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THE ECONOMIC INTERPENETRATION BETWEEN THE EUROPEAN UNION AND EASTERN EUROPE

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- Series A—'Economic trends' appears monthly except in August and describes in a more succinct way financial and economic developments in the European Union.

- Series B—'Business and consumer survey results' gives the main results of opinion surveys of chief executives (orders, stocks, production outlook, etc.) and of consumers (economic and financial situation and outlook, etc.) in the Community, and other business cycle indicators. It also appears monthly, with the exception of August.

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The economic interpenetration between the European Union and Eastern Europe

Abbreviations and symbols used

Member States

B	Belgium
DK	Denmark
D	Germany
WD	West Germany
GR	Greece
E	Spain
F	France
IRL	Ireland
I	Italy
L	Luxembourg
NL	The Netherlands
P	Portugal
UK	United Kingdom
EUR 9	European Community excluding Greece, Spain and Portugal
EUR 10	European Community excluding Spain and Portugal
EUR 12–	European Community, 12 Member States including West Germany
EUR 12+	European Community, 12 Member States including Germany

Currencies

ECU	European currency unit
BFR	Belgian franc
DKR	Danish krone
DM	German mark (Deutschmark)
DR	Greek drachma
ESC	Portuguese escudo
FF	French franc
HFL	Dutch guilder
IRL	Irish pound (punt)
LFR	Luxembourg franc
LIT	Italian lira
PTA	Spanish peseta
UKL	Pound sterling
USD	US dollar
SFR	Swiss franc
YEN	Japanese yen
CAD	Canadian dollar
ÖS	Austrian schilling
R	Russian rouble

Other abbreviations

ACP	African, Caribbean and Pacific countries having signed the Lomé Convention
ECSC	European Coal and Steel Community
EDF	European Development Fund
EIB	European Investment Bank
EMCF	European Monetary Cooperation Fund
EMS	European Monetary System
ERDF	European Regional Development Fund
Euratom	European Atomic Energy Community
Eurostat	Statistical Office of the European Communities
GDP (GNP)	Gross domestic (national) product
GFCF	Gross fixed capital formation
LDCs	Less-developed countries
Mio	Million
Mrd	1 000 million
NCI	New Community Instrument
OCTs	Overseas countries and territories
OECD	Organization for Economic Cooperation and Development
OPEC	Organization of Petroleum Exporting Countries
PPS	Purchasing power standard
SMEs	Small and medium-sized enterprises
toe	Tonne of oil equivalent
:	Not available

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Foreword

In July 1989, following the launch of the PHARE programme of aid for Poland and Hungary, the Directorate-General for Economic and Financial Affairs commissioned a group of independent experts to produce a collection of studies on the two countries which discussed various aspects of their transformation efforts to turn into market economies. The collection was published as an edition of *European Economy* (No 43) in March 1990. Despite being based on the transformation experiences of Hungary and Poland alone, the results of the studies were also applicable to all other previously centrally planned economies attempting the move to markets.

Subsequently, after July 1990 when the PHARE programme was extended to Bulgaria, the former Czechoslovakia, the former Yugoslavia and, later on, to Romania, a decision was taken to support a second collection of studies which would cover all those countries as well. Once again, the aim of the studies was to explore the transformation process under way, but now in the light of experience from the early stage. This collection of studies was published as a special edition of *European Economy* (No 2) in 1991.

This volume of *European Economy* is the third issue devoted to the Central and East European countries (the so-called CEECs): Bulgaria, the Czech and the Slovak Republics combined, Hungary, Poland and Romania. Its aim is, firstly, to try to assess, on the basis of these first four to five years of reform, the developing economic intercourse between the CEECs and the European Union (EU). Secondly, to see what perspective can therefore be deduced about the possible future development of trade and foreign investment between the two halves of Europe. It was prepared under the supervision of Pierre Buigues.

The volume is divided into three parts. The first part, Part A, consists of studies prepared by Commission services, except for Chapter 2 which was written by Uta Möbius and Dieter Schumacher from DIW, Berlin. These studies focus on various issues all related to the recent and possible future development of CEEC trade, especially with the EU: how EU trade barriers have been evolving and the implications of the Europe Agreements for CEEC access to EU markets, analysis of CEEC-EU trade with particular reference to the changes in trade barriers, scenarios of possible CEEC trade and GDP growth, and what role foreign investment inside the CEECs has been playing so far. The authors of Part A are Anne Bucher, Declan Costello, Mark Hayden, Emma Laredo-Toledano and John Sheehy.

Part B then focuses on the CEECs themselves. Each CEEC is the subject of an individual study written by a country expert external to the Commission. On the basis of their intimate knowledge of the countries, these experts try to establish for each CEEC how its context of inherited industrial structure and potential comparative advantages relate to the actual development of trade with the EU so far. An attempt is also made to pinpoint distortions which continue to impact on the sectoral pattern of each CEEC's trade with the EU. In other words, the analyses presented in Part B not only discuss how CEEC imports and exports with the EU have developed sectorally since the reform processes began, but also offer some clues about how they are likely to develop in the future. Overall, evidence presented in this part shows that although the CEECs share a number of characteristics in their trade with the EU, nonetheless country-specific differences are growing. The authors of Part B are Rumen Dobrinsky from the Centre for Strategic Business and Political Studies in Sofia, Michael Landesmann from Cambridge University, János Gács from IIASA in Laxenburg, Dariusz Rosati from the UN-ECE in Geneva, and Marvin Jackson from the Katholieke Universiteit Leuven.

To round up the volume, Part C considers from three different perspectives the EU's sensitivity to market reforms in the CEECs through their impact on CEEC trade with the EU. One perspective is that of a Member State, Italy, which is large, geographically close to the CEECs and has experienced significant increases in the importance played by those countries as trade partners in the most recent period. The second perspective is that of a so-called sensitive industrial sector, for which the EU's trade-opening measures as set out in the Europe Agreements are least generous — in this case, textiles and clothing. Finally, the closing study or perspective steps back to take a wider view of the overall welfare impact of change in the CEECs on the EU. The external authors of Part C are Giovanni Graziani from IRSS in Milan, Alisdair Smith and Michael Gasiorek from Sussex University in Brighton together with Anthony Venables from the LSE in London, Eduard Mikelka from the Academy of Sciences in Bratislava, and Christine Huttin from CREDES in Paris. The one contribution from the Commission services was written by Nigel Nagarajan.

H. Matthes
Chairman of the Editorial Board
European Economy

Summary

Market reforms and economic transformation in the countries of Central and Eastern Europe (the CEECs) were always bound to have an impact on the European Union due to geographic proximity. This impact shows up most vividly in the rapid growth of trade flows between the EU and the CEECs and, to a lesser extent, growing flows of capital. This developing economic interdependence between the EU and the CEECs forces enterprises and public authorities to consider new strategies. For enterprises, new strategic responses are necessary if expanded markets and the potential development of comparative advantage are to be exploited. Public authorities, meanwhile, need to monitor and encourage trade liberalization. A major step forward in this context has already been taken with the signing of Europe Agreements between the EU and each CEEC which aim to establish free trade in industrial products within 10 years. This development, however, also makes it crucial for Member States to evaluate how, and to what extent, they will be affected by growing economic intercourse with the CEECs.

In this volume, the CEECs' focus is on manufacturing products as these compose the bulk of trade between the EU and the CEECs. The period scrutinized is 1988-93 which covers the end of the previous centrally planned economic system and the start of the reform processes in the CEECs. In general, the level of sectoral disaggregation is rather high — usually more than 100 manufacturing sectors are covered.

The bulk of the results of this volume are based on country studies which present the strengths and weaknesses of manufacturing industry in each of the CEECs. These studies point to the threats and opportunities created by the opening-up of the CEECs to the market-oriented developed economies of the world. A group of experts, coordinated by the Directorate-General for Economic and Financial Affairs, have met in Brussels on three occasions in 1992 and 1993 in order to comment on each other's papers. These meetings also showed the need to complement the country studies with a number of horizontal studies giving a broader view: analysing overall trade developments, foreign direct investment (FDI), EU trade barriers facing the CEECs and an assessment of market access. These horizontal studies appear in Part A of this volume, whilst the country studies form Part B. In Part C, the sensitivity of the EU to economic reform and opening-up in the CEECs is explored: there is a chapter on the potential effects on the EU of CEEC trade expansion derived from a general equilibrium model, and two further chapters looking at the sensitivity of one sector and one Member State (textiles and clothing and Italy) in the context of CEEC marketization. The chapters appearing in Part A have mainly been prepared by officials of DGII (Directorates B and F) whilst those in Part C were predominantly prepared by external consultants.

The following 18 points present the main conclusions of the different chapters of this issue (updated to include 1993 data when necessary). They do not pretend to be exhaustive, many important points remain in the 14 chapters below which comprise this particularly thick volume of *European Economy*. The 18 points are simply the result of an attempt to highlight some of the salient issues covered in this volume, taking into account the most recent period.

1. Viewed from the perspective of the European Union, trade with the Central and East European countries accounts for a relatively small share of total manufacturing imports. In 1993, only 4,6% of total extra-EU manufacturing came from the CEEC-5. From the perspective of the CEEC-5, the EU has become their largest trade partner, absorbing more than 50% of current manufacturing exports from Poland, Hungary, and the Czech and Slovak Republics. The EU is therefore much more important to the CEECs than they are to the EU.

2. On the other hand, there has been an unprecedented expansion of EU manufacturing trade with the CEECs since their market reforms and opening-up process began in 1989. Whereas the annual growth rate in value of EU imports from the CEECs was 12% between 1987 and 1989, subsequently there was a dramatic increase with growth rates of 29,2% in 1991, 23% in 1992 and 7,4% in 1993. As a result, the CEEC-5 share of total extra-EU manufacturing imports has risen from 2,8% in 1988 to 4,6% in 1993. Meanwhile, the share of total extra-EU manufacturing exports going to the CEEC-5 in 1993 was 5.1% compared with 2,6% in 1988. Finally, the trade balance in manufacturing has been continuously improving in the EU's favour since the CEECs' marketization process began, up from a surplus of ECU 1,6 billion in 1991 to ECU 2,1 billion in 1992 and ECU 5,0 billion in 1993.

3. If we compare current trade flows between the EU and the CEEC-5 with predicted flows based on the so-called gravity model as developed by Hamilton and Winters (where trade flows are calculated as being a function of income and distance between trade partners), actual data so far for the five-year period 1988-93 show that the annual growth rates of EU-CEEC trade have generally been at least twice as high as forecast if we take Hamilton and Winters' assumption of a 20-year catch-up period (see Chapter 1). For CEEC exports to the EU, growth in the five-year period has averaged 17,9% per year whereas Hamilton and Winters' implicit forecast rate was 8,4%. Similarly, actual CEEC imports from the EU have grown 22,8% annually on average, which is much higher than the forecast of 9,3%. Of course, we are only at the beginning of the adjustment process, and the question therefore arises whether these high growth rates are sustainable over the long term.

4. The relative importance of trade with the CEECs for each Member State of the EU varies widely. Germany has continued its traditional role of dominating EU trade links with the CEECs, a position that was further intensified by German reunification in 1990. In 1993, Germany alone imported 60,3% of the EU's total manufacturing imports from the CEECs, up from 45,0% in 1988, and supplied 55,8% of the EU's manufacturing exports to the CEECs. Italy is the second most important Member State in terms of trade with the CEECs, but it lies far behind Germany (absorbing only 11,3% of the EU's manufacturing imports from the CEECs and providing 15,8% of EU manufacturing exports to those countries). On the other hand, the share absorbed by southern European Member States (Greece, Portugal and Spain) has declined continuously from 6% in 1988 to 3,4% in 1993, showing that the types of manufacturing products currently exported by the CEECs to the EU correspond much more to the demand of northern European Member States, especially Germany, than southern European ones. Meanwhile, the share of EU manufacturing exports to the CEECs originating from the southern European Member States has been relatively stable (around 2,4% between 1988 and 1992) apart from a sudden increase in 1993 (to 3%). The question that naturally arises is whether or not southern European Member States and some northern European Member States can take as much advantage of the possibilities opened up by reform in the CEECs as has Germany and, in this context, whether the 1993 results are exceptional or evidence of structural change.

5. The recent CEEC-5 trade performance with the EU varies widely from country to country. The share taken of total EU manufacturing imports rose 0,81 percentage points between 1988 and 1993 in the case of Poland, 0,75 points in the case of the Czech and Slovak Republics, 0,28 points for Hungary, 0,08 points for Bulgaria and even declined 0,12 points in the case of Romania. More or less the same picture emerges in the case of EU manufacturing exports to the CEECs: Poland's share of EU manufacturing exports rose from 0,75% in 1988 to 1,92% in 1993, an increase of 1,17 percentage points in five years, whilst the Czech and Slovak Republics' share experienced a 0,89 point increase, Hungary had a 0,37 point increase, Romania a 0,27 point increase and Bulgaria's share actually declined by 0,14 points. As a result, the EU registered a surplus in manufacturing trade in 1993 of ECU 2 billion with Poland, ECU 1,2 billion with the Czech and Slovak Republics, ECU 1,1 billion with Hungary and ECU 0,37 billion with Romania and Bulgaria. Clearly, then, Poland and the Czech and Slovak Republics are integrating their trade flows with the EU much more successfully than Romania and Bulgaria. However, the latter two CEECs are late starters in terms of market reforms and may therefore increase their shares significantly in the future.

6. The CEECs' most successful export sectors to the EU are in traditional consumer and low-technology goods. Clothing, footwear and leather goods, which represented 19,5% of total EU manufacturing imports from those countries in 1993, compared to 14,4% in 1988, are perhaps the best example of this. In 1993, the CEECs largest trade surpluses by far with the EU were in the clothing and footwear and leather goods sectors (ECU 2,7 billion). The CEECs' second most successful sector from this point of view was the timber and wooden furniture sector (ECU 1,3 billion surplus), although its share of the EU's total manufacturing imports from the CEECs is declining (to 9% in 1993 as against 10,6% in 1988). The CEECs' third most successful sector was the metals sector (with a surplus of ECU 0,9 billion) but, again, its share of EU manufacturing imports from the CEECs is declining steadily (to 9,1% in 1993 from 14,7% in 1988).

Finally, the chemicals industry is another significant export sector to the EU for the CEECs (7,5% in 1993), but also one which has been decreasing (its share was 11,6% in 1988). However, it runs a large deficit in trade with the EU (ECU 1,5 billion in 1993). Meanwhile, four CEEC sectors have been increasing their share of total EU manufacturing imports from the CEECs (metal articles, motor vehicles, electrical engineering and other means of transport), up in 1993 to 21,9% from 12,4% in 1988. However, apart from other means of transport, these sectors still produce deficits in trade with the EU (see point 9 below).

7. Despite the growth of CEEC exports, not even their most successful export sectors (e.g. wood manufactures, clothing, footwear and knitting products) have yet managed to achieve even a small share (up to 5%) of apparent consumption in the EU market. Moreover, where CEEC import penetration of the EU market has been most marked, it is usually the result of EU policies and practice — in particular, the growing phenomenon of outward processing traffic. It is also the case that some of the growth of CEEC exports to the EU has come at the expense not of domestic EU producers, but rather other non-EU exporters. As a result, the adjustment problem for EU industries is reduced.

The sectoral pattern of EU imports from the CEECs are more similar to the EU's imports from the Mediterranean countries than to other groups of countries (including South-East Asia, EFTA, the rest of the world, etc.). The rapid increase of EU imports from the CEECs in recent years seems to be at the expense of a gradual displacement of supplies from Mediterranean countries. Only part of this deterioration of the Mediterranean countries' position in the EU market is due to the disintegration of the former Yugoslavia (see Chapter 3).

8. Coinciding with the very rapid expansion of EU imports from the CEECs has been a radical trade liberalization by the EU towards the CEECs and formalized in the signing of Europe Agreements (EAs) which aim generally to establish free trade areas in 10 years. In fact, some 75% of industrial imports from Hungary will already be freely traded by the end of 1994, with equivalent figures of 77% in the case of the Czech and Slovak Republics, and 69% for Poland. With a one-year delay, similar conditions will apply to 65% of EU imports from Bulgaria and 56% of imports from Romania.

However, the CEECs' exports are concentrated and specialized in sectors in which there is restricted access to the EU market. Moreover, their overall export structure to the EU has not adjusted significantly in response to recent changes in EU trade protection, although there is evidence of some slightly enhanced trade response to protection changes in the last three years (see Chapters 2, 3 and 5).

9. In 1993, the EU ran a huge surplus in its trade with the CEECs in sectors incorporating engineering (mechanical and electrical), research and development (chemicals) or used as inputs for exports of clothing by the CEECs (textiles): mechanical engineering (ECU 3,0 billion), chemicals (ECU 1,5 billion), textiles (ECU 1,5 billion) and electrical engineering (ECU 1,4 billion). Combined, these four sectors accounted for 52,8% of EU manufacturing exports to the CEECs. In 1988, by comparison, these four sectors accounted for 63,9% of the EU's manufacturing exports to the CEECs. The decrease is primarily due to the enormous decline in importance of mechanical engineering and chemicals (whose shares dropped from 24,9 to 17,5% and 21,7 to 12,4% respectively). Conversely, the shares accounted for by electrical engineering and textiles both increased between 1988 and 1993 (from 8,8 to 12,0% and from 8,5 to 10,9% respectively).

Two other sectors deserve attention: motor vehicles and office machinery. The share of both these sectors has increased rapidly since 1988 (up from 2,8 to 8,1% in 1993 in the case of motor vehicles, and up from 1,5 to 2,8% in the case of office machinery). As a consequence, trade with the CEECs in these two sectors combined moved from a small surplus in 1988 (ECU 74 million) to a substantial surplus in 1993 (ECU 1,4 billion)

10. The CEECs' sectoral pattern of exports to the EU and the export patterns of the EU towards the CEECs may have changed considerably since 1988, much more so than the patterns of other EU trade partners (such as the USA, Japan, the newly industrialized countries (NICs) or China), although there is disagreement on this point. The index measuring the change of trade patterns with the EU in the five-year period 1988-93 is particularly high for Bulgaria, both for exports and imports. It is also high for Poland. On the other hand, the lowest index is recorded by Hungary, which means that its trade patterns with the EU have changed much less than any of the other CEECs. This could be explained by the fact that, in 1988, Hungary was the most market-oriented CEEC by some distance having already started down the path of reform some time before.

In the very first years of the reform period, the CEECs all recorded higher indices for the change in the sectoral pattern of their imports from the EU than for the change in their export patterns to the EU. This mainly reflected the release of consumer demand pent-up during the pre-reform period which fuelled a boom in imports, especially of consumer goods. It also reflected the difficulties of quickly adapting the CEECs' supply-side to the new economic realities.

On the other hand, the annual change in the CEECs' import structure from the EU has slowed down considerably in 1992 and 1993 whereas that for CEEC exports to the EU has increased. On the import side, this could show that the structure of CEEC imports now properly reflects underlying CEEC demand. On the export side, it may be that reorientation is continuing apace, and that the rapidly changing CEECs' domestic industrial structures are now being mirrored by changes in their exports.

11. Reorientation by the CEECs of their engineering sectors' exports away from ex-CMEA (Council for Mutual Economic Assistance) markets and towards the EU has not been easy. This is a problem because these sectors currently account for high shares in employment and output, so their development is vital to the CEEC economies. Prior to 1989, these sectors accounted for extremely high shares of manufactured exports to the ex-CMEA, typically over 60%. However, CEEC exports of these sectors as a share of total manufacturing exports to the EU were much smaller (15,6% in 1988). Since 1989, Hungary and the ex-CSFR have both been able to increase substantially the share of engineering products in their manufacturing exports to the EU (from just over 15% in 1988 to over 25% in 1992) thanks to available labour skills and foreign investments. Poland has also seen an increase, but only from 18,3% in 1988 to 21,4% in 1993. The implication is that the former Czech and Slovak Federal Republic and Hungary have been more successful than Poland in reorienting their exports (in these sectors at least) away from ex-CMEA markets and towards the EU. Bulgaria and Romania have been completely unsuccessful in reorienting exports of these sectors to the EU.

12. The CEECs and the EU are trading more and more in goods from the same sectors (i.e. intraindustrial trade is prevailing over interindustrial trade, which is trade in goods from different sectors), which indicates that their factor endowments are converging with that of the EU. Between 1988 and 1993, the

intraindustry trade index which measures the extent to which the EU and the CEECs are trading products originating from the same industries (the Grubel-Lloyd index) has increased quite significantly, particularly for the Czech and Slovak Republics combined (up 11,7 points), Bulgaria (up 9,0 points), Hungary (up 8,1 points) and Poland (up 5,2 points). The only exception to this trend has been Romania, where the level of intraindustry trade has been quite stable.

In 1993, the index measuring intraindustry trade between the CEECs and the EU was close in the cases of the Czech and Slovak Republics combined (58,1%) and Hungary (54,8%) to the index recorded between Spain and the EU in 1980 (57,0%). Such high levels of intraindustry trade suggest that these three CEECs are as structurally similar to the EU now as Spain was in 1980. Moreover, the lowest indices recorded by the CEECs — Poland (43,5%) and Bulgaria (44,8%) — in their trade with the EU are higher than the index recorded in the case of Portugal (32,0%) or Greece (24,0%) in 1980. Only Romania (with an index of 29,5%) is comparable to Portugal and Greece in 1980.

13. Flows of foreign direct investment (FDI) to the CEECs accelerated significantly after the process of market reforms began (see Chapter 4), favouring the transfer of technology and technical know-how. However, FDI to the CEECs now seems to have levelled off everywhere, at least temporarily, at levels which remain rather disappointing by comparison with expectations and international experience except, perhaps, in the case of Hungary, the foreign investors' favourite target — where the stock of FDI in 1992 represented USD 332 per person (and approximately 46% of the CEECs' total stock of FDI), about half the comparable figure of USD 675 per person in Portugal that same year. Uncertainty over the CEECs' macroeconomic prospects and political and social stability apparently lie behind foreign investors' caution, as does continuing dissatisfaction with the CEECs' legislative and regulatory frameworks. Furthermore, privatization inside the CEECs remains a sensitive issue so that supply opportunities (in terms of existing enterprises for sale) for FDI remain limited.

There is also a clear division between the experience of Hungary, Poland and the Czech Republic on the one hand, which have attracted the lion's share of FDI flows (approximately 94% of 1992's net inflow of USD 2,9 billion), whilst Bulgaria, Romania and the Slovak Republic, on the other, have received very insignificant flows. The EU, EFTA and the USA are the dominant sources of FDI for the CEECs. Japan is very insignificant. Within the EU, Germany (generally between 8% and over 30% of the stock of FDI in different CEECs) has led the way, but Italy has recently become much more important (between 5 and 30% of the stock of FDI in the various CEECs).

14. Poland is increasingly becoming the EU's largest trading partner amongst the CEECs. In 1993, it supplied 36,5% of the EU's manufacturing imports from the CEECs (up from 31,0% in 1988) and was the destination for 37,4% of EU manufacturing exports to the CEECs (up from 29,2% in 1988). Poland also runs the largest manufacturing trade deficit amongst the CEECs (ECU 2,0 billion in 1993), whereas in 1988 it enjoyed a small surplus. Its most successful export sectors to the EU are clothing and footwear and timber and wooden furniture: their combined share of Polish manufacturing exports has risen to 31,7% in 1993 from 22,6% in 1988, giving a 1993 surplus of ECU 1,8 billion. In general, then, Poland specializes in the export to the EU of natural resource-based products and low-technology manufactures. The country's worst export performance has been turned in by the food, drink and tobacco sector which provided 15,3% of exports to the EU in 1988, but now only provides 8,3%. As a consequence, Poland's export surplus of ECU 154 million in this sector in 1988 has been transformed into a ECU 123 million deficit in 1993.

15. Since the start of the reform period, the combined manufacturing export performance to the EU of the Czech and Slovak Republics has been the most vigorous of all the CEECs. In 1993, exports from the two countries accounted for 30,7% of the CEEC total, whereas they had only accounted for 23,7% in 1988. The two countries together are now the EU's second largest trade partner amongst the CEECs by some distance. An explanation for this performance may be that they have the least concentrated export structure to the EU of all the CEECs — their three largest export sectors (metals, chemicals and clothing and footwear) provided 29,3% of their 1993 manufacturing exports — whereas other CEECs are much more concentrated, especially in sectors for which EU demand is growing rather slowly. Evidence also suggests that trade reorientation of products away from the collapsed ex-CMEA markets towards the EU has been accomplished rather successfully, despite their poor quality, perhaps due to extreme price competitiveness.

16. Alone amongst the CEECs, Hungary's manufacturing exports to the EU are no longer growing in value, having fallen in 1993 to ECU 3,5 billion from ECU 3,6 billion in 1992. An important reason for this is the strong real appreciation of the exchange rate over recent years, which has seriously eroded the international competitivity of Hungarian costs, especially labour. Clothing and footwear are the country's most successful sectors with a share increase from 16,2% of Hungarian manufacturing exports to the EU in 1988 to 18,6% in 1993, accompanied by an ECU 480 million surplus. Generally, the only trade surpluses Hungary runs with the EU are in sectors which are natural resource-based or labour intensive (e.g. metals, mineral products, and timber and wooden furniture). However, the food, drink and tobacco sector has suffered a decline from 21,7% of manufacturing exports in 1988 to only 13,3% in 1993, although this was not enough to wipe out Hungary's trade surplus with the EU in the sector. Meanwhile,

there has been a notable increase in the importance in exports of engineering sectors (especially electrical engineering) from 15,2% in 1988 to 27,8% in 1993, the biggest increase recorded by any CEEC for these sectors. Nonetheless, imports of EU products originating in these sectors outstrip exports.

17. Of all the CEECs, Bulgaria is the only country where manufacturing imports from the EU were lower in 1993 than in 1988, having reached their nadir in 1990 at 63% by value of the 1988 level. Partly because of this, Bulgaria is the only CEEC with an improved trade balance vis-à-vis the EU in 1993 than in 1988 (with a deficit of ECU 370 million compared to ECU 950 million). Lying behind this development is the foreign debt crisis inherited from the previous regime. The country's most successful export sectors are textiles, leather goods and clothing and footwear, which have achieved a big increase in their share of manufacturing exports to the EU from 15,6% in 1988 to 35,5% in 1993 and produced an enhanced, though small, trade surplus. Amongst the CEECs, Bulgaria also has the largest share of its exports to the EU originating from capital and energy intensive sectors — especially petrochemicals, industrial chemicals and iron and steel. As for its imports from the EU, Bulgaria had the biggest decline of all the CEECs in the share represented by mechanical engineering between 1988 and 1993 (down 14,4 percentage points from 28,2 to 13,8%). This may be a sign that investment activity has collapsed in Bulgaria and, if so, that future growth prospects are imperilled.

18. Romania is the sole CEEC to have recorded a decrease in the value of manufacturing exports to the EU between 1989 and 1993, partially reflecting the catastrophic economic performance since 1989. As a result, the country's share of CEEC exports to the EU has fallen from 18,9% in 1988 to 8,8% in 1993. The most spectacularly successful export sector is labour-intensive clothing and footwear, which already provided 20,9% of Romanian manufactured exports to the EU in 1988 but has since almost doubled to 40,7% in 1993, generating an ECU 550 million surplus. This sector, plus the timber and wooden furniture sector and textiles, make up the country's three most important export sectors — together they account for 65,5% of manufacturing exports to the EU, making Romania's export structure the most concentrated of all the CEECs. Indeed, Romania is the only CEEC to experience an increase in export concentration since 1988 (when the three top sectors accounted for 59,2% of the manufacturing total). What is more, export restructuring has perversely been towards the EU's most protected sectors. Overall, the country has moved from a substantial trade surplus with the EU of ECU 1 billion in 1989 to a deficit in 1993 of ECU 370 million, as imports have soared. However, it is the only CEEC to increase the importance of mechanical engineering in total manufactured imports from the EU (up to 19,9 in 1993 from 4,5%). The question is therefore posed, to what extent does this increase correspond to an increase in domestic investment activity.

Part A

Overall view

Chapter 1

CEECs' growth prospects for GDP and manufacturing trade with the EC — A short literature survey

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[1] European Commission, DG II.

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1. Introduction

The transition of the CEECs[1] from planned economies to market economies has raised speculation amongst economists about the time necessary for the process to be completed and, more generally, about the capacity of those countries to catch up with the EU's average standard of living. A number of studies have now been published in the most recent years which offer a range of estimates for this catch-up period. This first chapter aims to present briefly a certain number of these recent papers which touch on the issue.

To cover the spectrum of scenarios which have so far been produced, this paper presents in the first part the results of those papers which consider a scenario of successful CEEC reform processes with increased trade access to the Community market. The second part gives the results of those papers which consider a scenario of disappointing CEEC reforms and limited trade opening. The final part offers some conclusions drawn from the papers synthesized together with some discussion of which scenario-type is developing.

The final objective of the note is thus to give a range of results giving the best and worst performances that the CEECs are likely to experience. For the best GNP results, only those figures which are called 'plausible' are highlighted.[2] Presenting a range of figures allows us to forecast with some confidence the ballpark figures that we can expect the CEECs to actually achieve.[3]

Overall, the papers surveyed suggest that in an optimistic scenario up to the year 2000, the CEECs will experience real economic growth rates comparable to Spain's best (between 4 and 6% per year). This, combined with trade redirection and EU market-opening would allow CEEC export growth to the EU of up to 12% per year. Such export performance, in turn, would permit CEEC annual import growth of up to 13%. In terms of CEEC export patterns, such an experience could enable the development of comparative advantages in higher processed products.

In a pessimistic scenario, the CEECs economic growth is weak (around 3% a year is the consensus of the literature), as are export and import growth. Furthermore, the CEECs are doomed to remain specialized in the export of low value-added products. From the EU's point of view, this would mean that the CEECs had a rather insignificant economic impact on the Community in the future (although it would raise the risk of greater migration from the CEECs to the EU). However, it is also clear that the assumptions underlying pessimistic scenarios developed in the literature are proving to be excessively pessimistic by comparison with actual developments.

2. Successful transformation process and moves towards a free trade area

2.1. GNP or GDP growth estimates (see Table 1)

In 1992, Rollo and Stern developed an optimistic scenario in which they assumed that the CEECs' stabilization programmes are successful, that there is a strong entrepreneurial response to marketization, human capital is abundant and comparable to southern Europe, and that infrastructure is not a constraint. Given these conditions, they propose that, in the best possible case, the CEECs' GNP growth will consequently compare with the best achieved by Spain and Korea (between 8,8 and 10% per year between 1995 and 2000). Allowing for a slackening of CEEC growth after 2000 and assuming that the EU grows at an average 3% per year between now and 2010, the implication is that by 2010 Hungary and the CSFR will approach the Spanish level of GNP per capita. The other CEECs will be poorer.

One weakness of this 'historical trends' approach is that no attempt is made to calculate the likely capital needs generated. Using exactly the approach adopted by the authors to calculate the probable annual capital needs of eastern Germany if it is to catch up with western Germany in 15 years suggests that, assuming quite favourable incremental capital-output ratios, at best an average of USD 190 billion per year would be necessary to generate the forecast growth rates (oddly, Rollo and Stern did not themselves investigate the capital-needs implications of their scenario). Such an estimate seems justifiable when compared with those produced by Begg et al. (roughly USD 103 billion per year for 7% per year GNP/capita growth over 10 years) and Collins and Rodrik (about USD 344 billion per year for 7% per year GNP growth for the next 10

[1] In this note, as in the overall interpenetration project, the CEECs (Central and East European countries) are Bulgaria, Hungary, Poland, Romania and the CSFR — i.e. the Czech and Slovak Republics are generally, but not always, treated as still being a united country because data distinguishing the two countries is limited and recent.

[2] Some studies present high exogenous GNP growth rates so as to examine the implications for capital flows from the West, which are usually so enormous that the growth figures are rejected as impossibly high by the authors themselves.

[3] It is essential to bear in mind that the different papers and studies were not written with any intention of necessarily being mutually compatible in terms of time horizon or sectoral breakdown. Indeed, the estimates of initial CEEC GDP differ depending on the study, which can have a significant effect on subsequent estimates for economic or trade growth. Therefore, imposing comparability on the different studies has meant making a number of rather shaky calculations which nowhere appear in some of the studies, based on some questionable assumptions. Therefore, it is wise to treat the figures provided in Tables 1 to 3 with caution. In any case, as the papers and studies themselves are based on flimsy historical data and sometimes use highly simplified methods to produce projections for the CEECs, such caution is requisite.

Table 1

Scenarios of annual GNP or GDP growth in the CEECs up to 2000

Note: figures in italics are rough estimates by Commission services on basis of study referred to.

(%)

		Best case		Worst case	
Source / Study	Country	1993-2000	1995-2000	1993-2000	1995-2000
Rollo and Stern	Bulgaria	—	8,8	—	3,6
	CSFR	—	10,0	—	4,0
	Hungary	—	10,0	—	4,0
	Poland	—	10,0	—	4,0
	Romania	—	8,8	—	4,0
Collins and Rodrik[1, 3]	CEEC-5	*5,3*	—	—	—
CEPII[2]	Bulgaria	5,5	—	2,9	—
	CSFR	5,3	—	2,9	—
	Hungary	5,8	—	3,7	—
	Poland	5,5	—	3,0	—
	Romania	5,5	—	2,8	—
Hamilton and Winters[3]	CEEC-5	*5,0*	—	—	—
Cohen[3]	Bulgaria	—	4,0	—	—
	CSFR	—	2,5	—	—
	Hungary	—	2,9	—	—
	Poland	—	4,0	—	—
	Romania	—	3,9	—	—
Baldwin[4]	Bulgaria	2,6 — 3,3	—	—	—
	CSFR	2,9 — 4,0	—	—	—
	Hungary	3,6 — 5,8	—	—	—
	Poland	4,1 — 6,9	—	—	—
	Romania	3,1 — 4,5	—	—	—

[1] Growth figures estimated knowing: (a) Collins and Rodrik calculations of capital needs for 7,0% growth; (b) Collins and Rodrik estimates of feasible capital availability; and then multiplying 7,0% by (b)/(a).

[2] CEPII's 'worst-case' scenario is not quantified. The estimates presented here represent their 'continuity' scenario, in which global trends continue and CEEC reforms are implemented slowly.

[3] Growth figure estimated assuming that EU grows at an average long-run rate of 3% per year.

[4] EU growth rate assumed to be 2% per year. For CEECs, higher growth rate reflects catch-up in 10 years, lower growth rate reflects catch-up in 30 years.

years). However, Begg et al. and Collins and Rodrik both consider that such capital needs could not be fulfilled, at least not from Western sources, and domestic savings would only partially (if at all) compensate for the shortfall. Thus, the implication is that Rollo and Stern's growth projections are unfeasibly high, even if justifiable on the basis of other countries' experiences.

On the basis of growth theory (in particular, what he calls the 'convergence hypothesis'), Cohen develops some long-run potential growth rates for the CEECs which, ranging between 2,5 and 4,0%, he freely admits are not very fast (especially if rich countries are assumed to grow at around 2%). At such rates, 25 years will be necessary before the CEECs can catch up with current Western per capita incomes. However, Cohen argues that this would still mean, thanks to their higher levels of education, that the CEECs should grow faster than the poorest countries, although lower population expansion in the CEECs must keep overall CEEC growth down. Of course, calculating long-run equilibrium growth rates does not mean that growth could not temporarily be higher in the CEECs (especially in the shorter term when spare capacity is bound to be available). However, Cohen does not discuss this.

CEPII (1992) produces some GDP growth estimates using probably the most sophisticated methods of all those surveyed in this note. This involves the use of their rather large Mimosa econometric model, which nests the possible combined CEEC

performances within a global context. On this basis, they calculate that the growth of total world GDP will be 3,8% per year between 1992 and 2000, while that of the CEECs will be 2,9% per year — although in the period after 1994, the CEECs' growth rate should increase to 4,4% per year. Then CEPII uses a simple accounting model to disaggregate the individual CEEC performances on the basis of their domestic savings rates, foreign indebtedness and rate of capital stock amortization. Use of this accounting model also allows CEPII to estimate the resources that would have to flow from the West for the projected growth rates to be realized. Making the assumptions that the CEECs succeed in reforming their economies, that they do receive significant resources from the West (equalling 2,3% of the CEECs' GDP by 2000 — Spain's experience during the 1980s) which can be and are effectively used, that Western markets are very open to CEEC products, and that there is significant deepening of world trade integration, CEPII believes that the CEECs could enjoy GDP growth comparable to the best Spanish performances (around 5% per year after 1993).

Collins and Rodrik (1991) do not themselves venture specific feasible growth rates for the CEECs in their paper. However, they do provide estimates of what they think possible capital availability in the region will be, whether domestically or foreign-provided. This allows us to make some rather rough calculations of the growth implications because they do provide estimates of the capital needs associated with 7% per year GNP growth, which they consider to be too great to be fulfilled. Knowing what capital provisions are feasible allows us to work backwards, arriving at a figure for all the CEECs of just over 5% per year.

Baldwin (1992) performs the simple exercise of assuming catch-up by the CEECs with the poorer EU Member States in between 10 and 30 years. The issue of the capital needs which such growth would generate is ignored, and as the relatively high Summers and Heston estimates of CEEC GDP are used, the implied catch-up growth rates are not so high. It is admitted, however, that the significant decline in CEEC GDP during the transformation period means that the estimated growth figures have to be higher if catch-up is to happen in the specified period.

Before moving on to the next section, it is worthwhile recapping the necessary conditions for the CEECs to be able to achieve the relatively high growth rates envisaged in the papers discussed above. There are at least three critical conditions which all have to be well-fulfilled, otherwise much slower growth will be realized. These three conditions (or problems which must be solved) are best put by Baldwin et al. (1992) who write that the CEECs must 'finance and organize investment (given scarce financial and managerial resources), ... limit rent-seeking and institutional sclerosis' and 'increase access to protected export markets'.

2.2. Trade

Changes in total trade with the EU (see Table 2)

To generate their optimistic scenario Collins and Rodrik (1991) assume that over a minimum period of 20 years the CEECs become like developed countries in terms of openness and direction of trade and enjoy average EU real income levels. In this case, using a statistical model which relates the openness of a country to its income levels and population calibrated from the experience of a large group of non-socialist countries, the CEECs could account for over 9,5% of world trade (up from nearly 3% now). Only by raising their real incomes in this way will the CEECs have such an appreciable effect on global (and EU) trade. To establish a geographic breakdown of this enhanced volume of trade, Collins and Rodrik then integrate evidence about the geographic trade patterns of the CEECs in the inter-war period with evidence about the geographic trade patterns in 1989 of six countries assumed to be comparable with the CEECs post-1989. Applying the results of this combined trade matrix to the CEECs would imply that by the end of the 20-year period, the CEECs would absorb 11,6% of total EU exports (i.e. intra- plus extra-EU exports) and provide 10,6% of total EU imports.

On the basis of two rather simple equations (incorporating assumptions about future CEEC GNP, exchange rates, growth of world trade and CEEC import elasticities) mixed, without justification, with projections derived from Collins and Rodrik and Cohen, Rollo and Stern expect that CEEC export growth rates will not be especially high (between 8 and 10,6% per year between 1991 and 2000), and certainly consistent with the historic performances of other countries. Meanwhile, imports by the CEECs from the EU are projected to grow rapidly between 1995 and 2000 (by over 13% per year).

Hamilton and Winters (1991) use a gravity model to determine future volumes and directions of international trade flows, assuming that market relationships start to work 'normally' in place of the previous planned trading system organized under the ex-CMEA. Use of a gravity model implies assuming that the volume and direction of international trade flows is directly related to GNP and openness, and inversely related to distance and population. Taking current estimates of GDP, they calculate that trade within the CEECs should be the same or lower than it was in 1985 while trade with Western markets (including the EU) should be four or five times greater (and even greater if CEEC income levels were higher). However, such a change is so enormous that it could not possibly be absorbed by the West in less than 20 to 30 years.

Using a similar gravity-type model to forecast future trade flows between the West and the CEECs and taking current estimates of the CEECs' GDPs as inputs, Havrylyshyn and

Table 2

Scenarios of annual CEEC trade growth with the EU up to 2000

Note : figures in italics are rough estimates by Commission services on basis of study referred to.

Imports from the EU

(%)

		Best case		Worst case	
Source / Study	Country	1991-95	1996-2000	1993-2000	1996-2000
Rollo and Stern[1]	Bulgaria	9,2	8,1	*3,7*	*2,1*
	CSFR	8,0	10,5	*2,4*	*2,4*
	Hungary	10,0	7,4	*– 1,8*	*2,4*
	Poland	8,7	9,7	*2,5*	*2,2*
	Romania	10,0	10,6	—	*2,3*
Collins and Rodrik[2]	Bulgaria	—	*9,8*	—	*7,6*
	CSFR	—	*8,1*	—	*5,6*
	Hungary	—	*7,5*	—	*4,0*
	Poland	—	*12,1*	—	*7,4*
	Romania	—	*13,4*	—	*6,6*
	CEEC-5		*11,0*		*6,4*
CEPII[3]	Bulgaria	—	7,3	—	—
	CSFR	—	10,4	—	—
	Hungary	—	8,9	—	—
	Poland	—	7,2	—	—
	Romania	—	7,8	—	—
	CEEC-5	*14,2*	*14,2*	*8,8*	*8,8*
Hamilton and Winters[4]	Bulgaria	*9,6*	*9,6*	—	—
	CSFR	*12,2*	*12,2*	—	—
	Hungary	*8,3*	*8,3*	—	—
	Poland	*8,4*	*8,4*	—	—
	Romania	*3,6*	*3,6*	—	—
	CEEC-5	*8,4*	*8,4*		
Baldwin[5]	CEEC-5	—	22	—	10

Pritchett expect substantial trade redirection. They forecast that northern Europe will become the destination for 77% of CEEC exports, up from 24% in the pre-reform period. At the same time, imports from northern Europe by the CEECs will account for 79% of their total imports, up from 37%. However, if the CEECs do achieve higher real levels of income, then their geographic trade patterns will approach those of the pre-reform period once again.

By 2010, Landesmann and Shields (1992) on the basis of the 'optimistic' Rollo and Stern scenario forecast that the share of EU imports (including intra-EU trade) provided by the CEECs will have risen from just over 1% in 1987 to over 4,2%. Much of this increase is expected to be at the expense of the original six members of the EU. However, market growth should ensure that any declines in export share suffered by a Member State do not translate into an actual drop in exports. The CEEC sectors most expected to succeed are the paper industry, metal processing, chemicals, mechanical engineering and mineral extraction. Generally, their average expected rise in market penetration is 7,5 percentage points. Meanwhile, the share of CEEC imports from the EU of mechanical engineering and chemicals are expected to shrink considerably by 2010, as will textile imports to a lesser degree. Motor vehicles are predicted to be the largest EU export gainer.

Baldwin (1992) develops the gravity-model approach used by Hamilton and Winters, but in addition explicitly accounts for possible income growth in both the CEECs and Western Europe (using assumptions about CEEC growth discussed briefly above). This is important because bilateral trade tends to increase as trading partners become richer. Assuming that the CEECs do catch up with the per capita income of poorer Member States in 10 to 30 years time, then it is estimated that combined CEEC exports to the EU will grow at between 10 and 22% per year. In the meantime, CEEC imports from the EU will grow a little faster (reflecting reconstruction and capital needs) at anything between 11 and 23% per year.

Table 2 *(continued)*

Imports from the EU

(%)

		Best case		Worst case	
Source / Study	Country	1991-95	1996-2000	1993-2000	1996-2000
NERA[1]	Bulgaria	1,5	13,3	*2,9*	*2,5*
	CSFR	1,9	13,3	*3,1*	*2,3*
	Hungary	6,6	13,3	*6,1*	*2,3*
	Poland	1,9	13,3	*7,7*	*2,4*
	Romania	4,7	13,3	*1,7*	*2,3*
Collins and Rodrik[2]	Bulgaria	*8,8*	*8,8*	*4,5*	*4,5*
	CSFR	*9,3*	*9,3*	*6,8*	*6,8*
	Hungary	*7,3*	*7,3*	*3,7*	*3,7*
	Poland	*13,0*	*13,0*	*8,2*	*8,2*
	Romania	*18,6*	*18,6*	*11,5*	*11,5*
	CEEC-5	*11,4*	*11,4*	*6,9*	*6,9*
CEPII[3]	Bulgaria	—	*6,7*	—	—
	CSFR	—	*7,0*	—	—
	Hungary	—	*6,9*	—	—
	Poland	—	*4,2*	—	—
	Romania	—	*5,0*	—	—
	CEEC-5	*16,1*	*16,1*	*11,4*	*11,4*
Hamilton and Winters[4]	Bulgaria	*3,6*	*3,6*	—	—
	CSFR	*12,0*	*12,0*	—	—
	Hungary	*7,1*	*7,1*	—	—
	Poland	*10,0*	*10,0*	—	—
	Romania	*10,2*	*10,2*	—	—
	CEEC-5	*9,3*	*9,3*		
Baldwin[5]	CEEC-5	—	23	—	11

1 World trade growth assumed to be 6%. CEEC export growth figures are for total exports, not just to the EU. The growth of exports to the EU is likely to be faster still.

2 The higher figures reflect the assumption that CEEC income per capita in 2010 equals EU average. The lower figures reflect the assumption that CEEC income per capita in 2010 is the same as in 1988. In both cases, however, the EU market is open and market behaviour followed. The total value of EU trade is assumed to be constant at all times. Adjustment takes 20 years.

3 Figures for individual CEECs are for total exports; estimated total for CEECs is of exports to the EU only. The total value of EU is assumed to remain constant through time.

4 Assumes that the world remains at 1985 income levels but that trade is free and adjustment takes 20 years.

5 Assumes that the CEECs catch up with the income per capita of poorer Member States over next 10 to 30 years, and that trade is open.

By way of comparison, it is interesting to look at the CEECs' export and import growth rates with the EU implicitly postulated[1] by the various authors summarized above, given in Table 2, and at the actual growth rates of manufacturing trade recorded since the transition period began in Table 3. In general, it is interesting to note that the actual record so far seems to have outstripped the postulated growth rates for most of the studies, especially as regards CEEC imports from the EU. Several essential caveats should be kept in mind, however. Firstly, that the implied average annual trade growth rates forecast in the surveyed studies are real growth rates, whereas the actual growth rates recorded are nominal (and therefore subject to upward bias due to inflation). Secondly, that the comparative statics nature of many of the studies surveyed make for a number of implications. Take, for example, the Hamilton and Winters study which compares the situation in 1985 with a 'potential' situation, i.e. what would have been the volume of trade flows as estimated by their gravity model had the CEECs been long-established market economies in 1985 rather than planned economies. They do not say very much about the kind of adjustment to be expected between the actual and such a potential trade situation, except that it is unlikely to take less than 20 years. It is, however, plausible to think that the adjustment necessary would be front-loaded because CEEC-EU trade was previously so tightly

1 Implicitly postulated because in many of the studies summarized the authors do not give annual growth rates for trade, but rather say what the final equilibrium will be at the end of a specified time period in terms of, say, share of EU trade. Commission services have then simply calculated what constant annual growth rate would be necessary to move from the initial position to the postulated final equilibrium.

controlled. Relaxation of those controls was bound to lead to a surge in trade, especially of imports by the CEECs as consumers rushed to fulfil their pent-up demands, less so for CEEC exports owing to supply difficulties. In that case, trade growth rates would be much higher initially than later on. Thirdly, Hamilton and Winters (and Collins and Rodrik, who make a similar assumption for their medium-run case) base their calculations on the CEECs remaining at 1985 levels of income per capita in the entire adjustment period, which is very unlikely. Nonetheless, there is no reason so far to think that income per capita has changed substantially since 1985 in the CEECs. Indeed, so far it is quite possibly lower now than it was then. One other caveat is that Collins and Rodriks' forecast growth rates are not only real, but also in excess of the overall real growth of EU trade. For that reason, the development of the EU's total non-EU manufacturing trade is also given in Table 3.

Changes in trade patterns with the EU (see Table 4)

Landesmann and Shields (1992) concentrate on the future composition of trade in manufactured goods between the EU and the CEECs up to 2010. To motivate their forecasts, they assume that by 2010 all the CEECs will approach the same level of economic development and trade performance currently displayed by a set of so-called reference economies — market economies in or bordering the EU — and will also have comparable trade structures. However, CEEC country size and location, current output quality and starting-date of economic reform also condition the long-run export pattern forecasts. However, this ignores the question discussed in other papers as to whether there will be sufficient resources available to significantly change the medium-run export patterns from current patterns. Meanwhile, in the short run, Landesmann and Shields postulate that export structure will be determined mainly by spare export capacity (basically exports formerly targeted at the ex-CMEA redirected towards the EU), effective investment (which is assumed to go to those CEEC sectors currently producing the best quality products) and output quality. Indeed, the development of future export patterns is both the most interesting and, perhaps, the most contentious part of the study because it deals with the supply-side, whose flexibility and direction of change (due to comparative advantage) is still most open to further examination. Imports, on the other hand, being demand-side phenomena and the CEECs being small economies, do seem likely to reflect very quickly the import structures of other small open economies with similar income levels. Indeed, standard international trade theory specifically assumes that consumer tastes do not impact on trade patterns (or, in other words, that all countries have identical and homothetic utility functions). Actual trade results so far suggest support for the assumption and its forecast implications.

In their paper, Rollo and Smith (1993) investigate the impact on the Community of the largest plausible trade expansions from the CEECs in agriculture and sensitive manufactured products, in order to assess the worst adjustment scenario that could possibly face the EU. Concerning manufactures, Rollo and Smith postulate a scenario in which CEEC exports to the EU of ores and metals (NACE 13), chemicals (NACE 17), and textiles (NACE 42) grow 400% in real terms by the year 2000 without reducing EU imports from other non-EU countries. These growth figures are chosen more for their demonstration effect of the worst possible impact that the Community could suffer, rather than as necessarily likely outcomes. Nonetheless, the assumed growth rates do derive from the work done by Hamilton and Winters (see above). If such an outcome were to occur, Community production in the relevant sectors would be reduced by between 1 and 10%. Nonetheless, such production declines would be spread over a decade and would therefore be well within the range of normal economic change.

Table 3

Actual annual trade growth with the EU between 1989 and 1993

(%)

	1989-93	1991-93
	Exports to EU	
Bulgaria	18,6	14,6
CSFR	25,4	22,4
Hungary	12,7	5,9
Poland	23,3	14,9
Romania	– 1,1	14,4
CEEC-5	17,9	14,9
World	3,8	2,1
	Imports from the EU	
Bulgaria	– 3,3	13,8
CSFR	32,9	39,6
Hungary	14,4	20,8
Poland	27,0	13,5
Romania	32,0	33,7
CEEC-5	22,8	22,8
World	4,9	8,4

Source : Eurostat (Comext).

Collins and Rodrik (1991) assume that the CEECs' reforms will succeed because only in that event will the CEECs have a significant impact on Western countries. They also expect that the demise of the CMEA will lead to substantial trade redirection from East to West, notably to the Community. At the same time, trade patterns will change substantially and much more quickly than real incomes. Overall, however, they expect that the CEECs will have broadly balanced trade for the foreseeable future. Unfortunately, they also expect that the CEECs will become formidable competitors in the sensitive sectors, especially textiles, clothing and agriculture (in other words, their comparative advantage will lie in being low-cost producers of relatively standardized products). Collins and Rodrik accept that human capital endowments in the CEECs offer potential for

Table 4

Scenarios of CEEC sectoral comparative advantage by 2000

Study sectors	CEPII		Landesmann and Shields	Collins and Rodrik
	Best scenario	Worst scenario		
Textiles			–	+
Mechanical engineering	+			–
Transport vehicles	+	+	+	
Metallurgy	–	–	–	+
Chemicals	–	–		–
Electrical engineering				
Electronics	+	+	+	
Paper products			+	

developing comparative advantages in more processed products, but they do not believe that technology and capital transfers from the West will be sufficient to unlock such potential.

For CEPII (1992), significant resource flows from the West to the CEECs will allow the development of CEEC comparative advantages in the production and export of vehicles and electronic components.

For Hamilton and Winters, increasing CEEC exports of manufactured products to the West, in the short run, will consist predominantly of unsophisticated, labour-intensive goods because present patterns will be maintained. Only in the long run can the depth of scientific education in the CEECs possibly lead to strengths in the exports of relatively more sophisticated goods.

3. Slow transformation process and limited trade integration

3.1. GNP or GDP growth estimates (see Table 1)

There is much less attempt to estimate what the effect could be on CEEC growth prospects of a situation in which their reform processes are unsuccessful and trade opening is limited because such a situation would hardly affect the world economy, let alone the EU. It is not therefore considered interesting enough to warrant special attention. Nevertheless, some attempts have been made at quantification, which are included below because they are interesting as providing estimates of the floor below which the CEECs will not go.

Rollo and Stern (1992), for example, paint a pessimistic scenario for the CEECs. In this scenario, stabilization fails, reforms do not provoke a supply-side response, domestic savings are inadequate, as are foreign investments, and foreign exchange is limited, all contributing to poor GNP growth performances. Nonetheless, the marketization process does lead to quite good growth in the second half of the 1990s (about 4,0% per year growth for all the CEECs), before slipping to rates after 2000 comparable to Latin American countries in the 1980s.

CEPII's (1992) worst-case scenario assumes that investment in the CEECs is inadequate, leading to feeble growth which, in turn, could weaken the forces for structural adjustment. However, no attempt is made to estimate what the growth rates would actually be. The growth figures for a 'continuity' scenario are given, in which CEEC reforms have only a slow impact on the CEEC economies and trade opening by the West is limited. These figures are presented in Table 1, but are between 2,8% and 3,7% per year. Obviously, the implicit growth figures for CEPII's worst-case scenario must lie below these.

3.2. Trade

Changes in total trade with the EU (see Table 2)

Rollo and Stern (1992) assume slow reform implementation leading to slow supply-side responses to market signals, and that as a result CEEC exports grow no faster than world trade. In quantitative terms, this means growth rates for exports of about 2,25% per annum after 1995.

Collins and Rodrik (1991) hardly have a pessimistic scenario. The worst situation that they discuss is one in which they assume that the CEECs become like developed countries in terms of openness and direction of trade, but that their real incomes remain at present levels — what they call their 'medium-run' scenario. In this case, their share of world trade would rise to just over 4% and they would absorb 5,1% of total EU exports (i.e. intra- plus extra-EU exports) and supply about 4,6% of total EU imports.

CEPII (1992) does not discuss the implications of the pessimistic scenario on the growth of CEEC exports, and nor does it adequately explain the reasoning behind the figures it does produce for the market share by the year 2000 of CEEC exports on the EU market in such a scenario. However, on the basis of its projected market share figures, back-of-the-envelope calculations suggest that CEPII believes that CEEC exports will still grow at over 8% per year between now and 2000 (unless the pessimistic scenario implies real falls in EU imports). This could be because CEPII expects that the pessimistic scenario will see the world divide into trading blocs, with the CEECs as part of a group including the EU and EFTA.

Changes in trade patterns with the EU (see Table 4)

Without market opening by the West, especially the EU, Rollo and Stern (1992) expect that resource flows to the CEECs from the West will be inadequate to develop comparative advantages in more processed products. Therefore, current CEEC comparative advantages in low-processed products will continue into the future, competing with EU producers of low value-added, low-processed products.

In CEPII's view, the pessimistic scenario should adversely affect the CEECs' prospects of obtaining significant resources from the West, leading to the development of CEEC comparative advantages in textiles, mechanical engineering and vehicles. However, the figures produced by CEPII in its accompanying tables do not support the textual assertion very well and, indeed, do not differ significantly from the expected comparative advantages that would develop in the optimistic scenario.

4. Conclusions (see Table 5)

4.1. GNP or GDP growth estimates

In an optimistic scenario, the CEECs must catch up with average EU income per capita. They certainly have well-educated enough populations to offer a genuine prospect of catch-up. However, it seems unlikely that there will be sufficient capital availability, whether domestic or foreign, to allow growth rates up to 2000 comparable to the fastest dynamic Asian economies. The CEECs' experience is most likely, at best, to be of real growth rates equal to the best Spanish experience (somewhere around 5% per year). Depending on the still disputed current GDP figures of the CEECs, this means that they will only catch up with the poorer Member States in between 20 and 30 years' time.

In the most pessimistic scenarios surveyed, two crucial assumptions are normally made: that market reforms fail in the CEECs and that there is poor market-opening by the West. If this were the situation, the CEECs would probably be condemned to growth rates (around 2,5% to 3,5% per year) which mean that they could become relatively even more impoverished in comparison to the EU up to 2000 (and even beyond). However, with the passing of time since the start of the reform process, it is becoming clearer that these two assumptions are untenable for any realistic scenario. First of all, market reforms in Poland, Hungary and the Czech Republic have already gone far and seem so durable that, even in the case (such as in Poland or Hungary) where a government is elected with roots in the past socialist-type system, they continue to be implemented. Furthermore, market-opening by developed countries — including the CEECs' main Western trade partners, the EU and EFTA — have been quite bold and far-reaching. Certainly, there are criticisms that the Europe Agreements do not go far enough, but by no stretch of the imagination can it be argued that the extent of market opening so far puts the CEECs firmly in the pessimistic scenario (quite the opposite, if the actual growth rates of CEEC exports to the EU market are used as an indicator).

Of course, up to now the actual experience of economic performance in the CEECs has been dire (although there is some evidence that the worst is now over), much worse than any of the medium- to long-run estimates produced for a pessimistic scenario by the studies surveyed. However, the *experience so far cannot be ascribed to failure of the reform* process (with the possible exceptions of Romania and Bulgaria) or lack of market-opening, but to the enormous shock of systemic transformation. The CEECs are not, as said above, in the pessimistic scenario. Progress so far in market reforms and market-opening provides a potentially fertile economic climate for export-led economic growth which will push average growth rates over 20 years of transition well up from current levels. Provided present policies continue (and they look certain to do so), if future CEEC growth is disappointing, this will be due to some factor other than reform failure and lack of market access. However, on the basis of the studies surveyed here, it seems that the greatest threat to the CEECs' catching-up with EU levels of per capita income is empty. Therefore, the CEECs' likely future GDP growth rates look set to be closer to the optimistic outlook.

4.2. Trade growth

A realistic optimistic range for the volume growth of CEEC exports to the EU, according to the studies surveyed, is between 7,5 and 12,0% per year on average between now and 2000. This would increase the share of CEEC exports in total Community imports (including intra-EU imports) from around 1,5% now to up to 11,6% after 30 years.

Table 5

Summary table of possible CEEC scenarios from 1993 to 2000

	Optimistic scenario	Pessimistic scenario
GDP (% per year)[1]	6,0 — 4,0	2,5 — 3,5
Exports to the EU (% per year)	12,0 — 7,5	3,0 — 2,0
Imports from the EU (% per year)	13,0 — 10,0	6,0 — 2,3
Specialization	Mechanical engineering, transport vehicles and electronics	Transport vehicles, metallurgy and textiles

[1] At the same time, it is assumed that the EU grows at between 2 and 3% per year.
Source: DG II, based on various study estimates.

However, unsuccessful CEEC reforms combined with poor Western (and especially EU) market-opening would probably mean that the CEECs' exports grow slower than international trade (at about 2,4% per year). However, as argued above, actual experience is making this scenario untenable. As the actual situation is so much better than that envisaged for the pessimistic scenarios in the studies surveyed, the lower range for potential volume growth of CEEC exports to the EU is higher than that given by the studies and closer to the optimistic scenario.

Meanwhile, CEEC imports in an optimistic scenario would grow slightly faster than their exports (between 10 and 13% per year). This reflects the fact that the CEECs need to rebuild and modernize much of their capital stock in order to improve their international competitivity. However, debt constraints affecting Poland, Hungary and Bulgaria especially would prevent the import growth rate exceeding by too high a margin the export growth rate.

Actual experience so far clearly vindicates the most optimistic scenarios for trade growth. If anything, growth so far may even be in excess of any of the studies' optimistic scenarios, due in part to the degree of market access that has so far been provided by the EU. There is a doubt about the sustainability of the growth rates achieved. Indeed, they have been slowing in the most recent period, but there is little evidence which can blame this on EU trade barriers. The problem seems to lie much more on the CEECs' supply side.

4.3. Specialization

In whichever scenario, the CEECs' short- to medium-term comparative advantage seems to lie in the production of rather labour-intensive, standardized, low value-added, low technology products. However, with successful transition and trade integration, the long-term comparative advantages of the CEECs could be in human capital-intensive industries such as consumer electronics thanks to the region's apparently well-educated labour forces, given significant foreign resource flows (see Hamilton and Winters, CEPII). Unfortunately, resource flows from the West to the CEECs may be too small to unlock such potential (see Collins and Rodrik) even if reforms succeed and Western market access is provided. If so, the CEECs comparative advantages will inevitably remain in the production of labour-intensive, low value-added basic goods.

In a pessimistic scenario, however, there is no doubt that the CEECs would continue to specialize in the export to the EU of rather basic, unprocessed products because resources to transform current patterns would quite clearly not be available.

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Chapter 2

Analysis of Community trade barriers facing Central and East European countries and impact of the Europe Agreements

Analysis of Community trade barriers facing Central and East European countries and impact of the Europe Agreements

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[1] DIW (Berlin). The authors are grateful to Detlef Filip for organizing and carefully carrying out the computations.

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1. EC trade barriers (1988-93)

The aim of this part of the study is to describe the variety of EC barriers to imports from Central and East European countries (CEECs, i.e. Bulgaria, Czech and Slovak Federal Republic, Hungary, Poland and Romania) and to quantify the degree of protection by appropriate indicators, all at the level of industrial sectors. Agricultural products are excluded from the analysis, although they are of particular importance to Eastern Europe.[1]

The analysis proceeds as follows. Firstly, the most important trade barriers are identified and quantified at the 3-digit NACE (general industrial classification of economic activities within the European Communities) level. The measures covered by the study include:

(i) tariffs: most-favoured nation (MFN) tariff rates and tariff reductions within the framework of the generalized system of preferences (GSP);

(ii) quantitative restrictions and other non-tariff trade barriers (NTBs);

(iii) government procurement restrictions and technical regulations.

Secondly, a measure of intensity of EC barriers to Eastern Europe is calculated for each industrial sector. For this purpose, an index ranging between 0 and 3 (0 = none, 1 = weak, 2 = average, 3 = high) is used to classify the NACE sectors according to the degree of trade barriers. The results are given in Annex 1 and Table 16 of the Statistical Annex for the individual countries considered in the analysis. Finally, the relevance of the EC protection is evaluated for each country considering the commodity structure of its industrial exports to the European Community in the years 1988, 1989, 1990 and 1991. Most emphasis is given to 1990, because this was the last year before the Europe Agreements covered by complete data concerning tariffs as well as non-tariff barriers.

1.1. Tariffs

As for tariffs, the EC has for a long time granted most-favoured nation (MFN) treatment to all countries, not only to those who are members of the General Agreement on Tariffs and Trade (GATT) — that means to all CEECs as well. The differentiation in trade policy refers to the partial or complete removal of duties for industrial products: tariffs were abolished completely, on mutual terms, *vis-à-vis* the European Free Trade Area (EFTA) countries and unilaterally *vis-à-vis* the African, Caribbean and Pacific countries parties to the Lomé Convention (ACP). Duty-free access to the EC market for industrial products was also agreed upon with the Mediterranean countries, on a mutual basis with the more developed amongst them. Tariff exemptions within certain limits were granted within the framework of the GSP to all other developing countries (except Taiwan). Until 1990, there was no preferential treatment for the then State-trading countries in Europe — except for Romania which from the beginning (July 1971) was a beneficiary of the GSP, but with many special restrictions. These, however, were removed in 1991. Thus, in the hierarchic system of preferential tariff arrangements, the CEECs used to be at the bottom of the preference pyramid and only recently started to climb to the top (see Graph 1).

The liberalization of trade with the CEECs started with the Trade and Cooperation Agreements, but the timetable for reducing tariffs agreed therein was soon superseded by further steps: the EC temporarily incorporated the CEECs into the GSP, Poland and Hungary from January 1990, the CSFR and Bulgaria from January 1991. In December 1991, new Association Agreements, the so-called Europe Agreements with Poland, Hungary and the CSFR were signed; in spring 1993 with Bulgaria and Romania. These aim at the creation of a free trade area within 10 years.

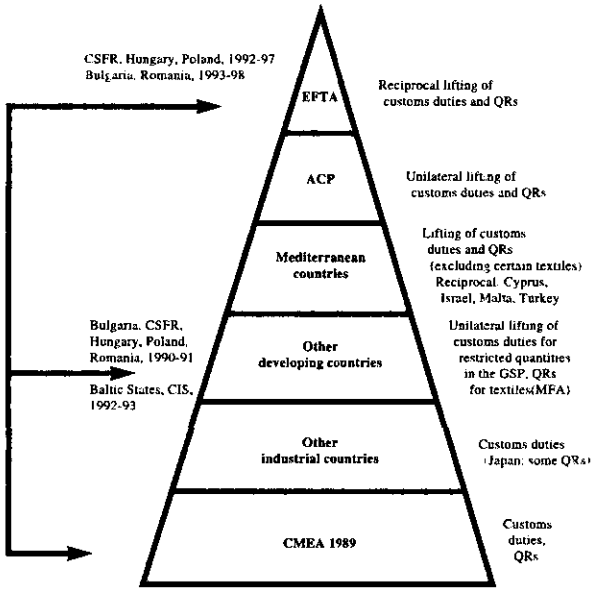
The starting point for all liberalization steps is with the MFN tariff treatment (where applicable all existing non-tariff trade barriers as well). To obtain an idea of the room to manoeuvre we first have to analyse the degree of tariff protection the individual CEECs are facing. The statistics allow us to calculate the tariff burden the CEECs are facing under MFN treatment[2] as well as the tariff relief from the GSP.

We restricted ourselves to industrial products (chapters 25-97 of the Combined Nomenclature (CN)), and excluded agricultural products (chapters 0-24). Due to the correspondance tables kindly provided by Eurostat on magnetic tape, we were able to completely attach all 8-digit product lines to the corresponding 3-digit NACE level. The only problem is

[1] Agricultural products are not considered here because of the special field of the common agricultural policy which is not part of the study. Therefore, the sectors of food, beverages and tobacco (NACE sectors 41 and 42) are not included in the tables in Annexes 1, 3 and 4. Estimates of the degree of protection in these sectors can be found in Annex 2.

[2] Tariffs are given for 8-digit product lines of the Combined Nomenclature for the external trade of the EC. There are some changes in the product lines each year, but MFN tariffs in general are unchanged in the four years studied here (the implementation of tariff cuts agreed upon in the Tokyo Round of GATT trade negotiations was completed in 1987). In a few cases, where no *ad valorem rates* (original or estimated by the EC) were available, we have used our own estimates.

GRAPH 1: **Preference pyramid — Access to the EC market for industrial products**



Source: DIW.

parts of the textile sector (431 to 435), where only two subdivisions could be distinguished, namely yarns (43A) and woven textile fabrics (43B), without differentiating between the various materials of the NACE groups (wool, cotton, silk, etc.). Furthermore, there were some products from chapters 25-97 CN which fitted into agricultural categories of NACE (within sections 0: agriculture, hunting, forestry and fishery, or 41/42: food, beverages and tobacco). On the whole, they were of little importance for the CEECs,[1] so they were not taken into account, because being just part of the respective NACE sector, they would give an incomplete and possibly false impression of the significance and protection of the sector. In total, 100 individual NACE sectors were identified and considered in the analysis.

Average tariffs for the individual 3-digit NACE sectors were calculated by weighting the MFN duty rates by the corresponding (8-digit CN) imports from the respective country. Tariffs vary within one NACE sector according to the degree of processing: the higher the degree of processing, the higher the customs duties. Furthermore, there are special sectors which are considered sensitive with respect to domestic suppliers and therefore enjoy higher protection: for example, many clothing products, footwear, some chemicals and some transport equipment (buses, trucks and parts thereof). The EC tariff rates for industrial products vary from 0 for many raw materials up to 14% for many clothing articles and 20% for shoes. The highest rate is 22% and concerns special trucks.

Weighted by the imports from all third countries in 1990, the average tariff rates for the individual NACE sectors range from 0 for various mining products (211, 212, 232) to 13% for knitting industries (436), the overall average being 5,1%. On the whole, the average tariffs for the individual countries do not differ very much at the 3-digit NACE level. In total, the weighted average tariffs for all industrial imports from the CEECs in 1990 ranged from 6,2% for Poland to 7,7% for Romania, due to the different export structures (see tables in Annex 1). The difference mainly arises from the significance of clothing within the imports from each country. Taking into account the rapid changes in the economies of the CEECs which will also influence future trade structures, it seems reasonable to use the unweighted (arithmetical) means in order to be independent from the present sectoral structure of a

[1] Only in two cases did imports of one product group account for at least 1% of total imports of industrial products from the respective country: wood (020) in the case of Hungary (1,2%) and dairy products (413) from Poland (1,4%).

Table 1

Index of intensity of the EC's gross tariff burden

Index	MFN duty rates
0 = none	0
1 = weak	> 0 and < 4
2 = average	≥ 4 and ≤ 7
3 = high	> 7

Table 2

Industrial sectors highly affected by EC tariff barriers in all five CEECs, 1990

NACE code	Sector
222	Steel tubes
247	Glass, glassware
248	Ceramics
252	Petrochemical industries
260	Artificial fibres
326	Transmission equipment
345	Radio, TV sets
351	Motor vehicles
363	Cycles, motor cycles
43B	Woven fabrics
436	Knitting industries
438	Carpets, floor coverings
439	Other textile industries
453	Clothing
455	Household textiles
462	Semi-finished wood products
464	Wooden containers
472	Paper processing
483	Plastics processing

country's deliveries. The unweighted average duty rates for the CEECs range from 5,3% for Bulgaria up to 5,8% for Poland.[1]

These tariff rates represent the MFN treatment, meaning the duties the countries would have to pay if the normal EC tariffs were applied. In this respect, these are hypothetical duty rates, reflecting the status without preferential treatment. To classify the intensity of the gross tariff burden each country is facing in each sector we applied the proposed index ranging from 0 to 3.

[1] Unweighted over all 3-digit NACE sectors and, within the individual sectors, weighted by country-specific imports.

Table 3

Individual sectors and countries highly affected by EC tariff barriers

NACE code	Sector	Country
233	Salt extraction	CSFR, Poland, Romania
241	Clay products	Hungary, Poland, Romania
244	Asbestos products	CSFR
253	Other chemical basic industries	Bulgaria, CSFR, Hungary, Romania
255	Paints, varnishes	Bulgaria, CSFR, Hungary, Poland
259	Chemicals for household use	Poland
321	Machinery for agriculture	CSFR, Romania
323	Textile machinery	Poland
344	Telecommunications equipment	Hungary, Romania
373	Optical instruments	Poland, Romania
442	Leather products	Bulgaria
451	Footwear	Bulgaria, CSFR, Poland, Romania,
471	Pulp, paper, board	Hungary, Poland, Romania
481	Rubber products	Bulgaria, CSFR
493	Photographic laboratories	Bulgaria, CSFR, Poland
494	Toys, sports goods	Bulgaria, CSFR, Poland, Romania
495	Miscellaneous manufacturing industries	Bulgaria, CSFR, Romania

The limits for the classification of sectors according to the MFN duty rates were chosen as follows (see Table 1); i.e. class 2 'average' comprises rates around the unweighted average duty rate for the East European countries (5,5%). According to this classification, the following 19 industrial sectors are regarded as 'highly' affected by tariff barriers in all of the five CEECs in 1990 (see Table 2).

In addition, there are some more sectors which are only classified as highly affected in one or more of the five countries (see Annex 1). This is because products of these sectors are not imported from all of these countries or only some countries deliver those products within the NACE group which face higher tariffs. The sectors and countries affected are as above (see Table 3).

In the process of opening up towards the East, the EC started to grant tariff reductions to the CEECs by including countries from this group in the GSP. In 1990 only Poland, Hungary and Romania obtained tariff relief.[2]

[2] To quantify this duty relief, we first calculated the amount of duties a country would have to pay under MFN conditions within a NACE sector. On the other hand, using the GSP imports for which duty exemption had been received (data at the 8-digit CN level were kindly provided on magnetic tape by Eurostat) and MFN tariff rates, we calculated the duties that did not have to be paid, i.e. the 'saved' or 'remitted' duties.

This duty relief is given as a proportion of 'payable' duties in Annex 1. From the evaluation of GSP imports from developing countries we know that usually only parts of dutiable imports really obtain GSP treatment. Here we achieved similar results: with respect to the individual NACE sectors, duty relief rates vary widely between 0 and 100%. To benefit from the GSP, products must furnish proof of being produced in the entitled country (according to the rather narrow rules of origin) and overcome other bureaucratic hurdles, so often — especially when tariffs are low — countries do not even bother claiming GSP treatment. On the other hand, tariff exemption is restricted to fixed amounts for sensitive products, especially with regard to already more competitive countries. Thus only part of the dutiable deliveries really enjoy preferences. To classify the degree of duty relief we used the same index, ranging here from 0 to minus 3. The classification was drawn up as follows (see Table 4).

Table 4

Index of duty relief

Index	Duty relief
0 = none	0
– 1 = little	> 0 and < 25
– 2 = average	≥ 25 and ≤ 40
– 3 = high	> 40

Out of the 19 most protected sectors in all CEECs, just three of them: radio, TV sets (345), paper processing (472) and plastics processing (483), achieved the highest relief in all three countries. Some of the textile sectors, woven fabrics (43B), knitting industries (436) and clothing (453), even received the lowest amount. Thus, the (relative) discrimination against these products even increased in terms of tariffs actually paid as compared with the MFN tariff schedule, although the tariff level is being reduced.

Table 5

Tariffs actually paid by CEECs in 1990 following duty relief on MFN schedule

(%)

	MFN tariff rate	Duty relief (MFN rate)	Tariff actually paid
Bulgaria	6,7	—	6,7
CSFR	6,4	—	6,4
Hungary	7,1	32,9	4,8
Poland	6,2	33,3	4,1
Romania	7,7	22,0	6,0

In total the duty relief for Poland and Hungary amounted to around one third of the amount of duties they would have to pay under MFN conditions; for Romania the rate was only 22%. The tariffs which actually had to be paid by the CEECs in 1990, i.e. MFN net of duty relief, were as follows (see Table 5).

The GSP treatment increased further the advantages Poland had due to the commodity pattern of her exports and it put Hungary and Romania in a better position than Bulgaria and the CSFR. In 1991, taking into account the duty relief for Bulgaria and the CSFR as well, the ranking of the five countries according to the MFN tariff schedule was approximately reflected in the tariffs actually paid. Only Bulgaria happened to get below-average duty relief, presumably because it had difficulties in taking advantage of the preference system in the first year of being a beneficiary.

1.2. Quantitative restrictions and other non-tariff barriers

Non-tariff barriers, especially quantitative restrictions, occur both at the EC level, due to the common commercial policy, and in the national competence of the individual EC countries. Most of the EC countries continue to maintain national quotas *vis-à-vis* all or some non-EC countries.[1] Until recently, all EC countries kept special quotas *vis-à-vis* State-trading countries according to Regulation (EEC) No 3420/83. As a consequence of the trade liberalization agreed upon in the PHARE programme (which was later extended to all CEECs), these special quotas were abolished for the CEECs and the general ones suspended.[2] An earlier evaluation of the utilization of the special quotas of selected EC countries by selected East European countries (USSR, Romania, CSFR, Bulgaria) in 1988 showed that in many cases these quotas were only utilized to a very limited extent or even not at all.[3] Therefore, it was assumed that these quantitative restrictions on the whole were not binding because of the inability of the CEECs to supply.

Here, the analysis refers to non-tariff barriers at the EC level. The quantitative assessment of NTBs in principle follows the procedure used for tariffs. The information on NTBs refers to 1990 and was taken from the Unctad databank on non-tariff measures of Western industrialized countries. The following distinction of the various measures was made between:

[1] Based on Regulation (EEC) No 288/82, most recently amended by Regulation (EEC) No 196/91, OJ L 21, 26.1.1991.

[2] OJ L 262, 26.9.1990 and OJ L 369, 31.12.1991.

[3] This refers to special national quotas except textiles and ECSC products. See Schumacher, D. and Möbius, U., *Eastern Europe and the EC*, DIW, Berlin, January 1991, Table 5.

(i) 'hard core' measures: quantitative restrictions (QRs) comprising the restraint agreements in the framework of the Multifibre Arrangement (MFA), other textiles restraint agreements and 'voluntary' export restraints, and

(ii) other non-tariff barriers (ONTBs) comprising anti-dumping duties, variable components of duties, import surveillance by the EC, basic import prices and anti-dumping undertakings.

The EC measures may apply to all non-EC countries or they may be selectively directed against one country or a group of countries. To quantify the relevance of all of these NTBs for each of the five East European countries, the share of imports affected by these NTBs in all imports from the respective country (import coverage ratio) was calculated at the 3-digit NACE level.

The quantitative restrictions are highly concentrated (see Annex 1). They refer to 9 to 11 sectors including steel sectors, artificial fibres and textiles and clothing sectors. The other NTBs affect 22 to 27 sectors including steel sectors, chemicals, electrical motors, optical instruments, leather products, footwear, fur goods and musical instruments. Considering all 100 sectors, the unweighted average of the import coverage ratio with respect to the five countries is some 7,5% for QRs, and some 6,5% for ONTBs.

The classification of sectors presented in Annex 1 was chosen as follows (see Table 6).

Table 6

Index of intensity of non-tariff barriers (by import coverage ratios)

Import coverage ratios

Index	QR	ONTB
0 = none	0	0
1 = weak	> 0 and < 5	> 0 and < 4
2 = average	≥ 5 and ≤ 10	≥ 4 and ≤ 9
3 = high	> 10	> 9

Textiles and clothing articles falling under the MFA are most heavily affected by QRs. In the second part of the study, it will be analysed to what extent the quotas — which are agreed upon and increased annually according to the MFA — have been utilized in order to judge how binding these barriers have been.

1.3. Tariffs and non-tariff trade measures

An overview of the combination of tariff and non-tariff protection is given in Table 1. The matrices show the classification of NACE sectors: (i) by the level of tariffs and the degree of protection by QRs, and (ii) by the level of tariffs and the degree of protection by other NTBs. The largest number of sectors has average tariffs and no QRs or other NTBs. There is also a number of sectors which are not subject to NTBs and with no or below-average tariffs (see Table 7).

Table 7

Classification of NACE sectors by tariffs and non-tariff barriers to EC imports from CEECs, 1990

Bulgaria

QR

	Tariffs 0	Tariffs 1	Tariffs 2	Tariffs 3
0	111 232 112 233 130 244 151 364 152 161 162 163 211 212	120 461 231 465 239 471 242 473 243 491 245 620 246 256 321 361	140 315 342 372 223 316 343 373 241 322 344 374 257 323 346 441 258 324 347 456 259 325 352 463 311 327 353 466 312 328 362 467 313 330 365 482 314 341 371 492	222 451 247 462 248 464 252 472 255 481 326 483 345 493 351 494 363 495 442
1				253
2		43A		
3		224	221	260 43B 436 453 438 455 439

ONTB

	Tariffs 0	Tariffs 1	Tariffs 2	Tariffs 3
0	111 232 112 233 130 244 151 364 152 161 162 163 211 212	120 461 231 471 239 473 242 243 245 246 321 361 43A	140 322 346 466 241 323 347 482 257 324 352 258 325 353 259 327 362 311 328 365 312 330 371 313 341 372 314 343 374 315 344 463	248 43B 255 455 260 462 326 464 345 472 351 481 363 483 436 493 438 439
1		256 491 465 620	316 467	222 252 494 247 453 495
2				
3		224	221 373 492 223 441 342 456	253 442 451

Table 7 *(continued)*

Classification of NACE sectors by tariffs and non-tariff barriers to EC imports from CEECs, 1990

CSFR

	Tariffs																			
	0			1			2						3							
QR	0	112	111	361	140	314	342	372	491	222	345	495								
		130	*120*	*364*	223	*315*	*343*	*373*	492	233	*351*									
		151	152	441	241	316	344	374		244	363									
		161	162	461	256	322	346	442		247	451									
		163	239	471	257	323	347	456		248	462									
		211	242	473	258	324	352	463		252	464									
		212	243	620	259	325	353	465		253	472									
		231	245		311	328	362	466		255	483									
		232	246		312	330	365	467		321	493									
			327		313	341	371	482		326	494									
	1																			
	2									481										
	3		43A		221					260	43B									
					224					436	453									
										438	455									
										439										

	Tariffs																			
	0			1			2						3							
ONTB	0	112		111			140	315	347		233		436							
		130		*120*			*241*	322	352		*244*		438							
		151		152			256	323	353		248		439							
		161		162			257	324	362		255		43B							
		163		239			258	325	365		260		455							
		211		242			259	330	371		321		464							
		212		243			311	341	372		326		472							
		231		245			312	343	374		345		493							
		232		246			313	344	463		351									
				327			314	346	482		363									
	1			620			316	373	467		252		462	494						
							328	465			453		483	495						
	2						466													
	3			441			221	342	491		222		451							
							223	442	492		247		481							
							224	456			253									

Hungary

	Tariffs																			
	0			1			2						3							
QR	0	111	232	120	327	140	313	346	442	222	351									
		112	233	162	361	223	314	347	451	241	363									
		130		239	364	243	315	352	456	247	462									
		151		242	441	244	316	353	463	248	464									
		152		245	461	256	325	362	466	252	471									
		161		246	465	257	328	365	467	253	472									
		163		321	473	258	330	371	482	255	483									
		211		322	491	259	341	372	492	326										
		212		323	493	311	342	373	494	344										
		231		324	620	312	343	374	495	345										
	1					224														
	2																			
	3					221				260	43B									
						43A				436	453									
						481				438	455									
										439										

	Tariffs																			
	0			1			2						3							
ONTB	0	111	232	120	324	140	314	362		241	436									
		112	233	162	327	243	315	365		248	438									
		130		239	361	244	325	371		252	439									
		151		242	364	256	330	372		255	43B									
		152		245	461	257	341	374		260	455									
		161		246	473	258	343	43A		326	462									
		163		321	493	259	346	463		344	464									
		211		322		311	347	482		345	471									
		212		323		312	352			351	472									
		231				313	353			363										
	1			465		224	342	467		247	483									
				620		316	466	481		453										
	2					328				253										
						373														
	3			441	221	442	456	494		222										
				491	223	451	492	495												

Table 7 *(continued)*

Classification of NACE sectors by tariffs and non-tariff barriers to EC imports from CEECs, 1990

Bulgaria

	Tariffs																			
	0				1				2								3			
QR	0	111	232	120	461	140	315	342	372					222	451					
		112	233	231	465	223	316	343	373	247				462						
		130	244	239	471	241	322	344	374	248				464						
		151	364	242	473	257	323	346	441	252				472						
		152		243	491	258	324	347	456	255				481						
		161		245	620	259	325	352	463	326				483						
		162		246		311	327	353	466	345				493						
		163		256		312	328	362	467	351				494						
		211		321		313	330	365	482	363				495						
		212		361		314	341	371	492	442										
	1									253										
	2			43A																
	3			224		221				260	43B									

	Tariffs																			
	0				1				2								3			
ONTB	0	111	232	120	461	140	322	346	466	248				43B						
		112	233	231	471	241	323	347	482	255				455						
		130	244	239	473	257	324	352		260				462						
		151	364	242		258	325	353		326				464						
		152		243		259	327	362		345				472						
		161		245		311	328	365		351				481						
		162		246		312	330	371		363				483						
		163		321		313	341	372		436				493						
		211		361		314	343	374		438										
		212		43A		315	344	463		439										
	1			256	491	316				222	252	494								
				465	620	467				247	453	495								
	2																			
	3			224		221	373	492		253										
						223	441			442										

Bulgaria

	Tariffs																			
	0				1				2								3			
QR	0	111	232	120	461	140	315	342	372					222	451					
		112	233	231	465	223	316	343	373	247				462						
		130	244	239	471	241	322	344	374	248				464						
		151	364	242	473	257	323	346	441	252				472						
		152		243	491	258	324	347	456	255				481						
		161		245	620	259	325	352	463	326				483						
		162		246		311	327	353	466	345				493						
		163		256		312	328	362	467	351				494						
		211		321		313	330	365	482	363				495						
		212		361		314	341	371	492	442										
	1									253										
	2			43A																
	3			224		221				260	43B									
										436	453									
										438	455									
										439										

	Tariffs																			
	0				1				2								3			
ONTB	0	111	232	120	461	140	322	346	466	248				43B						
		112	233	231	471	241	323	347	482	255				455						
		130	244	239	473	257	324	352		260				462						
		151	364	242		258	325	353		326				464						
		152		243		259	327	362		345				472						
		161		245		311	328	365		351				481						
		162		246		312	330	371		363				483						
		163		321		313	341	372		436				493						
		211		361		314	343	374		438										
		212		43A		315	344	463		439										
	1			256	491	316				222	252	494								
				465	620	467				247	453	495								
	2																			
	3			224		221	373	492		253										
						223	441			442										
						342	456		451											

Table 7 *(continued)*

Classification of NACE sectors by tariffs and non-tariff barriers to EC imports from CEECs, 1990

Poland

	Tariffs			
	0	1	2	3
0	112	120 441	111 313 330 365 492	222 345 493
	130	162 461	140 314 341 371 495	233 351 494
	151	231 465	223 315 342 372	241 363
QR	152	239 473	244 316 343 374	247 373
	161	242 491	253 321 344 442	248 451
	163	243 620	256 322 346 456	252 462
	211	245	257 324 347 463	255 464
	212	246	258 325 352 466	259 471
	232	361	311 327 353 467	323 482
		364	312 328 362 482	326 483
1		224	481	
2				260
3		43A	221	436 453
				438 455
				439
				43B

	Tariffs			
	0	1	2	3
0	112	120 43A	111 321 346 482	233 351 472
	130	162 461	140 322 347	241 363 493
	151	231 473	244 324 352	247 436
ONTB	152	239 620	257 325 353	248 438
	161	242	258 327 362	255 439
	163	243	311 328 365	259 43B
	211	245	312 330 371	260 455
	212	246	313 341 372	323 462
	232	361	314 343 374	326 464
		364	315 344 463	345 471
1		224	256 466 481	252 453 494
		465	316 467 495	373 483
2			253	
3		441	221 442	222
		491	223 456	451
			342 492	

Romania

	Tariffs			
	0	1	2	3
0	111 212	231 473	140 314 342 441	222 345 494
	112 232	242 491	223 315 343 442	233 351 495
	120 239	245 493	224 316 347 456	241 363
QR	130 243	246 620	244 323 352 463	247 373
	151 255	256	257 324 353 466	248 451
	152 361	322	258 325 362 467	252 462
	161 482	346	259 327 365 492	253 464
	162	364	311 328 371	321 471
	163	461	312 330 372	326 472
	211	465	313 341 374	344 483
1			481	
2				
3			221	260 43A
				436 43B
				438 453
				439 455

	Tariffs			
	0	1	2	3
0	111 212	231 493	140 315 352	233 438
	112 232	242 620	224 323 353	241 439
	120 239	245	244 324 362	248 43B
ONTB	130 243	246	257 325 365	321 455
	151 255	322	258 327 371	326 462
	152 361	346	259 328 372	344 464
	161 482	364	311 330 374	345 471
	162	461	312 341 463	351 472
	163	473	313 343	363 483
	211	491	314 347	436 495
1		256	316 467	247 373 494
		465	466 481	252 453
2				
3			221 441 492	222 43A
			223 442	253 451
			342 456	260

QR = quantitative restrictions.
ONTB = other non-tariff barriers.
Source: DIW calculations based on data from Eurostat and Unctad.

On the other hand, taking tariffs and QRs together nearly all sectors subject to QRs have high tariffs. There are seven sectors which are classified as most strongly affected by both indicators in all of the five countries[1] (see Table 8).

All of those belonging to the textiles and clothing area are covered — at least partly — by the MFA.

Taking tariffs and other NTBs together there is more variation among countries and sectors. In general, steel tubes (222), other chemical basic industries (253) and footwear (451) are subject to both high tariffs and high protection by other NTBs. Sectors affected by other NTBs tend to have average or high tariffs. They are, however, more evenly distributed over average and high tariff sectors, while the 'hard core' measures, i.e. QRs, are concentrated in high tariff sectors. All in all, the non-tariff trade measures tend to supplement tariff protection instead of being a substitute.

Table 8

CEEC sectors strongly affected by both tariffs and quantitative restrictions

NACE code	Sector
260	Artificial fibres
436	Knitting industries
43B	Woven fabrics
438	Carpets, floor coverings
439	Other textile industries
453	Clothing
455	Household textiles

Lacking a more plausible alternative and therefore giving equal weight to the three kinds of trade measures, a summarizing assessment of the protection by trade policy instruments may be based on the sum of classifications according to tariffs, QRs and other NTBs. The sectors may be grouped according to the overall degree of tariff and non-tariff protection in the following way (see Table 9).

This provides for some progression in the effects of cumulative protection by several kinds of measures. A sector is classified as 'highly protected', for example, if the three kinds of measures each achieve an average level or if one kind has a high level, the second one an average level and the third one a low level. On that basis, the sectors most strongly protected by trade policy measures in 1990 (score 6 to 9) are as follows (see Table 10).

Table 9

Ranking used to characterize intensity of EC TBs, NTBs and ONTBs

	Score
None	0
Weak	> 0 and < 3
Average	≥ 3 and < 6
High	≥ 6 and ≤ 9

Table 10

EC sectors most protected from CEECs, 1990 (with index)

NACE code	Sector
221	Iron and steel industries for all five countries (8)
222	Steel tubes for CSFR, Hungary, Poland, Romania (6)
224	Non-ferrous metals for Bulgaria (7), CSFR (8)
247	Glassware for CSFR (6)
253	Other chemical basic industries for Bulgaria (7), CSFR (6), Romania (6)
260	Artificial fibres for Bulgaria (6), CSFR (6), Hungary (6), Romania (9)
43A	Yarns for Romania (9)
43B	Woven fabrics for all five countries (6)
436	Knitting industries for all five countries (6)
438	Carpets, floor coverings for all five countries (6)
439	Other textile industries for all five countries (6)
442	Leather products for Bulgaria (6)
451	Footwear for Bulgaria, CSFR, Poland, Romania (6)
453	Clothing for all five countries (7)
455	Household textiles for all five countries (6)
481	Rubber products for CSFR (8), Hungary (6)

The overall relevance of trade barriers for supplies from the individual countries may be indicated by the percentage distribution of the 1990 EC imports from the five countries according to the overall degree of the three categories of trade barriers considered so far (see Table 11).

Table 11

Share of each CEEC's exports to the EC classified by intensity of EC trade protection, 1990

	None	Weak	Average	High	Total
Bulgaria	1,6	30,8	20,9	46,8	100
CSFR	3,5	26,7	32,4	37,3	100
Hungary	0,1	25,9	44,2	29,8	100
Poland	0,5	33,9	42,6	23,0	100
Romania	0,0	36,5	29,6	33,8	100

[1] Except artificial fibres in Poland, where QRs are only classified as average.

Table 12

Summary of the degree of EC protection facing each CEEC, 1990 (due to TBs, NTBs and ONTBs)

	Import coverage ratio			Classification			
	MFN duty rate (%)	QR (%)	ONTB (%)	D	QR	ONTB	Total
Bulgaria	6,7	32,9	19,6	2	3	3	8
CSFR	6,4	22,9	18,5	2	3	3	8
Hungary	7,1	25,5	14,4	3	3	3	9
Poland	6,2	19,2	10,2	2	3	3	8
Romania	7,7	27,9	8,8	3	3	2	8

Bulgaria shows the highest share of highly protected goods, Hungary and Poland have the highest proportions of goods with average protection, while Romania has the highest proportion of weakly protected goods.

The summarizing findings can also be described by the average tariff rate and the average import coverage ratio of NTBs, weighted by the 1990 commodity structure of EC imports from these countries. These statistics give the following pattern (see Table 12).

When compared with the unweighted averages the five countries are strongly affected by EC trade barriers due to the commodity structure of their supplies. There are, however, differences with regard to the kind of measures. Tariff barriers are most important for Romania, while non-tariff barriers play the most important role for Bulgaria.

The figures given above do not take into account the GSP preferences. In 1990, these preferences reduced the tariffs actually paid on imports from Hungary (4,8% net of preferences), Poland (4,1%) and Romania (6,0%). The preferences were smallest for Romania, which had the highest tariff burden in terms of MFN rates.

The degree of protection at country level, measured by the weighted average of tariff rates or import coverage ratios, varied over the years considered in the analysis due to the changing commodity structures — within the NACE sectors (in terms of 8-digit CN items) as well as between them (see Table 8). The share of high-duty commodities increased for the CSFR, Poland and Romania. The share of commodities subject to QRs increased for Bulgaria, Poland and Romania. In these cases EC protection gained in importance.

At the level of the individual NACE sectors the indicators of protection showed a rather stable pattern. In our calculations, the sectoral indicator may change over time if the commodity structure (in terms of 8-digit CN categories) shifts within the 3-digit NACE sector. The number of sectors whose classification changed during the four-year period under consideration was as follows (see Table 13).

Table 13

Number of NACE 3-digit sectors in each CEEC whose index of trade protection intensity changed, 1988-91

	Total number	Changes of score Two	Three
Bulgaria	40	7	6
CSFR	20	4	1
Hungary	26	3	—
Poland	21	1	—
Romania	35	7	3

The total number is rather high, and is larger the smaller the exports of the country. Most of the cases are due to small changes in the tariff rate varying around the threshold value which defines the classes. In a number of sectors the supplies were zero in some years; this was particularly true for Bulgaria.[1] In nearly all cases the total score changed by one point. Changes by two or even three points were very rare (see Table 14).

[1] *The indicator of protection is zero by definition if the supplies are zero* because there are no imports which can be affected by trade measures.

Table 14

EC protection against industrial imports from CEECs, 1988-91

		Industrial imports (million ECU)	Share in EC's total industrial imports (%)	MFN duty rate (%)	Import coverage ratio (%)		Duty relief (% of MFN duty)
					QR	ONTB	
Bulgaria	1988	320	0,1	6,5	23,1	11,3	0,0
	1989	370	0,1	6,4	27,8	16,9	0,0
	1990	406	0,1	6,7	32,9	19,6	0,0
	1991	540	0,1	6,6	29,9	16,1	20,9
CSFR	1988	1 977	0,6	6,2	21,8	17,5	0,0
	1989	2 242	0,6	6,2	21,0	17,7	0,0
	1990	2 397	0,6	6,4	22,9	18,5	0,0
	1991	3 700	0,9	6,8	19,9	13,6	36,1
Hungary	1988	1 472	0,5	7,1	26,8	14,2	0,0
	1989	1 735	0,5	7,0	25,7	14,6	0,0
	1990	2 133	0,5	7,1	25,5	14,4	32,9
	1991	2 603	0,6	7,2	22,4	12,0	38,5
Poland	1988	2 504	0,8	5,7	17,0	8,8	0,0
	1989	2 811	0,8	5,9	18,0	9,7	0,0
	1990	3 838	1,0	6,2	19,2	10,2	33,3
	1991	4 847	1,2	6,3	20,3	8,6	35,9
Romania	1988	2 115	0,6	7,3	22,0	8,5	:
	1989	2 424	0,6	7,2	21,2	7,3	29,2
	1190	1 552	0,4	7,7	27,9	8,8	22,0
	1991	1 370	0,3	7,8	30,2	9,5	21,6

Source: DIW calculations based on data from Eurostat and Unctad.

1.4. Public procurement and technical standards

Public-procurement practices and technical standards may represent significant barriers to non-EC suppliers in addition to the measures of trade policy considered above. The classification of the sectors according to the relevance of public procurement and technical standards was derived from a report by the EC.[1] There the combined indicator PT (public procurement and technical standards) had only three categories, and we defined the classes as follows: high = 3, moderate = 2, all other = 0.

This classification of the sectors was of course the same for all of the five countries and for all four years (see Table 15).

For all other sectors the report assumed that public procurement and technical standards were not a trade barrier.

As to the five CEECs, the sectors affected by public procurement and technical standards were of different importance within their deliveries (see Table 16).

The sectors highly affected by barriers relating to public-procurement procedures and technical standards are of minor importance for the CEECs. For Hungary, Poland and Bulgaria they reached some 5% of all industrial sectors. However, around one third of the deliveries of the CEECs consisted of products from sectors moderately hit by PT barriers. In the case of Hungary this share even reached 41%.

On the whole Hungary in particular faced trade barriers relating to public procurement and technical standards. In 1990 almost half of Hungarian deliveries were from these sectors. On the other hand, Romania and Poland were least affected by these kinds of barriers.

[1] European Commission, *European Economy*, 'Social Europe', special edition 1990, Table 2.1, p. 24.

Table 15

Sectors highly/moderately affected by EC public-procurement practices and technical standards (PT)

NACE code	Sector
Nine sectors affected by PT restraints	
257	Pharmaceutical products
315	*Boiler, tanks*
330	Office machinery
341	Electrical wires
342	Electrical motors
344	Telecommunications equipment
361	Shipbuilding
362	Railway equipment
372	Medico-surgical equipment
25 sectors classified as moderately affected	
247	Glass, glassware
348	Ceramics
356	Chemicals for industrial purposes
321	*Machinery for agriculture*
322	Machine tools
323	Textile machinery
324	Machinery for the food industry
325	Plant for mines
326	Transmission equipment
327	Other specific equipment
345	Radio, TV sets
346	Domestic electrical equipment
347	Electrical lighting equipment
351	Motor vehicles
364	Aerospace equipment
43A	Yarns
43B	Woven fabrics
438	Carpets, floor coverings
451	Footwear
453	Clothing
455	Household textiles
481	Rubber products
491	Jewellery
493	Photographic laboratories
494	Toys, sports goods

1.5. Final evaluation of restrictions

The sectors highly affected by public procurement and technical standards are different from those which are most strongly protected by trade policy. Among the sectors moderately affected by PT there are, however, some sectors which are highly protected by trade policy (e.g. yarns, woven fabrics, carpets, etc., clothing and household textiles). The total assessment of barriers against imports from CEECs considers trade policy measures as well as the relevance of public procurement and technical standards.

Table 16

Share of sectors affected by PT barriers, 1990

	(%) Highly affected	Moderately affected	Total
Bulgaria	5,4	29,9	35,3
CSFR	2,8	34,0	36,8
Hungary	5,1	40,9	46,0
Poland	5,1	27,1	32,2
Romania	1,7	29,9	31,6

The final classification of sectors is derived from the total score summing up the classifications by the three kinds of trade measures and the PT classification (see the results in Annex 1). In line with the abovementioned reasoning on the summarizing assessment of trade measures, the following groups may be defined: none = 0; weak = > 0 and < 4; average = ≥ 4 and < 8; high = ≥ 8 and < 12.

For this reason, the following sectors appear highly protected taking into account trade policy measures as well as public procurement and technical standards (see Table 17).

The list includes most of the sectors highly protected by trade policy measures and also electrical motors.

Table 17

Most protected sectors, 1990

NACE code	Sector	Score
221	Iron and steel industries in all five countries	8
224	Non-ferrous metals for CSFR	8
247	Glassware for CSFR	8
260	Artificial fibres for Romania	9
342	Electrical motors for Bulgaria, CSFR, Poland and Romania	8
43A	Yarns for Romania	11
43B	Woven fabrics for all five countries	8
438	Carpets, floor coverings for all five countries	8
451	Footwear for Bulgaria, CSFR, Poland, Romania	8
453	Clothing for all five countries	9
455	Household textiles for all five countries	8
481	Rubber products for: CSFR	10
	Hungary	8

The percentage distribution of the EC imports from CEECs in 1990 according to the degree of protection including PT varies among countries (see Table 18).

Table 18

Percentage distribution of EC imports from CEECs according to the degree of protection (including PT), 1990

	None	Weak	Average	High	Total
Bulgaria	1,6	23,0	43,1	32,3	100
CSFR	3,5	26,5	37,5	32,4	100
Hungary	0,1	31,3	44,9	23,7	100
Poland	0,5	45,5	32,9	21,1	100
Romania	0,0	55,0	16,7	28,2	100

Bulgaria and the CSFR have the highest shares of highly protected goods, the share of average protection goods is highest for Hungary and Bulgaria, while Romania and Poland have the largest proportion of weakly protected goods. In total, Bulgaria appears to be most strongly affected by EC trade barriers and Romania seems to be least affected.

All in all, the figures reveal a high potential for liberalization of imports from CEECs. Only a very small amount is not subject to any barriers at all, while almost half to three quarters of the supplies are affected more than weakly.

2. Liberalization according to the Europe Agreements

This part analyses the changing trade regime of the EC and its impact on industrial imports from CEECs. It begins with a short description of the content of the Europe Agreements with the CSFR, Hungary and Poland as well as with Bulgaria and Romania concerning trade policy. Thereafter, the changes in the level of protection by tariffs and by QRs are quantified for various years after the agreements came into force taking into account the market access package which was agreed upon in Copenhagen in mid-1993. The assessment of the possible impact of the liberalization on imports from the CEECs is based on the price elasticity of demand for those imports whose tariffs are reduced.

2.1. General features of the Europe Agreements

After signing the Europe Agreements, Interim Agreements with the CSFR, Hungary and Poland on trade and trade-related matters came into force on 1 March 1992 and allowed trade liberalization to start before the complete agreements are ratified, which takes time.[1] The Interim Agreement with Romania came into force on 1 May 1993. Thus the liberalization steps started one year later than in the first three agreements. The corresponding Interim Agreement with Bulgaria was approved in December 1993 and entered into force on 31st December 1993; in our calculations it is regarded as having entered into force in 1993.[2]

The Interim Agreements are very similar to each other and mainly consist of the gradual establishment of a free trade area for industrial products in a transition period lasting a maximum of 10 years starting from the entry into force of the agreements. The EC's liberalization steps are concentrated in the first five years after the Interim Agreements come into force. Similarly to the GSP they are more hesitant with sensitive products. These include textiles, ECSC products and a group of other sensitive products, which are approximately the same as those for which duty-free supplies are limited under the GSP. The list of these sensitive products is more or less different for each of the five countries.

For the majority of industrial products,[3] the EC abolished the tariffs when the Interim Agreements came into force. Excluded are the groups of special goods in Annexes II and III and Protocols Nos 1 (textiles) and 2 (ECSC goods).

Annex II: certain raw materials and primary products.

(a) For products in Annex IIa tariffs will be halved when the Interim Agreement comes into force and abolished in the following year;

(b) for products in Annex IIb the EC will reduce tariffs by 20% annually.

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1 Since the fields of cooperation of these agreements include a framework for political dialogue, financial cooperation and assistance and the promotion of cooperation in cultural matters, they have to be ratified by the Member States as well.

2 All five agreements include an article stating that 'date of entry into force of the agreement shall mean: 1 January 1992 (1993 in the case of Bulgaria and Romania) in relation to obligations taking effect after the date of entry into force by reference to the date of entry into force'.

3 Chapters 25 to 97 of the Combined Nomenclature, except for goods in Annex 1 classed as 'agricultural products', which are identical in all five agreements. These goods made up less than 0,1% of the deliveries of industrial products from the CSFR, Hungary and Poland and were hardly imported at all in 1992 from Bulgaria and Romania.

Table 19

Most important basic products in EC imports from CEECs, 1992

Bulgaria	CSFR	Hungary	Poland	Romania
		Annex IIa		
Leather	Tantalum	Aluminium oxide and hydroxide	Ferro-chromium	Leather
Unwrought lead	Aluminium	Leather	Leather	Tungsten
Cadmium	Ferro-(silico-)chromium	Titanium	Salt	Zirconium
Aluminium		Ferro-silico-manganese		
		Annex IIb		
Unwrought zinc	Ferro-silicon	Aluminium	Zinc	Unwrought aluminium

Sources: European Commission, OJ L 114, 115 and 116, 30.4.1992 and OJ L 81, 2.4.1993; Kommission der EG, KOM (93) 45 endg. Vorschlag für einen Beschluß des Rates und der Kommission über den Abschluß des Europa-Abkommens zwischen den Europäischen Gemeinschaften und ihren Mitgliedstaaten einerseits und Bulgarien andererseits; Eurostat, 'Import statistics (Combined Nomenclature)', magnetic tape.

The most important products in these groups are given in Table 3. On the whole, these products do not play a significant role; the shares of most of these products are less than 0,1% of all industrial imports from the respective country and in no case more than 0,6% (see Table 19).

Annex III: industrial products which approximately correspond to the sensitive products of the GSP. Here the EC offers duty-free imports of certain quotas and up to certain ceilings. For excess quantities the tariffs will be gradually reduced by 15% annually (by 10% for Hungary). At the same time, the duty-free quantities will be increased by 20% annually (Hungary 15%) from the time that the agreements enter into force.[1] The most important products are listed in Table 20.

In contrast to the GSP, a complete liberalization is envisaged here after five years, whereby tariff quotas and ceilings and remaining tariffs will be lifted. Except for via escape clauses, for whose use considerable injury (already caused or threatening to cause) through increased imports must be shown, liberalization cannot be lifted if the partner country has shown itself to be competitive, as is possible and meaningful in the GSP, where the emphasis is on non-reciprocal preferential treatment for less-developed countries.

Textiles (Protocol No 1)

The tariffs on textiles and clothing will be reduced in six steps, by two sevenths when the agreements come into force and by a further one seventh every year, beginning two years later, so that they will be lifted after six years. The tariffs on outward processed goods will be abolished when the agreements come into force.[2] Quantitative restrictions, however, will continue to exist, but will be dismantled within the next six years.

ECSC products (Protocol No 2)

(a) The duties on coal from the CSFR and Poland will be abolished at the latest one year after the entry into force of the agreements, with only Germany and Spain having three more years. The tariffs on coal from Bulgaria, Hungary and Romania will be reduced by 50% in 1994 and abolished two years later;

(b) the tariffs on steel imports will be reduced by 20% per year for the first four years after the agreements enter into force, and by 10% at the beginning of the fifth and sixth years (Bulgaria: 20% in the fifth year).

Table 21 gives an overview of the agreed liberalization steps. It illustrates the different treatment of individual product groups and countries and shows that, according to the Europe Agreements, the agreed free trade area for industrial products

[1] In the case of Romania, the augmentation of some quotas and ceilings will start in 1994.

[2] In applying the first three agreements, there had been differences of opinion among the Member States as to whether this should apply for all textiles or only to those subject to quantitative restrictions.

Table 20

Most important sensitive products in EC imports from CEECs, 1992

Bulgaria		CSFR		Hungary		Poland		Romania	
Product	Share[1] (%)	Product	Share[1] (%)	Product	Share[1] (%)	Product	Share[1] (%)	Product	Share[1] (%)
Footwear, uppers of leather	3,2	Passenger cars	4,5	Footwear, uppers of leather	3,2	Furniture (metal etc.)	3,3	Furniture (metal, wooden, etc.)	11,7
Disodium carbonate, sodium bicarbonate	1,6	Cement	2,1	Polymers, of styrene	1,6	Passenger cars	3,3	Seats	5,1
Mixtures of urea	1,2	Furniture (metal, wooden, etc.)	1,9	Seats	1,5	Seats	2,5	Footwear, uppers of leather	2,9
Ammonium nitrate	0,8	Footwear, uppers of leather	1,8	Electric filament or discharge lamps	1,2	Cement	1,2	Cement	2,0
Certain mineral or chemical fertilizers, nitrogenous	0,6	Tubes, pipes, etc., of iron or steel	1,7	Polyvinyl chloride	1,1	Footwear, uppers of leather	1,0	Glassware for table etc.	1,4
Ethylene glycol	0,5	Seats	1,4	Pneumatic tyres and inner tubes, of rubber	0,9	Copper bars, rods, profiles, wire	0,7	Tubes, pipes, etc., of iron or steel	1,0
Urea	0,2	Glassware for household etc.	1,2	Sheets, bands	0,8	Casein	0,7	Mixture of ammonium nitrate	0,4
Vitamin C	0,2	Trucks	1,0	Polyethylene	0,8	Pneumatic tyres and inner tubes, of rubber	0,7	Passenger cars	0,4
Tableware, porcelain or china	0,2	Pneumatic tyres and inner tubes, of rubber	1,0	Suitcases, bags	0,8	Mixtures of urea	0,6	Tableware, porcelain or china	0,4
Mixtures of ammonium nitrate	0,1	Tractors	0,9	Horticultural sheet glass, wired glass	0,8	6-Hexanelactam	0,6	Pneumatic tyres and inner tubes, of rubber	0,4

[1] Share in EC imports of industrial products from the respective country.

Sources: European Commission, OJ L 114, 115 and 116, 30.4.1992 and OJ L 81, 2.4.1993; Kommission der EG, KOM (93) 45 endg. Vorschlag für einen Beschluß des Rates und der Kommission über den Abschluß des Europa-Abkommens zwischen den Europäischen Gemeinschaften und ihren Mitgliedstaaten einerseits und Bulgarien andererseits; Eurostat, 'Import statistics (Combined Nomenclature)', magnetic tape.

will to a large extent be completed from the EC side by the beginning of 1997 (1998 towards Bulgaria and Romania).

2.2. Market access package (Copenhagen Summit)

Whereas the Europe Agreements have not yet entered into force and even the Interim Agreement on trade and trade-related matters with Bulgaria was still pending, the EC gave a political sign of its willingness to support the associated economies in transition at least in the area of its own competence. The EC decided at the Copenhagen Summit in June 1993 to accelerate its efforts to open up its market for products from these countries.

Concerning these improvements in market access, until now Additional Protocols to the Interim Agreements have only been concluded between the EC and the Czech and Slovak Republics, Hungary and Poland. Thus, the conclusions of the Presidency concerning Romania and Bulgaria have not yet been implemented, but they are regarded here as if they had been. On the whole, the main progress achieved is the acceleration of abolishing customs duties, remaining quantitative restrictions not being removed. For imports of basic products and the sensitive products of Annex III exceeding quotas or ceilings, customs duties will be totally abolished two years earlier than foreseen in the Interim Agreements (see Table 22), duty-free quotas and ceilings being increased annually by larger amounts. As to textiles, nothing is said about a quicker abolition of quotas, but all duties will be removed one year earlier. The same applies to ECSC products. For all product groups, liberalization steps remain the same in the beginning, but become larger at the end of the period. Thus, the improvement will take place mainly in the last three years of the transition period (1995-97) (see Table 21).

The largest tariff reductions were mainly granted when the agreements entered into force, successively followed by further steps. The more years pass, the more remaining duties are lowered. That means that accelerating the last steps of duty

Table 21

Scale of tariff reduction for industrial products[1] from CEECs

Product group	1992/93[2]	Further steps	Complete elimination	
			CSFR, Hungary, Poland	Bulgaria, Romania
Basic products (Annex II a)	– 50%	– 50% following year	1.1.1993	1.1.1994
(Annex II b)	– 20%	– 20% each subsequent year	1.1.1996	1.1.1997
Sensitive products (Annex III)	– 100%	Augmentation of quotas and ceilings by 20% per year (Hungary 15%)	1.1.1997	1.1.1998
Within limits of quotas or ceilings				
Quantities in excess	– 15%	Annual reduction of 15%	1.1.1997	1.1.1998
Hungary	– 10%	Annual reduction of 10%	1.1.1997	
Textiles[3] (Protocol No 1)	$\frac{2}{7}$	– $\frac{1}{7}$ each year, starting the third year	1.1.1998	1.1.1999
ECSC coal[4] (Protocol No 2)	—	– 50% 1994; – 50% 1996	1.1.1996	1.1.1996
CSFR, Poland	—	– 100% 1993; Germany and Spain 1996	1.1.1996	
ECSC steel (Protocol No 2)	– 20%	Three times – 20% per year (Bulgaria four times), then twice – 10%	1.1.1997	1.1.1998
Other industrial products	– 100%	—	1.3.1992	1.5.1993[5]

[1] Chapters 25-97 of the Combined Nomenclature except some products (Annex I) considered agricultural products.
[2] 1.3.1992: CSFR, Hungary and Poland; 1.5.1993: Romania. For Bulgaria, the date is assumed here to be 1993.
[3] Tariff reductions apply to all textiles within Chapters 50 to 63 of the Combined Nomenclature. New quotas haven been agreed upon in December 1992 for 1993 and following years. For reimports after processing, duties are abolished at the time of the entry into force of the agreement (concerning products covered by quotas).
[4] All quantitative restrictions are abolished one year after the entry into force of the agreements, in Germany and Spain after four years at the latest.
[5] Bulgaria: 31.12.1993.

Sources: Interim Agreements with Poland, CSFR and Hungary, OJ L 114, 115 and 116, 30.4.1992; with Romania, OJ L 81, 2.4.1993; Kommission der EG, KOM (93) 45 endg., Vorschlag für einen Beschluß des Rates und der Kommission über den Abschluß des Europa-Abkommens zwischen den Europäischen Gemeinschaften und ihren Mitgliedstaaten einerseits und Bulgarien andererseits.

Table 22

Scale of complete elimination of duties according to the Europe Agreements and the conclusions of the Copenhagen Summit

		CSFR[1], Hungary, Poland		Bulgaria, Romania	
		Agreement	Additional Protocol	Agreement	Copenhagen
Basic products	(Annex IIa)	1.1.93	—	1.1.94	—
	(Annex IIb)	1.1.96	1.1.94	1.1.97	1.1.95
Sensitive products	(Annex III)[2]	1.1.97	1.1.95	1.1.98	1.1.96
Textiles	(Protocol No 1)	1.1.98	1.1.97	1.1.99	1.1.98
ECSC coal	(Protocol No 2)	1.1.96	—	1.1.96	—
ECSC steel	(Protocol No 2)	1.1.97	1.1.96	1.1.98	1.1.97

[1] As of 1.1.1993, the Czech Republic and Slovakia.
[2] Quotas and ceilings will be augmented by 30% instead of 20% for the Czech Republic and Slovakia, Poland, Romania and Bulgaria (25% instead of 15% for Hungary).

Sources: OJ L 114, 115 and 116, 30.4.1992, OJ L 81, 2.4.1993 and OJ L 195, 4.8.1993; Kommission der EG, KOM (93) 45 endg., Vorschlag für einen Beschluß des Rates der Kommission über den Abschluß des Europa-Abkommens zwischen den Europäischen Gemeinschaften und ihren Mitgliedstaaten einerseits und Bulgarien andererseits.

Table 23

EC tariff reduction for imports of industrial products[1] from the CSFR, Hungary and Poland, 1992

CSFR

	1992 share in EC imports[2] (%)	1992 MFN tariff (%)	1992 under Europe Agreement		Year of total liberalization
			Tariff reduction[3] (%)	Reduced tariff (%)	
Basic products A (Annex IIa)	1,1	5,3	50	2,6	1993
Basic products B (Annex IIb)	0,0	6,2	20	5,0	1994
Sensitive products (Annex III)	26,3	8,8	73	2,4	1995
Textiles (Protocol No 1)	12,9	12,1	29	8,7	1997
ECSC coal (Protocol No 2)	2,4	1,3	0	1,3	1993[4]
ECSC steel (Protocol No 2)	8,2	4,0	20	3,2	1996
Other industrial products	49,1	5,1	100	0,0	1992
Total	100	6,8	69	2,1	

Hungary

	1992 share in EC imports[2] (%)	1992 MFN tariff (%)	1992 under Europe Agreement		Year of total liberalization
			Tariff reduction[3] (%)	Reduced tariff (%)	
Basic products A (Annex IIa)	0,2	5,0	50	2,5	1993
Basic products B (Annex IIb)	0,2	6,0	20	4,8	1994
Sensitive products (Annex III)	20,1	8,8	76	2,1	1995
Textiles (Protocol No 1)	21,3	12,5	29	9,0	1997
ECSC coal (Protocol No 2)	0,0	0,5	0	0,5	1996
ECSC steel (Protocol No 2)	3,7	3,5	20	2,8	1996
Other industrial products	54,5	5,1	100	0,0	1992
Total	100				

Poland

	1992 share in EC imports[2] (%)	1992 MFN tariff (%)	1992 under Europe Agreement		Year of total liberalization
			Tariff reduction[3] (%)	Reduced tariff (%)	
Basic products A (Annex IIa)	0,3	7,5	50	3,7	1993
Basic products B (Annex IIb)	0,7	3,7	20	3,0	1994
Sensitive products (Annex III)	23,4	7,9	89	0,9	1995
Textiles (Protocol No 1)	18,8	13,3	29	9,5	1997
ECSC coal (Protocol No 2)	7,2	3,4	0	3,4	1993[4]
ECSC steel (Protocol No 2)	4,9	3,3	20	2,6	1996
Other industrial products	44,7	3,6	100	0,0	1992
Total	100	6,4	63	2,4	

[1] Chapters 25 to 97 of the Combined Nomenclature with the exception of some agricultural products listed in Annex I (albumins, cork, raw cotton, flax and true hemp).

[2] In % of total industrial imports from the respective country.

[3] Percentage MFN tariff cut.

[4] Except Germany and Spain, which will only fully liberalize in 1996.

Sources: Interim Agreements, OJ L 114, 115 and 116, 30.4.1992; Additional Protocol, OJ L 195, 4.8.1993; Eurostat, Import statistics (Combined Nomenclature) and Common Customs Tariff, magnetic tapes.

Table 24

EC tariff reduction for imports of industrial products[1] from Bulgaria and Romania, 1993

Bulgaria

	1992 share in EC imports[2] (%)	1992 MFN tariff (%)	1992 under Europe Agreement[3]		Year of total liberalization
			Tariff reduction[4] (%)	Reduced tariff (%)	
Basic products A (Annex IIa)	0,4	4,0	50	2,0	1994
Basic products B (Annex IIb)	0,6	3,6	20	2,8	1995
Sensitive products (Annex III)	8,7	8,7	80	1,8	1996
Textiles (Protocol No 1)	28,1	12,8	29	9,2	1998
ECSC coal (Protocol No 2)	0,2	8,3	0	8,3	1996
ECSC steel (Protocol No 2)	6,5	3,9	20	3,1	1997
Other industrial products	55,5	4,6	100	0,0	1993
Total	100,0	7,2	58	3,0	•

Romania

	1992 share in EC imports[2] (%)	1992 MFN tariff (%)	1993 under Europe Agreement[3]		Year of total liberalization
			Tariff reduction[4] (%)	Reduced tariff (%)	
Basic products A (Annex IIa)	0,0	4,3	50	2,2	1994
Basic products B (Annex IIb)	0,4	6,0	20	4,8	1995
Sensitive products (Annex III)	29,9	6,7	55	3,0	1996
Textiles (Protocol No 1)	37,8	13,3	29	9,5	1998
ECSC coal (Protocol No 2)	0,0	0,4	0	0,4	1996
ECSC steel (Protocol No 2)	6,5	4,6	20	3,7	1997
Other industrial products	25,4	6,1	100	0,0	1993
Total	100,0	8,9	46	4,8	•

[1] Chapters 25 to 97 of the Combined Nomenclature with the exception of some agricultural products listed in Annex I (they were not imported from Bulgaria and Romania in 1992).
[2] In % of total industrial imports from the respective country.
[3] Weighted by the commodity structure of 1992 imports.
[4] Percentage MFN tariff cut.
Sources: Interim Agreement with Romania, OJ L 81, 2.4.1993; Kommission der EG, KOM (93) 45 endg., Vorschlag für einen Beschluß des Rates und der Kommission über den Abschluß des Europa-Abkommens zwischen den Europäischen Gemeinschaften und ihren Mitgliedstaaten einerseits und Bulgarien andererseits; Eurostat, Import statistics (Combined Nomenclature) and Common Customs Tariff, magnetic tapes.

relief refers only to very low residua. As to textiles, where duties are relatively high and only slowly released, the abolition of duties will partly refer to restricted amounts in the case of categories under quantitative restrictions for one more year. On the other hand, within the conclusions of the Copenhagen Summit the exemption from customs duties from the beginning of 1994 for products concerned by outward processing operations is confirmed.

The following computations on the reduction of protection against CEECs arising from the Europe Agreements include the accelerated time schedule agreed upon in Copenhagen.

2.3. Tariff reduction by product groups

The significance of the individual product groups varies from country to country (see Table 23 for the CSFR, Hungary and Poland and Table 24 for Bulgaria and Romania). In general the EC will immediately abolish the tariffs for around 50% of the imports of industrial goods from most countries, but only for around 25% of those from Romania (see Tables 23 and 24).

Of the product groups with slower liberalization steps, basic products are of little importance in all countries. The share of other product groups — some of which are combined somewhat differently in the five agreements — varies widely: so-called sensitive products have the greatest significance for Romania (30%) and the smallest for Bulgaria (9%), with the other three countries lying in between. In Romania and Bulgaria, textiles play a much larger role than these sensitive products, 38% in Romania and 28% in Bulgaria. In Hungary's exports, textiles are as important as these sensitive products, in the other two countries they have smaller shares. Of the ECSC products, coal is significant for Poland (7%) and somewhat less for the CSFR (2%), but hardly at all for the other three countries. The share of steel ranges from almost 4% in Hungary to 8% in the CSFR and reaches nearly 7% in Bulgaria and Romania.

The supply structure of the five countries examined also differs within product groups, shown by the different average MFN tariff rates weighted with the supplies. For sensitive products in Annex III they are nearly 9% in Bulgaria, the CSFR and Hungary, 8% in Poland and 7% in Romania.

In general the average tariff burden which would have to be paid under most-favoured nation conditions is lower for those products being liberalized immediately (between 3,6% and 6,1%), but particularly high for textiles with respect to all partner countries and also above average for sensitive products in all countries except Romania. Accordingly, the reduction of tariffs for textiles is particularly sluggish and the relative discrimination against textiles is increased.

For sensitive products tariff reductions can, however, only be estimated, because in the context of quotas and ceilings the relationship between imports which are and imports which are not subject to tariffs is unclear. In the case of quotas — which are particularly numerous and important for the CSFR and Romania — the situation is clear: once the maximum quantity is reached, the tariffs must be reintroduced; as to ceilings, a decision is required to reintroduce duties. In many cases the limits of tariff quotas were reached in 1992 (see Table 25).

Table 25

Number of tariff quotas within the Europe Agreements

	Total	Imports in 1992 exceeding at least 90%
Bulgaria	5	4
CSFR	22	21
Hungary	15	9
Poland	13	9
Romania	22	15

Sources: European Commission, OJ L 56, 29.2.1992 and OJ L 81, 2.4.1993; Kommission der EG, KOM (93) 45 endg. Vorschlag für einen Beschluß des Rates und der Kommission über den Abschluß des Europa-Abkommens zwischen den Europäischen Gemeinschaften und ihren Mitgliedstaaten einerseits und Bulgarien andererseits; Eurostat, 'Import statistics (Combined Nomenclature)', magnetic tape.

In 1992, all five countries' supplies of products with quotas far exceeded the duty-free maximum amounts. First of all, the CSFR has to be mentioned, delivering six times the duty-free amounts. Poland delivered three times and the other three countries also more than twice as much.

As to ceilings, duties on imports above the duty-free amounts within the Interim Agreements were only reintroduced in two cases for Hungary and in three cases for the CSFR and Poland.[1] Checking the reintroduction of duties in 1992 on products from Bulgaria and Romania which are subject to ceilings within the GSP showed that duties were reintroduced after the ceilings were reached only in one case each. Hence, duties were only reintroduced on supplies above ceilings in a very small number of cases.

Therefore the tariffs on sensitive products under the Europe Agreements are calculated as follows:

(i) products which are subject to quotas are assumed to have (reduced) tariffs on imports exceeding the quotas; the duty-free amounts are calculated according to the ratio of 1992 quotas over 1992 imports;

(ii) products which are subject to ceilings are assumed to be imported completely duty-free.

[1] See European Commission, (MED application) Plafonds état des imputations au 22.12.92, based on Council Regulation 521/92 of 27.2.1992, OJ L 56, 29.2.1992.

If quotas are increased more quickly than imports, the reduction in tariffs is underestimated. On the other hand, it may be overestimated, because some of the imports may not comply with the rules of origin, the amount of which is, however, not available.

2.4. Quantification by NACE sectors

To transfer the steps of liberalization agreed upon according to the product nomenclature of the customs duty (Combined Nomenclature) to the 3-digit NACE sectors, we used the method already described (in Section 1.1). Here, average tariff rates for the 3-digit NACE sectors were calculated by weighting the tariff rates by the imports from the country concerned in 1992. Thus, the product structure is the same for all years and differences in duty rates within one NACE sector refer to the tariff reductions of the agreements.

The results are given in the tables in Annex 3. The first and second columns give the level and the commodity structure of EC imports in 1992 from the respective country. The third column shows the tariffs which should have been paid in 1992 under MFN conditions, while the fourth column reports the tariffs which were actually paid under the GSP in 1991. The fifth to eighth columns give the tariffs to be paid under the Europe Agreements for various years, starting with the first year of the agreement. The next two columns show the reduction in tariffs arising from the Europe Agreements in the first year as compared with: (i) the MFN tariffs, and (ii) the GSP tariffs actually paid in 1991. The last three columns give the tariff reductions during the next years under the agreements. The figures include the acceleration of the last steps of liberalization as agreed upon in Copenhagen in mid-1993.

In the first years, tariff reductions for coal are overestimated because they do not take into account the remaining restrictions in Germany and Spain, and tariff reductions for textiles are underestimated through not taking into account duty-free re-imports after processing, manufacturing or working in the CEECs. On the other hand, the tariff reductions are overestimated because some of the imports may not comply with the rules of origin, the amount of which is, however, not available.

The tariff reduction through the Europe Agreements can be evaluated by comparing it to MFN treatment. In fact, all CEECs already qualified for the GSP in 1991 and 1992 and were subject to correspondingly lower average tariffs. The additional liberalization step taken with the agreements is correspondingly smaller as when compared with MFN tariffs, but probably still overestimated in relation to the GSP tariff reductions: when calculating the tariff preference under the GSP the imports actually receiving preferences (i.e. duty-free) served as the basis, whereas for the Europe Agreements reduced tariffs on all imports were assumed without certainty as to whether they satisfied the rules of origin to the necessary extent.

Taking the preferences under the GSP and the additional tariff reduction from the Europe Agreements together, the tariff reduction in the first year of the agreements is highest for Hungary and lowest for Poland. With respect to NACE sectors, tariff reductions offer the largest price advantage (some 8 to 15 percentage points) to all five countries for motor vehicles, cycles, paper and plastics processing and for the following sectors in individual countries (see Table 26).

At the end of the whole period of liberalization the cumulative tariff reduction will be largest for textiles and clothing, which

Table 26

Sectors in each CEEC with the largest tariff reductions in the first year of the Europe Agreements

Bulgaria	CSFR	Hungary	Poland	Romania
Steel tubes	Salt extraction	Petrochemicals	Petrochemicals	Petrochemicals
Glassware	Petrochemicals	Semi-finished wood products	Radio and TV sets	Agricultural machinery
Ceramics	Radio and TV sets	Paints, varnishes	Paints, varnishes	Transmission equipment
Radio and TV sets	Semi-finished wood products	Chemicals for household		Radio and TV sets
Semi-finished wood products	Paints, varnishes	pulp, paper, board		Semi-finished wood products
				Optical instruments

are subject to the highest MFN tariffs (up to 14% at the level of 3-digit NACE sectors).

Comparing the five countries, the average tariff on industrial supplies to the EC in the first year of the Europe Agreements is lowest for the CSFR (2,1%) while it is highest for Romania (4,8%). The difference remains during the next four years under the agreements, although it decreases in absolute terms. It is mainly due to the different shares of textiles, which is lowest for the CSFR and highest for Romania.

The calculations do not yet consider duty-free imports after outward processing (OPT). OPT plays a significant role in textile imports from CEECs. It is most important for Poland, Hungary and Romania and least important for the CSFR. The OPT share in total textile imports of the EC and total industrial imports, too, from the five countries in 1992 was as follows (in %) (see Table 27).

OPT imports are concentrated on products of the knitting industry and clothing, i.e. those sectors which have the highest MFN tariffs (13 to 14 %). Here they accounted for some 40 to 80% of EC imports from the individual CEECs (see Table 9). They also achieved a significant share (at least a fifth) of woven fabrics, carpets and household textiles from Hungary, of yarns, woven fabrics, other textiles and household textiles from Poland and of household textiles from Romania (see Table 28).

According to the results of the Copenhagen Summit in mid-1993, all OPT textile imports will be duty-free under the Europe Agreements. Thus, the average tariff on industrial imports from CEECs will be further decreased giving the following values (in %, assuming the 1992 share of OPT) (see Table 29).

Table 27

OPT share of EC imports of textiles and industrial goods from each CEEC

	Share in textile imports	Share in industrial imports
CSFR	37	5
Hungary	68	15
Poland	74	14
Bulgaria	42	12
Romania	64	24

Table 29

Trend of average EC tariff on imports from each CEEC, 1992-98

	1992	1994	1995	1997
CSFR	1,6	1,0	0,4	—
Hungary	1,1	0,8	0,4	—
Poland	1,0	0,6	0,3	—
	1993	1995	1996	1998
Bulgaria	1,8	1,3	0,9	—
Romania	2,5	1,7	0,8	—

Table 28

EC textile imports after outward processing, 1992

NACE code	Sector	CSFR 1 000 ECU	CSFR %[1]	Hungary 1 000 ECU	Hungary %[1]	Poland 1 000 ECU	Poland %[1]	Bulgaria 1 000 ECU	Bulgaria %[1]	Romania 1 000 ECU	Romania %[1]
260	Artificial fibres	88	0,2	315	2,1	76	0,3	0	0	5	0,0
43A	Yarns	662	3,3	1 512	8,8	6 111	36,2	37	0,6	332	6,1
43B	Woven fabrics	2 089	1,9	6 485	27,4	6 923	17,1	7	0,0	128	3,1
436	Knitting industry	53 983	43,5	95 523	67,0	77 440	55,4	15 591	37,5	45 002	47,6
438	Carpets, floor coverings	365	4,5	1 434	18,5	43	0,8	2	0,0	14	0,2
439	Other textile industries	963	2,9	722	7,3	2 061	22,8	0	0	8	1,8
453	Clothing	179 869	60,7	325 248	76,6	721 897	84,9	67 952	61,0	268 395	73,1
455	Household textiles	5 701	10,5	13 591	40,6	12 778	29,3	0	0	1 611	17,8
481	Rubber products	85	0,1	0	0	0	0	0	0	0	0
Total		243 805	(36,7)	444 830	(67,8)	827 329	(74,4)	83 589	(42,3)	315 495	(63,9)

[1] Percentage share in total sector imports. Shares of totals are given in parentheses, because they refer to total textile imports (Chapters 50-63 CN).
Source: DIW calculations based on data from Eurostat.

As compared to the figures in Tables A.3.1 to A.3.5 (see Annex 3), the average tariff on total industrial supplies is reduced by another percentage point for Hungary, Poland and Bulgaria, while the effect is larger for Romania and smaller for the CSFR. Including duty-free OPT imports, the lowest tariff burden will be on imports from Poland and Hungary, the highest one still being on supplies from Romania.

2.5. Impact on imports

The potential effect of a tariff reduction on imports from a CEEC can theoretically be divided into the effects of trade creation and trade diversion. The trade-creation effect occurs when the tariff reduction results in a substitution of imports from the CEEC for production of the same good in the EC. The decrease in domestic production will have a negative effect on income in the EC reducing, in turn, the demand for imports. Trade creation also occurs when there is an increase in the imports of a good from the CEEC because the new effective price is lower than it was before the tariff reduction and, therefore, the demand for that good in the EC increases. Trade diversion occurs when imports from the CEEC replace imports from other third countries. The magnitude of these effects depends on the price and income elasticities of demand for the products in the EC, on the cross-price elasticities of demand between the EC product, the CEEC's product and the product from other third countries, as well as on the supply elasticities. The changes in real flows could induce exchange-rate changes which, in turn, would dampen the effects on the real flows and change the terms of trade.

A detailed quantitative analysis by sectors considering these aspects is beyond the limited scope of this study. Here we can only give a rough estimate of the impact on imports from the CSFR, Hungary and Poland as well as Bulgaria and Romania which may arise from the tariff reductions provided by the Europe Agreements.

The estimation starts from the tariff levels which were calculated for the years from 1992 (or 1993 respectively) onwards. They give the average tariff burden by 3-digit NACE sectors on imports from the five countries under consideration. The difference between these tariffs and the corresponding MFN rates can be interpreted as the price advantage from the Europe Agreements as compared to a situation in which imports are subject to MFN tariffs. If the elasticities of substitution are very low and the elasticity of supply in the CEECs is very high, the increase in imports mainly depends on the price elasticity of demand. Assuming an average elasticity of one for CEECs' products, the total tariff reduction from the Europe Agreements may increase the imports of industrial products from the five countries by some 6 to 9% as compared to a situation in 1992 with MFN tariffs.[1]

One must take into account, however: (i) that all five countries already received tariff preferences before the Europe Agreements came into force, and (ii) that the tariff reduction is distributed over various years. Hungary, Poland and Romania were beneficiaries of the GSP in 1990 and 1991, for the CSFR and Bulgaria this is true for 1991. The preferences considerably reduced the tariffs actually paid in 1991 (see tables in Annex 3 by 3-digit NACE sectors).[2] The incremental impact in the first year of the Europe Agreements, therefore, has to be measured against the tariffs paid by the five countries under the GSP.

In general the Europe Agreements provide lower tariffs for 1992 (or 1993 respectively) than the GSP treatment in 1991. There are some exceptions, however, where the tariffs calculated according to the provisions of the Europe Agreements in the first year are higher than those paid under the GSP in 1991. In the tables in Annex 3 this is shown by a minus sign in the column giving the differences between the 1992 (or 1993) tariffs under the Europe Agreements and the 1991 GSP tariffs. The sectors affected are mainly textiles and clothing. Here, the Europe Agreements initially provide less tariff relief than the GSP because the tariffs reduced by two sevenths are applied to all imports while under the GSP certain amounts of imports were allowed to enter duty-free.

Overall, the GSP duty relief in 1991 as compared to MFN tariffs was as large as or even larger than the additional tariff reduction in the first year of the Europe Agreements. Only in Bulgaria may the additional advantage from the Europe Agreement be larger than that from the GSP.

The average tariffs on industrial imports under MFN conditions, the GSP regime and the Europe Agreements are summarized for the CSFR, Hungary and Poland in Table 30, while Table 31 gives the same figures for Bulgaria and Romania. On that basis the annual changes in the tariff burden which took place during the last years and which can be expected from the Europe Agreements were calculated. The largest reductions are due to the GSP and the first year under the Europe Agreements, followed by smaller steps during the

[1] This estimate is in line with the relationship between the effect on imports and tariff reduction from the GSP as calculated, for example, for Hungary (see Inotai, A. 'Assoziierungsabkommen: Schritte zur Reintegration ostmitteleuropäischer Staaten', in: *Integration* 1/1992, p. 28, and Langhammer, R. 'Die Auswirkungen der EG-Handelspolitik gegenüber Mittel- und Osteuropa, in: *Wirtschaftsreformen in Mittel- und Osteuropa, Beihefte der Konjunkturpolitik*, Heft 40, Berlin, 1992, p. 229).

[2] The tariffs actually paid were calculated at the 8-digit CN level by considering the imports which entered duty-free under the GSP and reducing the MFN tariff accordingly.

Table 30

Tariff reduction for industrial products and increase in EC imports from the CSFR, Hungary and Poland

	CSFR	Hungary	Poland
	MFN tariffs (%)[1]		
1989	6,2	7,0	5,9
1990	6,4	7,1	6,2
1991	6,8	7,3	6,3
1992	6,8	7,5	6,4
	Tariffs actually paid (%)[2]		
1989	6,2	7,0	5,9
1990	6,4	5,0	4,6
1991	4,4	4,5	4,0
	Tariffs under Europe Agreements (%)		
1992	2,1	2,5	2,4
1994	1,4	1,9	1,7
1995	0,27	1,2	1,1
1997	—	—	—
	Tariff reduction (% points)		
1990	–0,2[3]	2,0	1,3
1991	2,0	0,5	0,6
1992	2,3	2,0	1,6
1993-94	0,7	0,6	0,7
1995	0,7	0,7	0,6
1996-97	0,7	1,2	1,1
1990-97	6,2	7,0	5,9
	Actual increase in imports (%)		
1990	7	23	37
1991	54	22	26
1992	38	17	20

[1] Differences of the average tariff are due to different CN commodity structures.
[2] MFN tariffs minus preferences under the GSP.
[3] Due to changes in the CN commodity structure as compared to 1989.
Source: DIW calculations based on data from Eurostat.

Table 31

Tariff reduction for industrial products and increase in EC imports from Bulgaria and Romania

	Bulgaria	Romania
	MFN tariffs (%)[1]	
1989	6,4	7,2
1990	6,7	7,7
1991	6,6	7,9
1992	7,2	8,9
	Tariffs actually paid (%)[2]	
1989	6,4	5,1
1990	6,7	6,0
1991	5,2	6,2
1992[3]	(5,2)	(6,2)
	Tariffs under Europe Agreements (%)	
1993	3,0	4,8
1995	2,3	3,6
1996	1,6	2,2
1998	—	—
	Tariff reduction (% points)	
1990	– 0,3[4]	– 0,9[4]
1991	1,5	– 0,2[4]
1992	(—)	(—)
1993	2,2	1,4
1994-95	0,7	1,2
1996	0,7	1,4
1997-98	1,6	2,2
1990-98	6,4	5,1
	Actual increase in imports (%)	
1990	10	– 36[5]
1991	33	– 12[5]
1992	28	– 5[5]

[1] Differences of the average tariff are due to different CN commodity structures.
[2] MFN tariffs minus preferences under the GSP.
[3] Estimated according to the level in 1991 because GSP statistics for 1992 were not yet available.
[4] Due to changes in the CN commodity structure as compared to the previous year.
[5] Excluding mineral oil, the figures are – 27% (1990), +1% (1991) and +11% (1992).
Source: DIW calculations based on data from Eurostat.

next years. The higher the share of textiles the more significant are the last tariff reductions in the sixth year under the agreements.

The estimated increase in imports arising from the tariff reductions can be directly seen from the tariff reductions given in Tables 30 and 31 assuming a price elasticity of one. According to the uneven distribution of the tariff reductions over the years the effect on imports is different in the various subperiods, achieving the highest values (2 to 3%) in 1990 or 1991 as well as in 1992 or 1993. The increase will be larger if the price elasticity of demand for individual product groups tends to be higher the higher the MFN tariff.

The figures, which are broad estimates under very restrictive assumptions, indicate a rather small effect if compared to the actual increase in imports of industrial products from the CEECs (except for Romania) during the last few years. The rise in imports in the range of 20 to 50% per year in 1991 and 1992, therefore, was mainly due to increased efforts to supply.

2.6. Removal of quantitative restrictions

According to the Europe Agreements all quantitative restrictions (QRs) on imports to the Community and measures having an equivalent effect will be abolished on the date that the agreements come into force. This also applies to steel products while special regulations apply to coal and textiles.

On *coal*, all QRs will be abolished at the latest one year after the agreements come into force. In the case of coal, we find the only exception of common trade policy, in so far as there appear to be different rules concerning the EC Member States: whereas quantitative restrictions have to be abolished in 10 of the member countries one year after the entry into force of the agreements at the latest, Germany and Spain are allowed to maintain national quantitative restrictions for three more years against imports from the five CEECs. The countries concerned are mainly Poland and the CSFR; Hungary and Romania hardly export any coal to the EC and Bulgaria not to Germany or Spain. Poland's coal exports to the EC are much higher than those of the CSFR, Germany taking around 50% of those from Poland (Spain 4%), and 99% of those from the CSFR. That means Polish coal exports to the EC are liberalized to a rather high degree, whereas CSFR exports rely strongly for the next four years on German trade policy — if we consider regional trade relations as rather inflexible with respect to coal.

The QRs on textiles should have been dealt with according to the results of the Uruguay Round. The multilateral negotiations of the Uruguay Round not being concluded in 1992, new bilateral textile agreements were initialled in December 1992. The EC then confirmed the abolition of all QRs within a period of five years starting from 1 January 1993.

Of all textile categories[1] covered by the MFA, only some were in fact subject to quotas within the bilateral textile agreements between the EC and the CEECs and they differ in kind and number between the five countries. Regarding the number of textile categories restricted by quotas in 1991, the CSFR was on top with 38 categories,[2] followed by Romania with 29; Hungary and Poland facing 27 and 26 categories respectively and Bulgaria only 12.

For 1992, the EC liberalized a number of textile categories for the CSFR, Hungary and Poland, namely all those which had not been utilized by more than 50% in the last three years. In this way, the quotas for 12 textile categories were abolished in the case of the CSFR and seven and five categories respectively in the case of Hungary and Poland. With regard to Bulgaria and Romania the number of quotas was not changed. The remaining QRs still cover large parts of the textile imports from all five countries. The new protocols for the next five years contain only a few categories less than those for 1992. However, quotas for many categories were increased considerably, especially towards the CSFR, for Hungary and Poland as well, but scarcely *vis-à-vis* Bulgaria and Romania (see Table 32).

Quantitative restrictions effectively restrict imports only if they are binding, i.e. if actual imports are as high as the quotas. QRs play the most important role in textiles, and here the data for 1991 show that the EC quotas were exhausted only in a very small number of textile categories for the CSFR and in one category for Bulgaria and Romania, while imports from Hungary and Poland did not reach the limit in any category. In most categories the utilization rate was below 50%. In 1992, the CSFR did not exceed the new limits either; only Bulgaria utilized two quotas to more than 90%. This picture may be too positive because textile quotas were allotted to Member States and utilization rates here apply to the Community as a whole, thus neglecting cases where quotas are exhausted in one (or some) Member State(s) while in other Member States missing demand or protected markets did not allow further deliveries. For 1993, however, quotas were increased considerably.

In Table 33, the relevance of the QRs on textiles in 1992 is represented according to NACE sectors by import coverage ratios, i.e. the imports subject to the MFA as a percentage of total imports in the NACE sector concerned and imports subject to QRs as a percentage of imports covered by the MFA.[3] The figures show that a very high proportion of textile and clothing imports from the five CEECs may be restricted by QRs under the Multi-Fibre Agreement (second column), the proportion of imports for which QRs were actually applied being smaller (third column).

The utilization rates (fourth column) can be used to modify the classification of textile sectors according to the relevance of QRs which were calculated in the first part of this study considering the total import coverage ratio of the MFA. Multiplying the MFA import coverage ratio (i) by the ratio of

[1] Textile quotas are listed in around 120 categories.

[2] These numbers refer to categories with quotas in all EC countries, excluding those which are restricted in one EC country only or some countries. See European Commission, 'System AMF textile surveillance report'.

[3] Combining the statistics by textile categories with import data faces various problems: (i) the quotas and the information on their use refer to import licences and not to actual imports; (ii) the exact correlation of import data and textile categories needs the 10-digit TARIC classification because some 8-digit CN codes correspond to several textile categories. To assign the information by textile categories to the corresponding NACE sectors we had to use the 8-digit Combined Nomenclature and, therefore, had to assume that all subitems of a CN relating to different textile categories have the same weight. In total these CN are overrepresented in the averages calculated at the NACE level. The bias should not, however, significantly distort the ranking of sectors.

Table 32

Augmentation of EC textile quotas, 1993 versus 1991

(%)

Category	Bulgaria	CSFR[1]	Hungary	Poland	Romania
1	4	—	—	2	
2	4	80	26	111	
2a	4	111	22	78	4
3		178	60	138	6
4	6	146	82	57	5
5	5	209	51	98	5
6	7	279	227	250	6
7	6	540	185	—	5
8	5	549	67	94	4
9		60	163	75	
12		198	121	112	6
13	—	—	—	—	6
14	8	—	—	105	7
15	8	143	118	105	9
16	—	298	82	126	6
17	—	169	39	—	8
20	—	124	41	100	11
24	—	64	74	96	0
26	—	288	—	62	6
32	—	38	—	—	—
36	—	35	—	—	12
37	—	—	—	—	12
39	—	38	50	—	—
41	—	—	—	—	12
55	—	—	—	—	12
58	—	—	—	—	12
68	—	—	—	—	12
73	8	—	116	—	10
76	8	254	—	—	—
78	—		14		
90	—	68	—	15	
99	—	12			
110	—	13	—	—	—
117	—	21	27	26	11
118	—	93	—	45	10

[1] The quotas were allotted to the Czech Republic and Slovakia in 1993.
Sources: European Commission, OJ L 103, 28.4.1993.

imports which were actually subject to QRs and (ii) by the utilization rate of these quotas, modified import coverage ratios are obtained. Taking the utilization of QRs into account gives more differentiation among the textile sectors. In most countries woven fabrics, products of knitting industries, clothing and household textiles still appear as highly restricted under QRs. These sectors comprise the most important textile categories in quantitative terms. Other textile sectors appear less restricted when the modification is taken into account (see Table 33).

Comparing 1992 figures with 1991 figures similarly calculated shows that the modified import coverage ratios in general decrease, reflecting the liberalization of QRs by the EC. In terms of our classification the most important textile sectors still belong to the category of 'highly protected' while the smaller textile sectors now appear to be less protected by QRs. Any impact of restrictions is lowered anyhow when outward processed products are treated more liberally and gain further in importance.

With regard to textiles, we have the demonstration of trade liberalization by means of reducing duties and simultaneously restricting total amounts of imports — i.e. two contrary trade policies referring to the same product. This will continue, when duties are removed one year earlier than foreseen in the agreements due to the Copenhagen conclusions, but QRs will not be lifted until one year later.

Table 33

Quantitative restrictions on textile imports from the CEECs, 1992

NACE code	Sector	EC imports (million ECU)	Import coverage ratio: covered by MFA[1] %	Import coverage ratio: of which: subject to QR[2] %	Utilization rate of QR[3] %	Modified import coverage ratio %	Modified import coverage ratio: Classification
			CSFR				
260	Artificial fibres	52	57	0	-	0	0
43A	Yarns	20	88	0	-	0	0
43B	Woven fabrics	108	100	65	54	35	3
436	Knitting industry	124	98	62	49	30	3
438	Carpets, floor coverings	8	99	0	-	0	0
439	Other textile industries	33	58	21	98	12	3
453	Clothing	297	95	77	43	31	3
455	Household textiles	54	88	61	48	26	3
481	Rubber products	89	3	89	21	1	1
			Hungary				
260	Artificial fibres	15	54	0	-	0	0
43A	Yarns	17	81	0	-	0	0
43B	Woven fabrics	24	100	44	28	12	3
436	Knitting industry	143	100	55	41	23	3
438	Carpets, floor coverings	8	100	30	14	4	1
439	Other textile industries	10	84	0	-	0	0
453	Clothing	425	92	61	34	19	3
455	Household textiles	33	78	30	27	6	2
481	Rubber products	46	2	0	-	0	0
			Poland				
260	Artificial fibres	24	19	0	-	0	0
43A	Yarns	17	91	1	23	0.2	1
43B	Woven fabrics	40	100	65	30	20	3
436	Knitting industry	140	100	47	53	25	3
438	Carpets, floor coverings	5	100	0	-	0	0
439	Other textile industries	9	91	31	67	19	3
453	Clothing	850	96	49	35	16	3
455	Household textiles	44	84	38	42	13	3
481	Rubber products	55	0	0	-	0	0

[1] Imports covered by the MFA as a percentage of total imports in the respective NACE sector.
[2] Imports subject to QRs as a percentage of imports covered by the MFA.
[3] Import licences as a percentage of import quota.
Source: DIW calculations based on data from Eurostat and the European Commission.

2.7. Final evaluation of remaining protection

Similar to the classification of EC trade barriers in 1990 in Section 1 of this paper, a classification of remaining or newly introduced trade barriers for 1992 or 1993, respectively, is given in Tables 16f to 16j of the Statistical Annex. This classification comprises the same four main indicators: duties, quantitative restrictions, other non-tariff barriers as well as public-procurement procedures and technical standards (PT).

The limits for the classification of the indicators are the same as set out in Section 1. Differences in definition due to different sources will be considered with the description of each respective indicator. The evaluation is confined to trade policy instruments, because public-procurement procedures and technical standards may not have changed significantly in the mean time. Lacking new information, classification of NACE sectors according to the significance of PT was taken from Annex 1 and incorporated into Tables 16f to 16j of the Statistical Annex just for completeness.

Table 33 *(continued)*

NACE code	Sector	EC imports (million ECU)	Import coverage ratio: covered by MFA[1] %	Import coverage ratio: of which: subject to QR[2] %	Utilization rate of QR[3] %	Modified import coverage ratio %	Modified import coverage ratio: Classification
			Bulgaria				
260	Artificial fibres	5	20	0	-	0	0
43A	Yarns	7	59	4	11	0.3	1
43B	Woven fabrics	15	97	27	63	16	3
436	Knitting industry	42	99	66	83	54	3
438	Carpets, floor coverings	1	100	0	-	0	0
439	Other textile industries	1	94	0	-	0	0
453	Clothing	111	98	58	58	33	3
455	Household textiles	16	99	0	-	0	0
481	Rubber products	13	0	0	-	0	0
			Romania				
260	Artificial fibres	13	21	100	34	7	2
43A	Yarns	5	80	29	55	13	3
43B	Woven fabrics	4	100	67	11	7	2
436	Knitting industry	94	100	65	53	34	3
438	Carpets, floor coverings	7	100	0	-	0	0
439	Other textile industries	0	87	0	-	0	0
453	Clothing	367	97	69	55	37	3
455	Household textiles	9	88	52	31	14	3
481	Rubber products	7	0	0	-	0	0

[1] Imports covered by the MFA as a percentage of total imports in the respective NACE sector.
[2] Imports subject to QRs as a percentage of imports covered by the MFA.
[3] Import licences as a percentage of import quota.
Source: DIW calculations based on data from Eurostat and the European Commission.

With regard to duties, the rates (in the fifth column of the tables) refer to the first year the agreements enter into force, i.e. 1992 in the case of the CSFR, Hungary and Poland and 1993 with respect to Bulgaria and Romania, weighted within each NACE sector by the commodity structure of 1992.

Due to the abolition of duties for the bulk of products at the time the Interim Agreements enter into force and the reduction for most of the other products, only a small number of NACE sectors was still classified as highly protected by duties: in all five countries these are woven fabrics, knitting industries and clothing. Other sectors concerned were household textiles from Bulgaria, the CSFR and Romania and carpets from the CSFR. Taking into account that these are sectors with high OPT shares in most of the CEECs, of which we do not know to what extent duties are remitted, this classification certainly overestimates the remaining protection by duties. Besides textiles, there were only two more sectors highly protected by duties: coal imports from Bulgaria and salt extraction in the case of the CSFR.

All together, protection by duties for all industrial imports was classified as 'weak' for all CEECs except Romania, where it remained 'average'. Compared to the classification of MFN status (not considering GSP treatment for Hungary, Poland and Romania) in 1990, that means a decrease of protection by one class for all countries except Hungary, where this index fell from 'high' to 'weak'.

The remaining QRs concern coal and textiles as set out in the agreements.[1] Their importance is shown by import coverage ratios. As to coal, this refers to the imports of Germany and Spain who are allowed to maintain national restrictions for four years after the entry into force of the agreements. The NACE

[1] In Section 1 of this paper, the Unctad Databank on trade measures was the source for measuring NTBs (QRs and ONTBs as well); see Section 1.2. Here, concerning QRs, we rely on the agreements only, that means potentially still existing 'voluntary' export restraints are not covered. As to ONTBs, here only anti-dumping measures are taken into account.

sectors concerned are hard coal mining and lignite mining (and part of coke ovens and iron-ore extraction). Corresponding to the share of Germany and Spain in EC imports of coal, import coverage ratios for hard coal and lignite mining are quite high in the CSFR and smaller in Poland (in Hungary they are 100% but refer to very small deliveries).

Concerning textiles, not only the quotas agreed upon according to Protocol No 1 of the agreements, but also the utilization of these quotas could be taken into account. Thus, the modified import coverage ratios of Table 33 have been used here and in the corresponding classification. Comparison with the MFA import coverage ratios in 1990 overestimates the liberalization; the change in classification and the aggregate judgment are, however, only slightly distorted.

The sectors still 'highly' protected by QRs are knitting industries and clothing in all five CEECs, woven fabrics in all countries except Romania, household textiles from the CSFR, Poland and Romania, other textiles from the CSFR and Poland and yarns from Romania. The QR on coal highly affect the CSFR, Poland and Hungary. For the average of all industrial NACE sectors, the protection by QRs thus diminished from 'high' to 'average' for Bulgaria, the CSFR and Poland and even to 'weak' for Hungary, but remained 'high' against Romania.

Out of all ONTBs, anti-dumping measures alone are covered, and only those still existing by the end of 1992, as well as investigations initiated in 1992.[1] Futhermore, the export restraint agreements with the Czech and Slovak Republics concerning certain steel products are covered.[2] Within these agreements, tariff quotas for several steel products and penalty duties of 25 to 30% for imports exceeding these quotas are introduced. The anti-dumping measures concentrate on various chemical products from all CEECs, iron and steel from Poland and Romania and cement and artificial fibres from Romania. Many of these products are so-called sensitive products of Annex III of the Europe Agreements, for which duty-free imports are limited by quotas or ceilings.

These other non-tariff measures refer to the whole or part of a NACE sector, the import coverage ratios are given in the seventh column. The NACE sectors 'highly' affected by ONTBs (tenth column) are other chemical basic industries in Bulgaria, Hungary and Romania, chemicals for industry in Romania, steel in the CSFR and Romania and cement in Romania.

The overall protection of ONTBs was now classified 'weak' in all CEECs, only for the CSFR was it rated 'average'. Compared to 1990, that means a decrease in protection by two classes for Bulgaria, Hungary and Poland and by one for the CSFR and Romania. The decrease may be overestimated, because not all of the protective measures of the Unctad databank for 1990 could be quantified for 1992. For example, the retrospective Community surveillance of imports of shoes from all third countries is not included here.

To finally assess the degree of protection by trade policy instruments, the three indicators are summed up as in Section 1.3. Sectors with scores 6 and more are also classified as 'highly protected' here. Out of the 57 cases in part one,[3] only 16 still rate as highly protected by duties and non-tariff barriers (see Table 34).

Table 34

Remaining sectors still facing high EC protection, 1992-93

NACE code	Sector	Score
43B	Woven fabrics for Bulgaria, CSFR, Hungary, Poland	6
436	Knitting industries for all five countries	6
453	Clothing for all five countries	6
455	Household textiles for the CSFR and Romania	6

All four NACE sectors still classified as 'highly protected' refer to textiles and clothing. Taking into account the uncertainty as to what degree of outward processing trade is treated more liberally and the considerable increase of quotas from 1993 onwards (for the CSFR, Hungary and Poland), it might be doubted that textile and clothing imports from the CEECs should still be considered as highly protected.

On the other hand, import coverage ratios for products affected by anti-dumping measures do not take into account the anti-dumping duties, so that duties here are underestimated. Furthermore, despite the overall reduction of protection, there are some cases of increased import coverage ratios for specific

[1] See: Kommission der Europäischen Gemeinschaften, 11. Jahresbericht der Kommission an das Europäische Parlament über die Antidumping- und Antisubventionsmaßnahmen der Gemeinschaft (1992), KOM (93) 516 endg., Anhänge A und Q.

[2] See OJ L 157 29.6.1993 and OJ L 180, 23.7.1993.

[3] Sixteen sectors for all five countries or some of them.

Table 35

Sectors from each CEEC whose import coverage ratio of ONTBs increased between 1990 and 1992

Bulgaria	CSFR	Hungary	Poland	Romania
Other chemical basic industries	Steel tubes	Other chemical basic industries	Chemicals for industries	Steel tubes Cement, lime Other chemical basic industries Chemicals for industries

(competitive) products and countries: even if this may not necessarily mean increased protective measures, but above-average increased imports of protected goods within the NACE sector, this means a greater share of deliveries hit by protective measures. The sectors and countries with higher import coverage ratios for other non-tariff barriers in 1992 compared with 1990 are as follows (see Table 35).

The overall relevance of trade barriers for supplies from the individual countries may be indicated by the percentage distribution of 1992/93 EC imports as was shown for 1990 in Section 1.3 (see Table 36).

Table 36

Share of each CEEC's exports to the EC classified by intensity of EC trade protection, 1993

	None	Weak	Average	High	Total
Bulgaria	43,8	23,0	8,9	24,3	100
CSFR	39,3	37,4	11,8	11,4	100
Hungary	52,9	25,4	2,3	19,5	100
Poland	36,3	35,2	10,8	17,7	100
Romania	16,8	39,8	6,3	37,1	100

The significance of highly protected goods decreased for four CEECs (most for the CSFR), but actually increased in the case of Romania. On the other hand, the share of completely liberalized products grew considerably, even if least for Romania. None the less as in 1990, Romania still has the highest proportion of weakly protected goods.

On the whole, duties and NTBs decreased considerably and show the following pattern in the first year of the agreements (weighted by the commodity structure in 1992) (see Table 37).

Table 37

Summary of the degree of EC protection facing each CEEC, 1993 (due to TBs, NTBs and ONTBs)

	Import coverage ratio			Classification			
	Duty rate (%)	QR (%)	ONTB (%)	D	QR	ONTB	Total
Bulgaria	3,0	8,9	1,6	1	2	1	4
CSFR	2,1	5,6	5,7	1	2	2	5
Hungary	2,5	3,9	0,1	1	1	1	3
Poland	2,4	6,1	0,3	1	2	1	4
Romania	4,8	13,1	2,8	2	3	1	6

Compared to 1990 (see Section 1.3) the total score of trade policy instruments was only half as high for Bulgaria and Poland, reached only a third for Hungary and decreased by 2 and 3 points for Romania and the CSFR respectively. Protection now is lowest against Hungary and highest *vis-à-vis* Romania.

Despite the various shortcomings of data and methodology the results give a consistent picture. All in all, one may say that the Europe Agreements potentially offer a significant liberalization of imports from the CEECs which provides space for high additional supplies of industrial products. The trend towards liberalization is not, however, irreversible due to the various escape clauses in the agreements. To refrain from high anti-dumping duties and to remove (or keep removed) QRs on products where CEECs prove to be competitive (e.g. steel, textiles and chemicals) is more important than an acceleration of tariff reductions as agreed upon in Copenhagen.

Annex 1: Tables on the degree of EC protection facing CEECs by 3-digit NACE sectors, 1988-91

Explanatory notes

The tables give the following information for the individual CEECs:

Column	*Contents*
1	EC imports in ECU 1 000
2	Commodity structure of EC imports
3	Share of the supplier country in total EC imports
4	MFN duty rate, weighted by 8-digit CN imports within each NACE sector
5	Imports subject to QRs as a perentage of the respective total imports
6	Imports subject to other NTBs as a perentage of the respective total imports
7 to 10	Classification of the NACE sector into four categories[1] according to: • the MFN duty rate (D); • the import coverage ratio of QRs (QR); • the import coverage ratio of other NTBs (ONTB); • the relevance of public procurement and technical standards (PT) according to the Commission's report: *European Economy*, 'Social Europe', special edition 1990, Table 2.1, p. 24 (high = 3, moderate = 2, all other NACE sectors = 0)
11	Total score, i.e. sum of scores according to D, QR, ONTB and PT
12	Duty relief provided by the GSP as a perentage of the MFN duty
13	Classification[1] according to the extent of the GSP duty relief.

At the individual NACE sector level, the difference in the value of protection indicators for each year only reflects different subsectoral commodity structures in terms of 8-digit CN items. At the total level they also reflect changing shares of the NACE sectors in total industrial imports from the respective country.

Sources:
Eurostat, 'Common Customs Tariff', magnetic tape;
Eurostat, 'GSP imports', magnetic tape;
Eurostat, 'Correspondance table, Combined Nomenclature — NACE', magnetic tape;
Eurostat, 'External trade of the EC (Combined Nomenclature)', magnetic tape;
Unctad, databank on trade measures, 1990.

[1] 0 = none, 1 = weak, 2 = average, 3 = high; for definition of classes with regard to D, QR, ONTB and duty relief, see text.

Table A.1.1
EC trade barriers facing Bulgaria, 1988

NACE code	Sector	Imports (1000 ECU)	Product (% share)	Country (% share)	MFN duty (%)	QR (%)	ONTB (%)	Classification D	QR	ONTB	PT	Total	Duty relief (%)	Class.
111	Hard-coal mining	244	0,1	0,0	8,3	0,0	0,0	3	0	0	0	3	0,0	0
112	Lignite mining	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
120	Coke ovens	81	0,0	0,1	0,1	0,0	0,0	1	0	0	0	1	0,0	0
130	Gas-, petr. extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140	Oil refining	35 203	11,0	0,4	6,1	0,0	0,0	2	0	0	0	2	0,0	0
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152	Fissile materials	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
161	Electric power	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162	Gasworks	7	0,0	0,0	1,5	0,0	0,0	1	0	0	0	1	0,0	0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212	Non-f. metals extr	2 242	0,7	0,1	0,0	0,0	0,0	0	0	0	0	0	0,0	0
221	Iron & steel ind	26 709	8,3	0,6	4,5	100,0	100,0	2	3	3	0	8	0,0	0
222	Steel tubes	1 555	0,5	0,1	9,5	0,0	6,4	3	0	2	0	5	0,0	0
223	Steel drawing	2 427	0,8	0,3	5,3	0,0	48,7	2	0	3	0	5	0,0	0
224	Non-f. metals	18 415	5,7	0,1	1,5	6,5	6,5	1	2	2	0	5	0,0	0
231	*Build. mater. extr*	*819*	*0,3*	*0,1*	*0,0*	*0,0*	*0,0*	*0*	*0*	*0*	*0*	*0*	*0,0*	*0*
232	Potassium extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233	Salt extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
239	Other miner. extr	149	0,0	0,0	0,1	0,0	0,0	1	0	0	0	1	0,0	0
241	Clay products	312	0,1	2,5	8,0	0,0	0,0	3	0	0	0	3	0,0	0
242	Cement, lime	66	0,0	0,1	3,2	0,0	0,0	1	0	0	0	1	0,0	0
243	Cement products	40	0,0	0,1	2,9	0,0	0,0	1	0	0	0	1	0,0	0
244	Asbestos products	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
245	Stone working	782	0,2	0,3	2,7	0,0	0,0	1	0	0	0	1	0,0	0
246	Abrasive products	34	0,0	0,0	2,1	0,0	0,0	1	0	0	0	1	0,0	0
247	Glass, -ware	3 759	1,2	0,3	9,0	0,0	0,0	3	0	0	2	5	0,0	0
248	Ceramics	2 002	0,6	0,2	9,5	0,0	0,0	3	0	0	2	5	0,0	0
252	Petrochemical ind	52 395	16,4	0,5	7,8	0,0	0,7	3	0	1	0	4	0,0	0
253	Oth. chem. basic ind	13 370	4,2	0,3	7,5	0,0	6,0	3	0	2	0	5	0,0	0
255	Paints,varnishes	87	0,0	0,0	5,8	0,0	0,0	2	0	0	0	2	0,0	0
256	Chemicals for ind	7 155	2,2	0,2	2,2	0,0	0,7	1	0	1	2	4	0,0	0
257	Pharma products	3 681	1,1	0,1	5,5	0,0	0,0	2	0	0	3	5	0,0	0
258	Soap, detergents	257	0,1	0,1	6,6	0,0	0,0	2	0	0	0	2	0,0	0
259	Chemicals f. home	1 530	0,5	0,0	5,0	0,0	0,0	2	0	0	0	2	0,0	0
260	Artificial fibres	2 378	0,7	0,2	8,4	64,0	0,0	3	3	0	0	6	0,0	0
311	Foundries	448	0,1	0,1	6,1	0,0	0,0	2	0	0	0	2	0,0	0
312	Forging	126	0,0	0,1	5,0	0,0	0,0	2	0	0	0	2	0,0	0
313	Metal treatment	789	0,2	0,1	6,3	0,0	0,0	2	0	0	0	2	0,0	0
314	Metal structures	348	0,1	0,1	4,1	0,0	0,0	2	0	0	0	2	0,0	0
315	Boiler, tanks	19	0,0	0,0	4,9	0,0	0,0	2	0	0	3	5	0,0	0
316	Tools, met. prods	949	0,3	0,0	6,1	0,0	2,3	2	0	1	0	3	0,0	0
321	Machinery f. agric.	82	0,0	0,0	3,6	0,0	0,0	1	0	0	2	3	0,0	0
322	Machine tools	6 835	2,1	0,2	4,5	0,0	0,0	2	0	0	2	4	0,0	0
323	Textile machinery	207	0,1	0,0	3,9	0,0	0,0	1	0	0	2	3	0,0	0
324	*Machinery: food ind*	359	0,1	0,0	4,2	0,0	0,0	2	0	0	2	4	0,0	0
325	Plant for mines	17 934	5,6	0,5	4,7	0,0	0,0	2	0	0	2	4	0,0	0
326	Transmission eqm	733	0,2	0,0	6,8	0,0	0,0	2	0	0	2	4	0,0	0
327	Other specif. eqm	1 118	0,3	0,0	4,4	0,0	0,0	2	0	0	2	4	0,0	0
328	Other machinery	2 152	0,7	0,0	4,7	0,0	0,0	2	0	0	0	2	0,0	0
330	Office machinery	3 253	1,0	0,0	4,6	0,0	0,0	2	0	0	3	5	0,0	0
341	Electrical wires	180	0,1	0,0	6,5	0,0	0,0	2	0	0	3	5	0,0	0
342	Electrical motors	5 658	1,8	0,1	4,9	0,0	19,9	2	0	3	3	8	0,0	0
343	Industrial el. eqm	3 445	1,1	0,1	5,1	0,0	0,0	2	0	0	0	2	0,0	0
344	Telecommun. eqm	1 554	0,5	0,0	6,8	0,0	0,0	2	0	0	3	5	0,0	0
345	*Radio-, TV sets*	*995*	*0,3*	*0,0*	*7,0*	*0,0*	*0,0*	*2*	*0*	*0*	*2*	*4*	*0,0*	*0*
346	Domest. electr. eqm	1 033	0,3	0,1	4,9	0,0	0,0	2	0	0	2	4	0,0	0
347	Elec. lighting eqm	867	0,3	0,1	5,8	0,0	0,0	2	0	0	2	4	0,0	0
351	Motor vehicles	382	0,1	0,0	12,3	0,0	0,0	3	0	0	2	5	0,0	0
352	Bodies f. mot. veh.	165	0,1	0,1	5,2	0,0	0,0	2	0	0	0	2	0,0	0
353	Parts f. mot. veh.	496	0,2	0,0	6,9	0,0	0,0	2	0	0	0	2	0,0	0
361	Shipbuilding	0	0,0	0,0	0,0	0,0	0,0	0	0	0	3	3	0,0	0
362	Railway equipment	575	0,2	0,4	4,4	0,0	0,0	2	0	0	3	5	0,0	0
363	Cycles,mot.-cycles	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
364	Aerospace equipm.	2	0,0	0,0	3,8	0,0	0,0	1	0	0	2	3	0,0	0
365	Oth. transp. means	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
371	Precision instr	1 033	0,3	0,1	4,7	0,0	0,0	2	0	0	0	2	0,0	0
372	Medico-surg. eqm	268	0,1	0,0	5,3	0,0	0,0	2	0	0	3	5	0,0	0
373	Optical instr	264	0,1	0,0	6,1	0,0	0,0	2	0	0	0	2	0,0	0
374	Clocks, parts	12	0,0	0,0	0,9	0,0	0,0	1	0	0	0	1	0,0	0
43A	Yarns	1 693	0,5	0,1	1,6	15,1	0,0	1	3	0	2	6	0,0	0
43B	Woven fabrics	7 256	2,3	0,2	10,9	93,9	0,0	3	3	0	2	8	0,0	0
436	Knitting ind	10 108	3,2	0,2	13,7	99,8	0,0	3	3	0	0	6	0,0	0
438	Carpets, floor cov.	2 397	0,7	0,2	6,6	100,0	0,0	2	3	0	2	7	0,0	0
439	Other textile ind	950	0,3	0,1	8,2	100,0	0,0	3	3	0	0	6	0,0	0
441	Tanning	386	0,1	0,0	6,8	0,0	100,0	2	0	3	0	5	0,0	0
442	Leather products	3 253	1,0	0,2	7,0	0,0	7,9	2	0	2	0	4	0,0	0
451	Footwear	1 481	0,5	0,1	8,1	0,0	99,8	3	0	3	2	8	0,0	0
453	Clothings	22 931	7,2	0,2	13,6	98,4	0,8	3	3	1	2	9	0,0	0
455	Househ. textiles	3 632	1,1	0,4	12,0	85,8	0,0	3	3	0	2	8	0,0	0
456	Furs, fur goods	774	0,2	0,2	5,7	0,0	100,0	2	0	3	0	5	0,0	0
461	Sawing of wood	1 450	0,5	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
462	Semi-fin. wood prods	2 562	0,8	0,1	10,0	0,0	0,0	3	0	0	0	3	0,0	0
463	Carpentry parts	45	0,0	0,0	6,0	0,0	0,0	2	0	0	0	2	0,0	0
464	*Wooden containers*	232	0,1	1,1	7,5	0,0	0,0	3	0	0	0	3	0,0	0
465	Other wooden prods	646	0,2	0,2	4,7	0,0	0,0	2	0	0	0	2	0,0	0
466	Cork-, straw prods	358	0,1	0,1	6,3	0,0	2,8	2	0	1	0	3	0,0	0
467	Wooden furniture	8 377	2,6	0,5	5,6	0,0	0,0	2	0	0	0	2	0,0	0
471	Pulp, paper, board	8 714	2,7	0,1	1,0	0,0	0,0	1	0	0	0	1	0,0	0
472	Paper processing	502	0,2	0,0	8,6	0,0	0,0	3	0	0	0	3	0,0	0
473	Printing industr.	686	0,2	0,1	1,3	0,0	0,0	1	0	0	0	1	0,0	0
481	Rubber products	2 254	0,7	0,1	4,5	0,0	0,0	2	0	0	2	4	0,0	0
482	Tyre retreading	75	0,0	0,3	5,8	0,0	0,0	2	0	0	0	2	0,0	0
483	Plastics process.	3 773	1,2	0,1	9,0	0,0	0,0	3	0	0	0	3	0,0	0
491	*Jewellery*	*1 672*	*0,5*	*0,0*	*0,0*	*0,0*	*0,5*	*1*	*0*	*1*	*2*	*4*	*0,0*	*0*
492	Musical instrum.	169	0,1	0,0	6,2	0,0	16,6	2	0	3	0	5	0,0	0
493	Photographic labs	51	0,0	0,1	6,2	0,0	0,0	2	0	0	2	4	0,0	0
494	Toys, sports goods	2 603	0,8	0,1	7,4	0,0	2,0	3	0	1	2	6	0,0	0
495	Misc. manuf. ind	815	0,3	0,1	7,1	0,0	0,0	3	0	0	0	3	0,0	0
620	Waste-, scrap trade	2 530	0,8	0,1	0,7	0,0	0,0	1	0	0	0	1	0,0	0
Total		320 355	100,0	0,1	6,5	23,1	11,3	2	3	3			0,0	0,0

Table A.1.2
EC trade barriers facing Bulgaria, 1989

NACE code	Sector	Imports (1000 ECU)	Product (% share)	Country (% share)	MFN duty (%)	QR (%)	ONTB (%)	Classification D	QR	ONTB	PT	Total	Duty relief (%)	Class.
111	Hard-coal mining	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
112	Lignite mining	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
120	Coke ovens	126	0,0	0,1	0,1	0,0	0,0	1	0	0	0	1	0,0	0
130	Gas-, petr. extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140	Oil refining	35 226	9,5	0,3	6,8	0,0	0,0	2	0	0	0	2	0,0	0
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152	Fissile materials	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
161	Electric power	3 301	0,9	0,5	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162	Gasworks	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212	Non-f. metals extr	2 508	0,7	0,1	0,0	0,0	0,0	0	0	0	0	0	0,0	0
221	Iron & steel ind	47 096	12,7	0,9	4,5	99,8	99,8	2	3	3	0	8	0,0	0
222	Steel tubes	2 816	0,8	0,2	9,7	0,0	2,3	3	0	1	0	4	0,0	0
223	Steel drawing	1 864	0,5	0,2	5,3	0,0	46,5	2	0	3	0	5	0,0	0
224	Non-f. metals	14 793	4,0	0,1	3,5	24,0	25,6	1	3	3	0	7	0,0	0
231	Build. mater. extr	1 255	0,3	0,2	0,0	0,0	0,0	0	0	0	0	0	0,0	0
232	Potassium extr	1	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233	Salt extraction	2	0,0	0,0	17,4	0,0	0,0	3	0	0	0	3	0,0	0
239	Other miner. extr	341	0,1	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
241	Clay products	192	0,1	1,1	8,0	0,0	0,0	3	0	0	0	3	0,0	0
242	Cement, lime	23	0,0	0,0	3,2	0,0	0,0	1	0	0	0	1	0,0	0
243	Cement products	27	0,0	0,0	3,0	0,0	0,0	1	0	0	0	1	0,0	0
244	Asbestos products	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
245	Stone working	819	0,2	0,3	2,6	0,0	0,0	1	0	0	0	1	0,0	0
246	Abrasive products	26	0,0	0,0	2,8	0,0	0,0	1	0	0	0	1	0,0	0
247	Glass, -ware	3 183	0,9	0,2	9,1	0,0	0,8	3	0	1	2	6	0,0	0
248	Ceramics	2 134	0,6	0,2	9,7	0,0	0,0	3	0	0	2	5	0,0	0
252	Petrochemical ind	31 291	8,5	0,2	7,6	0,0	1,0	3	0	1	0	4	0,0	0
253	Oth. chem. basic ind	20 246	5,5	0,4	8,0	0,0	2,1	3	0	1	0	4	0,0	0
255	Paints, varnishes	11	0,0	0,0	8,4	0,0	0,0	3	0	0	0	3	0,0	0
256	Chemicals for ind	7 444	2,0	0,2	1,8	0,0	1,4	1	0	1	2	4	0,0	0
257	Pharma products	6 121	1,7	0,2	5,4	0,0	0,0	2	0	0	3	5	0,0	0
258	Soap, detergents	432	0,1	0,1	6,6	0,0	0,0	2	0	0	0	2	0,0	0
259	Chemicals f. home	2 617	0,7	0,1	4,9	0,0	0,0	2	0	0	0	2	0,0	0
260	Artificial fibres	1 450	0,4	0,1	7,9	38,1	0,0	3	3	0	0	6	0,0	0
311	Foundries	428	0,1	0,1	5,8	0,0	0,0	2	0	0	0	2	0,0	0
312	Forging	822	0,2	0,3	5,1	0,0	0,0	2	0	0	0	2	0,0	0
313	Metal treatment	1 463	0,4	0,1	5,9	0,0	0,0	2	0	0	0	2	0,0	0
314	Metal structures	412	0,1	0,1	4,2	0,0	0,0	2	0	0	0	2	0,0	0
315	Boiler, tanks	779	0,2	0,3	4,3	0,0	0,0	2	0	0	3	5	0,0	0
316	Tools, met. prods	1 921	0,5	0,0	5,9	0,0	0,0	2	0	0	0	2	0,0	0
321	Machinery f. agric.	219	0,1	0,0	3,6	0,0	0,0	1	0	0	2	3	0,0	0
322	Machine tools	9 276	2,5	0,3	4,5	0,0	0,0	2	0	0	2	4	0,0	0
323	Textile machinery	237	0,1	0,0	3,8	0,0	0,0	1	0	0	2	3	0,0	0
324	Machinery: food ind	818	0,2	0,0	4,2	0,0	0,0	2	0	0	2	4	0,0	0
325	Plant for mines	21 845	5,9	0,5	4,7	0,0	0,0	2	0	0	2	4	0,0	0
326	Transmission eqm	941	0,3	0,1	6,5	0,0	0,0	2	0	0	2	4	0,0	0
327	Other specif. eqm	1 134	0,3	0,0	4,4	0,0	0,0	2	0	0	2	4	0,0	0
328	Other machinery	2 802	0,8	0,0	4,7	0,0	0,0	2	0	0	0	2	0,0	0
330	Office machinery	2 684	0,7	0,0	4,6	0,0	0,0	2	0	0	3	5	0,0	0
341	Electrical wires	784	0,2	0,1	6,5	0,0	0,0	2	0	0	3	5	0,0	0
342	Electrical motors	8 836	2,4	0,1	4,9	0,0	24,1	2	0	3	3	8	0,0	0
343	Industrial el. eqm	5 335	1,4	0,1	5,2	0,0	0,0	2	0	0	0	2	0,0	0
344	Telecommun. eqm	2 039	0,6	0,0	5,5	0,0	0,0	2	0	0	3	5	0,0	0
345	Radio-, TV sets	888	0,2	0,0	6,5	0,0	0,0	2	0	0	2	4	0,0	0
346	Domest. electr. eqm	1 337	0,4	0,1	4,8	0,0	0,0	2	0	0	2	4	0,0	0
347	Elec. lighting eqm	1 106	0,3	0,1	6,0	0,0	0,0	2	0	0	2	4	0,0	0
351	Motor vehicles	184	0,0	0,0	9,2	0,0	0,0	3	0	0	2	5	0,0	0
352	Bodies f. mot. veh.	1 128	0,3	0,4	5,3	0,0	0,0	2	0	0	0	2	0,0	0
353	Parts f. mot. veh.	319	0,1	0,0	6,9	0,0	0,0	2	0	0	0	2	0,0	0
361	Shipbuilding	924	0,3	0,1	0,0	0,0	0,0	1	0	0	3	4	0,0	0
362	Railway equipment	145	0,0	0,1	5,0	0,0	0,0	2	0	0	3	5	0,0	0
363	Cycles, mot.-cycles	2	0,0	0,0	9,0	0,0	0,0	3	0	0	0	3	0,0	0
364	Aerospace equipm.	185	0,1	0,0	3,3	0,0	0,0	1	0	0	2	3	0,0	0
365	Oth. transp. means	26	0,0	0,0	4,1	0,0	0,0	2	0	0	0	2	0,0	0
371	Precision instr	1 654	0,4	0,1	4,6	0,0	0,0	2	0	0	0	2	0,0	0
372	Medico-surg. eqm	193	0,1	0,0	5,3	0,0	0,0	2	0	0	3	5	0,0	0
373	Optical instr	611	0,2	0,0	7,2	0,0	0,8	3	0	1	0	4	0,0	0
374	Clocks, parts	2	0,0	0,0	6,3	0,0	0,0	2	0	0	0	2	0,0	0
43A	Yarns	2 185	0,6	0,1	1,8	8,5	0,0	1	2	0	2	5	0,0	0
43B	Woven fabrics	8 509	2,3	0,2	11,0	93,0	0,0	3	3	0	2	8	0,0	0
436	Knitting ind	9 939	2,7	0,2	13,8	99,4	0,0	3	3	0	0	6	0,0	0
438	Carpets, floor cov.	1 844	0,5	0,1	5,9	100,0	0,0	2	3	0	2	7	0,0	0
439	Other textile ind	1 671	0,5	0,1	8,8	78,6	0,0	3	3	0	0	6	0,0	0
441	Tanning	772	0,2	0,0	4,4	0,0	70,2	2	0	3	0	5	0,0	0
442	Leather products	2 864	0,8	0,2	8,2	0,0	12,7	3	0	3	0	6	0,0	0
451	Footwear	3 865	1,0	0,1	8,0	0,0	100,0	3	0	3	2	8	0,0	0
453	Clothings	27 233	7,4	0,2	13,7	99,2	0,4	3	3	1	2	9	0,0	0
455	Househ. textiles	6 615	1,8	0,6	12,6	84,5	0,0	3	3	0	2	8	0,0	0
456	Furs, fur goods	488	0,1	0,2	5,6	0,0	87,7	2	0	3	0	5	0,0	0
461	Sawing of wood	2 352	0,6	0,0	0,0	0,0	0,0	1	0	0	0	1	0,0	0
462	Semi-fin. wood prods.	2 320	0,6	0,1	10,0	0,0	0,0	3	0	0	0	3	0,0	0
463	Carpentry parts	125	0,0	0,0	6,0	0,0	0,0	2	0	0	0	2	0,0	0
464	Wooden containers	411	0,1	1,2	7,5	0,0	0,0	3	0	0	0	3	0,0	0
465	Other wooden prods	767	0,2	0,2	4,5	0,0	0,0	2	0	0	0	2	0,0	0
466	Cork-, straw prods	353	0,1	0,1	6,7	0,0	0,0	2	0	0	0	2	0,0	0
467	Wooden furniture	7 229	2,0	0,4	5,6	0,0	0,0	2	0	0	0	2	0,0	0
471	Pulp, paper, board	14 465	3,9	0,1	0,5	0,0	0,0	1	0	0	0	1	0,0	0
472	Paper processing	359	0,1	0,0	7,5	0,0	0,0	3	0	0	0	3	0,0	0
473	Printing industr.	755	0,2	0,0	1,1	0,0	0,0	1	0	0	0	1	0,0	0
481	Rubber products	4 205	1,1	0,2	6,0	0,2	0,0	2	1	0	2	5	0,0	0
482	Tyre retreading	43	0,0	0,2	5,8	0,0	0,0	2	0	0	0	2	0,0	0
483	Plastics process.	4 165	1,1	0,1	9,5	0,0	0,0	3	0	0	0	3	0,0	0
491	Jewellery	1 500	0,4	0,0	0,1	0,0	0,5	1	0	1	2	4	0,0	0
492	Musical instrum.	222	0,1	0,0	6,3	0,0	6,8	2	0	2	0	4	0,0	0
493	Photographic labs	108	0,0	0,1	6,3	0,0	0,0	2	0	0	2	4	0,0	0
494	Toys, sports goods	2 288	0,6	0,1	7,4	0,0	3,7	3	0	1	2	6	0,0	0
495	Misc. manuf. ind	1 101	0,3	0,1	7,1	0,0	0,6	3	0	1	0	4	0,0	0
620	Waste-, scrap trade	4 022	1,1	0,1	1,2	0,0	3,6	1	0	1	0	2	0,0	0
Total		369 599	100,0	0,1	6,4	27,8	16,9	2	3	3			0,0	0,0

Table A.1.3
EC trade barriers facing Bulgaria, 1990

NACE code	Sector	Imports (1000 ECU)	Product (% share)	Country (% share)	MFN duty (%)	QR (%)	ONTB (%)	Classification D	QR	ONTB	PT	Total	Duty relief (%)	Class.
111	Hard-coal mining	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
112	Lignite mining	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
120	Coke ovens	1 330	0,3	0,8	0,4	0,0	0,0	1	0	0	0	1	0,0	0
130	Gas-, petr. extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140	Oil refining	32 503	8,0	0,2	6,1	0,0	0,0	2	0	0	0	2	0,0	0
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152	Fissile materials	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
161	Electric power	4 155	1,0	0,7	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162	Gasworks	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212	Non-f. metals extr	2 220	0,5	0,1	0,0	0,0	0,0	0	0	0	0	0	0,0	0
221	Iron & steel ind	59 113	14,6	1,1	4,6	99,9	99,9	2	3	3	0	8	0,0	0
222	Steel tubes	2 790	0,7	0,2	9,5	0,0	1,9	3	0	1	0	4	0,0	0
223	Steel drawing	2 981	0,7	0,2	5,4	0,0	59,5	2	0	3	0	5	0,0	0
224	Non-f. metals	18 212	4,5	0,1	2,2	11,7	11,7	1	3	3	0	7	0,0	0
231	Build. mater. extr	1 845	0,5	0,2	0,0	0,0	0,0	1	0	0	0	1	0,0	0
232	Potassium extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233	Salt extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
239	Other miner. extr	319	0,1	0,0	0,0	0,0	0,0	1	0	0	0	1	0,0	0
241	Clay products	3	0,0	0,0	4,0	0,0	0,0	2	0	0	0	2	0,0	0
242	Cement, lime	1 380	0,3	0,6	3,2	0,0	0,0	1	0	0	0	1	0,0	0
243	Cement products	27	0,0	0,0	3,4	0,0	0,0	1	0	0	0	1	0,0	0
244	Asbestos products	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
245	Stone working	475	0,1	0,1	2,8	0,0	0,0	1	0	0	0	1	0,0	0
246	Abrasive products	34	0,0	0,0	2,4	0,0	0,0	1	0	0	0	1	0,0	0
247	Glass, -ware	3 280	0,8	0,2	9,4	0,0	1,5	3	0	1	2	6	0,0	0
248	Ceramics	1 658	0,4	0,2	9,6	0,0	0,0	3	0	0	2	5	0,0	0
252	Petrochemical ind	27 694	6,8	0,2	7,7	0,0	0,9	3	0	1	0	4	0,0	0
253	Oth. chem. basic ind	24 857	6,1	0,5	8,6	0,3	13,3	3	1	3	0	7	0,0	0
255	Paints, varnishes	104	0,0	0,0	9,7	0,0	0,0	3	0	0	0	3	0,0	0
256	Chemicals for ind	4 384	1,1	0,1	2,5	0,0	0,2	1	0	1	2	4	0,0	0
257	Pharma products	5 368	1,3	0,1	5,4	0,0	0,0	2	0	0	3	5	0,0	0
258	Soap, detergents	271	0,1	0,0	6,6	0,0	0,0	2	0	0	0	2	0,0	0
259	Chemicals f. home	2 574	0,6	0,1	4,9	0,0	0,0	2	0	0	0	2	0,0	0
260	Artificial fibres	1 211	0,3	0,1	8,0	40,0	0,0	3	3	0	0	6	0,0	0
311	Foundries	364	0,1	0,1	5,3	0,0	0,0	2	0	0	0	2	0,0	0
312	Forging	1 445	0,4	0,5	5,2	0,0	0,0	2	0	0	0	2	0,0	0
313	Metal treatment	1 130	0,3	0,1	5,9	0,0	0,0	2	0	0	0	2	0,0	0
314	Metal structures	238	0,1	0,0	4,3	0,0	0,0	2	0	0	0	2	0,0	0
315	Boiler, tanks	1 237	0,3	0,5	4,0	0,0	0,0	2	0	0	3	5	0,0	0
316	Tools, met. prods	3 395	0,8	0,1	5,7	0,0	0,1	2	0	1	0	3	0,0	0
321	Machinery f. agric.	392	0,1	0,0	3,6	0,0	0,0	1	0	0	2	3	0,0	0
322	Machine tools	11 027	2,7	0,3	4,2	0,0	0,0	2	0	0	2	4	0,0	0
323	Textile machinery	397	0,1	0,0	4,7	0,0	0,0	2	0	0	2	4	0,0	0
324	Machinery: food ind	2 258	0,6	0,1	4,3	0,0	0,0	2	0	0	2	4	0,0	0
325	Plant for mines	19 413	4,8	0,5	4,6	0,0	0,0	2	0	0	2	4	0,0	0
326	Transmission eqm	1 367	0,3	0,1	7,2	0,0	0,0	3	0	0	2	5	0,0	0
327	Other specif. eqm	521	0,1	0,0	4,6	0,0	0,0	2	0	0	2	4	0,0	0
328	Other machinery	3 884	1,0	0,0	4,6	0,0	0,0	2	0	0	0	2	0,0	0
330	Office machinery	2 363	0,6	0,0	4,5	0,0	0,0	2	0	0	3	5	0,0	0
341	Electrical wires	476	0,1	0,0	6,5	0,0	0,0	2	0	0	3	5	0,0	0
342	Electrical motors	9 286	2,3	0,1	5,1	0,0	18,4	2	0	3	3	8	0,0	0
343	Industrial el. eqm	3 720	0,9	0,1	5,1	0,0	0,0	2	0	0	0	2	0,0	0
344	Telecommun. eqm	1 613	0,4	0,0	6,3	0,0	0,0	2	0	0	3	5	0,0	0
345	Radio-, TV sets	756	0,2	0,0	9,2	0,0	0,0	3	0	0	2	5	0,0	0
346	Domest. electr. eqm	1 132	0,3	0,1	4,6	0,0	0,0	2	0	0	2	4	0,0	0
347	Elec. lighting eqm	884	0,2	0,1	5,8	0,0	0,0	2	0	0	2	4	0,0	0
351	Motor vehicles	140	0,0	0,0	15,1	0,0	0,0	3	0	0	2	5	0,0	0
352	Bodies f. mot. veh.	190	0,0	0,1	4,4	0,0	0,0	2	0	0	0	2	0,0	0
353	Parts f. mot. veh.	479	0,1	0,0	6,9	0,0	0,0	2	0	0	0	2	0,0	0
361	Shipbuilding	1 138	0,3	0,1	1,1	0,0	0,0	1	0	0	3	4	0,0	0
362	Railway equipment	351	0,1	0,2	5,0	0,0	0,0	2	0	0	3	5	0,0	0
363	Cycles, mot.-cycles	1	0,0	0,0	9,0	0,0	0,0	3	0	0	0	3	0,0	0
364	Aerospace equipm.	0	0,0	0,0	0,0	0,0	0,0	0	0	0	2	2	0,0	0
365	Oth. transp. means	86	0,0	0,1	4,1	0,0	0,0	2	0	0	0	2	0,0	0
371	Precision instr	851	0,2	0,1	4,7	0,0	0,0	2	0	0	0	2	0,0	0
372	Medico-surg. eqm	187	0,0	0,0	5,6	0,0	0,0	2	0	0	3	5	0,0	0
373	Optical instr	367	0,1	0,0	6,9	0,0	9,8	2	0	3	0	5	0,0	0
374	Clocks, parts	8	0,0	0,0	5,9	0,0	0,0	2	0	0	0	2	0,0	0
43A	Yarns	1 477	0,4	0,1	0,9	8,1	0,0	1	2	0	2	5	0,0	0
43B	Woven fabrics	8 430	2,1	0,2	10,6	94,9	0,0	3	3	0	2	8	0,0	0
436	Knitting ind	18 177	4,5	0,3	13,8	99,9	0,0	3	3	0	0	6	0,0	0
438	Carpets, floor cov.	2 022	0,5	0,1	7,4	100,0	0,0	3	3	0	2	8	0,0	0
439	Other textile ind	1 405	0,3	0,1	8,8	100,0	0,0	3	3	0	0	6	0,0	0
441	Tanning	457	0,1	0,0	4,9	0,0	100,0	2	0	3	0	5	0,0	0
442	Leather products	4 263	1,0	0,2	7,7	0,0	13,1	3	0	3	0	6	0,0	0
451	Footwear	6 262	1,5	0,2	8,1	0,0	100,0	3	0	3	2	8	0,0	0
453	Clothings	38 736	9,5	0,3	13,6	98,2	0,5	3	3	1	2	9	0,0	0
455	Househ. textiles	7 442	1,8	0,6	12,6	81,6	0,0	3	3	0	2	8	0,0	0
456	Furs, fur goods	229	0,1	0,1	5,7	0,0	96,5	2	0	3	0	5	0,0	0
461	Sawing of wood	2 846	0,7	0,0	0,0	0,0	0,0	1	0	0	0	1	0,0	0
462	Semi-fin. wood prods	5 890	1,5	0,3	10,0	0,0	0,0	3	0	0	0	3	0,0	0
463	Carpentry parts	283	0,1	0,0	5,7	0,0	0,0	2	0	0	0	2	0,0	0
464	Wooden containers	619	0,2	1,2	7,5	0,0	0,0	3	0	0	0	3	0,0	0
465	Other wooden prods	1 407	0,3	0,3	2,1	0,0	0,2	1	0	1	0	2	0,0	0
466	Cork-, straw prods	117	0,0	0,0	4,7	0,0	0,0	2	0	0	0	2	0,0	0
467	Wooden furniture	7 891	1,9	0,4	5,6	0,0	1,2	2	0	1	0	3	0,0	0
471	Pulp, paper, board	7 916	1,9	0,1	0,6	0,0	0,0	1	0	0	0	1	0,0	0
472	Paper processing	636	0,2	0,0	7,4	0,0	0,0	3	0	0	0	3	0,0	0
473	Printing industr.	435	0,1	0,0	1,2	0,0	0,0	1	0	0	0	1	0,0	0
481	Rubber products	6 199	1,5	0,2	7,5	0,0	0,0	3	0	0	2	5	0,0	0
482	Tyre retreading	43	0,0	0,2	5,8	0,0	0,0	2	0	0	0	2	0,0	0
483	Plastics process.	4 447	1,1	0,1	9,1	0,0	0,0	3	0	0	0	3	0,0	0
491	Jewellery	1 705	0,4	0,0	0,4	0,0	1,0	1	0	1	2	4	0,0	0
492	Musical instrum.	169	0,0	0,0	6,2	0,0	10,7	2	0	3	0	5	0,0	0
493	Photographic labs	45	0,0	0,1	7,9	0,0	0,0	3	0	0	2	5	0,0	0
494	Toys, sports goods	1 703	0,4	0,0	7,5	0,0	2,8	3	0	1	2	6	0,0	0
495	Misc. manuf. ind	1 165	0,3	0,2	7,1	0,0	0,5	3	0	1	0	4	0,0	0
620	Waste-, scrap trade	3 843	0,9	0,1	0,7	0,0	1,0	1	0	1	0	2	0,0	0
Total		406 143	100,0	0,1	6,7	32,9	19,6	2	3	3			0,0	0,0

Table A.1.4
EC trade barriers facing the CSFR, 1988

NACE code	Sector	Imports (1000 ECU)	Product (% share)	Country (% share)	MFN duty (%)	QR (%)	ONTB (%)	Classification D	QR	ONTB	PT	Total	Duty relief (%)	Class.
111	Hard-coal mining	5 965	0,3	0,2	2,9	0,0	0,0	1	0	0	0	1	0,0	0
112	Lignite mining	39 118	2,0	87,4	0,6	0,0	0,0	1	0	0	0	1	0,0	0
120	Coke ovens	11 503	0,6	7,1	0,1	0,0	0,0	1	0	0	0	1	0,0	0
130	Gas-, petr. extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140	*Oil refining*	77 547	3,9	*0,8*	*5,4*	*0,0*	*0,0*	2	*0*	*0*	*0*	2	*0,0*	*0*
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152	Fissile materials	5	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
161	Electric power	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162	Gasworks	6 787	0,3	0,2	1,5	0,0	0,0	1	0	0	0	1	0,0	0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212	*Non-f. metals extr*	5 783	*0,3*	*0,2*	*0,0*	*0,0*	*0,0*	*0*	*0*	*0*	*0*	*0*	*0,0*	*0*
221	Iron & steel ind	210 566	10,7	4,9	4,8	99,6	99,9	2	3	3	0	8	0,0	0
222	Steel tubes	16 856	0,9	1,5	10,0	0,0	33,1	3	0	3	0	6	0,0	0
223	Steel drawing	29 175	1,5	3,1	5,4	0,0	67,7	2	0	3	0	5	0,0	0
224	Non-f. metals	17 016	0,9	0,1	3,8	35,7	35,7	1	3	3	0	7	0,0	0
231	Build. mater. extr	27 903	1,4	4,3	0,0	0,0	0,0	1	0	0	0	1	0,0	0
232	Potassium extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233	*Salt extraction*	26	*0,0*	*0,2*	*18,3*	*0,0*	*0,0*	3	*0*	*0*	*0*	3	*0,0*	*0*
239	Other miner. extr	1 986	0,1	0,2	0,1	0,0	0,0	1	0	0	0	1	0,0	0
241	Clay products	156	0,0	1,3	5,8	0,0	0,0	2	0	0	0	2	0,0	0
242	Cement, lime	4 630	0,2	3,6	3,2	0,0	0,0	1	0	0	0	1	0,0	0
243	Cement products	3 989	0,2	7,1	3,2	0,0	0,0	1	0	0	0	1	0,0	0
244	Asbestos products	221	0,0	0,5	7,1	0,0	0,0	3	0	0	0	3	0,0	0
245	Stone working	3 333	0,2	1,2	2,7	0,0	0,0	1	0	0	0	1	0,0	0
246	Abrasive products	1 080	0,1	0,5	3,0	0,0	0,0	1	0	0	0	1	0,0	0
247	Glass, -ware	105 731	5,3	8,6	8,6	0,0	10,1	3	0	3	2	8	0,0	0
248	Ceramics	19 926	1,0	2,4	10,2	0,0	0,0	3	0	0	2	5	0,0	0
252	Petrochemical ind	215 541	10,9	2,0	6,9	0,0	0,9	2	0	1	0	3	0,0	0
253	Oth. chem. basic ind	41 238	2,1	0,9	7,6	0,0	16,0	3	0	3	0	6	0,0	0
255	Paints, varnishes	337	0,0	0,1	9,5	0,0	0,0	3	0	0	0	3	0,0	0
256	Chemicals for ind	10 450	0,5	0,3	5,4	0,0	0,0	2	0	0	2	4	0,0	0
257	Pharma products	4 099	0,2	0,1	6,6	0,0	0,0	2	0	0	3	5	0,0	0
258	Soap, detergents	1 635	0,1	0,4	6,9	0,0	0,0	2	0	0	0	2	0,0	0
259	Chemicals f. home	2 601	0,1	0,1	5,7	0,0	0,0	2	0	0	0	2	0,0	0
260	Artificial fibres	18 833	1,0	1,4	8,5	61,2	0,0	3	3	0	0	6	0,0	0
311	Foundries	2 950	0,1	0,8	4,5	0,0	0,0	2	0	0	0	2	0,0	0
312	Forging	2 325	0,1	1,2	5,2	0,0	0,0	2	0	0	0	2	0,0	0
313	Metal treatment	6 749	0,3	0,8	5,9	0,0	0,0	2	0	0	0	2	0,0	0
314	Metal structures	3 280	0,2	0,7	4,2	0,0	0,0	2	0	0	0	2	0,0	0
315	Boiler, tanks	2 500	0,1	1,4	4,3	0,0	0,0	2	0	0	3	5	0,0	0
316	Tools, met. prods	27 989	1,4	0,7	5,6	0,0	4,7	2	0	2	0	4	0,0	0
321	Machinery f. agric.	41 063	2,1	4,1	8,2	0,0	0,0	3	0	0	2	5	0,0	0
322	Machine tools	46 028	2,3	1,5	4,2	0,0	0,0	2	0	0	2	4	0,0	0
323	Textile machinery	11 700	0,6	0,8	3,8	0,0	0,0	1	0	0	2	3	0,0	0
324	Machinery: food ind	3 747	0,2	0,2	4,1	0,0	0,0	2	0	0	2	4	0,0	0
325	Plant for mines	17 910	0,9	0,5	4,4	0,0	0,0	2	0	0	2	4	0,0	0
326	Transmission eqm	11 949	0,6	0,8	7,3	0,0	0,0	3	0	0	2	5	0,0	0
327	Other specif. eqm	11 330	0,6	0,5	3,2	0,0	0,0	1	0	0	2	3	0,0	0
328	Other machinery	21 218	1,1	0,2	4,6	0,0	1,3	2	0	1	0	3	0,0	0
330	Office machinery	2 224	0,1	0,0	4,6	0,0	0,0	2	0	0	3	5	0,0	0
341	Electrical wires	5 814	0,3	0,6	6,5	0,0	0,0	2	0	0	3	5	0,0	0
342	Electrical motors	30 648	1,6	0,5	4,9	0,0	31,3	2	0	3	3	8	0,0	0
343	Industrial el. eqm	2 886	0,1	0,1	5,4	0,0	0,0	2	0	0	0	2	0,0	0
344	Telecommun. eqm	5 411	0,3	0,1	6,7	0,0	0,0	2	0	0	3	5	0,0	0
345	Radio-, TV sets	6 341	0,3	0,0	10,7	0,0	0,0	3	0	0	2	5	0,0	0
346	Domest. electr. eqm	13 877	0,7	0,7	4,5	0,0	0,0	2	0	0	2	4	0,0	0
347	Elec. lighting eqm	8 764	0,4	1,2	6,0	0,0	0,0	2	0	0	2	4	0,0	0
351	Motor vehicles	63 194	3,2	0,4	11,1	0,0	0,0	3	0	0	2	5	0,0	0
352	Bodies f. mot. veh.	1 681	0,1	0,6	4,7	0,0	0,0	2	0	0	0	2	0,0	0
353	Parts f. mot. veh.	6 834	0,3	0,3	6,9	0,0	0,0	2	0	0	0	2	0,0	0
361	Shipbuilding	419	0,0	0,0	3,8	0,0	0,0	1	0	0	3	4	0,0	0
362	Railway equipment	776	0,0	0,5	4,6	0,0	0,0	2	0	0	3	5	0,0	0
363	Cycles, mot.-cycles	8 011	0,4	0,6	12,7	0,0	0,0	3	0	0	0	3	0,0	0
364	Aerospace equipm.	205	0,0	0,0	5,4	0,0	0,0	2	0	0	2	4	0,0	0
365	Oth. transp. means	395	0,0	0,0	4,1	0,0	0,0	2	0	0	0	2	0,0	0
371	Precision instr	2 814	0,1	0,3	5,6	0,0	0,0	2	0	0	0	2	0,0	0
372	Medico-surg. eqm	295	0,0	0,0	5,4	0,0	0,0	2	0	0	3	5	0,0	0
373	Optical instr	1 825	0,1	0,0	6,9	0,0	0,0	2	0	0	0	2	0,0	0
374	Clocks, parts	2 751	0,1	0,1	5,8	0,0	0,0	2	0	0	0	2	0,0	0
43A	Yarns	3 643	0,2	0,1	3,1	49,1	13,6	1	3	3	2	9	0,0	0
43B	Woven fabrics	73 112	3,7	2,1	11,2	90,7	0,0	3	3	0	2	8	0,0	0
436	Knitting ind	32 690	1,7	0,6	13,2	99,0	0,0	3	3	0	0	6	0,0	0
438	Carpets, floor cov.	7 162	0,4	0,6	9,3	96,9	0,0	3	3	0	2	8	0,0	0
439	Other textile ind	10 427	0,5	1,0	9,2	58,8	0,0	3	3	0	0	6	0,0	0
441	Tanning	290	0,0	0,0	5,6	0,0	100,0	2	0	3	0	5	0,0	0
442	Leather products	17 258	0,9	1,1	5,9	0,0	67,3	2	0	3	0	5	0,0	0
451	Footwear	25 975	1,3	1,0	9,4	0,0	100,0	3	0	3	2	8	0,0	0
453	Clothings	76 456	3,9	0,7	13,1	92,1	2,2	3	3	1	2	9	0,0	0
455	Househ. textiles	25 375	1,3	2,4	11,9	86,7	0,0	3	3	0	2	8	0,0	0
456	Furs, fur goods	5 308	0,3	1,6	5,0	0,0	85,1	2	0	3	0	5	0,0	0
461	Sawing of wood	112 834	5,7	2,0	0,0	0,0	0,0	1	0	0	0	1	0,0	0
462	Semi-fin. wood prods	18 712	0,9	1,0	9,8	0,0	2,3	3	0	1	0	4	0,0	0
463	Carpentry parts	958	0,0	0,2	5,6	0,0	0,0	2	0	0	0	2	0,0	0
464	Wooden containers	166	0,0	0,8	7,4	0,0	0,0	3	0	0	0	3	0,0	0
465	Other wooden prods	17 104	0,9	5,0	4,7	0,0	1,1	2	0	1	0	3	0,0	0
466	Cork-, straw prods	2 189	0,1	0,6	7,2	0,0	9,3	3	0	3	0	6	0,0	0
467	Wooden furniture	41 980	2,1	2,5	5,6	0,0	0,0	2	0	0	0	2	0,0	0
471	Pulp, paper, board	95 290	4,8	0,7	2,2	0,0	0,0	1	0	0	0	1	0,0	0
472	Paper processing	10 397	0,5	0,5	10,2	0,0	0,0	3	0	0	0	3	0,0	0
473	Printing industr.	20 753	1,0	1,5	0,3	0,0	0,0	1	0	0	0	1	0,0	0
481	Rubber products	33 244	1,7	1,5	8,0	8,8	14,0	3	2	3	2	10	0,0	0
482	Tyre retreading	139	0,0	0,6	5,8	0,0	0,0	2	0	0	0	2	0,0	0
483	Plastics process.	25 996	1,3	0,7	10,3	0,0	0,8	3	0	1	0	4	0,0	0
491	Jewellery	13 749	0,7	0,2	5,6	0,0	6,0	2	0	2	2	6	0,0	0
492	Musical instrum.	11 214	0,6	1,8	5,7	0,0	62,3	2	0	3	0	5	0,0	0
493	Photographic labs	146	0,0	0,2	8,5	0,0	0,0	3	0	0	2	5	0,0	0
494	Toys, sports goods	12 269	0,6	0,4	7,0	0,0	1,7	2	0	1	2	5	0,0	0
495	Misc. manuf. ind	1 630	0,1	0,3	7,2	0,0	0,6	3	0	1	0	4	0,0	0
620	Waste-, scrap trade	20 515	1,0	0,7	0,7	0,0	0,2	1	0	1	0	2	0,0	0
Total		1 976 920	100,0	0,6	6,2	21,8	17,5	2	3	3			0,0	0,0

Table A.1.5
EC trade barriers facing the CSFR, 1989

NACE code	Sector	Imports (1000 ECU)	Product (% share)	Country (% share)	MFN duty (%)	QR (%)	ONTB (%)	Classification D	QR	ONTB	PT	Total	Duty relief (%)	Class.
111	Hard-coal mining	10 327	0,5	0,2	2,9	0,0	0,0	1	0	0	0	1	0,0	0
112	Lignite mining	42 034	1,9	61,9	0,6	0,0	0,0	1	0	0	0	1	0,0	0
120	Coke ovens	13 094	0,6	8,0	0,1	0,0	0,0	1	0	0	0	1	0,0	0
130	Gas-, petr. extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140	Oil refining	110 941	4,9	0,9	5,1	0,0	0,0	2	0	0	0	2	0,0	0
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152	Fissile materials	687	0,0	0,1	0,0	0,0	0,0	0	0	0	0	0	0,0	0
161	Electric power	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162	Gasworks	8 124	0,4	0,2	1,5	0,0	0,0	1	0	0	0	1	0,0	0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212	Non-f. metals extr	8 028	0,4	0,2	0,0	0,0	0,0	0	0	0	0	0	0,0	0
221	Iron & steel ind	237 329	10,6	4,4	4,8	99,1	99,5	2	3	3	0	8	0,0	0
222	Steel tubes	24 035	1,1	1,7	9,9	0,0	22,0	3	0	3	0	6	0,0	0
223	Steel drawing	44 164	2,0	3,7	5,4	0,0	66,5	2	0	3	0	5	0,0	0
224	Non-f. metals	24 627	1,1	0,1	4,2	47,8	47,8	2	3	3	0	8	0,0	0
231	Build. mater. extr	33 294	1,5	4,3	0,0	0,0	0,0	1	0	0	0	1	0,0	0
232	Potassium extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233	Salt extraction	12	0,0	0,1	18,3	0,0	0,0	3	0	0	0	3	0,0	0
239	Other miner. extr	2 714	0,1	0,2	0,1	0,0	0,0	1	0	0	0	1	0,0	0
241	Clay products	89	0,0	0,5	4,8	0,0	0,0	2	0	0	0	2	0,0	0
242	Cement, lime	6 044	0,3	3,4	3,2	0,0	0,0	1	0	0	0	1	0,0	0
243	Cement products	3 889	0,2	5,4	3,2	0,0	0,0	1	0	0	0	1	0,0	0
244	Asbestos products	191	0,0	0,4	7,2	0,0	0,0	3	0	0	0	3	0,0	0
245	Stone working	4 133	0,2	1,4	2,7	0,0	0,0	1	0	0	0	1	0,0	0
246	Abrasive products	798	0,0	0,3	2,8	0,0	0,0	1	0	0	0	1	0,0	0
247	Glass, -ware	116 069	5,2	8,1	8,6	0,0	12,2	3	0	3	2	8	0,0	0
248	Ceramics	20 448	0,9	2,2	10,2	0,0	0,0	3	0	0	2	5	0,0	0
252	Petrochemical ind	228 606	10,2	1,7	7,8	0,0	1,0	3	0	1	0	4	0,0	0
253	Oth. chem. basic ind	46 694	2,1	0,8	7,3	0,0	16,0	3	0	3	0	6	0,0	0
255	Paints, varnishes	446	0,0	0,1	9,3	0,0	0,0	3	0	0	0	3	0,0	0
256	Chemicals for ind	11 516	0,5	0,3	5,3	0,0	0,0	2	0	0	2	4	0,0	0
257	Pharma products	3 516	0,2	0,1	6,5	0,0	0,0	2	0	0	3	5	0,0	0
258	Soap, detergents	1 702	0,1	0,3	6,9	0,0	0,0	2	0	0	0	2	0,0	0
259	Chemicals f. home	2 798	0,1	0,1	5,9	0,0	0,0	2	0	0	0	2	0,0	0
260	Artificial fibres	22 382	1,0	1,4	8,5	49,5	0,0	3	3	0	0	6	0,0	0
311	Foundries	4 077	0,2	0,9	4,3	0,0	0,0	2	0	0	0	2	0,0	0
312	Forging	3 000	0,1	1,1	5,3	0,0	0,0	2	0	0	0	2	0,0	0
313	Metal treatment	7 221	0,3	0,7	5,8	0,0	0,0	2	0	0	0	2	0,0	0
314	*Metal structures*	4 275	0,2	0,7	4,3	0,0	0,0	2	0	0	0	2	0,0	0
315	Boiler, tanks	3 225	0,1	1,3	4,4	0,0	0,0	2	0	0	3	5	0,0	0
316	Tools, met. prods	31 818	1,4	0,7	5,6	0,0	4,3	2	0	2	0	4	0,0	0
321	Machinery f. agric.	40 052	1,8	3,4	8,0	0,0	0,0	3	0	0	2	5	0,0	0
322	Machine tools	50 379	2,2	1,4	4,4	0,0	0,0	2	0	0	2	4	0,0	0
323	Textile machinery	7 228	0,3	0,5	3,9	0,0	0,0	1	0	0	2	3	0,0	0
324	Machinery: food ind	3 977	0,2	0,2	4,2	0,0	0,0	2	0	0	2	4	0,0	0
325	Plant for mines	17 775	0,8	0,4	4,4	0,0	0,0	2	0	0	2	4	0,0	0
326	Transmission eqm	16 629	0,7	0,9	7,6	0,0	0,0	3	0	0	2	5	0,0	0
327	Other specif. eqm	15 546	0,7	0,6	3,1	0,0	0,0	1	0	0	2	3	0,0	0
328	Other machinery	22 822	1,0	0,2	4,6	0,0	0,1	2	0	1	0	3	0,0	0
330	Office machinery	2 439	0,1	0,0	4,6	0,0	0,0	2	0	0	3	5	0,0	0
341	Electrical wires	4 139	0,2	0,4	6,5	0,0	0,0	2	0	0	3	5	0,0	0
342	Electrical motors	31 403	1,4	0,4	4,9	0,0	35,3	2	0	3	3	8	0,0	0
343	Industrial el. eqm	2 871	0,1	0,1	5,5	0,0	0,0	2	0	0	0	2	0,0	0
344	Telecommun. eqm	5 473	0,2	0,1	6,6	0,0	0,0	2	0	0	3	5	0,0	0
345	Radio-, TV sets	12 370	0,6	0,1	11,1	0,0	0,0	3	0	0	2	5	0,0	0
346	Domest. electr. eqm	12 074	0,5	0,6	4,4	0,0	0,0	2	0	0	2	4	0,0	0
347	Elec. lighting eqm	9 507	0,4	1,1	5,9	0,0	0,0	2	0	0	2	4	0,0	0
351	Motor vehicles	94 036	4,2	0,6	10,6	0,0	0,0	3	0	0	2	5	0,0	0
352	Bodies f. mot. veh.	1 638	0,1	0,6	4,6	0,0	0,0	2	0	0	0	2	0,0	0
353	Parts f. mot. veh.	9 084	0,4	0,3	6,9	0,0	0,0	2	0	0	0	2	0,0	0
361	Shipbuilding	349	0,0	0,0	3,8	0,0	0,0	1	0	0	3	4	0,0	0
362	Railway equipment	1 086	0,0	0,8	4,6	0,0	0,0	2	0	0	3	5	0,0	0
363	Cycles, mot.-cycles	7 949	0,4	0,4	12,6	0,0	0,0	3	0	0	0	3	0,0	0
364	Aerospace equipm.	3 870	0,2	0,0	0,7	0,0	0,0	1	0	0	2	3	0,0	0
365	Oth. transp. means	835	0,0	1,2	4,1	0,0	0,0	2	0	0	0	2	0,0	0
371	Precision instr	2 649	0,1	0,2	5,6	0,0	0,0	2	0	0	0	2	0,0	0
372	Medico-surg. eqm	510	0,0	0,0	5,3	0,0	0,0	2	0	0	3	5	0,0	0
373	Optical instr	2 459	0,1	0,1	6,7	0,0	0,3	2	0	1	0	3	0,0	0
374	Clocks, parts	2 639	0,1	0,1	5,8	0,0	0,0	2	0	0	0	2	0,0	0
43A	Yarns	1 729	0,1	0,1	3,0	36,7	0,0	1	3	0	2	6	0,0	0
43B	Woven fabrics	73 412	3,3	1,8	11,2	90,5	0,0	3	3	0	2	8	0,0	0
436	Knitting ind	31 624	1,4	0,5	13,1	99,2	0,0	3	3	0	0	6	0,0	0
438	Carpets, floor cov.	6 508	0,3	0,5	9,4	96,8	0,0	3	3	0	2	8	0,0	0
439	Other textile ind	11 966	0,5	1,1	9,3	58,7	0,0	3	3	0	0	6	0,0	0
441	Tanning	394	0,0	0,0	3,7	0,0	99,7	1	0	3	0	4	0,0	0
442	Leather products	17 915	0,8	1,0	5,8	0,0	65,6	2	0	3	0	5	0,0	0
451	Footwear	33 002	1,5	1,1	9,2	0,0	100,0	3	0	3	2	8	0,0	0
453	Clothings	86 065	3,8	0,7	13,2	93,5	1,6	3	3	1	2	9	0,0	0
455	Househ. textiles	26 612	1,2	2,3	11,5	82,4	0,0	3	3	0	2	8	0,0	0
456	Furs, fur goods	4 960	0,2	1,8	5,1	0,0	85,0	2	0	3	0	5	0,0	0
461	Sawing of wood	121 022	5,4	1,9	0,0	0,0	0,0	1	0	0	0	1	0,0	0
462	Semi-fin. wood prods	19 536	0,9	1,0	9,6	0,0	3,2	3	0	1	0	4	0,0	0
463	Carpentry parts	1 035	0,0	0,2	5,7	0,0	0,0	2	0	0	0	2	0,0	0
464	Wooden containers	45	0,0	0,1	7,5	0,0	0,0	3	0	0	0	3	0,0	0
465	Other wooden prods	19 045	0,8	4,4	4,8	0,0	1,0	2	0	1	0	3	0,0	0
466	Cork-, straw prods	2 350	0,1	0,6	7,2	0,0	10,2	3	0	3	0	6	0,0	0
467	Wooden furniture	46 695	2,1	2,3	5,6	0,0	0,0	2	0	0	0	2	0,0	0
471	Pulp, paper, board	111 054	5,0	0,7	2,7	0,0	0,0	1	0	0	0	1	0,0	0
472	Paper processing	11 610	0,5	0,5	10,3	0,0	0,0	3	0	0	0	3	0,0	0
473	Printing industr.	20 075	0,9	1,3	0,2	0,0	0,0	1	0	0	0	1	0,0	0
481	Rubber products	39 675	1,8	1,6	7,9	9,1	11,3	3	2	3	2	10	0,0	0
482	Tyre retreading	156	0,0	0,6	5,8	0,0	0,0	2	0	0	0	2	0,0	0
483	Plastics process.	28 301	1,3	0,6	10,2	0,0	0,9	3	0	1	0	4	0,0	0
491	Jewellery	12 971	0,6	0,2	5,4	0,0	6,5	2	0	2	2	6	0,0	0
492	Musical instrum.	13 162	0,6	2,0	5,7	0,0	68,6	2	0	3	0	5	0,0	0
493	Photographic labs	258	0,0	0,3	3,0	0,0	0,0	1	0	0	2	3	0,0	0
494	*Toys, sports goods*	*10 989*	*0,5*	*0,3*	*7,2*	*0,0*	*2,2*	*3*	*0*	*1*	*2*	*6*	*0,0*	*0*
495	Misc. manuf. ind	1 478	0,1	0,2	7,3	0,0	0,4	3	0	1	0	4	0,0	0
620	Waste-, scrap trade	24 636	1,1	0,6	0,8	0,0	0,1	1	0	1	0	2	0,0	0
Total		2 242 415	100,0	0,6	6,2	21,0	17,7	2	3	3			0,0	0,0

Table A.1.6
EC trade barriers facing the CSFR, 1990

NACE code	Sector	Imports (1000 ECU)	Product (% share)	Country (% share)	MFN duty (%)	QR (%)	ONTB (%)	Classification D	QR	ONTB	PT	Total	Duty relief (%)	Class.
111	Hard-coal mining	13 750	0,6	0,3	3,3	0,0	0,0	1	0	0	0	1	0,0	0
112	Lignite mining	44 842	1,9	79,9	0,0	0,0	0,0	0	0	0	0	0	0,0	0
120	Coke ovens	13 530	0,6	8,5	0,4	0,0	0,0	1	0	0	0	1	0,0	0
130	Gas-, petr. extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140	Oil refining	63 157	2,6	0,5	5,1	0,0	0,0	2	0	0	0	2	0,0	0
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152	Fissile materials	144	0,0	0,0	0,0	0,0	0,0	1	0	0	0	1	0,0	0
161	Electric power	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162	Gasworks	7 688	0,3	0,2	1,5	0,0	0,0	1	0	0	0	1	0,0	0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212	Non-f. metals extr	5 214	0,2	0,2	0,0	0,0	0,0	0	0	0	0	0	0,0	0
221	Iron & steel ind	275 692	11,5	5,3	4,8	98,2	99,5	2	3	3	0	8	0,0	0
222	Steel tubes	26 334	1,1	1,8	9,6	0,0	23,7	3	0	3	0	6	0,0	0
223	Steel drawing	43 675	1,8	3,6	5,4	0,0	68,1	2	0	3	0	5	0,0	0
224	Non-f. metals	22 253	0,9	0,1	4,2	38,9	38,9	2	3	3	0	8	0,0	0
231	Build. mater. extr	33 854	1,4	4,4	0,0	0,0	0,0	0	0	0	0	0	0,0	0
232	Potassium extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233	Salt extraction	7	0,0	0,1	11,9	0,0	0,0	3	0	0	0	3	0,0	0
239	Other miner. extr	2 506	0,1	0,3	0,0	0,0	0,0	1	0	0	0	1	0,0	0
241	Clay products	187	0,0	1,2	6,4	0,0	0,0	2	0	0	0	2	0,0	0
242	Cement, lime	11 305	0,5	4,8	3,2	0,0	0,0	1	0	0	0	1	0,0	0
243	Cement products	5 806	0,2	6,7	3,2	0,0	0,0	1	0	0	0	1	0,0	0
244	Asbestos products	481	0,0	1,0	7,1	0,0	0,0	3	0	0	0	3	0,0	0
245	Stone working	4 831	0,2	1,4	2,8	0,0	0,0	1	0	0	0	1	0,0	0
246	Abrasive products	925	0,0	0,4	2,9	0,0	0,0	1	0	0	0	1	0,0	0
247	Glass, -ware	129 577	5,4	8,7	8,4	0,0	14,5	3	0	3	2	8	0,0	0
248	Ceramics	22 694	0,9	2,3	10,2	0,0	0,0	3	0	0	2	5	0,0	0
252	Petrochemical ind	219 020	9,1	1,6	8,1	0,0	0,7	3	0	1	0	4	0,0	0
253	Oth. chem. basic ind	54 193	2,3	1,0	7,4	0,0	15,5	3	0	3	0	6	0,0	0
255	Paints, varnishes	669	0,0	0,1	9,4	0,0	0,0	3	0	0	0	3	0,0	0
256	Chemicals for ind	14 813	0,6	0,4	5,7	0,0	0,0	2	0	0	2	4	0,0	0
257	Pharma products	3 963	0,2	0,1	5,6	0,0	0,0	2	0	0	3	5	0,0	0
258	Soap, detergents	1 855	0,1	0,3	6,8	0,0	0,0	2	0	0	0	2	0,0	0
259	Chemicals f. home	3 153	0,1	0,1	5,5	0,0	0,0	2	0	0	0	2	0,0	0
260	Artificial fibres	24 119	1,0	1,5	8,6	52,6	0,0	3	3	0	0	6	0,0	0
311	Foundries	5 251	0,2	1,0	4,4	0,0	0,0	2	0	0	0	2	0,0	0
312	Forging	4 328	0,2	1,4	5,5	0,0	0,0	2	0	0	0	2	0,0	0
313	Metal treatment	6 775	0,3	0,6	5,9	0,0	0,0	2	0	0	0	2	0,0	0
314	Metal structures	12 522	0,5	1,8	4,4	0,0	0,0	2	0	0	0	2	0,0	0
315	Boiler, tanks	7 662	0,3	2,8	4,4	0,0	0,0	2	0	0	3	5	0,0	0
316	Tools, met. prods	41 829	1,7	0,9	5,6	0,0	3,7	2	0	1	0	3	0,0	0
321	Machinery f. agric.	37 434	1,6	3,4	7,6	0,0	0,0	3	0	0	2	5	0,0	0
322	Machine tools	56 957	2,4	1,4	4,3	0,0	0,0	2	0	0	2	4	0,0	0
323	Textile machinery	8 847	0,4	0,6	4,0	0,0	0,0	2	0	0	2	4	0,0	0
324	Machinery: food ind	6 466	0,3	0,2	4,1	0,0	0,0	2	0	0	2	4	0,0	0
325	Plant for mines	33 432	1,4	0,8	4,5	0,0	0,0	2	0	0	2	4	0,0	0
326	Transmission eqm	17 851	0,7	0,9	7,5	0,0	0,0	3	0	0	2	5	0,0	0
327	Other specif. eqm	13 817	0,6	0,5	3,3	0,0	0,0	1	0	0	2	3	0,0	0
328	Other machinery	27 260	1,1	0,2	4,5	0,0	2,8	2	0	1	0	3	0,0	0
330	Office machinery	2 680	0,1	0,0	4,4	0,0	0,0	2	0	0	3	5	0,0	0
341	Electrical wires	6 232	0,3	0,5	6,5	0,0	0,0	2	0	0	3	5	0,0	0
342	Electrical motors	39 663	1,7	0,5	4,9	0,0	28,2	2	0	3	3	8	0,0	0
343	Industrial el. eqm	3 989	0,2	0,1	5,2	0,0	0,0	2	0	0	0	2	0,0	0
344	Telecommun. eqm	3 989	0,2	0,0	6,6	0,0	0,0	2	0	0	3	5	0,0	0
345	Radio-, TV sets	13 174	0,5	0,1	9,1	0,0	0,0	3	0	0	2	5	0,0	0
346	Domest. electr. eqm	15 257	0,6	0,8	4,3	0,0	0,0	2	0	0	2	4	0,0	0
347	Elec. lighting eqm	9 153	0,4	1,1	5,9	0,0	0,0	2	0	0	2	4	0,0	0
351	Motor vehicles	98 265	4,1	0,6	10,7	0,0	0,0	3	0	0	2	5	0,0	0
352	Bodies f. mot. veh.	2 513	0,1	0,8	5,0	0,0	0,0	2	0	0	0	2	0,0	0
353	Parts f. mot. veh.	10 351	0,4	0,4	6,9	0,0	0,0	2	0	0	0	2	0,0	0
361	Shipbuilding	557	0,0	0,0	3,7	0,0	0,0	1	0	0	3	4	0,0	0
362	Railway equipment	2 419	0,1	1,3	4,7	0,0	0,0	2	0	0	3	5	0,0	0
363	Cycles, mot.-cycles	6 864	0,3	0,3	12,0	0,0	0,0	3	0	0	0	3	0,0	0
364	Aerospace equipm.	339	0,0	0,0	1,3	0,0	0,0	1	0	0	2	3	0,0	0
365	Oth. transp. means	1 108	0,0	1,5	4,1	0,0	0,0	2	0	0	0	2	0,0	0
371	Precision instr	3 260	0,1	0,2	5,6	0,0	0,0	2	0	0	0	2	0,0	0
372	Medico-surg. eqm	614	0,0	0,0	5,3	0,0	0,0	2	0	0	3	5	0,0	0
373	Optical instr	2 317	0,1	0,1	6,6	0,0	0,3	2	0	1	0	3	0,0	0
374	Clocks, parts	2 846	0,1	0,1	5,9	0,0	0,0	2	0	0	0	2	0,0	0
43A	Yarns	1 859	0,1	0,1	1,8	18,8	0,0	1	3	0	2	6	0,0	0
43B	Woven fabrics	81 462	3,4	1,9	11,3	92,6	0,0	3	3	0	2	8	0,0	0
436	Knitting ind	38 502	1,6	0,6	13,1	99,2	0,0	3	3	0	0	6	0,0	0
438	Carpets, floor cov.	7 509	0,3	0,5	9,7	97,6	0,0	3	3	0	2	8	0,0	0
439	Other textile ind	13 774	0,6	1,1	9,0	62,4	0,0	3	3	0	0	6	0,0	0
441	Tanning	951	0,0	0,0	3,5	0,0	99,2	1	0	3	0	4	0,0	0
442	Leather products	19 857	0,8	1,1	5,8	0,0	62,1	2	0	3	0	5	0,0	0
451	Footwear	38 472	1,6	1,2	9,5	0,0	100,0	3	0	3	2	8	0,0	0
453	Clothings	109 068	4,6	0,8	13,2	93,6	2,1	3	3	1	2	9	0,0	0
455	Househ. textiles	29 642	1,2	2,3	11,5	83,7	0,0	3	3	0	2	8	0,0	0
456	Furs, fur goods	2 317	0,1	1,2	4,7	0,0	82,3	2	0	3	0	5	0,0	0
461	Sawing of wood	119 082	5,0	1,8	0,0	0,0	0,0	1	0	0	0	1	0,0	0
462	Semi-fin. wood prods	17 243	0,7	0,8	9,6	0,0	1,4	3	0	1	0	4	0,0	0
463	Carpentry parts	1 749	0,1	0,3	5,7	0,0	0,0	2	0	0	0	2	0,0	0
464	Wooden containers	196	0,0	0,4	7,4	0,0	0,0	3	0	0	0	3	0,0	0
465	Other wooden prods	25 070	1,0	4,6	4,0	0,0	2,4	2	0	1	0	3	0,0	0
466	Cork-, straw prods	2 664	0,1	0,7	6,7	0,0	8,7	2	0	2	0	4	0,0	0
467	Wooden furniture	51 676	2,2	2,4	5,6	0,0	0,9	2	0	1	0	3	0,0	0
471	Pulp, paper, board	104 081	4,3	0,7	3,6	0,0	0,0	1	0	0	0	1	0,0	0
472	Paper processing	11 568	0,5	0,4	10,5	0,0	0,0	3	0	0	0	3	0,0	0
473	Printing industr.	25 250	1,1	1,5	0,4	0,0	0,0	1	0	0	0	1	0,0	0
481	Rubber products	44 377	1,9	1,8	7,4	8,0	9,6	3	2	3	2	10	0,0	0
482	Tyre retreading	249	0,0	1,0	5,8	0,0	0,0	2	0	0	0	2	0,0	0
483	Plastics process.	31 412	1,3	0,7	10,1	0,0	0,3	3	0	1	0	4	0,0	0
491	Jewellery	12 740	0,5	0,2	4,9	0,0	11,4	2	0	3	2	7	0,0	0
492	Musical instrum.	14 465	0,6	2,2	5,7	0,0	66,9	2	0	3	0	5	0,0	0
493	Photographic labs	258	0,0	0,3	9,1	0,0	0,0	3	0	0	2	5	0,0	0
494	Toys, sports goods	11 757	0,5	0,3	7,1	0,0	2,7	3	0	1	2	6	0,0	0
495	Misc. manuf. ind	1 536	0,1	0,2	7,3	0,0	0,1	3	0	1	0	4	0,0	0
620	Waste-, scrap trade	21 707	0,9	0,5	1,3	0,0	0,3	1	0	1	0	2	0,0	0
Total		2 396 751	100,0	0,6	6,4	22,9	18,5	2	3	3			0,0	0,0

Table A.1.7
EC trade barriers facing Hungary, 1988

NACE code	Sector	Imports (1000 ECU)	Product (% share)	Country (% share)	MFN duty (%)	QR (%)	ONTB (%)	Classification D	QR	ONTB	PT	Total	Duty relief (%)	Class.
111	Hard-coal mining	73	0,0	0,0	2,0	0,0	0,0	1	0	0	0	1	0,0	0
112	Lignite mining	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
120	Coke ovens	1 275	0,1	0,8	0,1	0,0	0,0	1	0	0	0	1	0,0	0
130	Gas-, petr. extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140	Oil refining	50 284	3,4	0,5	5,0	0,0	0,0	2	0	0	0	2	0,0	0
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152	Fissile materials	6	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
161	Electric power	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162	Gasworks	11 587	0,8	0,3	1,8	0,0	0,0	1	0	0	0	1	0,0	0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212	Non-f. metals extr	2 753	0,2	0,1	0,0	0,0	0,0	0	0	0	0	0	0,0	0
221	Iron & steel ind	90 848	6,2	2,1	4,4	98,9	99,5	2	3	3	0	8	0,0	0
222	Steel tubes	16 451	1,1	1,5	9,8	0,0	26,6	3	0	3	0	6	0,0	0
223	Steel drawing	8 356	0,6	0,9	5,1	0,0	49,2	2	0	3	0	5	0,0	0
224	Non-f. metals	76 689	5,2	0,3	5,4	0,3	0,3	2	1	1	0	4	0,0	0
231	Build. mater. extr	638	0,0	0,1	0,0	0,0	0,0	0	0	0	0	0	0,0	0
232	Potassium extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233	Salt extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
239	Other miner. extr	1 397	0,1	0,1	0,0	0,0	0,0	1	0	0	0	1	0,0	0
241	Clay products	240	0,0	1,9	7,7	0,0	0,0	3	0	0	0	3	0,0	0
242	Cement, lime	2 745	0,2	2,1	3,2	0,0	0,0	1	0	0	0	1	0,0	0
243	Cement products	668	0,0	1,2	4,3	0,0	0,0	2	0	0	0	2	0,0	0
244	Asbestos products	273	0,0	0,6	4,9	0,0	0,0	2	0	0	0	2	0,0	0
245	Stone working	763	0,1	0,3	3,0	0,0	0,0	1	0	0	0	1	0,0	0
246	Abrasive products	114	0,0	0,1	3,0	0,0	0,0	1	0	0	0	1	0,0	0
247	Glass, -ware	27 308	1,9	2,2	8,4	0,0	1,3	3	0	1	2	6	0,0	0
248	Ceramics	14 463	1,0	1,7	8,8	0,0	0,0	3	0	0	2	5	0,0	0
252	Petrochemical ind	149 823	10,2	1,4	6,8	0,0	0,0	2	0	0	0	2	0,0	0
253	Oth. chem. basic ind	46 226	3,1	1,0	7,4	0,0	6,3	3	0	2	0	5	0,0	0
255	Paints, varnishes	494	0,0	0,1	7,8	0,0	0,0	3	0	0	0	3	0,0	0
256	Chemicals for ind	8 444	0,6	0,3	5,6	0,0	0,0	2	0	0	2	4	0,0	0
257	Pharma products	8 442	0,6	0,3	5,6	0,0	0,0	2	0	0	3	5	0,0	0
258	Soap, detergents	2 049	0,1	0,4	6,9	0,0	0,0	2	0	0	0	2	0,0	0
259	Chemicals f. home	1 072	0,1	0,0	6,2	0,0	0,0	2	0	0	0	2	0,0	0
260	Artificial fibres	8 301	0,6	0,6	7,8	13,3	0,0	3	3	0	0	6	0,0	0
311	Foundries	7 217	0,5	1,9	5,8	0,0	0,0	2	0	0	0	2	0,0	0
312	Forging	3 120	0,2	1,6	5,3	0,0	0,0	2	0	0	0	2	0,0	0
313	Metal treatment	2 233	0,2	0,3	6,1	0,0	0,0	2	0	0	0	2	0,0	0
314	Metal structures	6 183	0,4	1,3	5,0	0,0	0,0	2	0	0	0	2	0,0	0
315	Boiler, tanks	2 548	0,2	1,4	4,3	0,0	0,0	2	0	0	3	5	0,0	0
316	Tools, met. prods	38 141	2,6	1,0	5,6	0,0	0,0	2	0	0	0	2	0,0	0
321	Machinery f. agric.	18 202	1,2	1,8	3,5	0,0	0,0	1	0	0	2	3	0,0	0
322	Machine tools	11 308	0,8	0,4	4,3	0,0	0,0	2	0	0	2	4	0,0	0
323	Textile machinery	1 974	0,1	0,1	3,9	0,0	0,0	1	0	0	2	3	0,0	0
324	Machinery: food ind	5 928	0,4	0,3	3,9	0,0	0,0	1	0	0	2	3	0,0	0
325	Plant for mines	20 735	1,4	0,6	4,8	0,0	0,0	2	0	0	2	4	0,0	0
326	Transmission eqm	12 785	0,9	0,8	7,7	0,0	0,0	3	0	0	2	5	0,0	0
327	Other specif. eqm	5 604	0,4	0,2	3,7	0,0	0,0	1	0	0	2	3	0,0	0
328	Other machinery	28 138	1,9	0,3	4,5	0,0	7,0	2	0	2	0	4	0,0	0
330	Office machinery	3 127	0,2	0,0	4,2	0,0	0,0	2	0	0	3	5	0,0	0
341	Electrical wires	3 925	0,3	0,4	6,5	0,0	0,0	2	0	0	3	5	0,0	0
342	Electrical motors	29 075	2,0	0,5	4,8	0,0	10,9	2	0	3	3	8	0,0	0
343	Industrial el. eqm	7 066	0,5	0,2	5,9	0,0	0,0	2	0	0	0	2	0,0	0
344	Telecommun. eqm	6 168	0,4	0,1	6,5	0,0	0,0	2	0	0	3	5	0,0	0
345	Radio-, TV sets	19 784	1,3	0,1	10,5	0,0	0,0	3	0	0	2	5	0,0	0
346	Domest. electr. eqm	36 754	2,5	2,0	4,1	0,0	0,0	2	0	0	2	4	0,0	0
347	Elec. lighting eqm	36 835	2,5	5,0	5,8	0,0	0,0	2	0	0	2	4	0,0	0
351	Motor vehicles	5 534	0,4	0,0	18,5	0,0	0,0	3	0	0	2	5	0,0	0
352	Bodies f. mot. veh.	3 153	0,2	1,2	4,4	0,0	0,0	2	0	0	0	2	0,0	0
353	Parts f. mot. veh.	9 347	0,6	0,4	6,9	0,0	0,0	2	0	0	0	2	0,0	0
361	Shipbuilding	154	0,0	0,0	0,9	0,0	0,0	1	0	0	3	4	0,0	0
362	Railway equipment	273	0,0	0,2	4,5	0,0	0,0	2	0	0	3	5	0,0	0
363	Cycles, mot.-cycles	67	0,0	0,0	7,4	0,0	0,0	3	0	0	0	3	0,0	0
364	Aerospace equipm.	166	0,0	0,0	0,0	0,0	0,0	0	0	0	2	2	0,0	0
365	Oth. transp. means	17	0,0	0,0	4,1	0,0	0,0	2	0	0	0	2	0,0	0
371	Precision instr	2 004	0,1	0,2	5,2	0,0	0,0	2	0	0	0	2	0,0	0
372	Medico-surg. eqm	4 544	0,3	0,3	5,2	0,0	0,0	2	0	0	3	5	0,0	0
373	Optical instr	1 472	0,1	0,0	6,6	0,0	2,6	2	0	1	0	3	0,0	0
374	Clocks, parts	1 127	0,1	0,1	5,9	0,0	0,0	2	0	0	0	2	0,0	0
43A	Yarns	16 456	1,1	0,6	5,5	66,8	0,7	2	3	1	2	8	0,0	0
43B	Woven fabrics	23 004	1,6	0,6	10,9	93,3	0,0	3	3	0	2	8	0,0	0
436	Knitting ind	51 012	3,5	0,9	13,5	98,9	0,0	3	3	0	0	6	0,0	0
438	Carpets, floor cov.	8 386	0,6	0,7	9,2	99,9	0,0	3	3	0	2	8	0,0	0
439	Other textile ind	5 262	0,4	0,5	9,8	95,1	0,0	3	3	0	0	6	0,0	0
441	Tanning	7 191	0,5	0,5	3,3	0,0	99,9	1	0	3	0	4	0,0	0
442	Leather products	16 800	1,1	1,1	7,2	0,0	51,1	3	0	3	0	6	0,0	0
451	Footwear	58 102	3,9	2,1	6,9	0,0	100,0	2	0	3	2	7	0,0	0
453	Clothings	212 407	14,4	2,0	13,0	95,1	3,0	3	3	1	2	9	0,0	0
455	Househ. textiles	13 386	0,9	1,3	10,8	79,4	0,0	3	3	0	2	8	0,0	0
456	Furs, fur goods	10 847	0,7	3,3	5,1	0,0	99,0	2	0	3	0	5	0,0	0
461	Sawing of wood	16 704	1,1	0,3	0,0	0,0	0,0	1	0	0	0	1	0,0	0
462	Semi-fin. wood prods	5 179	0,4	0,3	8,8	0,0	0,0	3	0	0	0	3	0,0	0
463	Carpentry parts	5 650	0,4	1,3	5,8	0,0	0,0	2	0	0	0	2	0,0	0
464	Wooden containers	227	0,0	1,1	7,2	0,0	0,0	3	0	0	0	3	0,0	0
465	Other wooden prods	15 310	1,0	4,5	4,7	0,0	0,1	2	0	1	0	3	0,0	0
466	Cork-, straw prods	3 629	0,2	1,0	5,7	0,0	3,9	2	0	1	0	3	0,0	0
467	Wooden furniture	37 291	2,5	2,2	5,6	0,0	0,0	2	0	0	0	2	0,0	0
471	Pulp, paper, board	4 445	0,3	0,0	8,3	0,0	0,0	3	0	0	0	3	0,0	0
472	Paper processing	1 914	0,1	0,1	9,7	0,0	0,0	3	0	0	0	3	0,0	0
473	Printing industr.	11 436	0,8	0,8	1,7	0,0	0,0	1	0	0	0	1	0,0	0
481	Rubber products	27 130	1,8	1,3	6,8	13,0	2,5	2	3	1	2	8	0,0	0
482	Tyre retreading	958	0,1	3,9	5,8	0,0	0,0	2	0	0	0	2	0,0	0
483	Plastics process.	18 783	1,3	0,5	10,4	0,0	0,0	3	0	0	0	3	0,0	0
491	Jewellery	6 424	0,4	0,1	1,0	0,0	9,4	1	0	3	2	6	0,0	0
492	Musical instrum.	473	0,0	0,1	6,0	0,0	28,8	2	0	3	0	5	0,0	0
493	Photographic labs	461	0,0	0,5	3,2	0,0	0,0	1	0	0	2	3	0,0	0
494	Toys, sports goods	5 925	0,4	0,2	6,9	0,0	22,7	2	0	3	2	7	0,0	0
495	Misc. manuf. ind	386	0,0	0,1	6,8	0,0	27,7	2	0	3	0	5	0,0	0
620	Waste-, scrap trade	20 531	1,4	0,7	0,5	0,0	0,1	1	0	1	0	2	0,0	0
Total		1 472 199	100,0	0,5	7,1	26,8	14,2	3	3	3			0,0	0,0

Table A.1.8
EC trade barriers facing Hungary, 1989

NACE code	Sector	Imports (1000 ECU)	Product (% share)	Country (% share)	MFN duty (%)	QR (%)	ONTB (%)	Classification D	QR	ONTB	PT	Total	Duty relief (%)	Class.
111	Hard-coal mining	89	0,0	0,0	8,3	0,0	0,0	3	0	0	0	3	0,0	0
112	Lignite mining	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
120	Coke ovens	4 006	0,2	2,4	0,1	0,0	0,0	1	0	0	0	1	0,0	0
130	Gas-, petr. extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140	Oil refining	63 266	3,6	0,5	5,1	0,0	0,0	2	0	0	0	2	0,0	0
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152	Fissile materials	11	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
161	*Electric power*	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162	Gasworks	7 365	0,4	0,2	1,5	0,0	0,0	1	0	0	0	1	0,0	0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212	Non-f. metals extr	2 860	0,2	0,1	0,0	0,0	0,0	0	0	0	0	0	0,0	0
221	Iron & steel ind	101 351	5,8	1,9	4,5	99,7	99,9	2	3	3	0	8	0,0	0
222	Steel tubes	19 579	1,1	1,4	9,8	0,0	31,3	3	0	3	0	6	0,0	0
223	Steel drawing	13 514	0,8	1,1	5,1	0,0	63,4	2	0	3	0	5	0,0	0
224	Non-f. metals	101 716	5,9	0,4	5,0	2,3	2,5	2	1	1	0	4	0,0	0
231	Build. mater. extr	388	0,0	0,1	0,0	0,0	0,0	1	0	0	0	1	0,0	0
232	*Potassium extr*	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233	Salt extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
239	Other miner. extr	1 564	0,1	0,1	0,1	0,0	0,0	1	0	0	0	1	0,0	0
241	Clay products	113	0,0	0,7	7,8	0,0	0,0	3	0	0	0	3	0,0	0
242	Cement, lime	3 656	0,2	2,1	3,2	0,0	0,0	1	0	0	0	1	0,0	0
243	Cement products	1 697	0,1	2,4	3,8	0,0	0,0	1	0	0	0	1	0,0	0
244	Asbestos products	430	0,0	0,9	5,0	0,0	0,0	2	0	0	0	2	0,0	0
245	Stone working	804	0,0	0,3	2,9	0,0	0,0	1	0	0	0	1	0,0	0
246	Abrasive products	93	0,0	0,0	3,3	0,0	0,0	1	0	0	0	1	0,0	0
247	Glass, -ware	25 110	1,4	1,8	8,3	0,0	0,7	3	0	1	2	6	0,0	0
248	*Ceramics*	17 014	1,0	1,8	8,6	0,0	0,0	3	0	0	2	5	0,0	0
252	Petrochemical ind	176 116	10,2	1,3	6,7	0,0	0,0	2	0	0	0	2	0,0	0
253	Oth. chem. basic ind	51 461	3,0	0,9	7,3	0,0	9,3	3	0	3	0	6	0,0	0
255	Paints, varnishes	331	0,0	0,1	6,8	0,0	0,0	2	0	0	0	2	0,0	0
256	Chemicals for ind	10 798	0,6	0,3	5,9	0,0	0,0	2	0	0	2	4	0,0	0
257	Pharma products	7 680	0,4	0,2	6,1	0,0	0,0	2	0	0	3	5	0,0	0
258	Soap, detergents	2 401	0,1	0,4	6,9	0,0	0,0	2	0	0	0	2	0,0	0
259	Chemicals f. home	1 889	0,1	0,1	5,7	0,0	0,0	2	0	0	0	2	0,0	0
260	Artificial fibres	10 127	0,6	0,6	8,1	28,3	0,0	3	3	0	0	6	0,0	0
311	Foundries	7 784	0,4	1,7	5,8	0,0	0,0	2	0	0	0	2	0,0	0
312	*Forging*	3 888	0,2	1,5	5,3	0,0	0,0	2	0	0	0	2	0,0	0
313	Metal treatment	2 392	0,1	0,2	6,1	0,0	0,0	2	0	0	0	2	0,0	0
314	Metal structures	8 744	0,5	1,5	5,1	0,0	0,0	2	0	0	0	2	0,0	0
315	Boiler, tanks	5 936	0,3	2,5	4,6	0,0	0,0	2	0	0	3	5	0,0	0
316	Tools, met. prods	39 638	2,3	0,9	5,6	0,0	0,2	2	0	1	0	3	0,0	0
321	Machinery f. agric.	25 432	1,5	2,1	3,5	0,0	0,0	1	0	0	2	3	0,0	0
322	Machine tools	15 857	0,9	0,4	4,4	0,0	0,0	2	0	0	2	4	0,0	0
323	Textile machinery	1 059	0,1	0,1	3,9	0,0	0,0	1	0	0	2	3	0,0	0
324	Machinery: food ind	7 795	0,4	0,3	4,0	0,0	0,0	1	0	0	2	3	0,0	0
325	Plant for mines	25 923	1,5	0,6	4,9	0,0	0,0	2	0	0	2	4	0,0	0
326	*Transmission eqm*	16 982	1,0	0,9	7,6	0,0	0,0	3	0	0	2	5	0,0	0
327	Other specif. eqm	8 352	0,5	0,3	3,6	0,0	0,0	1	0	0	2	3	0,0	0
328	Other machinery	37 115	2,1	0,3	4,5	0,0	5,8	2	0	2	0	4	0,0	0
330	Office machinery	3 663	0,2	0,0	4,3	0,0	0,0	2	0	0	3	5	0,0	0
341	Electrical wires	10 778	0,6	0,9	6,5	0,0	0,0	2	0	0	3	5	0,0	0
342	Electrical motors	38 088	2,2	0,5	4,8	0,0	9,2	2	0	3	3	8	0,0	0
343	Industrial el. eqm	9 014	0,5	0,2	5,6	0,0	0,0	2	0	0	0	2	0,0	0
344	Telecommun. eqm	6 088	0,4	0,1	6,4	0,0	0,0	2	0	0	3	5	0,0	0
345	Radio-, TV sets	24 350	1,4	0,1	10,6	0,0	0,0	3	0	0	2	5	0,0	0
346	Domest. electr. eqm	39 411	2,3	1,9	4,1	0,0	0,0	2	0	0	2	4	0,0	0
347	Elec. lighting eqm	39 006	2,2	4,5	5,8	0,0	0,0	2	0	0	2	4	0,0	0
351	Motor vehicles	5 522	0,3	0,0	17,8	0,0	0,0	3	0	0	2	5	0,0	0
352	Bodies f. mot. veh.	5 451	0,3	2,0	4,5	0,0	0,0	2	0	0	0	2	0,0	0
353	Parts f. mot. veh.	10 390	0,6	0,4	6,9	0,0	0,0	2	0	0	0	2	0,0	0
361	Shipbuilding	225	0,0	0,0	3,2	0,0	0,0	1	0	0	3	4	0,0	0
362	Railway equipment	1 278	0,1	1,0	4,7	0,0	0,0	2	0	0	3	5	0,0	0
363	Cycles, mot.-cycles	55	0,0	0,0	7,2	0,0	0,0	3	0	0	0	3	0,0	0
364	Aerospace equipm.	2 221	0,1	0,0	4,9	0,0	0,0	2	0	0	2	4	0,0	0
365	Oth. transp. means	48	0,0	0,1	4,1	0,0	0,0	2	0	0	0	2	0,0	0
371	Precision instr	1 968	0,1	0,2	5,0	0,0	0,0	2	0	0	0	2	0,0	0
372	*Medico-surg. eqm*	3 956	0,2	0,2	5,3	0,0	0,0	2	0	0	3	5	0,0	0
373	Optical instr	1 234	0,1	0,0	6,7	0,0	4,8	2	0	2	0	4	0,0	0
374	Clocks, parts	1 033	0,1	0,0	5,9	0,0	0,0	2	0	0	0	2	0,0	0
43A	Yarns	22 123	1,3	0,8	5,3	63,9	0,0	2	3	0	2	7	0,0	0
43B	Woven fabrics	23 191	1,3	0,6	11,0	91,7	0,0	3	3	0	2	8	0,0	0
436	Knitting ind	55 922	3,2	0,9	13,5	99,5	0,0	3	3	0	0	6	0,0	0
438	Carpets, floor cov.	8 635	0,5	0,6	9,0	100,0	0,0	3	3	0	2	8	0,0	0
439	Other textile ind	4 667	0,3	0,4	9,4	93,7	0,0	3	3	0	0	6	0,0	0
441	Tanning	14 363	0,8	0,8	3,7	0,0	97,3	1	0	3	0	4	0,0	0
442	Leather products	18 301	1,1	1,1	6,5	0,0	37,4	2	0	3	0	5	0,0	0
451	Footwear	75 844	4,4	2,5	6,8	0,0	100,0	2	0	3	2	7	0,0	0
453	Clothings	242 764	14,0	2,0	13,1	95,0	2,7	3	3	1	2	9	0,0	0
455	Househ. textiles	14 356	0,8	1,3	10,6	75,2	0,0	3	3	0	2	8	0,0	0
456	Furs, fur goods	9 561	0,6	3,5	5,3	0,0	95,3	2	0	3	0	5	0,0	0
461	Sawing of wood	14 839	0,9	0,2	0,1	0,0	0,0	1	0	0	0	1	0,0	0
462	Semi-fin. wood prods	7 964	0,5	0,4	9,4	0,0	0,0	3	0	0	0	3	0,0	0
463	Carpentry parts	6 203	0,4	1,2	5,8	0,0	0,0	2	0	0	0	2	0,0	0
464	Wooden containers	272	0,0	0,8	7,2	0,0	0,0	3	0	0	0	3	0,0	0
465	Other wooden prods	15 049	0,9	3,5	4,7	0,0	0,1	2	0	1	0	3	0,0	0
466	Cork-, straw prods	3 168	0,2	0,8	5,5	0,0	3,1	2	0	1	0	3	0,0	0
467	Wooden furniture	38 453	2,2	1,9	5,6	0,0	0,0	2	0	0	0	2	0,0	0
471	Pulp, paper, board	7 813	0,5	0,0	8,5	0,0	0,0	3	0	0	0	3	0,0	0
472	Paper processing	3 308	0,2	0,1	9,6	0,0	0,0	3	0	0	0	3	0,0	0
473	Printing industr.	13 029	0,8	0,8	2,4	0,0	0,0	1	0	0	0	1	0,0	0
481	Rubber products	34 390	2,0	1,4	6,4	11,8	1,7	2	3	1	2	8	0,0	0
482	Tyre retreading	1 182	0,1	4,7	5,8	0,0	0,0	2	0	0	0	2	0,0	0
483	Plastics process.	24 817	1,4	0,5	10,0	0,0	0,0	3	0	0	0	3	0,0	0
491	Jewellery	5 852	0,3	0,1	1,1	0,0	12,1	1	0	3	2	6	0,0	0
492	Musical instrum.	535	0,0	0,1	5,9	0,0	14,0	2	0	3	0	5	0,0	0
493	Photographic labs	367	0,0	0,4	5,6	0,0	0,0	2	0	0	2	4	0,0	0
494	Toys, sports goods	6 436	0,4	0,2	6,8	0,0	30,6	2	0	3	2	7	0,0	0
495	Misc. manuf. ind	329	0,0	0,0	7,0	0,0	8,2	2	0	2	0	4	0,0	0
620	Waste-, scrap trade	25 174	1,5	0,6	0,3	0,0	0,5	1	0	1	0	2	0,0	0
Total		1 735 012	100,0	0,5	7,0	25,7	14,6	3	3	3			0,0	

Table A.1.9
EC trade barriers facing Hungary, 1990

NACE code	Sector	Imports (1000 ECU)	Product (% share)	Country (% share)	MFN duty (%)	QR (%)	ONTB (%)	Classification D	QR	ONTB	PT	Total	Duty relief (%)	Class.
111	Hard-coal mining	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
112	Lignite mining	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
120	Coke ovens	3 696	0,2	2,3	0,3	0,0	0,0	1	0	0	0	1	0,0	0
130	Gas-, petr. extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140	Oil refining	65 777	3,1	0,5	5,3	0,0	0,0	2	0	0	0	2	100,0	-3
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152	Fissile materials	11	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
161	Electric power	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162	Gasworks	8 306	0,4	0,2	1,5	0,0	0,0	1	0	0	0	1	5,8	-1
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212	Non-f. metals extr	1 506	0,1	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
221	Iron & steel ind	121 257	5,7	2,4	4,4	99,3	100,0	2	3	3	0	8	0,0	-1
222	Steel tubes	31 580	1,5	2,2	9,7	0,0	30,7	3	0	3	0	6	27,4	-2
223	Steel drawing	17 656	0,8	1,5	5,1	0,0	64,4	2	0	3	0	5	66,9	-3
224	Non-f. metals	121 723	5,7	0,6	5,4	1,7	1,8	2	1	1	0	4	49,3	-3
231	Build. mater. extr	460	0,0	0,1	0,0	0,0	0,0	0	0	0	0	0	0,0	0
232	Potassium extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233	Salt extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
239	*Other miner. extr*	*1 534*	*0,1*	*0,2*	*0,0*	*0,0*	*0,0*	*1*	*0*	*0*	*0*	*1*	*0,0*	*0*
241	Clay products	170	0,0	1,1	7,9	0,0	0,0	3	0	0	0	3	63,0	-3
242	Cement, lime	3 529	0,2	1,5	3,2	0,0	0,0	1	0	0	0	1	88,4	-3
243	Cement products	1 230	0,1	1,4	4,2	0,0	0,0	2	0	0	0	2	44,5	-3
244	Asbestos products	309	0,0	0,7	5,3	0,0	0,0	2	0	0	0	2	65,0	-3
245	Stone working	2 125	0,1	0,6	2,8	0,0	0,0	1	0	0	0	1	79,6	-3
246	Abrasive products	90	0,0	0,0	3,2	0,0	0,0	1	0	0	0	1	5,9	-1
247	Glass, -ware	30 090	1,4	2,0	8,6	0,0	1,6	3	0	1	2	6	62,9	-3
248	Ceramics	21 762	1,0	2,2	8,9	0,0	0,0	3	0	0	2	5	50,0	-3
252	Petrochemical ind	195 506	9,2	1,4	7,3	0,0	0,0	3	0	0	0	3	43,6	-3
253	Oth. chem. basic ind	57 877	2,7	1,1	7,4	0,0	8,3	3	0	2	0	5	43,4	-3
255	Paints, varnishes	258	0,0	0,1	7,4	0,0	0,0	3	0	0	0	3	31,6	-2
256	Chemicals for ind	9 321	0,4	0,2	5,8	0,0	0,0	2	0	0	2	4	45,5	-3
257	Pharma products	8 168	0,4	0,2	5,4	0,0	0,0	2	0	0	3	5	51,8	-3
258	Soap, detergents	2 300	0,1	0,4	6,9	0,0	0,0	2	0	0	0	2	25,4	-2
259	Chemicals f. home	2 406	0,1	0,1	5,8	0,0	0,0	2	0	0	0	2	22,5	-1
260	Artificial fibres	13 707	0,6	0,9	8,1	21,3	0,0	3	3	0	0	6	39,7	-2
311	Foundries	10 157	0,5	2,0	5,6	0,0	0,0	2	0	0	0	2	75,6	-3
312	Forging	3 897	0,2	1,3	5,2	0,0	0,0	2	0	0	0	2	70,9	-3
313	Metal treatment	3 867	0,2	0,4	6,0	0,0	0,0	2	0	0	0	2	60,2	-3
314	Metal structures	17 146	0,8	2,5	5,0	0,0	0,0	2	0	0	0	2	68,6	-3
315	Boiler, tanks	10 220	0,5	3,7	4,6	0,0	0,0	2	0	0	3	5	73,6	-3
316	Tools, met. prods	55 348	2,6	1,2	5,6	0,0	0,1	2	0	1	0	3	65,8	-3
321	Machinery f. agric.	36 119	1,7	3,3	3,5	0,0	0,0	1	0	0	2	3	55,5	-3
322	Machine tools	25 952	1,2	0,6	4,0	0,0	0,0	1	0	0	2	3	51,5	-3
323	Textile machinery	2 341	0,1	0,2	3,9	0,0	0,0	1	0	0	2	3	56,3	-3
324	Machinery: food ind	12 589	0,6	0,4	3,9	0,0	0,0	1	0	0	2	3	40,8	-3
325	Plant for mines	39 149	1,8	0,9	4,8	0,0	0,0	2	0	0	2	4	53,3	-3
326	Transmission eqm	25 563	1,2	1,2	7,6	0,0	0,0	3	0	0	2	5	74,1	-3
327	Other specif. eqm	9 469	0,4	0,4	3,7	0,0	0,0	1	0	0	2	3	57,6	-3
328	Other machinery	41 661	2,0	0,3	4,4	0,0	4,3	2	0	2	0	4	60,3	-3
330	Office machinery	4 236	0,2	0,0	4,3	0,0	0,0	2	0	0	3	5	35,5	-2
341	Electrical wires	28 782	1,3	2,2	6,5	0,0	0,0	2	0	0	3	5	17,5	-1
342	Electrical motors	42 627	2,0	0,6	5,0	0,0	3,5	2	0	1	3	6	36,3	-2
343	Industrial el. eqm	13 598	0,6	0,3	5,2	0,0	0,0	2	0	0	0	2	60,2	-3
344	Telecommun. eqm	5 155	0,2	0,0	7,1	0,0	0,0	3	0	0	3	6	36,7	-2
345	Radio-, TV sets	35 026	1,6	0,2	10,6	0,0	0,0	3	0	0	2	5	55,2	-3
346	Domest. electr. eqm	55 497	2,6	2,9	4,2	0,0	0,0	2	0	0	2	4	78,9	-3
347	Elec. lighting eqm	41 684	2,0	4,9	5,8	0,0	0,0	2	0	0	2	4	15,3	-1
351	Motor vehicles	4 108	0,2	0,0	12,9	0,0	0,0	3	0	0	2	5	17,7	-1
352	Bodies f. mot. veh.	6 077	0,3	2,0	4,5	0,0	0,0	2	0	0	0	2	78,4	-3
353	Parts f. mot. veh.	12 893	0,6	0,5	6,9	0,0	0,0	2	0	0	0	2	37,4	-2
361	Shipbuilding	3 771	0,2	0,2	2,9	0,0	0,0	1	0	0	3	4	4,2	-1
362	Railway equipment	377	0,0	0,2	4,4	0,0	0,0	2	0	0	3	5	100,0	-3
363	*Cycles, mot.-cycles*	*241*	*0,0*	*0,0*	*12,4*	*0,0*	*0,0*	*3*	*0*	*0*	*0*	*3*	*6,7*	*-1*
364	Aerospace equipm.	997	0,0	0,0	3,7	0,0	0,0	1	0	0	2	3	3,6	-1
365	Oth. transp. means	321	0,0	0,4	4,2	0,0	0,0	2	0	0	0	2	66,8	-3
371	Precision instr	2 319	0,1	0,2	4,7	0,0	0,0	2	0	0	0	2	32,9	-2
372	Medico-surg. eqm	5 505	0,3	0,3	5,3	0,0	0,0	2	0	0	3	5	43,6	-3
373	Optical instr	1 351	0,1	0,0	6,8	0,0	6,7	2	0	2	0	4	21,8	-1
374	Clocks, parts	1 157	0,1	0,0	5,9	0,0	0,0	2	0	0	0	2	36,6	-2
43A	Yarns	24 114	1,1	0,9	5,3	68,7	0,0	2	3	0	2	7	45,2	-3
43B	Woven fabrics	30 941	1,5	0,7	10,9	92,6	0,0	3	3	0	2	8	25,0	-1
436	Knitting ind	77 705	3,6	1,1	13,4	99,0	0,0	3	3	0	0	6	13,1	-1
438	Carpets, floor cov.	12 012	0,6	0,9	9,2	100,0	0,0	3	3	0	2	8	55,3	-3
439	Other textile ind	7 046	0,3	0,6	9,1	92,0	0,0	3	3	0	0	6	33,2	-2
441	Tanning	18 267	0,9	0,9	3,4	0,0	99,1	1	0	3	0	4	35,2	-2
442	Leather products	22 691	1,1	1,2	6,6	0,0	37,9	2	0	3	0	5	48,2	-3
451	Footwear	99 148	4,6	3,0	6,7	0,0	100,0	2	0	3	2	7	5,1	-1
453	Clothings	281 932	13,2	2,0	13,1	95,3	2,6	3	3	1	2	9	2,7	-1
455	Househ. textiles	22 379	1,0	1,8	9,8	72,6	0,0	3	3	0	2	8	24,5	-1
456	Furs, fur goods	4 925	0,2	2,5	5,2	0,0	96,0	2	0	3	0	5	56,3	-3
461	Sawing of wood	16 420	0,8	0,2	0,0	0,0	0,0	1	0	0	0	1	88,7	-3
462	Semi-fin. wood prods	7 003	0,3	0,3	9,5	0,0	0,0	3	0	0	0	3	71,3	-3
463	Carpentry parts	7 601	0,4	1,2	5,6	0,0	0,0	2	0	0	0	2	65,0	-3
464	Wooden containers	1 424	0,1	2,8	7,3	0,0	0,0	3	0	0	0	3	75,4	-3
465	Other wooden prods	25 876	1,2	4,8	3,8	0,0	0,2	1	0	1	0	2	72,8	-3
466	Cork-, straw prods	4 076	0,2	1,1	4,6	0,0	2,5	2	0	1	0	3	73,5	-3
467	Wooden furniture	42 338	2,0	2,0	5,6	0,0	1,7	2	0	1	0	3	78,3	-3
471	Pulp, paper, board	10 587	0,5	0,1	8,5	0,0	0,0	3	0	0	0	3	74,2	-3
472	Paper processing	4 213	0,2	0,2	10,3	0,0	0,0	3	0	0	0	3	49,6	-3
473	Printing industr.	14 357	0,7	0,9	2,9	0,0	0,0	1	0	0	0	1	2,0	-1
481	Rubber products	37 864	1,8	1,5	6,7	10,2	0,2	2	3	1	2	8	50,4	-3
482	Tyre retreading	952	0,0	3,9	5,8	0,0	0,0	2	0	0	0	2	67,4	-3
483	Plastics process.	33 139	1,6	0,7	10,4	0,0	0,1	3	0	1	0	4	56,0	-3
491	Jewellery	5 626	0,3	0,1	1,3	0,0	15,0	1	0	3	2	6	22,4	-1
492	Musical instrum.	538	0,0	0,1	6,0	0,0	10,0	2	0	3	0	5	36,1	-2
493	Photographic labs	844	0,0	0,9	3,2	0,0	0,0	1	0	0	2	3	13,9	-1
494	Toys, sports goods	7 418	0,3	0,2	6,9	0,0	24,4	2	0	3	2	7	39,4	-2
495	Misc. manuf. ind	196	0,0	0,0	5,8	0,0	19,4	2	0	3	0	5	33,6	-2
620	Waste-, scrap trade	29 729	1,4	0,7	0,5	0,0	0,3	1	0	1	0	2	0,0	0
Total		2 132 915	100,0	0,5	7,1	25,5	14,4	3	3	3			32,9	-2

Table A.1.10
EC trade barriers facing Poland, 1988

NACE code	Sector	Imports (1000 ECU)	Product (% share)	Country (% share)	MFN duty (%)	QR (%)	ONTB (%)	Classification D	QR	ONTB	PT	Total	Duty relief (%)	Class.
111	Hard-coal mining	322 349	12,9	9,0	5,0	0,0	0,0	2	0	0	0	2	0,0	0
112	Lignite mining	9	0,0	0,0	0,2	0,0	0,0	1	0	0	0	1	0,0	0
120	Coke ovens	15 333	0,6	9,4	0,1	0,0	0,0	1	0	0	0	1	0,0	0
130	Gas-,petr,extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140	Oil refining	31 661	1,3	0,3	5,1	0,0	0,0	2	0	0	0	2	0,0	0
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152	Fissile materials	6	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
161	Electric power	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162	Gasworks	2 900	0,1	0,1	1,5	0,0	0,0	1	0	0	0	1	0,0	0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212	Non-f,metals extr	35 405	1,4	1,1	0,0	0,0	0,0	0	0	0	0	0	0,0	0
221	Iron & steel ind	99 896	4,0	2,3	4,6	96,5	96,5	2	3	3	0	8	0,0	0
222	Steel tubes	13 493	0,5	1,2	7,7	0,0	22,9	3	0	3	0	6	0,0	0
223	Steel drawing	24 190	1,0	2,5	5,2	0,0	57,4	2	0	3	0	5	0,0	0
224	Non-f, metals	298 978	11,9	1,2	0,5	0,3	0,3	1	1	1	0	3	0,0	0
231	Build,mater. extr	1 399	0,1	0,2	0,4	0,0	0,0	1	0	0	0	1	0,0	0
232	Potassium extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233	Salt extraction	233	0,0	2,1	13,8	0,0	0,0	3	0	0	0	3	0,0	0
239	Other miner. extr	1 133	0,0	0,1	0,0	0,0	0,0	1	0	0	0	1	0,0	0
241	Clay products	545	0,0	4,4	8,0	0,0	0,0	3	0	0	0	3	0,0	0
242	Cement, lime	20 898	0,8	16,1	3,2	0,0	0,0	1	0	0	0	1	0,0	0
243	Cement products	285	0,0	0,5	3,3	0,0	0,0	1	0	0	0	1	0,0	0
244	Asbestos products	41	0,0	0,1	5,9	0,0	0,0	2	0	0	0	2	0,0	0
245	Stone working	2 038	0,1	0,8	2,5	0,0	0,0	1	0	0	0	1	0,0	0
246	Abrasive products	1 089	0,0	0,6	3,3	0,0	0,0	1	0	0	0	1	0,0	0
247	Glass, -ware	38 498	1,5	3,1	8,5	0,0	0,0	3	0	0	2	5	0,0	0
248	Ceramics	8 820	0,4	1,1	9,8	0,0	0,0	3	0	0	2	5	0,0	0
252	Petrochemical ind	92 298	3,7	0,8	7,1	0,0	0,2	3	0	1	0	4	0,0	0
253	Oth,chem,basic ind	135 210	5,4	2,8	3,0	0,0	5,2	1	0	2	0	3	0,0	0
255	Paints,varnishes	102	0,0	0,0	8,2	0,0	0,0	3	0	0	0	3	0,0	0
256	Chemicals for ind	13 840	0,6	0,4	4,0	0,0	1,5	2	0	1	2	5	0,0	0
257	Pharma products	3 400	0,1	0,1	6,4	0,0	0,0	2	0	0	3	5	0,0	0
258	Soap, detergents	273	0,0	0,1	6,6	0,0	0,0	2	0	0	0	2	0,0	0
259	Chemicals f,home	1 779	0,1	0,1	7,5	0,0	0,0	3	0	0	0	3	0,0	0
260	Artificial fibres	6 102	0,2	0,5	8,3	23,4	0,0	3	3	0	0	6	0,0	0
311	Foundries	8 519	0,3	2,2	4,6	0,0	0,0	2	0	0	0	2	0,0	0
312	Forging	6 926	0,3	3,5	4,7	0,0	0,0	2	0	0	0	2	0,0	0
313	Metal treatment	9 179	0,4	1,1	6,1	0,0	0,0	2	0	0	0	2	0,0	0
314	Metal structures	24 945	1,0	5,2	4,1	0,0	0,0	2	0	0	0	2	0,0	0
315	Boiler, tanks	4 168	0,2	2,3	4,6	0,0	0,0	2	0	0	3	5	0,0	0
316	Tools,met,prods	31 597	1,3	0,8	5,2	0,0	0,0	2	0	0	0	2	0,0	0
321	Machinery f,agric,	13 581	0,5	1,3	6,6	0,0	0,0	2	0	0	2	4	0,0	0
322	Machine tools	18 867	0,8	0,6	4,3	0,0	0,0	2	0	0	2	4	0,0	0
323	Textile machinery	3 561	0,1	0,2	5,9	0,0	0,0	2	0	0	2	4	0,0	0
324	Machinery:food ind	6 659	0,3	0,3	4,1	0,0	0,0	2	0	0	2	4	0,0	0
325	Plant for mines	17 561	0,7	0,5	4,8	0,0	0,0	2	0	0	2	4	0,0	0
326	Transmission eqm	18 410	0,7	1,2	7,8	0,0	0,0	3	0	0	2	5	0,0	0
327	Other specif,eqm	2 381	0,1	0,1	4,3	0,0	0,0	2	0	0	2	4	0,0	0
328	Other machinery	31 654	1,3	0,3	4,6	0,0	0,1	2	0	1	0	3	0,0	0
330	Office machinery	1 305	0,1	0,0	4,6	0,0	0,0	2	0	0	3	5	0,0	0
341	Electrical wires	29 005	1,2	3,2	6,5	0,0	0,0	2	0	0	3	5	0,0	0
342	Electrical motors	17 882	0,7	0,3	5,0	0,0	29,9	2	0	3	3	8	0,0	0
343	Industrial el,eqm	8 954	0,4	0,3	5,5	0,0	0,0	2	0	0	0	2	0,0	0
344	Telecommun, eqm	5 528	0,2	0,1	6,6	0,0	0,0	2	0	0	3	5	0,0	0
345	Radio-, TV sets	18 357	0,7	0,1	9,9	0,0	0,0	3	0	0	2	5	0,0	0
346	Domest,electr.eqm	21 087	0,8	1,1	4,4	0,0	0,0	2	0	0	2	4	0,0	0
347	Elec,lighting eqm	10 412	0,4	1,4	5,7	0,0	0,0	2	0	0	2	4	0,0	0
351	Motor vehicles	125 242	5,0	0,9	10,0	0,0	0,0	3	0	0	2	5	0,0	0
352	Bodies f,mot,veh,	5 777	0,2	2,2	4,8	0,0	0,0	2	0	0	0	2	0,0	0
353	Parts f,mot,veh,	7 002	0,3	0,3	6,9	0,0	0,0	2	0	0	0	2	0,0	0
361	Shipbuilding	78 599	3,1	5,1	0,2	0,0	0,0	1	0	0	3	4	0,0	0
362	Railway equipment	11 960	0,5	8,0	5,0	0,0	0,0	2	0	0	3	5	0,0	0
363	Cycles,mot,-cycles	4 096	0,2	0,3	16,0	0,0	0,0	3	0	0	0	3	0,0	0
364	Aerospace equipm,	519	0,0	0,0	0,6	0,0	0,0	1	0	0	2	3	0,0	0
365	Oth,transp,means	306	0,0	0,6	4,1	0,0	0,0	2	0	0	0	2	0,0	0
371	Precision instr	4 268	0,2	0,4	5,6	0,0	0,0	2	0	0	0	2	0,0	0
372	Medico-surg. eqm	1 276	0,1	0,1	5,3	0,0	0,0	2	0	0	3	5	0,0	0
373	Optical instr	2 448	0,1	0,1	7,7	0,0	0,0	3	0	0	0	3	0,0	0
374	Clocks, parts	310	0,0	0,0	6,0	0,0	0,0	2	0	0	0	2	0,0	0
43A	Yarns	2 649	0,1	0,1	1,1	7,2	0,0	1	2	0	2	5	0,0	0
43B	Woven fabrics	25 001	1,0	0,7	11,6	90,2	0,0	3	3	0	2	8	0,0	0
436	Knitting ind	45 423	1,8	0,8	13,4	99,3	0,0	3	3	0	0	6	0,0	0
438	Carpets,floor cov,	6 160	0,2	0,5	8,9	100,0	0,0	3	3	0	2	8	0,0	0
439	Other textile ind	7 334	0,3	0,7	10,3	97,6	0,0	3	3	0	0	6	0,0	0
441	Tanning	1 896	0,1	0,1	1,5	0,0	99,1	1	0	3	0	4	0,0	0
442	Leather products	11 128	0,4	0,7	5,3	0,0	87,1	2	0	3	0	5	0,0	0
451	Footwear	56 519	2,3	2,1	7,6	0,0	100,0	3	0	3	2	8	0,0	0
453	Clothings	258 740	10,3	2,5	13,5	94,3	4,2	3	3	2	2	10	0,0	0
455	Househ, textiles	17 325	0,7	1,7	12,3	75,3	0,0	3	3	0	2	8	0,0	0
456	Furs, fur goods	5 099	0,2	1,5	5,7	0,0	97,4	2	0	3	0	5	0,0	0
461	Sawing of wood	97 455	3,9	1,7	0,0	0,0	0,0	1	0	0	0	1	0,0	0
462	Semi-fin,wood prods	29 126	1,2	1,5	9,9	0,0	0,0	3	0	0	0	3	0,0	0
463	Carpentry parts	2 058	0,1	0,5	6,0	0,0	0,0	2	0	0	0	2	0,0	0
464	Wooden containers	251	0,0	1,2	7,2	0,0	0,0	3	0	0	0	3	0,0	0
465	Other wooden prods	11 742	0,5	3,4	4,6	0,0	0,0	2	0	0	0	2	0,0	0
466	Cork-,straw prods	4 726	0,2	1,3	6,3	0,0	2,4	2	0	1	0	3	0,0	0
467	Wooden furniture	94 448	3,8	5,5	5,6	0,0	0,0	2	0	0	0	2	0,0	0
471	Pulp,paper,board	26 582	1,1	0,2	6,3	0,0	0,0	2	0	0	0	2	0,0	0
472	Paper processing	1 108	0,0	0,1	9,0	0,0	0,0	3	0	0	0	3	0,0	0
473	Printing industr,	1 322	0,1	0,1	1,2	0,0	0,0	1	0	0	0	1	0,0	0
481	Rubber products	20 063	0,8	0,9	6,1	5,2	3,3	2	2	1	2	7	0,0	0
482	Tyre retreading	1 304	0,1	5,3	5,8	0,0	0,0	2	0	0	0	2	0,0	0
483	Plastics process,	13 715	0,5	0,4	10,7	0,0	2,7	3	0	1	0	4	0,0	0
491	Jewellery	2 858	0,1	0,0	1,5	0,0	31,9	1	0	3	2	6	0,0	0
492	Musical instrum,	2 752	0,1	0,4	5,8	0,0	95,9	2	0	3	0	5	0,0	0
493	Photographic labs	147	0,0	0,2	6,1	0,0	0,0	2	0	0	2	4	0,0	0
494	Toys, sports goods	10 170	0,4	0,3	7,2	0,0	1,3	3	0	1	2	6	0,0	0
495	Misc, manuf, ind	559	0,0	0,1	5,4	0,0	2,5	2	0	1	0	3	0,0	0
620	Waste-,scrap trade	22 179	0,9	0,8	0,8	0,0	0,1	1	0	1	0	2	0,0	0
Total		2 504 383	100,0	0,8	5,7	17,0	8,8	2	3	2			0,0	0,0

Table A.1.11
EC trade barriers facing Poland, 1989

NACE code	Sector	Imports (1000 ECU)	Product (% share)	Country (% share)	MFN duty (%)	QR (%)	ONTB (%)	Classification D	QR	ONTB	PT	Total	Duty relief (%)	Class.
111	Hard-coal mining	351 138	12,5	7,4	4,6	0,0	0,0	2	0	0	0	2	0,0	0
112	Lignite mining	2	0,0	0,0	0,0	0,0	0,0	1	0	0	0	1	0,0	0
120	Coke ovens	20 904	0,7	12,8	0,1	0,0	0,0	1	0	0	0	1	0,0	0
130	Gas-, petr. extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140	Oil refining	78 078	2,8	0,7	5,1	0,0	0,0	2	0	0	0	2	0,0	0
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152	Fissile materials	7	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
161	Electric power	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162	Gasworks	2 447	0,1	0,1	1,5	0,0	0,0	1	0	0	0	1	0,0	0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212	Non-f. metals extr	3 655	0,1	0,1	0,0	0,0	0,0	0	0	0	0	0	0,0	0
221	Iron & steel ind	142 763	5,1	2,6	4,6	99,4	99,6	2	3	3	0	8	0,0	0
222	Steel tubes	16 513	0,6	1,2	7,6	0,0	16,1	3	0	3	0	6	0,0	0
223	Steel drawing	33 249	1,2	2,8	5,2	0,0	60,8	2	0	3	0	5	0,0	0
224	Non-f. metals	315 961	11,2	1,4	0,6	0,6	0,6	1	1	1	0	3	0,0	0
231	Build. mater. extr	1 263	0,0	0,2	0,4	0,0	0,0	1	0	0	0	1	0,0	0
232	Potassium extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233	Salt extraction	732	0,0	5,2	16,5	0,0	0,0	3	0	0	0	3	0,0	0
239	Other miner. extr	1 777	0,1	0,2	0,0	0,0	0,0	1	0	0	0	1	0,0	0
241	Clay products	393	0,0	2,3	8,0	0,0	0,0	3	0	0	0	3	0,0	0
242	Cement, lime	26 362	0,9	14,9	3,2	0,0	0,0	1	0	0	0	1	0,0	0
243	Cement products	616	0,0	0,9	3,1	0,0	0,0	1	0	0	0	1	0,0	0
244	Asbestos products	71	0,0	0,1	5,3	0,0	0,0	2	0	0	0	2	0,0	0
245	Stone working	1 856	0,1	0,6	2,4	0,0	0,0	1	0	0	0	1	0,0	0
246	Abrasive products	1 059	0,0	0,4	3,1	0,0	0,0	1	0	0	0	1	0,0	0
247	Glass, -ware	38 535	1,4	2,7	8,7	0,0	0,0	3	0	0	2	5	0,0	0
248	Ceramics	8 980	0,3	1,0	10,1	0,0	0,0	3	0	0	2	5	0,0	0
252	Petrochemical ind	109 872	3,9	0,8	7,8	0,0	0,4	3	0	1	0	4	0,0	0
253	Oth. chem. basic ind	144 441	5,1	2,5	3,3	0,0	6,9	1	0	2	0	3	0,0	0
255	Paints, varnishes	250	0,0	0,1	9,9	0,0	0,0	3	0	0	0	3	0,0	0
256	Chemicals for ind	21 495	0,8	0,6	4,2	0,0	0,9	2	0	1	2	5	0,0	0
257	Pharma products	2 463	0,1	0,1	6,2	0,0	0,0	2	0	0	3	5	0,0	0
258	Soap, detergents	553	0,0	0,1	6,7	0,0	0,0	2	0	0	0	2	0,0	0
259	Chemicals f. home	2 241	0,1	0,1	7,1	0,0	0,0	3	0	0	0	3	0,0	0
260	Artificial fibres	8 704	0,3	0,5	8,2	22,4	0,0	3	3	0	0	6	0,0	0
311	Foundries	12 356	0,4	2,7	4,4	0,0	0,0	2	0	0	0	2	0,0	0
312	Forging	11 831	0,4	4,5	4,7	0,0	0,0	2	0	0	0	2	0,0	0
313	Metal treatment	12 594	0,4	1,1	6,0	0,0	0,0	2	0	0	0	2	0,0	0
314	Metal structures	34 637	1,2	5,9	4,1	0,0	0,0	2	0	0	0	2	0,0	0
315	Boiler, tanks	7 318	0,3	3,1	4,5	0,0	0,0	2	0	0	3	5	0,0	0
316	Tools, met. prods	37 610	1,3	0,8	5,3	0,0	0,1	2	0	1	0	3	0,0	0
321	Machinery f. agric.	16 263	0,6	1,4	6,4	0,0	0,0	2	0	0	2	4	0,0	0
322	Machine tools	23 179	0,8	0,6	4,4	0,0	0,0	2	0	0	2	4	0,0	0
323	Textile machinery	3 675	0,1	0,2	6,1	0,0	0,0	2	0	0	2	4	0,0	0
324	Machinery: food ind	9 906	0,4	0,4	4,0	0,0	0,0	2	0	0	2	4	0,0	0
325	Plant for mines	19 051	0,7	0,5	4,7	0,0	0,0	2	0	0	2	4	0,0	0
326	Transmission eqm	25 465	0,9	1,4	7,9	0,0	0,0	3	0	0	2	5	0,0	0
327	Other specif. eqm	4 626	0,2	0,2	4,5	0,0	0,0	2	0	0	2	4	0,0	0
328	Other machinery	44 732	1,6	0,4	4,8	0,0	0,0	2	0	0	0	2	0,0	0
330	Office machinery	1 065	0,0	0,0	4,6	0,0	0,0	2	0	0	3	5	0,0	0
341	Electrical wires	49 447	1,8	4,2	6,5	0,0	0,0	2	0	0	3	5	0,0	0
342	Electrical motors	20 462	0,7	0,3	5,0	0,0	26,9	2	0	3	3	8	0,0	0
343	Industrial el. eqm	11 177	0,4	0,3	5,5	0,0	0,0	2	0	0	0	2	0,0	0
344	Telecommun. eqm	11 136	0,4	0,1	7,0	0,0	0,0	3	0	0	3	6	0,0	0
345	Radio-, TV sets	21 148	0,8	0,1	9,9	0,0	0,0	3	0	0	2	5	0,0	0
346	Domest. electr. eqm	23 069	0,8	1,1	4,5	0,0	0,0	2	0	0	2	4	0,0	0
347	Elec. lighting eqm	13 416	0,5	1,6	5,7	0,0	0,0	2	0	0	2	4	0,0	0
351	Motor vehicles	114 555	4,1	0,7	10,1	0,0	0,0	3	0	0	2	5	0,0	0
352	Bodies f. mot. veh.	6 323	0,2	2,3	4,8	0,0	0,0	2	0	0	0	2	0,0	0
353	Parts f. mot. veh.	8 029	0,3	0,3	6,9	0,0	0,0	2	0	0	0	2	0,0	0
361	Shipbuilding	27 695	1,0	1,6	0,6	0,0	0,0	1	0	0	3	4	0,0	0
362	Railway equipment	1 972	0,1	1,5	4,9	0,0	0,0	2	0	0	3	5	0,0	0
363	Cycles, mot.-cycles	6 514	0,2	0,4	15,9	0,0	0,0	3	0	0	0	3	0,0	0
364	Aerospace equipm.	448	0,0	0,0	2,3	0,0	0,0	1	0	0	2	3	0,0	0
365	Oth. transp. means	528	0,0	0,8	4,1	0,0	0,0	2	0	0	0	2	0,0	0
371	Precision instr	5 127	0,2	0,4	5,6	0,0	0,0	2	0	0	0	2	0,0	0
372	Medico-surg. eqm	2 118	0,1	0,1	5,3	0,0	0,0	2	0	0	3	5	0,0	0
373	Optical instr	2 522	0,1	0,1	7,7	0,0	0,0	3	0	0	0	3	0,0	0
374	Clocks, parts	407	0,0	0,0	6,1	0,0	0,0	2	0	0	0	2	0,0	0
43A	Yarns	2 504	0,1	0,1	2,7	9,8	0,0	1	2	0	2	5	0,0	0
43B	Woven fabrics	25 777	0,9	0,6	11,4	87,7	0,0	3	3	0	2	8	0,0	0
436	Knitting ind	44 707	1,6	0,8	13,3	99,5	0,0	3	3	0	0	6	0,0	0
438	Carpets, floor cov.	5 987	0,2	0,4	8,7	100,0	0,0	3	3	0	2	8	0,0	0
439	Other textile ind	5 592	0,2	0,5	9,4	97,0	0,0	3	3	0	0	6	0,0	0
441	Tanning	3 723	0,1	0,2	1,8	0,0	99,9	1	0	3	0	4	0,0	0
442	Leather products	14 193	0,5	0,8	5,4	0,0	79,5	2	0	3	0	5	0,0	0
451	Footwear	57 404	2,0	1,9	7,6	0,0	100,0	3	0	3	2	8	0,0	0
453	Clothings	293 753	10,4	2,5	13,7	95,9	2,3	3	3	1	2	9	0,0	0
455	Househ. textiles	16 827	0,6	1,5	12,0	73,6	0,0	3	3	0	2	8	0,0	0
456	Furs, fur goods	3 746	0,1	1,4	5,7	0,0	94,0	2	0	3	0	5	0,0	0
461	Sawing of wood	88 794	3,2	1,4	0,0	0,0	0,0	1	0	0	0	1	0,0	0
462	Semi-fin. wood prods	29 103	1,0	1,5	9,9	0,0	0,1	3	0	1	0	4	0,0	0
463	Carpentry parts	3 147	0,1	0,6	5,9	0,0	0,0	2	0	0	0	2	0,0	0
464	Wooden containers	415	0,0	1,2	7,4	0,0	0,0	3	0	0	0	3	0,0	0
465	Other wooden prods	19 134	0,7	4,4	4,8	0,0	0,1	2	0	1	0	3	0,0	0
466	Cork-, straw prods	3 985	0,1	1,0	6,4	0,0	1,7	2	0	1	0	3	0,0	0
467	Wooden furniture	110 128	3,9	5,5	5,6	0,0	0,0	2	0	0	0	2	0,0	0
471	Pulp, paper, board	35 604	1,3	0,2	6,4	0,0	0,0	2	0	0	0	2	0,0	0
472	Paper processing	2 408	0,1	0,1	9,2	0,0	0,0	3	0	0	0	3	0,0	0
473	Printing industr.	1 292	0,0	0,1	2,1	0,0	0,0	1	0	0	0	1	0,0	0
481	Rubber products	22 527	0,8	0,9	6,1	5,6	2,0	2	2	1	2	7	0,0	0
482	Tyre retreading	1 636	0,1	6,5	5,8	0,0	0,0	2	0	0	0	2	0,0	0
483	Plastics process.	11 758	0,4	0,3	10,0	0,0	2,8	3	0	1	0	4	0,0	0
491	Jewellery	7 591	0,3	0,1	0,6	0,0	13,8	1	0	3	2	6	0,0	0
492	Musical instrum.	2 377	0,1	0,4	5,8	0,0	96,2	2	0	3	0	5	0,0	0
493	Photographic labs	146	0,0	0,2	6,8	0,0	0,0	2	0	0	2	4	0,0	0
494	Toys, sports goods	10 093	0,4	0,3	7,3	0,0	2,0	3	0	1	2	6	0,0	0
495	Misc. manuf. ind	533	0,0	0,1	4,5	0,0	2,4	2	0	1	0	3	0,0	0
620	Waste-, scrap trade	59 614	2,1	1,5	0,5	0,0	0,1	1	0	1	0	2	0,0	0
Total		2 811 279	100,0	0,8	5,9	18,0	9,7	2	3	3			0,0	0,0

Table A.1.12
EC trade barriers facing Poland, 1990

NACE code	Sector	Imports (1000 ECU)	Product (% share)	Country (% share)	MFN duty (%)	QR (%)	ONTB (%)	Classification D	QR	ONTB	PT	Total	Duty relief (%)	Class.
111	Hard-coal mining	350 455	9,1	7,4	4,4	0,0	0,0	2	0	0	0	2	0,0	0
112	Lignite mining	34	0,0	0,1	0,0	0,0	0,0	0	0	0	0	0	0,0	0
120	Coke ovens	39 940	1,0	25,0	0,4	0,0	0,0	1	0	0	0	1	0,0	0
130	Gas-, petr. extr	353	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140	Oil refining	92 358	2,4	0,7	4,9	0,0	0,0	2	0	0	0	2	19,0	-1
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152	Fissile materials	48	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
161	Electric power	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162	Gasworks	2 895	0,1	0,1	1,5	0,0	0,0	1	0	0	0	1	0,0	0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212	*Non-f. metals extr*	*20 101*	*0,5*	*0,6*	*0,0*	*0,0*	*0,0*	*0*	*0*	*0*	*0*	*0*	*0,0*	*0*
221	Iron & steel ind	185 093	4,8	3,6	4,4	99,1	99,1	2	3	3	0	8	0,0	0
222	Steel tubes	35 526	0,9	2,4	7,8	0,0	15,4	3	0	3	0	6	60,3	-3
223	Steel drawing	37 125	1,0	3,1	5,3	0,0	58,1	2	0	3	0	5	69,0	-3
224	Non-f. metals	400 437	10,4	1,9	0,8	2,2	2,2	1	1	1	0	3	58,8	-3
231	*Build. mater. extr*	*2 881*	*0,1*	*0,4*	*0,1*	*0,0*	*0,0*	*1*	*0*	*0*	*0*	*1*	*0,0*	*0*
232	Potassium extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233	Salt extraction	1 403	0,0	10,8	12,2	0,0	0,0	3	0	0	0	3	0,0	0
239	Other miner. extr	3 373	0,1	0,3	0,0	0,0	0,0	1	0	0	0	1	0,0	0
241	Clay products	927	0,0	6,0	7,9	0,0	0,0	3	0	0	0	3	75,1	-3
242	Cement, lime	32 142	0,8	13,6	3,2	0,0	0,0	1	0	0	0	1	75,5	-3
243	Cement products	1 354	0,0	1,6	3,5	0,0	0,0	1	0	0	0	1	4,4	-1
244	Asbestos products	232	0,0	0,5	6,7	0,0	0,0	2	0	0	0	2	35,4	-2
245	Stone working	3 118	0,1	0,9	2,5	0,0	0,0	1	0	0	0	1	43,3	-3
246	Abrasive products	1 250	0,0	0,5	3,2	0,0	0,0	1	0	0	0	1	72,1	-3
247	Glass, -ware	60 713	1,6	4,1	8,8	0,0	0,0	3	0	0	2	5	55,2	-3
248	Ceramics	15 033	0,4	1,5	10,3	0,0	0,0	3	0	0	2	5	14,6	-1
252	Petrochemical ind	217 709	5,7	1,6	8,8	0,0	0,2	3	0	1	0	4	41,5	-3
253	Oth. chem. basic ind	209 375	5,5	3,9	5,5	0,0	6,4	2	0	2	0	4	55,9	-3
255	Paints, varnishes	270	0,0	0,1	9,1	0,0	0,0	3	0	0	0	3	5,2	-1
256	Chemicals for ind	31 680	0,8	0,8	4,0	0,0	0,6	2	0	1	2	5	53,6	-3
257	Pharma products	2 714	0,1	0,1	5,3	0,0	0,0	2	0	0	3	5	54,7	-3
258	Soap, detergents	758	0,0	0,1	6,7	0,0	0,0	2	0	0	0	2	10,8	-1
259	Chemicals f. home	4 125	0,1	0,1	8,3	0,0	0,0	3	0	0	0	3	74,9	-3
260	*Artificial fibres*	*17 947*	*0,5*	*1,1*	*8,1*	*9,2*	*0,0*	*3*	*2*	*0*	*0*	*5*	*54,0*	*-3*
311	Foundries	18 169	0,5	3,6	4,5	0,0	0,0	2	0	0	0	2	56,3	-3
312	Forging	18 115	0,5	5,8	5,0	0,0	0,0	2	0	0	0	2	44,6	-3
313	Metal treatment	20 647	0,5	1,9	6,1	0,0	0,0	2	0	0	0	2	71,6	-3
314	Metal structures	47 640	1,2	6,9	4,2	0,0	0,0	2	0	0	0	2	44,2	-3
315	Boiler, tanks	15 743	0,4	5,8	4,5	0,0	0,0	2	0	0	3	5	50,7	-3
316	Tools, met. prods	69 957	1,8	1,5	5,3	0,0	0,1	2	0	1	0	3	68,3	-3
321	Machinery f. agric.	17 439	0,5	1,6	5,9	0,0	0,0	2	0	0	2	4	43,4	-3
322	Machine tools	35 184	0,9	0,9	4,3	0,0	0,0	2	0	0	2	4	53,2	-3
323	Textile machinery	8 538	0,2	0,6	7,8	0,0	0,0	3	0	0	2	5	42,7	-3
324	Machinery: food ind	12 321	0,3	0,4	4,1	0,0	0,0	2	0	0	2	4	48,3	-3
325	Plant for mines	22 320	0,6	0,5	4,5	0,0	0,0	2	0	0	2	4	42,6	-3
326	Transmission eqm	37 229	1,0	1,8	8,0	0,0	0,0	3	0	0	2	5	61,5	-3
327	Other specif. eqm	7 540	0,2	0,3	4,5	0,0	0,0	2	0	0	2	4	33,9	-2
328	Other machinery	75 630	2,0	0,6	4,8	0,0	0,0	2	0	0	0	2	18,9	-1
330	Office machinery	1 875	0,0	0,0	4,5	0,0	0,0	2	0	0	3	5	5,9	-1
341	Electrical wires	91 075	2,4	6,8	6,5	0,0	0,0	2	0	0	3	5	82,0	-3
342	Electrical motors	39 177	1,0	0,5	5,0	0,0	26,7	2	0	3	3	8	47,9	-3
343	Industrial el. eqm	14 127	0,4	0,4	5,6	0,0	0,0	2	0	0	0	2	28,3	-2
344	Telecommun. eqm	9 495	0,2	0,1	6,6	0,0	0,0	2	0	0	3	5	16,4	-1
345	Radio-, TV sets	25 049	0,7	0,1	9,9	0,0	0,0	3	0	0	2	5	56,1	-3
346	Domest. electr. eqm	29 216	0,8	1,5	4,5	0,0	0,0	2	0	0	2	4	74,9	-3
347	Elec. lighting eqm	19 322	0,5	2,3	5,7	0,0	0,0	2	0	0	2	4	66,3	-3
351	Motor vehicles	68 880	1,8	0,4	10,0	0,0	0,0	3	0	0	2	5	49,3	-3
352	*Bodies f. mot. veh.*	*11 011*	*0,3*	*3,7*	*4,9*	*0,0*	*0,0*	*2*	*0*	*0*	*0*	*2*	*41,5*	*-3*
353	Parts f. mot. veh.	13 289	0,3	0,5	6,9	0,0	0,0	2	0	0	0	2	40,5	-3
361	Shipbuilding	18 370	0,5	0,9	0,8	0,0	0,0	1	0	0	3	4	15,0	-1
362	Railway equipment	13 343	0,3	7,0	5,0	0,0	0,0	2	0	0	3	5	1,9	-1
363	Cycles, mot.-cycles	7 787	0,2	0,3	15,4	0,0	0,0	3	0	0	0	3	71,6	-3
364	Aerospace equipm.	3 206	*0,1*	*0,0*	*0,3*	*0,0*	*0,0*	*1*	*0*	*0*	*2*	*3*	*0,0*	*0*
365	Oth. transp. means	946	0,0	1,3	4,1	0,0	0,0	2	0	0	0	2	63,0	-3
371	Precision instr	8 268	0,2	0,6	5,6	0,0	0,0	2	0	0	0	2	56,0	-3
372	Medico-surg. eqm	2 846	0,1	0,1	5,3	0,0	0,0	2	0	0	3	5	62,1	-3
373	Optical instr	2 231	0,1	0,1	8,3	0,0	0,2	3	0	1	0	4	27,0	-2
374	Clocks, parts	432	0,0	0,0	6,1	0,0	0,0	2	0	0	0	2	71,1	-3
43A	Yarns	4 597	0,1	0,2	3,9	50,4	0,0	1	3	0	2	6	100,0	-3
43B	Woven fabrics	29 782	0,8	0,7	11,7	89,7	0,0	3	3	0	2	8	24,7	-1
436	Knitting ind	70 662	1,8	1,0	13,3	99,0	0,0	3	3	0	0	6	20,7	-1
438	Carpets, floor cov.	6 442	0,2	0,5	9,2	100,0	0,0	3	3	0	2	8	28,7	-2
439	Other textile ind	5 504	0,1	0,5	8,7	94,8	0,0	3	3	0	0	6	28,1	-2
441	Tanning	12 353	0,3	0,6	2,8	0,0	100,0	1	0	3	0	4	50,9	-3
442	Leather products	20 246	0,5	1,1	5,6	0,0	70,7	2	0	3	0	5	55,4	-3
451	Footwear	81 956	2,1	2,5	7,6	0,0	100,0	3	0	3	2	8	11,7	-1
453	*Clothings*	442 724	11,5	3,2	13,7	96,1	2,0	3	3	1	2	9	4,9	-1
455	Househ. textiles	25 889	0,7	2,0	12,0	82,3	0,0	3	3	0	2	8	26,8	-2
456	Furs, fur goods	3 790	0,1	1,9	5,5	0,0	95,3	2	0	3	0	5	58,0	-3
461	Sawing of wood	105 203	2,7	1,6	0,2	0,0	0,0	1	0	0	0	1	34,3	-2
462	Semi-fin. wood prods	44 605	1,2	2,1	9,9	0,0	0,0	3	0	0	0	3	51,5	-3
463	*Carpentry parts*	*6 497*	*0,2*	*1,0*	*5,7*	*0,0*	*0,0*	*2*	*0*	*0*	*0*	*2*	*49,8*	*-3*
464	Wooden containers	1 993	0,1	3,9	7,5	0,0	0,0	3	0	0	0	3	48,6	-3
465	Other wooden prods	61 427	1,6	11,3	3,2	0,0	0,2	1	0	1	0	2	66,3	-3
466	Cork-, straw prods	6 395	0,2	1,7	5,2	0,0	3,7	2	0	1	0	3	70,6	-3
467	Wooden furniture	160 703	4,2	7,6	5,6	0,0	2,5	2	0	1	0	3	75,5	-3
471	Pulp, paper, board	40 230	1,0	0,3	7,4	0,0	0,0	3	0	0	0	3	74,2	-3
472	Paper processing	2 467	0,1	0,1	9,8	0,0	0,0	3	0	0	0	3	48,2	-3
473	Printing industr.	2 106	0,1	0,1	2,4	0,0	0,0	1	0	0	0	1	0,0	0
481	Rubber products	28 681	0,7	1,1	5,9	2,9	2,6	2	1	1	2	6	68,7	-3
482	Tyre retreading	1 577	0,0	6,4	5,8	0,0	0,0	2	0	0	0	2	60,3	-3
483	Plastics process.	21 087	0,5	0,4	9,9	0,0	1,5	3	0	1	0	4	54,9	-3
491	Jewellery	12 187	0,3	0,2	0,7	0,0	15,6	1	0	3	2	6	19,2	-1
492	Musical instrum.	3 152	0,1	0,5	5,8	0,0	95,1	2	0	3	0	5	34,9	-2
493	Photographic labs	247	0,0	0,3	8,7	0,0	0,0	3	0	0	2	5	0,0	0
494	Toys, sports goods	13 083	0,3	0,4	7,0	0,0	1,6	3	0	1	2	6	62,8	-3
495	Misc. manuf. ind	2 550	0,1	0,3	4,9	0,0	0,8	2	0	1	0	3	4,9	-1
620	Waste-, scrap trade	61 605	1,6	1,4	0,7	0,0	0,0	1	0	0	0	1	0,7	-1
Total		3 837 526	100,0	1,0	6,2	19,2	10,2	2	3	3			33,3	-2

Table A.1.13
EC trade barriers facing Romania, 1988

NACE code	Sector	Imports (1000 ECU)	Product (% share)	Country (% share)	MFN duty (%)	QR (%)	ONTB (%)	Classification D	QR	ONTB	PT	Total	Duty relief (%) not available	Class.
111	Hard-coal mining	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0		
112	Lignite mining	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0		
120	Coke ovens	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0		
130	Gas-, petr. extr	5 552	0,3	0,0	0,0	0,0	0,0	0	0	0	0	0		
140	Oil refining	621 352	29,4	6,6	5,4	0,0	0,0	2	0	0	0	2		
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0		
152	Fissile materials	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0		
161	Electric power	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0		
162	Gasworks	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0		
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0		
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0		
212	Non-f. metals extr	6 205	0,3	0,2	0,0	0,0	0,0	0	0	0	0	0		
221	Iron & steel ind	91 703	4,3	2,2	4,7	100,0	100,0	2	3	3	0	8		
222	Steel tubes	15 821	0,7	1,4	9,4	0,0	40,3	3	0	3	0	6		
223	Steel drawing	5 267	0,2	0,6	5,2	0,0	34,3	2	0	3	0	5		
224	Non-f. metals	133 629	6,3	0,5	5,9	0,3	0,3	2	1	1	0	4		
231	Build. mater. extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0		
232	Potassium extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0		
233	Salt extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0		
239	Other miner. extr	2	0,0	0,0	0,5	0,0	0,0	1	0	0	0	1		
241	Clay products	14	0,0	0,1	3,5	0,0	0,0	1	0	0	0	1		
242	Cement, lime	15 310	0,7	11,8	3,2	0,0	0,0	1	0	0	0	1		
243	Cement products	160	0,0	0,3	3,2	0,0	0,0	1	0	0	0	1		
244	Asbestos products	7	0,0	0,0	5,3	0,0	0,0	2	0	0	0	2		
245	Stone working	1 291	0,1	0,5	2,3	0,0	0,0	1	0	0	0	1		
246	Abrasive products	15	0,0	0,0	3,2	0,0	0,0	1	0	0	0	1		
247	Glass, -ware	30 097	1,4	2,5	9,3	0,0	0,2	3	0	1	2	6		
248	Ceramics	16 902	0,8	2,0	9,3	0,0	0,0	3	0	0	2	5		
252	Petrochemical ind	70 053	3,3	0,6	8,6	0,0	0,6	3	0	1	0	4		
253	Oth. chem. basic ind	42 743	2,0	0,9	8,5	0,5	22,8	3	1	3	0	7		
255	Paints, varnishes	65	0,0	0,0	9,8	0,0	0,0	3	0	0	0	3		
256	Chemicals for ind	3 209	0,2	0,1	2,9	0,0	0,1	1	0	1	2	4		
257	Pharma products	3 113	0,1	0,1	5,4	0,0	0,0	2	0	0	3	5		
258	Soap, detergents	57	0,0	0,0	6,7	0,0	0,0	2	0	0	0	2		
259	Chemicals f. home	920	0,0	0,0	6,5	0,0	0,0	2	0	0	0	2		
260	Artificial fibres	22 404	1,1	1,7	8,0	10,4	23,6	3	3	3	0	9		
311	Foundries	1 718	0,1	0,4	4,3	0,0	0,0	2	0	0	0	2		
312	Forging	788	0,0	0,4	5,2	0,0	0,0	2	0	0	0	2		
313	Metal treatment	4 381	0,2	0,5	6,4	0,0	0,0	2	0	0	0	2		
314	Metal structures	806	0,0	0,2	4,6	0,0	0,0	2	0	0	0	2		
315	Boiler, tanks	2 086	0,1	1,1	4,8	0,0	0,0	2	0	0	3	5		
316	Tools, met. prods	37 823	1,8	1,0	5,3	0,0	0,0	2	0	0	0	2		
321	Machinery f. agric.	4 296	0,2	0,4	8,7	0,0	0,0	3	0	0	2	5		
322	Machine tools	6 954	0,3	0,2	4,0	0,0	0,0	2	0	0	2	4		
323	Textile machinery	304	0,0	0,0	4,3	0,0	0,0	2	0	0	2	4		
324	Machinery: food ind	40	0,0	0,0	3,6	0,0	0,0	1	0	0	2	3		
325	Plant for mines	10 238	0,5	0,3	4,4	0,0	0,0	2	0	0	2	4		
326	Transmission eqm	21 099	1,0	1,4	8,5	0,0	0,0	3	0	0	2	5		
327	Other specif. eqm	611	0,0	0,0	5,6	0,0	0,0	2	0	0	2	4		
328	Other machinery	3 153	0,1	0,0	4,6	0,0	3,8	2	0	1	0	3		
330	Office machinery	465	0,0	0,0	4,9	0,0	0,0	2	0	0	3	5		
341	Electrical wires	1 970	0,1	0,2	6,5	0,0	0,0	2	0	0	3	5		
342	Electrical motors	21 857	1,0	0,4	5,1	0,0	14,4	2	0	3	3	8		
343	Industrial el. eqm	2 150	0,1	0,1	5,1	0,0	0,0	2	0	0	0	2		
344	Telecommun. eqm	323	0,0	0,0	5,9	0,0	0,0	2	0	0	3	5		
345	Radio-, TV sets	7 262	0,3	0,0	13,9	0,0	0,0	3	0	0	2	5		
346	Domest. electr. eqm	12 281	0,6	0,7	3,8	0,0	0,0	1	0	0	2	3		
347	Elec. lighting eqm	5 804	0,3	0,8	5,8	0,0	0,0	2	0	0	2	4		
351	Motor vehicles	34 706	1,6	0,2	10,2	0,0	0,0	3	0	0	2	5		
352	Bodies f. mot. veh.	1 925	0,1	0,7	4,4	0,0	0,0	2	0	0	0	2		
353	Parts f. mot. veh.	10 303	0,5	0,4	6,9	0,0	0,0	2	0	0	0	2		
361	Shipbuilding	2	0,0	0,0	3,8	0,0	0,0	1	0	0	3	4		
362	Railway equipment	893	0,0	0,6	3,9	0,0	0,0	1	0	0	3	4		
363	Cycles, mot.-cycles	83	0,0	0,0	8,8	0,0	0,0	3	0	0	0	3		
364	Aerospace equipm.	1 672	0,1	0,0	2,6	0,0	0,0	1	0	0	2	3		
365	Oth. transp. means	127	0,0	0,2	4,1	0,0	0,0	2	0	0	0	2		
371	Precision instr	1 488	0,1	0,1	5,2	0,0	0,0	2	0	0	0	2		
372	Medico-surg. eqm	91	0,0	0,0	5,3	0,0	0,0	2	0	0	3	5		
373	Optical instr	822	0,0	0,0	9,9	0,0	0,0	3	0	0	0	3		
374	Clocks, parts	450	0,0	0,0	5,6	0,0	0,0	2	0	0	0	2		
43A	Yarns	3 075	0,1	0,1	6,6	76,3	55,9	2	3	3	2	10		
43B	Woven fabrics	15 437	0,7	0,4	10,5	99,2	0,0	3	3	0	2	8		
436	Knitting ind	83 858	4,0	1,5	13,4	99,3	0,0	3	3	0	0	6		
438	Carpets, floor cov.	7 034	0,3	0,5	5,9	100,0	0,0	2	3	0	2	7		
439	Other textile ind	311	0,0	0,0	10,0	94,2	0,0	3	3	0	0	6		
441	Tanning	1 192	0,1	0,1	6,6	0,0	100,0	2	0	3	0	5		
442	Leather products	6 198	0,3	0,4	6,7	0,0	93,7	2	0	3	0	5		
451	Footwear	46 060	2,2	1,7	7,9	0,0	100,0	3	0	3	2	8		
453	Clothings	266 023	12,6	2,6	13,7	96,0	0,8	3	3	1	2	9		
455	Househ. textiles	10 068	0,5	1,0	12,3	71,8	0,0	3	3	0	2	8		
456	Furs, fur goods	2 000	0,1	0,6	5,8	0,0	95,5	2	0	3	0	5		
461	Sawing of wood	25 283	1,2	0,4	0,1	0,0	0,0	1	0	0	0	1		
462	Semi-fin. wood prods	23 937	1,1	1,3	9,3	0,0	0,0	3	0	0	0	3		
463	Carpentry parts	2 069	0,1	0,5	5,9	0,0	0,0	2	0	0	0	2		
464	Wooden containers	1 911	0,1	8,9	7,5	0,0	0,0	3	0	0	0	3		
465	Other wooden prods	7 997	0,4	2,3	4,8	0,0	0,0	2	0	0	0	2		
466	Cork-, straw prods	13 411	0,6	3,7	6,2	0,0	0,8	2	0	1	0	3		
467	Wooden furniture	267 233	12,6	15,6	5,6	0,0	0,0	2	0	0	0	2		
471	Pulp, paper, board	19 009	0,9	0,1	7,8	0,0	0,0	3	0	0	0	3		
472	Paper processing	371	0,0	0,0	9,4	0,0	0,0	3	0	0	0	3		
473	Printing industr.	1 000	0,0	0,1	2,5	0,0	0,0	1	0	0	0	1		
481	Rubber products	14 386	0,7	0,7	6,0	0,1	0,4	2	1	1	2	6		
482	Tyre retreading	38	0,0	0,2	5,8	0,0	0,0	2	0	0	0	2		
483	Plastics process.	5 129	0,2	0,1	7,6	0,0	0,0	3	0	0	0	3		
491	Jewellery	892	0,0	0,0	1,8	0,0	0,8	1	0	1	2	4		
492	Musical instrum.	1 352	0,1	0,2	6,2	0,0	24,7	2	0	3	0	5		
493	Photographic labs	39	0,0	0,0	7,6	0,0	0,0	3	0	0	2	5		
494	Toys, sports goods	3 784	0,2	0,1	7,6	0,0	4,5	3	0	2	2	7		
495	Misc. manuf. ind	907	0,0	0,1	7,7	0,0	0,0	3	0	0	0	3		
620	Waste-, scrap trade	624	0,0	0,0	3,5	0,0	0,0	1	0	0	0	1		
Total		2 115 490	100,0	0,6	7,3	22,0	8,5	3	3	2				

Table A.1.14
EC trade barriers facing Romania, 1989

NACE code	Sector	Imports (1000 ECU)	Product (% share)	Country (% share)	MFN duty (%)	QR (%)	ONTB (%)	Classification D	QR	ONTB	PT	Total	Duty relief (%)	Class.
111	Hard-coal mining	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
112	Lignite mining	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
120	Coke ovens	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
130	Gas-, petr. extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140	Oil refining	844 069	34,8	7,1	5,5	0,0	0,0	2	0	0	0	2	73,3	-3
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152	Fissile materials	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
161	Electric power	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162	Gasworks	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212	Non-f. metals extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
221	Iron & steel ind	104 153	4,3	1,9	4,7	100,0	100,0	2	3	3	0	8	0,0	-1
222	Steel tubes	14 821	0,6	1,1	8,4	0,0	32,7	3	0	3	0	6	0,0	0
223	Steel drawing	9 706	0,4	0,8	5,1	0,0	63,1	2	0	3	0	5	52,7	-3
224	Non-f. metals	147 516	6,1	0,6	6,0	0,0	0,0	2	0	0	0	2	0,4	-1
231	Build. mater. extr	2	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
232	Potassium extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233	Salt extraction	7	0,0	0,1	14,6	0,0	0,0	3	0	0	0	3	0,0	0
239	Other miner. extr	33	0,0	0,0	0,1	0,0	0,0	1	0	0	0	1	0,0	0
241	Clay products	61	0,0	0,4	8,0	0,0	0,0	3	0	0	0	3	45,9	-3
242	*Cement, lime*	16 816	0,7	9,5	3,2	0,0	0,0	1	0	0	0	1	91,5	-3
243	Cement products	22	0,0	0,0	3,2	0,0	0,0	1	0	0	0	1	77,3	-3
244	Asbestos products	1	0,0	0,0	5,3	0,0	0,0	2	0	0	0	2	0,0	0
245	Stone working	1 051	0,0	0,4	2,5	0,0	0,0	1	0	0	0	1	100,0	-3
246	Abrasive products	24	0,0	0,0	3,3	0,0	0,0	1	0	0	0	1	2,5	-1
247	Glass, -ware	31 949	1,3	2,2	9,8	0,0	0,1	3	0	1	2	6	5,3	-1
248	Ceramics	17 978	0,7	2,0	9,2	0,0	0,0	3	0	0	2	5	60,9	-3
252	Petrochemical ind	63 956	2,6	0,5	8,8	0,0	0,6	3	0	1	0	4	43,9	-3
253	Oth. chem. basic ind	43 974	1,8	0,8	7,9	0,0	10,4	3	0	3	0	6	13,5	-1
255	Paints, varnishes	107	0,0	0,0	10,0	0,0	0,0	3	0	0	0	3	0,0	0
256	Chemicals for ind	3 245	0,1	0,1	3,2	0,0	5,1	1	0	2	2	5	63,5	-3
257	Pharma products	2 833	0,1	0,1	5,4	0,0	0,0	2	0	0	3	5	24,2	-1
258	Soap, detergents	57	0,0	0,0	6,6	0,0	0,0	2	0	0	0	2	68,0	-3
259	Chemicals f. home	750	0,0	0,0	6,7	0,0	0,0	2	0	0	0	2	60,5	-3
260	Artificial fibres	26 883	1,1	1,7	8,0	12,7	15,7	3	3	3	0	9	14,9	-1
311	Foundries	2 081	0,1	0,5	4,3	0,0	0,0	2	0	0	0	2	22,7	-1
312	Forging	1 948	0,1	0,7	5,1	0,0	0,0	2	0	0	0	2	57,4	-3
313	Metal treatment	5 672	0,2	0,5	6,3	0,0	0,0	2	0	0	0	2	71,4	-3
314	Metal structures	1 684	0,1	0,3	4,1	0,0	0,0	2	0	0	0	2	1,7	-1
315	Boiler, tanks	4 223	0,2	1,8	4,4	0,0	0,0	2	0	0	3	5	88,3	-3
316	Tools, met. prods	41 093	1,7	0,9	5,3	0,0	0,0	2	0	0	0	2	30,8	-2
321	Machinery f. agric.	5 659	0,2	0,5	8,3	0,0	0,0	3	0	0	2	5	36,7	-2
322	Machine tools	10 569	0,4	0,3	3,9	0,0	0,0	1	0	0	2	3	75,8	-3
323	Textile machinery	159	0,0	0,0	4,4	0,0	0,0	2	0	0	2	4	0,0	0
324	Machinery: food ind	186	0,0	0,0	4,1	0,0	0,0	2	0	0	2	4	0,0	0
325	Plant for mines	3 580	0,1	0,1	4,7	0,0	0,0	2	0	0	2	4	48,8	-3
326	Transmission eqm	31 428	1,3	1,7	8,6	0,0	0,0	3	0	0	2	5	3,9	-1
327	Other specif. eqm	1 044	0,0	0,0	5,5	0,0	0,0	2	0	0	2	4	78,0	-3
328	Other machinery	2 460	0,1	0,0	4,7	0,0	0,0	2	0	0	0	2	72,6	-3
330	Office machinery	296	0,0	0,0	4,8	0,0	0,0	2	0	0	3	5	3,4	-1
341	Electrical wires	2 672	0,1	0,2	6,5	0,0	0,0	2	0	0	3	5	0,0	0
342	Electrical motors	24 085	1,0	0,3	5,0	0,0	16,1	2	0	3	3	8	48,5	-3
343	Industrial el. eqm	1 364	0,1	0,0	5,0	0,0	0,0	2	0	0	0	2	69,0	-3
344	Telecommun. eqm	488	0,0	0,0	5,1	0,0	0,0	2	0	0	3	5	42,7	-3
345	Radio-, TV sets	3 308	0,1	0,0	13,3	0,0	0,0	3	0	0	2	5	100,0	-3
346	Domest. electr. eqm	15 601	0,6	0,8	3,9	0,0	0,0	1	0	0	2	3	56,8	-3
347	Elec. lighting eqm	6 586	0,3	0,8	5,8	0,0	0,0	2	0	0	2	4	56,9	-3
351	Motor vehicles	22 862	0,9	0,1	10,2	0,0	0,0	3	0	0	2	5	80,3	-3
352	*Bodies f. mot. veh.*	2 642	0,1	1,0	4,7	0,0	0,0	2	0	0	0	2	79,8	-3
353	Parts f. mot. veh.	7 350	0,3	0,3	6,9	0,0	0,0	2	0	0	0	2	73,8	-3
361	Shipbuilding	3	0,0	0,0	3,8	0,0	0,0	1	0	0	3	4	0,0	0
362	Railway equipment	810	0,0	0,6	4,6	0,0	0,0	2	0	0	3	5	69,6	-3
363	Cycles, mot.-cycles	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
364	Aerospace equipm.	1 577	0,1	0,0	2,3	0,0	0,0	1	0	0	2	3	0,0	0
365	Oth. transp. means	209	0,0	0,3	4,1	0,0	0,0	2	0	0	0	2	61,7	-3
371	Precision instr	1 811	0,1	0,1	5,2	0,0	0,0	2	0	0	0	2	53,1	-3
372	Medico-surg. eqm	56	0,0	0,0	5,5	0,0	0,0	2	0	0	3	5	18,9	-1
373	Optical instr	733	0,0	0,0	9,9	0,0	0,0	3	0	0	0	3	100,0	-3
374	Clocks, parts	242	0,0	0,0	5,8	0,0	0,0	2	0	0	0	2	75,8	-3
43A	Yarns	2 021	0,1	0,1	7,6	90,3	72,9	3	3	3	2	11	2,8	-1
43B	Woven fabrics	12 898	0,5	0,3	10,6	98,6	0,0	3	3	0	2	8	10,3	-1
436	Knitting ind	82 028	3,4	1,4	13,4	99,8	0,0	3	3	0	0	6	2,6	-1
438	Carpets, floor cov.	8 459	0,3	0,6	6,0	100,0	0,0	2	3	0	2	7	19,4	-1
439	Other textile ind	387	0,0	0,0	10,0	99,5	0,0	3	3	0	0	6	20,4	-1
441	Tanning	299	0,0	0,0	6,9	0,0	100,0	2	0	3	0	5	35,4	-2
442	Leather products	6 484	0,3	0,4	6,0	0,0	91,5	2	0	3	0	5	71,8	-3
451	Footwear	35 477	1,5	1,2	7,8	0,0	100,0	3	0	3	2	8	0,0	0
453	Clothings	305 866	12,6	2,6	13,7	96,2	1,2	3	3	1	2	9	2,6	-1
455	Househ. textiles	10 826	0,4	0,9	12,1	69,2	0,0	3	3	0	2	8	12,5	-1
456	Furs, fur goods	2 063	0,1	0,8	6,0	0,0	100,0	2	0	3	0	5	19,1	-1
461	Sawing of wood	22 993	0,9	0,4	0,1	0,0	0,0	1	0	0	0	1	93,6	-3
462	Semi-fin. wood prods	22 354	0,9	1,1	9,4	0,0	0,0	3	0	0	0	3	3,8	-1
463	Carpentry parts	3 138	0,1	0,6	5,9	0,0	0,0	2	0	0	0	2	43,7	-3
464	*Wooden containers*	2 121	0,1	6,1	7,5	0,0	0,0	3	0	0	0	3	7,2	-1
465	Other wooden prods	10 545	0,4	2,4	4,8	0,0	0,0	2	0	0	0	2	43,9	-3
466	Cork-, straw prods	12 498	0,5	3,1	6,2	0,0	0,7	2	0	1	0	3	71,4	-3
467	Wooden furniture	295 985	12,2	14,8	5,6	0,0	0,0	2	0	0	0	2	0,4	-1
471	Pulp, paper, board	22 630	0,9	0,1	8,2	0,0	0,0	3	0	0	0	3	90,5	-3
472	Paper processing	598	0,0	0,0	9,5	0,0	0,0	3	0	0	0	3	64,7	-3
473	Printing industr.	762	0,0	0,0	3,1	0,0	0,0	1	0	0	0	1	69,6	-3
481	Rubber products	13 995	0,6	0,6	6,3	0,1	0,5	2	1	1	2	6	21,3	-1
482	Tyre retreading	27	0,0	0,1	5,8	0,0	0,0	2	0	0	0	2	0,0	0
483	Plastics process.	7 787	0,3	0,2	7,7	0,0	0,0	3	0	0	0	3	61,2	-3
491	Jewellery	1 136	0,0	0,0	1,1	0,0	0,0	1	0	0	2	3	0,0	0
492	Musical instrum.	1 798	0,1	0,3	6,2	0,0	14,2	2	0	3	0	5	85,7	-3
493	Photographic labs	5	0,0	0,0	8,2	0,0	0,0	3	0	0	2	5	0,0	0
494	Toys, sports goods	3 419	0,1	0,1	7,5	0,0	2,7	3	0	1	2	6	70,2	-3
495	Misc. manuf. ind	39	0,0	0,0	6,7	0,0	0,0	2	0	0	0	2	0,0	0
620	Waste-, scrap trade	463	0,0	0,0	3,0	0,0	0,0	1	0	0	0	1	0,0	0
Total		2 423 596	100,0	0,6	7,2	21,2	7,3	3	3	2			29,2	-2

Table A.1.15
EC trade barriers facing Romania, 1990

NACE code	Sector	Imports (1000 ECU)	Product (% share)	Country (% share)	MFN duty (%)	QR (%)	ONTB (%)	Classification D	QR	ONTB	PT	Total	Duty relief (%)	Class.
111	Hard-coal mining	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
112	Lignite mining	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
120	Coke ovens	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
130	Gas-, petr. extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140	Oil refining	395 247	25,5	3,0	5,7	0,0	0,0	2	0	0	0	2	70,4	-3
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152	Fissile materials	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
161	Electric power	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162	Gasworks	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212	Non-f. metals extr	11	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
221	Iron & steel ind	72 606	4,7	1,4	4,7	99,8	99,8	2	3	3	0	8	0,0	-1
222	Steel tubes	12 425	0,8	0,9	7,7	0,0	9,4	3	0	3	0	6	0,0	0
223	Steel drawing	4 432	0,3	0,4	5,4	0,0	46,9	2	0	3	0	5	63,6	-3
224	Non-f. metals	53 252	3,4	0,3	6,0	0,0	0,0	2	0	0	0	2	0,7	-1
231	Build. mater. extr	57	0,0	0,0	0,7	0,0	0,0	1	0	0	0	1	0,0	0
232	Potassium extr	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233	Salt extraction	6	0,0	0,0	11,9	0,0	0,0	3	0	0	0	3	0,0	0
239	Other miner. extr	16	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
241	Clay products	112	0,0	0,7	8,0	0,0	0,0	3	0	0	0	3	100,0	-3
242	Cement, lime	27 134	1,7	11,5	3,2	0,0	0,0	1	0	0	0	1	79,9	-3
243	Cement products	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
244	Asbestos products	22	0,0	0,0	5,3	0,0	0,0	2	0	0	0	2	0,0	0
245	Stone working	792	0,1	0,2	2,6	0,0	0,0	1	0	0	0	1	77,3	-3
246	Abrasive products	26	0,0	0,0	2,4	0,0	0,0	1	0	0	0	1	0,0	0
247	Glass, -ware	24 233	1,6	1,6	9,9	0,0	0,1	3	0	1	2	6	5,4	-1
248	Ceramics	14 462	0,9	1,5	9,5	0,0	0,0	3	0	0	2	5	67,4	-3
252	Petrochemical ind	32 819	2,1	0,2	9,8	0,0	0,5	3	0	1	0	4	36,2	-2
253	Oth. chem. basic ind	17 985	1,2	0,3	7,9	0,0	13,3	3	0	3	0	6	20,6	-1
255	Paints, varnishes	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
256	Chemicals for ind	2 703	0,2	0,1	3,5	0,0	2,9	1	0	1	2	4	38,8	-2
257	Pharma products	1 190	0,1	0,0	5,4	0,0	0,0	2	0	0	3	5	36,5	-2
258	Soap, detergents	53	0,0	0,0	6,6	0,0	0,0	2	0	0	0	2	73,6	-3
259	Chemicals f. home	497	0,0	0,0	6,4	0,0	0,0	2	0	0	0	2	38,4	-2
260	Artificial fibres	10 742	0,7	0,7	8,0	15,1	17,3	3	3	3	0	9	30,4	-2
311	Foundries	2 290	0,1	0,5	4,4	0,0	0,0	2	0	0	0	2	31,6	-2
312	Forging	1 479	0,1	0,5	5,4	0,0	0,0	2	0	0	0	2	41,7	-3
313	Metal treatment	3 599	0,2	0,3	6,2	0,0	0,0	2	0	0	0	2	73,3	-3
314	Metal structures	1 275	0,1	0,2	4,2	0,0	0,0	2	0	0	0	2	2,4	-1
315	Boiler, tanks	1 953	0,1	0,7	4,4	0,0	0,0	2	0	0	3	5	69,6	-3
316	Tools, met. prods	32 336	2,1	0,7	5,3	0,0	0,3	2	0	1	0	3	32,0	-2
321	Machinery f. agric.	4 026	0,3	0,4	8,7	0,0	0,0	3	0	0	2	5	43,0	-3
322	Machine tools	8 242	0,5	0,2	3,8	0,0	0,0	1	0	0	2	3	82,7	-3
323	Textile machinery	171	0,0	0,0	4,6	0,0	0,0	2	0	0	2	4	5,2	-1
324	Machinery: food ind	292	0,0	0,0	4,0	0,0	0,0	2	0	0	2	4	0,3	-1
325	Plant for mines	2 499	0,2	0,1	4,6	0,0	0,0	2	0	0	2	4	72,9	-3
326	Transmission eqm	32 214	2,1	1,6	8,6	0,0	0,0	3	0	0	2	5	3,6	-1
327	Other specif. eqm	1 176	0,1	0,0	5,6	0,0	0,0	2	0	0	2	4	82,1	-3
328	Other machinery	2 614	0,2	0,0	5,5	0,0	0,0	2	0	0	0	2	21,2	-1
330	Office machinery	431	0,0	0,0	4,8	0,0	0,0	2	0	0	3	5	0,0	0
341	Electrical wires	2 150	0,1	0,2	6,5	0,0	0,0	2	0	0	3	5	0,0	0
342	Electrical motors	19 147	1,2	0,3	5,0	0,0	14,5	2	0	3	3	8	46,0	-3
343	Industrial el. eqm	2 194	0,1	0,1	5,1	0,0	0,0	2	0	0	0	2	74,7	-3
344	Telecommun. eqm	356	0,0	0,0	8,6	0,0	0,0	3	0	0	3	6	35,2	-2
345	Radio-, TV sets	427	0,0	0,0	13,3	0,0	0,0	3	0	0	2	5	57,7	-3
346	Domest. electr. eqm	11 851	0,8	0,6	3,9	0,0	0,0	1	0	0	2	3	80,0	-3
347	Elec. lighting eqm	5 079	0,3	0,6	5,7	0,0	0,0	2	0	0	2	4	74,7	-3
351	Motor vehicles	6 365	0,4	0,0	10,1	0,0	0,0	3	0	0	2	5	52,6	-3
352	Bodies f. mot. veh.	3 050	0,2	1,0	4,4	0,0	0,0	2	0	0	0	2	81,1	-3
353	Parts f. mot. veh.	3 538	0,2	0,1	6,9	0,0	0,0	2	0	0	0	2	68,4	-3
361	Shipbuilding	654	0,0	0,0	0,0	0,0	0,0	0	0	0	3	3	0,0	0
362	Railway equipment	121	0,0	0,1	4,1	0,0	0,0	2	0	0	3	5	100,0	-3
363	Cycles, mot.-cycles	9	0,0	0,0	7,2	0,0	0,0	3	0	0	0	3	0,0	0
364	Aerospace equipm.	5 606	0,4	0,0	2,0	0,0	0,0	1	0	0	2	3	0,0	0
365	Oth. transp. means	105	0,0	0,1	4,1	0,0	0,0	2	0	0	0	2	87,1	-3
371	Precision instr	1 071	0,1	0,1	5,2	0,0	0,0	2	0	0	0	2	81,0	-3
372	Medico-surg. eqm	18	0,0	0,0	5,2	0,0	0,0	2	0	0	3	5	0,0	0
373	Optical instr	524	0,0	0,0	9,9	0,0	0,4	3	0	1	0	4	83,7	-3
374	Clocks, parts	68	0,0	0,0	6,0	0,0	0,0	2	0	0	0	2	75,1	-3
43A	Yarns	1 002	0,1	0,0	7,8	92,6	69,4	3	3	3	2	11	12,2	-1
43B	Woven fabrics	8 006	0,5	0,2	10,5	99,1	0,0	3	3	0	2	8	5,1	-1
436	Knitting ind	74 553	4,8	1,1	13,4	99,8	0,0	3	3	0	0	6	1,0	-1
438	Carpets, floor cov.	10 224	0,7	0,7	7,1	100,0	0,0	3	3	0	2	8	9,7	-1
439	Other textile ind	332	0,0	0,0	9,3	88,3	0,0	3	3	0	0	6	30,0	-2
441	Tanning	214	0,0	0,0	4,1	0,0	100,0	2	0	3	0	5	63,6	-3
442	Leather products	4 998	0,3	0,3	6,0	0,0	84,7	2	0	3	0	5	60,4	-3
451	Footwear	42 592	2,7	1,3	7,5	0,0	100,0	3	0	3	2	8	0,0	0
453	Clothings	262 467	16,9	1,9	13,6	97,7	0,8	3	3	1	2	9	1,3	-1
455	Househ. textiles	11 211	0,7	0,9	12,3	74,3	0,0	3	3	0	2	8	28,3	-2
456	Furs, fur goods	1 248	0,1	0,6	6,0	0,0	100,0	2	0	3	0	5	0,0	0
461	Sawing of wood	12 950	0,8	0,2	0,2	0,0	0,0	1	0	0	0	1	78,1	-3
462	Semi-fin. wood prods	9 300	0,6	0,4	9,0	0,0	0,0	3	0	0	0	3	5,3	-1
463	Carpentry parts	2 730	0,2	0,4	5,9	0,0	0,0	2	0	0	0	2	45,0	-3
464	Wooden containers	2 283	0,1	4,5	7,5	0,0	0,0	3	0	0	0	3	12,2	-1
465	Other wooden prods	6 881	0,4	1,3	0,7	0,0	3,7	1	0	1	0	2	42,6	-3
466	Cork-, straw prods	10 319	0,7	2,7	4,6	0,0	0,3	2	0	1	0	3	82,2	-3
467	Wooden furniture	231 245	14,9	11,0	5,6	0,0	0,4	2	0	1	0	3	0,3	-1
471	Pulp, paper, board	10 031	0,6	0,1	7,8	0,0	0,0	3	0	0	0	3	75,6	-3
472	Paper processing	719	0,0	0,0	10,4	0,0	0,0	3	0	0	0	3	79,5	-3
473	Printing industr.	482	0,0	0,0	3,2	0,0	0,0	1	0	0	0	1	67,0	-3
481	Rubber products	7 068	0,5	0,3	5,9	0,2	0,1	2	1	1	2	6	22,9	-1
482	Tyre retreading	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
483	Plastics process.	7 505	0,5	0,2	7,8	0,0	0,0	3	0	0	0	3	71,8	-3
491	Jewellery	1 069	0,1	0,0	0,0	0,0	0,0	1	0	0	2	3	0,0	0
492	Musical instrum.	1 439	0,1	0,2	6,2	0,0	19,9	2	0	3	0	5	83,3	-3
493	Photographic labs	44	0,0	0,0	3,4	0,0	0,0	1	0	0	2	3	0,0	0
494	Toys, sports goods	1 762	0,1	0,0	7,9	0,0	0,7	3	0	1	2	6	67,1	-3
495	Misc. manuf. ind	418	0,0	0,1	7,7	0,0	0,0	3	0	0	0	3	52,6	-3
620	Waste-, scrap trade	1 083	0,1	0,0	3,2	0,0	0,0	1	0	0	0	1	0,0	0
Total		1 551 927	100,0	0,4	7,7	27,9	8,8	3	3	2			22,0	-1

Annex 2: Estimating the degree of protection in food, beverages and tobacco

The estimation of the degree of EC trade barriers in food, beverages and tobacco (NACE sectors 41 and 42) is based on the data compiled in Tables A.2.3 and A.2.4.

Summarizing the figures presented in Table A.2.3 the aggregated results for NACE 41 and 42 on the degree of non-tariff protection of the EC against CEECs are as follows (*import coverage ratios in percentages, weighted by 1990* imports).

They show that the main instruments of agricultural policy are 'other NTBs', mainly variable levies.

Considering the tariff rates on agricultural products which in general are very high and the EC information on public procurement and technical standards, the classification in Table A.2.4 can be derived. The abbreviations and the definition of classes are in line with the text and Annex 1. The final classification (total score) of NACE 41 and 42, covering tariffs (D), quantitative restrictions (QR), other NTBs (ONTB) and public procurement and technical standards (PT), can be summarized as follows.

Table A.2.1

The degree of EC non-tariff protection against CEEC exports of food, beverages and tobacco, 1990

	Quantitative restrictions			Other NTBs		
	NACE 41	NACE 42	NACE 41 and 42	NACE 41	NACE 42	NACE 41 and 42
Bulgaria	9,0	0,0	6,9	77,8	79,4	78,2
CSFR	4,0	0,0	2,9	79,2	45,5	70,4
Hungary	4,7	0,5	4,3	70,8	59,4	69,7
Poland	0,6	0,0	0,6	48,6	60,4	49,7
Romania	0,3	0,0	0,3	58,2	49,1	57,9

According to these calculations the degree of EC protection in NACE 41 and 42 is as high as in textiles and clothing.

Table A.2.2

The intensity of EC TBs and NTBs against CEEC exports of food, beverages and tobacco, 1990

	NACE 41	NACE 42	NACE 41 and 42
Bulgaria	9	7	9
CSFR	8	7	8
Hungary	8	8	8
Poland	8	7	8
Romania	8	7	8

Table A.2.3

Import coverage ratios of EC non-tariff barriers for NACE sectors 41 and 42, 1990

NACE code	EC imports from all third countries (million ECU)	EC imports (million ECU)	Import coverage ratio (%)		EC imports (million ECU)	Import coverage ratio (%)		EC imports (million ECU)	Import coverage ratio (%)	
			QR	ONTB		QR	ONTB		QR	ONTB
		Bulgaria			CSFR			Hungary		
411	3 861,3	0,2	0,0	0,0	1,0	0,0	0,0	2,2	0,0	0,0
412	4 058,6	20,6	17,2	95,8	67,6	3,4	87,5	342,0	1,7	77,3
413	818,3	7,7	0,0	83,6	15,3	0,0	86,7	12,3	0,0	35,1
414	3 221,0	20,0	4,7	62,9	14,2	11,3	36,3	74,4	19,7	45,9
415	2 715,9	1,3	0,0	0,6	0,0	0,0	0,0	0,0	0,0	2,2
416	52,2	0,0	0,0	0,0	0,0	0,0	100,0	1,9	0,0	100,0
417	29,9	0,0	0,0	0,0	0,0	0,0	0,0	0,1	0,0	100,0
418	685,1	0,0	0,0	0,0	0,6	0,0	100,0	5,8	0,0	100,0
419	188,0	0,0	0,0	100,0	0,0	0,0	100,0	0,1	0,0	100,0
420	1 192,8	0,2	0,0	100,0	4,8	0,0	30,3	4,1	0,0	0,0
421	531,0	0,0	0,0	100,0	3,3	0,0	100,0	6,7	0,0	65,5
422	632,6	12,3	0,0	91,7	0,8	0,0	88,1	13,6	0,0	89,3
423	1 117,7	2,0	0,0	3,9	4,7	0,0	25,2	22,3	1,0	52,9
424	326,2	0,0	0,0	0,0	0,4	0,0	0,0	0,7	0,0	2,2
425	25,1	0,2	0,0	100,0	0,0	0,0	100,0	0,2	0,0	100,0
426	10,8	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
427	69,9	0,1	0,0	0,0	20,8	0,0	44,2	0,2	0,0	89,6
428	69,5	0,0	0,0	0,0	0,0	0,0	0,0	0,1	0,0	0,0
429	311,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

NACE code	EC imports (million ECU)	Import coverage ratio (%)		EC imports (million ECU)	Import coverage ratio (%)	
		QR	ONTB		QR	ONTB
	Poland			Romania		
411	17,3	0,0	0,0	0,1	0,0	0,0
412	160,4	0,0	87,4	10,8	0,2	61,6
413	75,2	0,0	25,3	1,3	0,0	100,0
414	204,8	1,7	46,7	2,2	0,9	22,1
415	112,7	0,0	18,2	0,1	0,0	0,0
416	0,1	0,0	95,9	0,0	0,0	0,0
417	0,0	0,0	0,0	0,0	0,0	0,0
418	3,0	0,0	100,0	0,0	0,0	0,0
419	0,4	0,0	100,0	0,0	0,0	100,0
420	32,2	0,0	85,5	0,0	0,0	0,0
421	11,9	0,0	35,9	0,0	0,0	100,0
422	3,6	0,0	35,2	0,0	0,0	87,8
423	4,5	0,0	31,4	0,2	0,0	74,3
424	4,8	0,0	0,0	0,2	0,0	0,0
425	0,0	0,0	100,0	0,1	0,0	96,7
426	0,0	0,0	0,0	0,0	0,0	0,0
427	0,1	0,0	3,5	0,0	0,0	0,0
428	0,0	0,0	0,0	0,0	0,0	0,0
429	0,0	0,0	0,0	0,0	0,0	0,0

Source: DIW calculations based on data from Unctad and Eurostat.

Table A.2.4

Classification of NACE sectors 41 and 42 by degree of EC protection, 1990

NACE code	Bulgaria					CSFR					Hungary				
	D	QR	ONTB	PT	Total	D	QR	ONTB	PT	Total	D	QR	ONTB	PT	Total
411		0	0		3		0	0		3		0	0		3
412		3	3		9		1	3		7		1	3		7
413		0	3		6		0	3		6		0	3		6
414		1	3		7		3	3		9		3	3		9
415		0	1		4		0	0		3		0	1		4
416		0	0		3		0	3		6		0	3		6
417		0	0	3	6		0	0	3	6		0	3	3	9
418		0	0		3		0	3		6		0	3		6
419		0	3		6		0	3		6		0	3		6
	3					3					3				
420		0	3		6		0	3		6		0	0		3
421		0	3	3	9		0	3	3	9		0	3	3	9
422		0	3		6		0	3		6		0	3		6
423		0	1		4		0	3		6		1	3		7
424		0	0		3		0	0		3		0	1		4
425		0	3	3	9		0	3	3	9		0	3	3	9
426		0	0		3		0	0		3		0	0		3
427		0	0	3	6		0	3	3	9		0	3	3	9
428		0	0	3	6		0	0	3	6		0	0	3	6
429		0	0		3		0	0		3		0	0		3
41	3	2	3	(1)	(9)	3	1	3	(1)	(8)	3	1	3	(1)	(8)
42	3	0	3	(1)	(7)	3	0	3	(1)	(7)	3	1	3	(1)	(8)
41 and 42	3	2	3	(1)	(9)	3	1	3	(1)	(8)	3	1	3	(1)	(8)

NACE code	Poland					Romania				
	D	QR	ONTB	PT	Total	D	QR	ONTB	PT	Total
411		0	0		3		0	0		3
412		0	3		6		1	3		7
413		0	3		6		0	3		6
414		1	3		7		1	3		7
415		0	3		6		0	0		3
416		0	3		6		0	0		3
417		0	0	3	6		0	0	3	6
418		0	3		6		0	0		3
419		0	3		6		0	3		6
	3					3				
420		0	3		6		0	0		3
421		0	3	3	9		0	3	3	9
422		0	3		6		0	3		6
423		0	3		6		0	3		6
424		0	0		3		0	0		3
425		0	3	3	9		0	3	3	9
426		0	0		3		0	0		3
427		0	1	3	7		0	0	3	6
428		0	0	3	6		0	0	3	6
429		0	0		3		0	0		3
41	3	1	3	(1)	(8)	3	1	3	(1)	(8)
42	3	0	3	(1)	(7)	3	0	3	(1)	(7)
41 and 42	3	1	3	(1)	(8)	3	1	3	(1)	(8)

Source: DIW calculations and estimates based on data from Unctad and Eurostat.

Annex 3: Tables on the degree of tariff reduction from the Europe Agreements (including the Copenhagen Summit conclusions) and the GSP, by 3-digit NACE sectors

Explanatory notes

The tables give the following information for the individual CEECs:

Column	*Contents*
1	EC imports in ECU 1 000
2	Commodity structure of EC imports
3	MFN duty rate, weighted by 8-digit CN imports within each NACE sector
4	GSP duty rate actually paid
5 to 8	Duty rates as foreseen in the Europe Agreements and Copenhagen conclusions, weighted by 1992 commodity structure
9 to 13	Duty relief for various years

Sources:

Eurostat, 'Common Customs Tariff, 1992', magnetic tape;
Eurostat, 'Correspondence table, Combined Nomenclature — NACE', magnetic tape;
Eurostat, 'External trade of the EC, 1991 and 1992 (Combined Nomenclature)', magnetic tape;
Eurostat, 'GSP imports, 1991', magnetic tape;
OJ L 114, 115 and 116, 30.4.1992, Interim Agreements between the EC and Poland, CSFR, Hungary;
OJ L 81, 2.4.1993, Interim Agreement with Romania;
OJ L 195, 4.8.1993, Additional Protocols with the Czech and Slovak Republics, Hungary and Poland.
Kommission der EG, KOM (93) 45 endg., Vorschlag für einen Beschluß des Rates und der Kommission über den Abschluß des Europa-Abkommens zwischen den Europäischen Gemeinschaften und ihren Mitgliedstaaten einerseits und Bulgarian andererseits (Interim Agreement, OJ L 323, 23.12.1993).

Table A.3.1
EC tariff reduction for imports from the CSFR

NACE code	Sector	Imports 1992 (1 000 ECU)	Product (% share)	MFN 1992	GSP 1991	Europe Agreement 1992 (%)	1994 (%)	1995 (%)	1997 (%)	Duty relief 1992/ MFN	1992/ GSP	1994/92 (% points)	1995/94	1997/95
111	Hard-coal mining	38 602	0,8	3,7	3,6	3,7	0,0	0,0	0,0	0,0	-0,2	3,7	0,0	0,0
112	Lignite mining	64 966	1,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
120	Coke ovens	17 383	0,3	0,4	0,4	0,4	0,0	0,0	0,0	0,0	0,0	0,4	0,0	0,0
130	Gas-, petr. extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
140	Oil refining	32 016	0,6	4,4	3,9	0,0	0,0	0,0	0,0	4,4	3,9	0,0	0,0	0,0
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
152	Fissile materials	686	0,0	0,3	5,8	0,1	0,0	0,0	0,0	0,1	5,7	0,1	0,0	0,0
161	Electric power	841	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
162	Gasworks	7 081	0,1	1,5	1,3	0,0	0,0	0,0	0,0	1,5	1,3	0,0	0,0	0,0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
212	Non-f. metals extr	3 486	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
221	Iron & steel ind	358 863	7,0	4,6	4,6	3,7	1,8	0,9	0,0	0,9	1,0	1,8	0,9	0,9
222	Steel tubes	98 067	1,9	9,5	7,8	6,5	4,2	0,0	0,0	3,0	1,2	2,3	4,2	0,0
223	Steel drawing	86 927	1,7	5,4	3,1	0,0	0,0	0,0	0,0	5,4	3,1	0,0	0,0	0,0
224	Non-f. metals	157 387	3,1	3,6	2,7	0,9	0,0	0,0	0,0	2,7	1,8	0,9	0,0	0,0
231	Build. mater. extr	56 393	1,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
232	Potassium extr	33	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
233	Salt extraction	48	0,0	19,2	11,9	9,6	0,0	0,0	0,0	9,6	2,3	9,6	0,0	0,0
239	Other miner. extr	4 573	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
241	Clay products	12 501	0,2	4,4	2,1	0,6	0,4	0,0	0,0	3,8	1,5	0,2	0,4	0,0
242	Cement, lime	114 517	2,2	3,2	0,6	0,0	0,0	0,0	0,0	3,2	0,6	0,0	0,0	0,0
243	Cement products	19 735	0,4	3,3	1,7	0,0	0,0	0,0	0,0	3,3	1,7	0,0	0,0	0,0
244	Asbestos products	1 069	0,0	5,9	3,7	0,0	0,0	0,0	0,0	5,9	3,7	0,0	0,0	0,0
245	Stone working	17 250	0,3	2,6	1,1	0,0	0,0	0,0	0,0	2,6	1,1	0,0	0,0	0,0
246	Abrasive products	1 690	0,0	3,1	1,2	0,0	0,0	0,0	0,0	3,1	1,2	0,0	0,0	0,0
247	Glass, -ware	175 455	3,4	8,5	6,3	4,5	2,9	0,0	0,0	4,0	1,9	1,6	2,9	0,0
248	Ceramics	63 451	1,2	9,2	6,7	4,5	2,9	0,0	0,0	4,6	2,2	1,6	2,9	0,0
252	Petrochemical ind	291 459	5,7	8,9	3,5	0,1	0,1	0,0	0,0	8,8	3,4	0,0	0,1	0,0
253	Oth. chem. basic ind	131 490	2,6	7,9	3,9	1,0	0,6	0,0	0,0	7,0	3,0	0,4	0,6	0,0
255	Paints, varnishes	1 568	0,0	8,7	1,7	0,0	0,0	0,0	0,0	8,7	1,7	0,0	0,0	0,0
256	Chemicals for ind	32 431	0,6	5,5	2,5	0,0	0,0	0,0	0,0	5,5	2,5	0,0	0,0	0,0
257	Pharma products	12 138	0,2	5,6	2,7	0,0	0,0	0,0	0,0	5,6	2,7	0,0	0,0	0,0
258	Soap, detergents	2 933	0,1	6,7	5,5	0,0	0,0	0,0	0,0	6,7	5,5	0,0	0,0	0,0
259	Chemicals f. home	4 790	0,1	5,5	2,7	0,0	0,0	0,0	0,0	5,5	2,7	0,0	0,0	0,0
260	Artificial fibres	51 659	1,0	8,7	6,4	6,2	5,0	3,7	0,0	2,5	0,2	1,2	1,2	3,7
311	Foundries	24 714	0,5	4,5	2,1	0,0	0,0	0,0	0,0	4,5	2,1	0,0	0,0	0,0
312	Forging	16 713	0,3	5,5	2,7	0,0	0,0	0,0	0,0	5,5	2,7	0,0	0,0	0,0
313	Metal treatment	24 463	0,5	6,0	2,5	0,3	0,2	0,0	0,0	5,6	2,2	0,1	0,2	0,0
314	Metal structures	94 341	1,8	5,0	2,2	0,0	0,0	0,0	0,0	5,0	2,2	0,0	0,0	0,0
315	Boiler, tanks	35 151	0,7	4,3	1,9	0,0	0,0	0,0	0,0	4,3	1,9	0,0	0,0	0,0
316	Tools, met. prods	162 645	3,2	5,4	2,3	0,0	0,0	0,0	0,0	5,4	2,3	0,0	0,0	0,0
321	Machinery f. agric.	63 253	1,2	7,1	5,3	3,1	2,0	0,0	0,0	4,0	2,3	1,1	2,0	0,0
322	Machine tools	78 554	1,5	4,2	2,4	0,0	0,0	0,0	0,0	4,2	2,4	0,0	0,0	0,0
323	Textile machinery	23 920	0,5	5,2	4,1	0,0	0,0	0,0	0,0	5,2	4,1	0,0	0,0	0,0
324	Machinery: food ind	17 953	0,4	4,0	2,8	0,0	0,0	0,0	0,0	4,0	2,8	0,0	0,0	0,0
325	Plant for mines	106 634	2,1	4,7	3,4	0,0	0,0	0,0	0,0	4,7	3,4	0,0	0,0	0,0
326	Transmission eqm	28 113	0,6	6,7	3,7	0,0	0,0	0,0	0,0	6,7	3,7	0,0	0,0	0,0
327	Other specif. eqm	18 178	0,4	3,7	2,3	0,0	0,0	0,0	0,0	3,7	2,3	0,0	0,0	0,0
328	Other machinery	67 572	1,3	4,6	3,5	0,0	0,0	0,0	0,0	4,6	3,5	0,0	0,0	0,0
330	*Office machinery*	19 892	0,4	4,3	3,9	0,0	0,0	0,0	0,0	4,3	3,9	0,0	0,0	0,0
341	Electrical wires	62 343	1,2	6,5	4,9	0,0	0,0	0,0	0,0	6,5	4,9	0,0	0,0	0,0
342	Electrical motors	117 944	2,3	5,2	3,9	0,0	0,0	0,0	0,0	5,2	3,9	0,0	0,0	0,0
343	Industrial el. eqm	14 694	0,3	5,2	3,3	0,0	0,0	0,0	0,0	5,2	3,3	0,0	0,0	0,0
344	Telecommun. eqm	19 275	0,4	6,7	5,6	0,0	0,0	0,0	0,0	6,7	5,6	0,0	0,0	0,0
345	Radio-, TV sets	21 229	0,4	9,1	5,7	0,0	0,0	0,0	0,0	9,1	5,7	0,0	0,0	0,0
346	*Domest. electr. eqm*	43 863	0,9	4,3	2,5	0,0	0,0	0,0	0,0	4,3	2,5	0,0	0,0	0,0
347	Elec. lighting eqm	18 145	0,4	5,9	4,5	2,7	1,8	0,0	0,0	3,1	1,7	1,0	1,8	0,0
351	Motor vehicles	315 739	6,2	12,1	5,2	0,0	0,0	0,0	0,0	12,1	5,2	0,0	0,0	0,0
352	Bodies f. mot. veh.	19 348	0,4	5,2	1,7	0,0	0,0	0,0	0,0	5,2	1,7	0,0	0,0	0,0
353	Parts f. mot. veh.	44 548	0,9	6,9	4,6	0,0	0,0	0,0	0,0	6,9	4,6	0,0	0,0	0,0
361	Shipbuilding	1 616	0,0	3,1	1,7	0,0	0,0	0,0	0,0	3,1	1,7	0,0	0,0	0,0
362	*Railway equipment*	22 227	0,4	4,6	1,1	0,0	0,0	0,0	0,0	4,6	1,1	0,0	0,0	0,0
363	Cycles, mot.-cycles	20 065	0,4	12,7	3,9	0,0	0,0	0,0	0,0	12,7	3,9	0,0	0,0	0,0
364	Aerospace equipm.	12 344	0,2	0,6	0,6	0,0	0,0	0,0	0,0	0,6	0,6	0,0	0,0	0,0
365	Oth. transp. means	3 341	0,1	4,2	1,6	0,0	0,0	0,0	0,0	4,2	1,6	0,0	0,0	0,0
371	Precision instr	10 265	0,2	5,4	3,6	0,0	0,0	0,0	0,0	5,4	3,6	0,0	0,0	0,0
372	Medico-surg. eqm	3 543	0,1	5,2	4,7	0,0	0,0	0,0	0,0	5,2	4,7	0,0	0,0	0,0
373	*Optical instr*	7 801	0,2	6,4	4,4	0,0	0,0	0,0	0,0	6,4	4,4	0,0	0,0	0,0
374	Clocks, parts	4 023	0,1	5,9	3,1	0,0	0,0	0,0	0,0	5,9	3,1	0,0	0,0	0,0
43A	Yarns	20 194	0,4	6,0	2,2	4,3	3,5	2,6	0,0	1,7	-2,2	0,9	0,9	2,6
43B	Woven fabrics	108 247	2,1	11,2	9,8	8,0	6,4	4,8	0,0	3,2	1,9	1,6	1,6	4,8
436	Knitting ind	124 170	2,4	13,1	11,0	9,3	7,4	5,6	0,0	3,8	1,7	1,9	1,9	5,6
438	Carpets, floor cov.	8 045	0,2	9,9	3,9	7,0	5,6	4,2	0,0	2,8	-3,1	1,4	1,4	4,2
439	*Other textile ind*	33 111	0,6	8,6	4,5	3,3	2,6	2,0	0,0	5,3	1,2	0,7	0,7	2,0
441	Tanning	21 607	0,4	2,2	0,9	0,1	0,0	0,0	0,0	2,1	0,8	0,1	0,0	0,0
442	Leather products	35 363	0,7	6,4	2,4	0,4	0,2	0,0	0,0	6,0	2,0	0,1	0,2	0,0
451	Footwear	125 966	2,5	8,4	8,4	6,0	3,9	0,0	0,0	2,4	2,4	2,1	3,9	0,0
453	Clothings	296 517	5,8	13,3	12,3	9,3	7,5	5,6	0,0	4,0	2,9	1,9	1,9	5,6
455	Househ. textiles	54 195	1,1	11,0	9,9	7,3	5,8	4,4	0,0	3,8	2,6	1,5	1,5	4,4
456	*Furs, fur goods*	6 248	0,1	4,8	4,4	0,0	0,0	0,0	0,0	4,8	4,4	0,0	0,0	0,0
461	Sawing of wood	82 801	1,6	0,1	0,0	0,0	0,0	0,0	0,0	0,1	0,0	0,0	0,0	0,0
462	Semi-fin. wood prods	28 261	0,6	9,5	1,8	0,0	0,0	0,0	0,0	9,5	1,8	0,0	0,0	0,0
463	Carpentry parts	29 588	0,6	5,8	2,4	0,0	0,0	0,0	0,0	5,8	2,4	0,0	0,0	0,0
464	Wooden containers	6 178	0,1	7,4	2,4	0,0	0,0	0,0	0,0	7,4	2,4	0,0	0,0	0,0
465	Other wooden prods	54 545	1,1	3,7	1,4	0,0	0,0	0,0	0,0	3,7	1,4	0,0	0,0	0,0
466	Cork-, straw prods	5 370	0,1	7,1	2,3	0,0	0,0	0,0	0,0	7,1	2,3	0,0	0,0	0,0
467	Wooden furniture	134 200	2,6	5,6	1,7	0,0	0,0	0,0	0,0	5,6	1,7	0,0	0,0	0,0
471	Pulp, paper, board	146 761	2,9	5,6	1,9	0,0	0,0	0,0	0,0	5,6	1,9	0,0	0,0	0,0
472	Paper processing	20 277	0,4	10,6	3,1	0,0	0,0	0,0	0,0	10,6	3,1	0,0	0,0	0,0
473	Printing industr.	36 392	0,7	1,4	0,9	0,0	0,0	0,0	0,0	1,4	0,9	0,0	0,0	0,0
481	Rubber products	89 461	1,8	6,4	5,3	3,5	2,3	0,1	0,0	2,9	1,8	1,2	2,2	0,1
482	Tyre retreading	1 964	0,0	5,8	5,8	4,2	2,7	0,0	0,0	1,6	1,6	1,5	2,7	0,0
483	Plastics process.	66 993	1,3	9,1	2,8	0,1	0,0	0,0	0,0	9,1	2,7	0,0	0,0	0,0
491	Jewellery	33 273	0,7	2,7	1,0	0,0	0,0	0,0	0,0	2,7	1,0	0,0	0,0	0,0
492	Musical instrum.	18 697	0,4	5,8	3,2	0,0	0,0	0,0	0,0	5,8	3,2	0,0	0,0	0,0
493	Photographic labs	374	0,0	5,3	6,1	0,0	0,0	0,0	0,0	5,3	6,1	0,0	0,0	0,0
494	Toys, sports goods	33 286	0,7	7,0	2,6	0,0	0,0	0,0	0,0	7,0	2,6	0,0	0,0	0,0
495	Misc. manuf. ind	4 882	0,1	7,0	3,9	0,0	0,0	0,0	0,0	7,0	3,9	0,0	0,0	0,0
620	Waste-, scrap trade	69 279	1,4	1,3	0,8	0,0	0,0	0,0	0,0	1,3	0,8	0,0	0,0	0,0
Total		5 102 182	100,0	6,8	4,4	2,1	1,4	0,7	0,0	4,8	2,3	0,6	0,7	0,7

Table A.3.2
EC tariff reduction for imports from Hungary

NACE code	Sector	Imports 1992 (1 000 ECU)	Product (% share)	MFN 1992	GSP 1991	Europe Agreement 1992 (%)	1994 (%)	1995 (%)	1997 (%)	Duty relief 1992/ MFN	1992/ GSP	1994/92 (% points)	1995/94	1997/95
111	Hard-coal mining	61	0,0	2,0	2,9	2,0	1,0	1,0	0,0	0,0	0,9	1,0	0,0	1,0
112	Lignite mining	1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
120	Coke ovens	1 359	0,0	0,4	0,4	0,4	0,2	0,2	0,0	0,0	0,0	0,2	0,0	0,2
130	Gas-, petr. extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
140	Oil refining	54 892	1,8	4,8	2,9	0,0	0,0	0,0	0,0	4,8	2,9	0,0	0,0	0,0
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
152	Fissile materials	34	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
161	Electric power	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
162	Gasworks	3 585	0,1	1,5	1,3	0,0	0,0	0,0	0,0	1,5	1,3	0,0	0,0	0,0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
212	Non-f. metals extr	3 180	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
221	Iron & steel ind	85 673	2,8	4,6	4,5	3,6	1,8	0,9	0,0	0,9	0,9	1,8	0,9	0,9
222	Steel tubes	27 457	0,9	9,2	5,9	4,1	3,2	0,0	0,0	5,2	1,8	0,9	3,2	0,0
223	Steel drawing	14 378	0,5	5,0	1,0	0,0	0,0	0,0	0,0	5,0	1,0	0,0	0,0	0,0
224	Non-f. metals	104 772	3,5	5,4	2,2	0,4	0,0	0,0	0,0	5,0	1,9	0,4	0,0	0,0
231	Build. mater. extr	650	0,0	0,1	0,0	0,0	0,0	0,0	0,0	0,0	-0,0	0,0	0,0	0,0
232	Potassium extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
233	Salt extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
239	Other miner. extr	1 594	0,1	0,1	0,0	0,0	0,0	0,0	0,0	0,0	-0,0	0,0	0,0	0,0
241	Clay products	690	0,0	6,3	0,2	0,0	0,0	0,0	0,0	6,3	0,2	0,0	0,0	0,0
242	*Cement, lime*	*256*	*0,0*	*3,2*	*0,5*	*0,0*	*0,0*	*0,0*	*0,0*	*3,2*	*0,5*	*0,0*	*0,0*	*0,0*
243	Cement products	1 794	0,1	4,0	1,6	0,0	0,0	0,0	0,0	4,0	1,6	0,0	0,0	0,0
244	Asbestos products	3 789	0,1	5,3	1,8	0,0	0,0	0,0	0,0	5,3	1,8	0,0	0,0	0,0
245	Stone working	3 548	0,1	2,7	0,8	0,0	0,0	0,0	0,0	2,7	0,8	0,0	0,0	0,0
246	Abrasive products	143	0,0	2,5	2,3	0,0	0,0	0,0	0,0	2,5	2,3	0,0	0,0	0,0
247	Glass, -ware	56 925	1,9	6,6	3,4	2,3	1,8	0,0	0,0	4,3	1,1	0,5	1,8	0,0
248	Ceramics	27 003	0,9	8,9	4,0	2,5	1,9	0,0	0,0	6,5	1,6	0,6	1,9	0,0
252	Petrochemical ind	290 969	9,6	9,0	2,9	0,0	0,0	0,0	0,0	9,0	2,9	0,0	0,0	0,0
253	Oth,chem,basic ind	27 883	0,9	7,2	2,4	0,4	0,0	0,0	0,0	6,9	2,0	0,4	0,0	0,0
255	Paints, varnishes	465	0,0	8,7	6,1	0,0	0,0	0,0	0,0	8,7	6,1	0,0	0,0	0,0
256	Chemicals for ind	19 998	0,7	5,8	1,6	0,0	0,0	0,0	0,0	5,8	1,6	0,0	0,0	0,0
257	Pharma products	25 302	0,8	6,1	2,7	0,0	0,0	0,0	0,0	6,1	2,7	0,0	0,0	0,0
258	Soap, detergents	1 931	0,1	6,8	6,0	0,0	0,0	0,0	0,0	6,8	6,0	0,0	0,0	0,0
259	Chemicals f. home	10 861	0,4	10,4	6,3	0,0	0,0	0,0	0,0	10,4	6,3	0,0	0,0	0,0
260	Artificial fibres	14 954	0,5	8,4	4,5	6,0	4,8	3,6	0,0	2,4	-1,5	1,2	1,2	3,6
311	Foundries	17 903	0,6	5,8	0,7	0,0	0,0	0,0	0,0	5,8	0,7	0,0	0,0	0,0
312	Forging	4 847	0,2	5,3	1,2	0,0	0,0	0,0	0,0	5,3	1,2	0,0	0,0	0,0
313	Metal treatment	5 240	0,2	6,0	2,0	0,0	0,0	0,0	0,0	6,0	2,0	0,0	0,0	0,0
314	Metal structures	40 522	1,3	5,0	1,6	0,0	0,0	0,0	0,0	5,0	1,6	0,0	0,0	0,0
315	Boiler, tanks	17 983	0,6	4,7	1,5	0,0	0,0	0,0	0,0	4,7	1,5	0,0	0,0	0,0
316	Tools, met. prods	93 864	3,1	5,4	1,1	0,0	0,0	0,0	0,0	5,4	1,1	0,0	0,0	0,0
321	Machinery f. agric.	34 692	1,1	3,7	1,7	0,0	0,0	0,0	0,0	3,7	1,7	0,0	0,0	0,0
322	Machine tools	33 308	1,1	4,2	2,1	0,0	0,0	0,0	0,0	4,2	2,1	0,0	0,0	0,0
323	Textile machinery	2 100	0,1	4,1	2,8	0,0	0,0	0,0	0,0	4,1	2,8	0,0	0,0	0,0
324	Machinery: food ind	20 997	0,7	4,0	1,7	0,0	0,0	0,0	0,0	4,0	1,7	0,0	0,0	0,0
325	Plant for mines	59 990	2,0	4,7	1,2	0,0	0,0	0,0	0,0	4,7	1,2	0,0	0,0	0,0
326	Transmission eqm	21 555	0,7	7,7	1,8	0,0	0,0	0,0	0,0	7,7	1,8	0,0	0,0	0,0
327	Other specif. eqm	7 566	0,2	3,8	1,7	0,0	0,0	0,0	0,0	3,8	1,7	0,0	0,0	0,0
328	*Other machinery*	*78 452*	*2,6*	*4,4*	*1,4*	*0,0*	*0,0*	*0,0*	*0,0*	*4,4*	*1,4*	*0,0*	*0,0*	*0,0*
330	Office machinery	21 377	0,7	4,3	1,8	0,0	0,0	0,0	0,0	4,3	1,8	0,0	0,0	0,0
341	Electrical wires	100 347	3,3	6,5	5,1	0,0	0,0	0,0	0,0	6,5	5,1	0,0	0,0	0,0
342	Electrical motors	85 451	2,8	5,0	3,1	0,0	0,0	0,0	0,0	5,0	3,1	0,0	0,0	0,0
343	Industrial el. eqm	22 304	0,7	5,3	2,4	0,0	0,0	0,0	0,0	5,3	2,4	0,0	0,0	0,0
344	Telecommun. eqm	12 333	0,4	6,7	4,5	0,0	0,0	0,0	0,0	6,7	4,5	0,0	0,0	0,0
345	Radio-, TV sets	34 581	1,1	6,8	4,3	0,0	0,0	0,0	0,0	6,8	4,3	0,0	0,0	0,0
346	Domest. electr. eqm	72 358	2,4	4,2	0,4	0,0	0,0	0,0	0,0	4,2	0,4	0,0	0,0	0,0
347	Elec. lighting eqm	67 747	2,2	5,6	4,2	2,8	2,2	0,0	0,0	2,8	1,4	0,6	2,2	0,0
351	Motor vehicles	41 808	1,4	9,7	6,2	1,1	0,8	0,0	0,0	8,6	5,1	0,2	0,8	0,0
352	Bodies f. mot. veh.	41 291	1,4	4,5	1,4	0,0	0,0	0,0	0,0	4,5	1,4	0,0	0,0	0,0
353	Parts f. mot. veh.	35 289	1,2	6,9	2,9	0,0	0,0	0,0	0,0	6,9	2,9	0,0	0,0	0,0
361	Shipbuilding	149	0,0	3,3	0,1	0,0	0,0	0,0	0,0	3,3	0,1	0,0	0,0	0,0
362	Railway equipment	4 147	0,1	4,3	1,0	0,0	0,0	0,0	0,0	4,3	1,0	0,0	0,0	0,0
363	Cycles, mot.-cycles	1 367	0,0	11,1	8,7	0,0	0,0	0,0	0,0	11,1	8,7	0,0	0,0	0,0
364	Aerospace equipm.	758	0,0	2,2	3,4	0,0	0,0	0,0	0,0	2,2	3,4	0,0	0,0	0,0
365	Oth. transp. means	1 728	0,1	4,2	0,9	0,0	0,0	0,0	0,0	4,2	0,9	0,0	0,0	0,0
371	Precision instr	4 488	0,1	5,0	1,8	0,0	0,0	0,0	0,0	5,0	1,8	0,0	0,0	0,0
372	Medico-surg. eqm	13 085	0,4	5,2	2,6	0,0	0,0	0,0	0,0	5,2	2,6	0,0	0,0	0,0
373	Optical instr	4 813	0,2	7,3	3,2	0,0	0,0	0,0	0,0	7,3	3,2	0,0	0,0	0,0
374	Clocks, parts	3 610	0,1	6,1	5,5	0,0	0,0	0,0	0,0	6,1	5,5	0,0	0,0	0,0
43A	Yarns	17 167	0,6	5,5	2,8	3,9	3,1	2,4	0,0	1,6	-1,1	0,8	0,8	2,4
43B	Woven fabrics	23 676	0,8	10,9	6,0	7,8	6,2	4,7	0,0	3,1	-1,8	1,6	1,6	4,7
436	Knitting ind	142 600	4,7	13,4	11,3	9,6	7,6	5,7	0,0	3,8	1,8	1,9	1,9	5,7
438	Carpets, floor cov.	7 746	0,3	9,4	4,1	6,7	5,4	4,0	0,0	2,7	-2,6	1,3	1,3	4,0
439	Other textile ind	9 904	0,3	8,6	4,1	5,6	4,4	3,3	0,0	3,1	-1,5	1,1	1,1	3,3
441	Tanning	14 255	0,5	3,5	1,8	0,1	0,0	0,0	0,0	3,3	1,7	0,1	0,0	0,0
442	Leather products	32 625	1,1	6,3	3,3	0,0	0,0	0,0	0,0	6,3	3,3	0,0	0,0	0,0
451	*Footwear*	*168 358*	*5,5*	*7,0*	*6,3*	*4,4*	*3,4*	*0,0*	*0,0*	*2,6*	*1,9*	*1,0*	*3,4*	*0,0*
453	Clothings	424 659	14,0	13,1	12,6	9,1	7,3	5,5	0,0	3,9	3,5	1,8	1,8	5,5
455	Househ. textiles	33 463	1,1	8,8	7,3	5,3	4,2	3,2	0,0	3,6	2,0	1,1	1,1	3,2
456	Furs, fur goods	6 799	0,2	4,5	2,6	0,0	0,0	0,0	0,0	4,5	2,6	0,0	0,0	0,0
461	Sawing of wood	27 208	0,9	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
462	Semi-fin. wood prods	8 703	0,3	8,7	2,6	0,0	0,0	0,0	0,0	8,7	2,6	0,0	0,0	0,0
463	Carpentry parts	17 923	0,6	5,7	0,8	0,0	0,0	0,0	0,0	5,7	0,8	0,0	0,0	0,0
464	Wooden containers	1 137	0,0	7,2	0,8	0,0	0,0	0,0	0,0	7,2	0,8	0,0	0,0	0,0
465	Other wooden prods	18 861	0,6	2,9	0,7	0,0	0,0	0,0	0,0	2,9	0,7	0,0	0,0	0,0
466	Cork-, straw prods	5 850	0,2	5,1	1,1	0,0	0,0	0,0	0,0	5,1	1,1	0,0	0,0	0,0
467	Wooden furniture	86 232	2,8	5,6	1,2	0,0	0,0	0,0	0,0	5,6	1,2	0,0	0,0	0,0
471	Pulp, paper, board	15 209	0,5	8,3	2,7	0,0	0,0	0,0	0,0	8,3	2,7	0,0	0,0	0,0
472	Paper processing	8 921	0,3	10,4	3,6	0,0	0,0	0,0	0,0	10,4	3,6	0,0	0,0	0,0
473	Printing industr.	19 607	0,6	2,2	2,9	0,0	0,0	0,0	0,0	2,2	2,9	0,0	0,0	0,0
481	Rubber products	46 326	1,5	5,5	1,9	0,2	0,2	0,1	0,0	5,3	1,7	0,0	0,0	0,1
482	Tyre retreading	294	0,0	5,8	1,5	0,0	0,0	0,0	0,0	5,8	1,5	0,0	0,0	0,0
483	Plastics process.	51 211	1,7	9,9	3,1	0,0	0,0	0,0	0,0	9,9	3,1	0,0	0,0	0,0
491	Jewellery	5 235	0,2	1,5	0,6	0,0	0,0	0,0	0,0	1,5	0,6	0,0	0,0	0,0
492	Musical instrum.	437	0,0	5,9	3,0	0,0	0,0	0,0	0,0	5,9	3,0	0,0	0,0	0,0
493	Photographic labs	631	0,0	2,3	5,0	0,0	0,0	0,0	0,0	2,3	5,0	0,0	0,0	0,0
494	Toys, sports goods	15 288	0,5	7,2	3,6	0,0	0,0	0,0	0,0	7,2	3,6	0,0	0,0	0,0
495	Misc. manuf. ind	213	0,0	5,6	7,2	0,0	0,0	0,0	0,0	5,6	7,2	0,0	0,0	0,0
620	Waste-, scrap trade	34 462	1,1	1,0	0,5	0,1	0,1	0,0	0,0	0,9	0,4	0,0	0,1	0,0
Total		3 037 197	100,0	7,5	4,5	2,5	1,9	1,2	0,0	5,0	2,0	0,5	0,7	1,2

Table A.3.3
EC tariff reduction for imports from Poland

NACE code	Sector	Imports 1992 (1 000 ECU)	Product (% share)	MFN 1992	GSP 1991	Europe Agreement 1992 (%)	1994 (%)	1995 (%)	1997 (%)	Duty relief 1992/ MFN	1992/ GSP	1994/92 (% points)	1995/94	1997/95
111	Hard-coal mining	336 098	5,8	4,2	4,1	4,2	0,0	0,0	0,0	0,0	-0,1	4,2	0,0	0,0
112	Lignite mining	23 913	0,4	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
120	Coke ovens	69 989	1,2	0,4	0,4	0,4	0,0	0,0	0,0	0,0	0,0	0,4	0,0	0,0
130	Gas-, petr. extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
140	Oil refining	65 332	1,1	4,9	3,3	0,0	0,0	0,0	0,0	4,9	3,3	0,0	0,0	0,0
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
152	Fissile materials	236	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
161	Electric power	9	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
162	Gasworks	98	0,0	1,5	1,5	0,0	0,0	0,0	0,0	1,5	1,5	0,0	0,0	0,0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
211	Iron ore extr	480	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
212	Non-f. metals extr	21 355	0,4	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
221	Iron & steel ind	212 901	3,7	4,4	4,2	3,5	1,8	0,9	0,0	0,9	0,6	1,8	0,9	0,9
222	Steel tubes	48 711	0,8	8,4	4,7	3,2	2,1	0,0	0,0	5,2	1,5	1,1	2,1	0,0
223	Steel drawing	33 958	0,6	5,3	0,8	0,0	0,0	0,0	0,0	5,3	0,8	0,0	0,0	0,0
224	Non-f. metals	654 446	11,2	1,2	0,6	0,3	0,0	0,0	0,0	0,9	0,3	0,3	0,0	0,0
231	Build. mater. extr	46 068	0,8	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
232	Potassium extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
233	Salt extraction	1 421	0,0	12,9	12,8	6,5	0,0	0,0	0,0	6,5	6,3	6,5	0,0	0,0
239	Other miner. extr	4 619	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
241	Clay products	1 079	0,0	3,3	1,3	0,0	0,0	0,0	0,0	3,3	1,3	0,0	0,0	0,0
242	Cement, lime	76 515	1,3	3,2	0,8	0,0	0,0	0,0	0,0	3,2	0,8	0,0	0,0	0,0
243	Cement products	8 196	0,1	3,3	1,3	0,0	0,0	0,0	0,0	3,3	1,3	0,0	0,0	0,0
244	Asbestos products	135	0,0	6,3	1,7	0,0	0,0	0,0	0,0	6,3	1,7	0,0	0,0	0,0
245	Stone working	11 019	0,2	2,5	1,2	0,0	0,0	0,0	0,0	2,5	1,2	0,0	0,0	0,0
246	Abrasive products	1 149	0,0	3,3	0,4	0,0	0,0	0,0	0,0	3,3	0,4	0,0	0,0	0,0
247	Glass, -ware	82 312	1,4	8,8	3,2	2,5	1,6	0,0	0,0	6,2	0,7	0,9	1,6	0,0
248	Ceramics	28 781	0,5	10,0	8,4	5,8	3,7	0,0	0,0	4,3	2,6	2,0	3,7	0,0
252	Petrochemical ind	212 389	3,6	8,7	3,3	0,0	0,0	0,0	0,0	8,7	3,3	0,0	0,0	0,0
253	Oth. chem. basic ind	215 232	3,7	7,0	3,0	0,4	0,3	0,0	0,0	6,6	2,5	0,2	0,3	0,0
255	Paints, varnishes	597	0,0	8,8	7,4	0,0	0,0	0,0	0,0	8,8	7,4	0,0	0,0	0,0
256	Chemicals for ind	34 948	0,6	5,5	2,6	0,0	0,0	0,0	0,0	5,5	2,5	0,0	0,0	0,0
257	Pharma products	8 585	0,1	5,9	2,0	0,0	0,0	0,0	0,0	5,9	2,0	0,0	0,0	0,0
258	Soap, detergents	3 451	0,1	6,6	4,4	0,0	0,0	0,0	0,0	6,6	4,4	0,0	0,0	0,0
259	Chemicals f. home	9 199	0,2	7,0	0,7	0,0	0,0	0,0	0,0	7,0	0,7	0,0	0,0	0,0
260	Artificial fibres	24 272	0,4	8,1	2,5	5,8	4,6	3,5	0,0	2,3	-3,3	1,2	1,2	3,5
311	Foundries	34 745	0,6	4,7	1,7	0,0	0,0	0,0	0,0	4,7	1,7	0,0	0,0	0,0
312	Forging	25 689	0,4	5,2	1,5	0,0	0,0	0,0	0,0	5,2	1,5	0,0	0,0	0,0
313	*Metal treatment*	*26 386*	*0,5*	*6,1*	*1,1*	*0,0*	*0,0*	*0,0*	*0,0*	*6,1*	*1,1*	*0,0*	*0,0*	*0,0*
314	Metal structures	115 515	2,0	4,2	1,9	0,0	0,0	0,0	0,0	4,2	1,9	0,0	0,0	0,0
315	Boiler, tanks	57 992	1,0	4,5	1,4	0,0	0,0	0,0	0,0	4,5	1,4	0,0	0,0	0,0
316	Tools, met. prods	134 846	2,3	5,4	1,2	0,0	0,0	0,0	0,0	5,4	1,2	0,0	0,0	0,0
321	Machinery f. agric.	29 906	0,5	5,9	2,7	0,0	0,0	0,0	0,0	5,9	2,7	0,0	0,0	0,0
322	Machine tools	28 314	0,5	4,1	1,2	0,0	0,0	0,0	0,0	4,1	1,2	0,0	0,0	0,0
323	Textile machinery	7 573	0,1	7,4	2,4	0,0	0,0	0,0	0,0	7,4	2,4	0,0	0,0	0,0
324	Machinery: food ind	20 012	0,3	4,0	1,9	0,0	0,0	0,0	0,0	4,0	1,9	0,0	0,0	0,0
325	Plant for mines	43 054	0,7	4,4	1,7	0,0	0,0	0,0	0,0	4,4	1,7	0,0	0,0	0,0
326	Transmission eqm	29 643	0,5	7,5	2,5	0,0	0,0	0,0	0,0	7,5	2,5	0,0	0,0	0,0
327	Other specif. eqm	12 606	0,2	4,2	2,1	0,0	0,0	0,0	0,0	4,2	2,1	0,0	0,0	0,0
328	Other machinery	101 676	1,7	4,8	3,2	0,0	0,0	0,0	0,0	4,8	3,2	0,0	0,0	0,0
330	Office machinery	3 443	0,1	4,4	4,2	0,0	0,0	0,0	0,0	4,4	4,2	0,0	0,0	0,0
341	Electrical wires	27 912	0,5	6,5	1,4	0,0	0,0	0,0	0,0	6,5	1,4	0,0	0,0	0,0
342	Electrical motors	59 768	1,0	4,9	2,3	0,0	0,0	0,0	0,0	4,9	2,3	0,0	0,0	0,0
343	Industrial el. eqm	20 457	0,4	5,4	3,0	0,0	0,0	0,0	0,0	5,4	3,0	0,0	0,0	0,0
344	Telecommun. eqm	12 828	0,2	5,6	3,6	0,0	0,0	0,0	0,0	5,6	3,6	0,0	0,0	0,0
345	Radio-, TV sets	22 267	0,4	10,6	4,7	0,0	0,0	0,0	0,0	10,6	4,7	0,0	0,0	0,0
346	Domest. electr. eqm	63 642	1,1	4,5	0,6	0,0	0,0	0,0	0,0	4,5	0,6	0,0	0,0	0,0
347	Elec. lighting eqm	38 078	0,7	5,2	1,0	0,0	0,0	0,0	0,0	5,2	1,0	0,0	0,0	0,0
351	Motor vehicles	213 724	3,7	10,6	5,2	0,3	0,2	0,0	0,0	10,3	5,0	0,1	0,2	0,0
352	Bodies f. mot. veh.	20 797	0,4	4,9	1,8	0,0	0,0	0,0	0,0	4,9	1,8	0,0	0,0	0,0
353	Parts f. mot. veh.	29 709	0,5	6,9	3,3	0,0	0,0	0,0	0,0	6,9	3,3	0,0	0,0	0,0
361	Shipbuilding	62 657	1,1	1,0	0,3	0,0	0,0	0,0	0,0	1,0	0,3	0,0	0,0	0,0
362	Railway equipment	7 128	0,1	4,7	4,0	0,0	0,0	0,0	0,0	4,7	4,0	0,0	0,0	0,0
363	Cycles, mot.-cycles	11 539	0,2	15,0	2,0	0,0	0,0	0,0	0,0	15,0	2,0	0,0	0,0	0,0
364	Aerospace equipm.	3 296	0,1	2,1	0,5	0,0	0,0	0,0	0,0	2,1	0,5	0,0	0,0	0,0
365	Oth. transp. means	2 669	0,0	4,2	1,6	0,0	0,0	0,0	0,0	4,2	1,6	0,0	0,0	0,0
371	Precision instr	10 571	0,2	5,4	2,2	0,0	0,0	0,0	0,0	5,4	2,2	0,0	0,0	0,0
372	Medico-surg. eqm	5 632	0,1	5,1	2,1	0,0	0,0	0,0	0,0	5,1	2,1	0,0	0,0	0,0
373	Optical instr	2 272	0,0	7,5	4,1	0,0	0,0	0,0	0,0	7,5	4,1	0,0	0,0	0,0
374	Clocks, parts	259	0,0	5,7	1,6	0,0	0,0	0,0	0,0	5,7	1,6	0,0	0,0	0,0
43A	Yarns	16 864	0,3	5,4	1,8	3,9	3,1	2,3	0,0	1,5	-2,0	0,8	0,8	2,3
43B	Woven fabrics	40 470	0,7	11,6	7,4	8,3	6,6	5,0	0,0	3,3	-0,9	1,7	1,7	5,0
436	Knitting ind	139 680	2,4	13,5	11,3	9,6	7,7	5,8	0,0	3,9	1,7	1,9	1,9	5,8
438	Carpets, floor cov.	5 114	0,1	9,1	1,9	6,5	5,2	3,9	0,0	2,6	-4,6	1,3	1,3	3,9
439	Other textile ind	9 058	0,2	8,7	5,5	5,8	4,6	3,5	0,0	2,9	-0,3	1,2	1,2	3,5
441	Tanning	40 096	0,7	3,2	0,6	0,1	0,0	0,0	0,0	3,1	0,6	0,1	0,0	0,0
442	Leather products	17 789	0,3	5,5	1,8	0,0	0,0	0,0	0,0	5,5	1,8	0,0	0,0	0,0
451	Footwear	114 097	2,0	6,8	6,4	3,5	2,3	0,0	0,0	3,3	2,8	1,2	2,3	0,0
453	Clothings	850 169	14,6	13,7	13,0	9,7	7,8	5,8	0,0	4,0	3,3	1,9	1,9	5,8
455	Househ. textiles	43 674	0,8	10,7	7,9	7,0	5,6	4,2	0,0	3,7	0,9	1,4	1,4	4,2
456	Furs, fur goods	6 811	0,1	5,0	2,4	0,0	0,0	0,0	0,0	5,0	2,4	0,0	0,0	0,0
461	Sawing of wood	139 138	2,4	0,3	0,1	0,0	0,0	0,0	0,0	0,3	0,1	0,0	0,0	0,0
462	Semi-fin. wood prods	56 092	1,0	9,7	3,6	2,2	1,4	0,0	0,0	7,5	1,4	0,8	1,4	0,0
463	Carpentry parts	30 538	0,5	5,6	1,8	0,0	0,0	0,0	0,0	5,6	1,8	0,0	0,0	0,0
464	Wooden containers	6 882	0,1	7,5	1,8	0,0	0,0	0,0	0,0	7,5	1,8	0,0	0,0	0,0
465	Other wooden prods	121 478	2,1	3,1	0,5	0,0	0,0	0,0	0,0	3,1	0,5	0,0	0,0	0,0
466	Cork-, straw prods	10 653	0,2	5,1	0,9	0,0	0,0	0,0	0,0	5,1	0,9	0,0	0,0	0,0
467	Wooden furniture	326 345	5,6	5,6	1,9	0,0	0,0	0,0	0,0	5,6	1,9	0,0	0,0	0,0
471	Pulp, paper, board	72 567	1,2	6,1	0,5	0,0	0,0	0,0	0,0	6,1	0,5	0,0	0,0	0,0
472	Paper processing	19 842	0,3	9,4	2,0	0,0	0,0	0,0	0,0	9,4	2,0	0,0	0,0	0,0
473	Printing industr.	5 097	0,1	1,5	2,0	0,0	0,0	0,0	0,0	1,5	2,0	0,0	0,0	0,0
481	Rubber products	55 097	0,9	5,8	1,6	0,3	0,2	0,0	0,0	5,4	1,3	0,1	0,2	0,0
482	Tyre retreading	1 309	0,0	5,8	1,9	0,0	0,0	0,0	0,0	5,8	1,9	0,0	0,0	0,0
483	Plastics process.	36 507	0,6	8,7	3,1	0,0	0,0	0,0	0,0	8,6	3,1	0,0	0,0	0,0
491	Jewellery	10 783	0,2	1,5	1,0	0,0	0,0	0,0	0,0	1,5	1,0	0,0	0,0	0,0
492	Musical instrum.	3 920	0,1	5,8	1,8	0,0	0,0	0,0	0,0	5,8	1,8	0,0	0,0	0,0
493	*Photographic labs*	*128*	*0,0*	*7,5*	*7,0*	*0,0*	*0,0*	*0,0*	*0,0*	*7,5*	*7,0*	*0,0*	*0,0*	*0,0*
494	Toys, sports goods	20 085	0,3	7,2	1,5	0,0	0,0	0,0	0,0	7,2	1,5	0,0	0,0	0,0
495	Misc. manuf. ind	7 138	0,1	5,7	5,1	0,0	0,0	0,0	0,0	5,7	5,1	0,0	0,0	0,0
620	Waste-, scrap trade	91 798	1,6	1,2	1,3	0,1	0,1	0,0	0,0	1,1	1,1	0,1	0,1	0,0
Total		5 823 317	100,0	6,4	4,0	2,4	1,7	1,1	0,0	4,0	1,6	0,8	0,5	1,1

Table A.3.4
EC tariff reduction for imports from Bulgaria

NACE code	Sector	Imports 1992 (1 000 ECU)	Product (% share)	MFN 1992	GSP 1991	Europe Agreement 1993 (%)	1995 (%)	1996 (%)	1998 (%)	Duty relief 1993/ MFN	1993/ GSP	1995/93 (% points)	1995/95	1997/96
111	Hard-coal mining	1 412	0,2	8,3	2,9	8,3	4,2	0,0	0,0	0,0	-5,4	4,2	4,2	0,0
112	Lignite mining	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
120	Coke ovens	3	0,0	0,4	0,4	0,4	0,2	0,0	0,0	0,0	0,0	0,2	0,2	0,0
130	Gas-, petr. extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
140	Oil refining	1 623	0,2	3,9	5,0	0,0	0,0	0,0	0,0	3,9	5,0	0,0	0,0	0,0
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
152	Fissile materials	1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
161	Electric power	1 470	0,2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
162	Gasworks	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
212	Non-f. metals extr	897	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
221	Iron & steel ind	39 790	5,7	4,5	4,5	3,6	1,8	0,9	0,0	0,9	0,9	1,8	0,9	0,9
222	Steel tubes	3 525	0,5	8,4	6,1	0,0	0,0	0,0	0,0	8,4	6,1	0,0	0,0	0,0
223	Steel drawing	6 539	0,9	5,4	5,4	0,0	0,0	0,0	0,0	5,4	5,4	0,0	0,0	0,0
224	Non-f. metals	66 804	9,6	1,1	0,9	0,2	0,0	0,0	0,0	0,8	0,6	0,2	0,0	0,0
231	Build. mater. extr	3 468	0,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
232	Potassium extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
233	Salt extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
239	Other miner. extr	423	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	-0,0	0,0	0,0	0,0
241	Clay products	345	0,1	7,9	5,5	0,0	0,0	0,0	0,0	7,9	5,5	0,0	0,0	0,0
242	Cement, lime	1 979	0,3	3,2	3,1	0,0	0,0	0,0	0,0	3,2	3,1	0,0	0,0	0,0
243	Cement products	299	0,0	3,5	3,1	0,0	0,0	0,0	0,0	3,5	3,1	0,0	0,0	0,0
244	Asbestos products	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
245	Stone working	2 085	0,3	3,5	3,0	0,0	0,0	0,0	0,0	3,5	3,0	0,0	0,0	0,0
246	Abrasive products	367	0,1	2,0	2,0	0,0	0,0	0,0	0,0	2,0	2,0	0,0	0,0	0,0
247	Glass, -ware	7 780	1,1	8,9	8,4	0,0	0,0	0,0	0,0	8,9	8,4	0,0	0,0	0,0
248	Ceramics	8 641	1,2	9,3	4,0	0,0	0,0	0,0	0,0	9,3	4,0	0,0	0,0	0,0
252	Petrochemical ind	20 129	2,9	7,4	5,9	0,0	0,0	0,0	0,0	7,4	5,9	0,0	0,0	0,0
253	Oth. chem. basic ind	44 584	6,4	8,4	7,4	2,4	1,6	0,0	0,0	6,0	5,0	0,9	1,6	0,0
255	Paints, varnishes	359	0,1	7,6	3,9	0,0	0,0	0,0	0,0	7,6	3,9	0,0	0,0	0,0
256	Chemicals for ind	4 425	0,6	3,8	1,9	0,0	0,0	0,0	0,0	3,8	1,9	0,0	0,0	0,0
257	Pharma products	7 690	1,1	5,8	3,8	0,0	0,0	0,0	0,0	5,8	3,8	0,0	0,0	0,0
258	Soap, detergents	663	0,1	6,6	6,4	0,0	0,0	0,0	0,0	6,6	6,4	0,0	0,0	0,0
259	Chemicals f. home	7 157	1,0	4,9	1,8	0,0	0,0	0,0	0,0	4,9	1,8	0,0	0,0	0,0
260	Artificial fibres	5 186	0,7	8,0	7,8	5,7	4,6	3,4	0,0	2,3	2,1	1,1	1,1	3,4
311	Foundries	4 745	0,7	4,8	4,2	0,0	0,0	0,0	0,0	4,8	4,2	0,0	0,0	0,0
312	Forging	691	0,1	5,2	2,1	0,0	0,0	0,0	0,0	5,2	2,1	0,0	0,0	0,0
313	Metal treatment	1 677	0,2	6,4	2,8	0,0	0,0	0,0	0,0	6,4	2,8	0,0	0,0	0,0
314	Metal structures	1 184	0,2	4,4	3,8	0,0	0,0	0,0	0,0	4,4	3,8	0,0	0,0	0,0
315	Boiler, tanks	208	0,0	4,2	2,9	0,0	0,0	0,0	0,0	4,2	2,9	0,0	0,0	0,0
316	Tools, met. prods	6 785	1,0	5,5	2,9	0,0	0,0	0,0	0,0	5,5	2,9	0,0	0,0	0,0
321	Machinery f. agric.	2 017	0,3	4,6	3,6	0,0	0,0	0,0	0,0	4,6	3,6	0,0	0,0	0,0
322	Machine tools	11 627	1,7	3,8	2,0	0,0	0,0	0,0	0,0	3,8	2,0	0,0	0,0	0,0
323	Textile machinery	364	0,1	4,2	3,6	0,0	0,0	0,0	0,0	4,2	3,6	0,0	0,0	0,0
324	Machinery: food ind	1 921	0,3	4,1	3,4	0,0	0,0	0,0	0,0	4,1	3,4	0,0	0,0	0,0
325	Plant for mines	19 199	2,8	4,5	3,2	0,0	0,0	0,0	0,0	4,5	3,2	0,0	0,0	0,0
326	Transmission eqm	1 613	0,2	7,8	5,2	0,0	0,0	0,0	0,0	7,8	5,2	0,0	0,0	0,0
327	Other specif. eqm	1 091	0,2	5,0	3,9	0,0	0,0	0,0	0,0	5,0	3,9	0,0	0,0	0,0
328	Other machinery	8 076	1,2	4,7	3,1	0,0	0,0	0,0	0,0	4,7	3,1	0,0	0,0	0,0
330	Office machinery	2 961	0,4	4,5	2,7	0,0	0,0	0,0	0,0	4,5	2,7	0,0	0,0	0,0
341	Electrical wires	2 851	0,4	6,5	0,6	0,0	0,0	0,0	0,0	6,5	0,6	0,0	0,0	0,0
342	Electrical motors	10 921	1,6	5,0	3,3	0,0	0,0	0,0	0,0	5,0	3,3	0,0	0,0	0,0
343	Industrial el. eqm	8 202	1,2	4,7	3,6	0,0	0,0	0,0	0,0	4,7	3,6	0,0	0,0	0,0
344	Telecommun. eqm	2 634	0,4	3,9	5,7	0,0	0,0	0,0	0,0	3,9	5,7	0,0	0,0	0,0
345	Radio-, TV sets	1 457	0,2	9,0	2,4	0,0	0,0	0,0	0,0	9,0	2,4	0,0	0,0	0,0
346	Domest. electr. eqm	8 307	1,2	4,1	3,0	0,0	0,0	0,0	0,0	4,1	3,0	0,0	0,0	0,0
347	Elec. lighting eqm	1 556	0,2	6,0	3,7	0,0	0,0	0,0	0,0	6,0	3,7	0,0	0,0	0,0
351	Motor vehicles	762	0,1	9,9	11,2	0,0	0,0	0,0	0,0	9,9	11,2	0,0	0,0	0,0
352	Bodies f. mot. veh.	1 085	0,2	5,0	5,3	0,0	0,0	0,0	0,0	5,0	5,3	0,0	0,0	0,0
353	Parts f. mot. veh.	2 535	0,4	6,9	3,9	0,0	0,0	0,0	0,0	6,9	3,9	0,0	0,0	0,0
361	Shipbuilding	189	0,0	4,4	0,0	0,0	0,0	0,0	0,0	4,4	0,0	0,0	0,0	0,0
362	Railway equipment	981	0,1	3,8	4,9	0,0	0,0	0,0	0,0	3,8	4,9	0,0	0,0	0,0
363	Cycles, mot.-cycles	142	0,0	10,2	8,0	0,0	0,0	0,0	0,0	10,2	8,0	0,0	0,0	0,0
364	Aerospace equipm.	976	0,1	4,7	0,0	0,0	0,0	0,0	0,0	4,7	0,0	0,0	0,0	0,0
365	Oth. transp. means	122	0,0	4,1	3,1	0,0	0,0	0,0	0,0	4,1	3,1	0,0	0,0	0,0
371	Precision instr	1 237	0,2	5,2	3,7	0,0	0,0	0,0	0,0	5,2	3,7	0,0	0,0	0,0
372	Medico-surg. eqm	483	0,1	5,2	5,3	0,0	0,0	0,0	0,0	5,2	5,3	0,0	0,0	0,0
373	Optical instr	963	0,1	7,4	5,7	0,0	0,0	0,0	0,0	7,4	5,7	0,0	0,0	0,0
374	Clocks, parts	38	0,0	5,7	4,7	0,0	0,0	0,0	0,0	5,7	4,7	0,0	0,0	0,0
43A	Yarns	6 668	1,0	4,0	2,9	2,9	2,3	1,7	0,0	1,1	0,0	0,6	0,6	1,7
43B	Woven fabrics	15 329	2,2	11,1	7,5	7,9	6,3	4,8	0,0	3,2	-0,4	1,6	1,6	4,8
436	Knitting ind	41 566	6,0	13,7	10,1	9,8	7,8	5,9	0,0	3,9	0,4	2,0	2,0	5,9
438	Carpets, floor cov.	924	0,1	7,6	5,5	5,4	4,3	3,3	0,0	2,2	0,1	1,1	1,1	3,3
439	Other textile ind	823	0,1	7,4	4,7	5,1	4,1	3,1	0,0	2,3	-0,4	1,0	1,0	3,1
441	Tanning	3 319	0,5	1,9	2,1	0,5	0,0	0,0	0,0	1,4	1,7	0,5	0,0	0,0
442	Leather products	11 310	1,6	5,8	3,9	0,0	0,0	0,0	0,0	5,8	3,9	0,0	0,0	0,0
451	Footwear	44 068	6,3	7,3	6,3	0,0	0,0	0,0	0,0	7,3	6,3	0,0	0,0	0,0
453	Clothings	111 474	16,1	13,7	12,0	9,8	7,8	5,9	0,0	3,9	2,2	2,0	2,0	5,9
455	Househ. textiles	15 800	2,3	12,3	10,0	8,8	7,0	5,3	0,0	3,6	1,3	1,8	1,8	5,3
456	Furs, fur goods	1 094	0,2	5,4	3,7	0,0	0,0	0,0	0,0	5,4	3,7	0,0	0,0	0,0
461	Sawing of wood	6 882	1,0	0,2	0,0	0,0	0,0	0,0	0,0	0,2	0,0	0,0	0,0	0,0
462	Semi-fin. wood prods	5 811	0,8	9,9	9,6	0,0	0,0	0,0	0,0	9,9	9,6	0,0	0,0	0,0
463	Carpentry parts	943	0,1	5,5	3,3	0,0	0,0	0,0	0,0	5,5	3,3	0,0	0,0	0,0
464	Wooden containers	831	0,1	6,5	6,7	0,0	0,0	0,0	0,0	6,5	6,7	0,0	0,0	0,0
465	Other wooden prods	1 793	0,3	1,8	0,7	0,0	0,0	0,0	0,0	1,8	0,7	0,0	0,0	0,0
466	Cork-, straw prods	338	0,0	6,1	3,7	0,0	0,0	0,0	0,0	6,1	3,7	0,0	0,0	0,0
467	Wooden furniture	12 375	1,8	5,6	3,1	0,0	0,0	0,0	0,0	5,6	3,1	0,0	0,0	0,0
471	Pulp, paper, board	12 407	1,8	1,4	0,8	0,0	0,0	0,0	0,0	1,4	0,8	0,0	0,0	0,0
472	Paper processing	1 223	0,2	9,4	1,9	0,0	0,0	0,0	0,0	9,4	1,9	0,0	0,0	0,0
473	Printing industr.	283	0,0	1,8	0,5	0,0	0,0	0,0	0,0	1,8	0,5	0,0	0,0	0,0
481	Rubber products	13 155	1,9	7,9	4,9	0,0	0,0	0,0	0,0	7,9	4,9	0,0	0,0	0,0
482	Tyre retreading	22	0,0	5,8	5,8	0,0	0,0	0,0	0,0	5,8	5,8	0,0	0,0	0,0
483	Plastics process.	7 855	1,1	10,0	4,7	0,0	0,0	0,0	0,0	10,0	4,7	0,0	0,0	0,0
491	Jewellery	15 263	2,2	0,0	0,1	0,0	0,0	0,0	0,0	0,0	0,1	0,0	0,0	0,0
492	Musical instrum.	425	0,1	6,3	2,4	0,0	0,0	0,0	0,0	6,3	2,4	0,0	0,0	0,0
493	Photographic labs	93	0,0	4,3	6,2	0,0	0,0	0,0	0,0	4,3	6,2	0,0	0,0	0,0
494	Toys, sports goods	4 628	0,7	7,8	1,8	0,0	0,0	0,0	0,0	7,8	1,8	0,0	0,0	0,0
495	Misc. manuf. ind	2 103	0,3	7,1	1,8	0,0	0,0	0,0	0,0	7,1	1,8	0,0	0,0	0,0
620	Waste-, scrap trade	7 884	1,1	0,8	1,4	0,0	0,0	0,0	0,0	0,7	1,4	0,0	0,0	0,0
Total		693 933	100,0	7,2	5,2	3,0	2,3	1,6	0,0	4,2	2,2	0,7	0,7	1,6

Table A.3.5
EC tariff reduction for imports from Romania

NACE code	Sector	Imports 1992 (1 000 ECU)	Product (% share)	MFN 1992	GSP 1991	Europe Agreement 1993 (%)	1995 (%)	1996 (%)	1998 (%)	Duty relief 1993/ MFN	1993/ GSP	1995/93 (% points)	1996/95	1998/96
111	Hard-coal mining	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
112	Lignite mining	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
120	Coke ovens	11	0,0	0,4	0,4	0,4	0,2	0,0	0,0	0,0	0,0	0,2	0,2	0,0
130	Gas-, petr. extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
140	Oil refining	13 349	1,0	5,8	3,4	0,0	0,0	0,0	0,0	5,8	3,4	0,0	0,0	0,0
151	Fissile ore extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
152	Fissile materials	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
161	Electric power	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
162	Gasworks	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
211	Iron ore extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
212	Non-f. metals extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
221	Iron & steel ind	82 573	6,3	4,7	4,7	3,8	1,9	0,9	0,0	0,9	0,9	1,9	0,9	0,9
222	Steel tubes	21 273	1,6	8,5	5,4	1,6	1,0	0,0	0,0	6,9	3,8	0,6	1,0	0,0
223	Steel drawing	3 086	0,2	5,8	1,5	0,0	0,0	0,0	0,0	5,8	1,5	0,0	0,0	0,0
224	Non-f. metals	13 682	1,1	4,7	5,0	1,9	0,0	0,0	0,0	2,8	3,2	1,9	0,0	0,0
231	Build. mater. extr	469	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
232	Potassium extr	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
233	Salt extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
239	Other miner. extr	57	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
241	Clay products	0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
242	Cement, lime	26 210	2,0	3,2	0,2	1,1	0,7	0,0	0,0	2,1	-0,9	0,4	0,7	0,0
243	Cement products	31	0,0	3,2	2,1	0,0	0,0	0,0	0,0	3,2	2,1	0,0	0,0	0,0
244	Asbestos products	52	0,0	6,1	0,0	0,0	0,0	0,0	0,0	6,1	0,0	0,0	0,0	0,0
245	Stone working	986	0,1	2,9	1,0	0,0	0,0	0,0	0,0	2,9	1,0	0,0	0,0	0,0
246	Abrasive products	55	0,0	3,4	3,2	0,0	0,0	0,0	0,0	3,4	3,2	0,0	0,0	0,0
247	Glass, -ware	28 830	2,2	10,1	8,5	5,1	3,3	0,0	0,0	5,0	3,4	1,8	3,3	0,0
248	Ceramics	14 661	1,1	10,3	4,8	3,3	2,2	0,0	0,0	7,0	1,5	1,2	2,2	0,0
252	Petrochemical ind	48 399	3,7	10,4	4,7	0,0	0,0	0,0	0,0	10,4	4,7	0,0	0,0	0,0
253	Oth. chem. basic ind	22 578	1,7	8,2	4,2	2,7	1,7	0,0	0,0	5,6	1,5	0,9	1,7	0,0
255	Paints, varnishes	30	0,0	4,1	5,3	0,0	0,0	0,0	0,0	4,1	5,3	0,0	0,0	0,0
256	Chemicals for ind	2 423	0,2	3,5	1,3	0,0	0,0	0,0	0,0	3,5	1,3	0,0	0,0	0,0
257	Pharma products	1 699	0,1	5,1	1,8	0,0	0,0	0,0	0,0	5,1	1,8	0,0	0,0	0,0
258	Soap, detergents	469	0,0	6,6	6,6	0,0	0,0	0,0	0,0	6,6	6,6	0,0	0,0	0,0
259	Chemicals f. home	729	0,1	6,2	3,3	0,0	0,0	0,0	0,0	6,2	3,3	0,0	0,0	0,0
260	Artificial fibres	12 578	1,0	8,2	4,5	5,9	4,7	3,5	0,0	2,3	-1,3	1,2	1,2	3,5
311	Foundries	2 777	0,2	4,3	1,1	0,0	0,0	0,0	0,0	4,3	1,1	0,0	0,0	0,0
312	Forging	816	0,1	5,0	2,4	0,0	0,0	0,0	0,0	5,0	2,4	0,0	0,0	0,0
313	Metal treatment	3 376	0,3	6,2	2,8	0,0	0,0	0,0	0,0	6,2	2,8	0,0	0,0	0,0
314	Metal structures	3 703	0,3	4,2	1,8	0,0	0,0	0,0	0,0	4,2	1,8	0,0	0,0	0,0
315	Boiler, tanks	1 535	0,1	4,3	2,9	0,0	0,0	0,0	0,0	4,3	2,9	0,0	0,0	0,0
316	Tools, met. prods	26 444	2,0	5,3	2,4	0,8	0,5	0,0	0,0	4,6	1,6	0,3	0,5	0,0
321	Machinery f. agric.	4 454	0,3	8,5	1,6	0,0	0,0	0,0	0,0	8,5	1,6	0,0	0,0	0,0
322	Machine tools	9 902	0,8	4,1	1,8	0,0	0,0	0,0	0,0	4,1	1,8	0,0	0,0	0,0
323	Textile machinery	746	0,1	4,3	2,5	0,0	0,0	0,0	0,0	4,3	2,5	0,0	0,0	0,0
324	Machinery: food ind	349	0,0	4,0	4,0	0,0	0,0	0,0	0,0	4,0	4,0	0,0	0,0	0,0
325	Plant for mines	4 313	0,3	4,4	2,9	0,0	0,0	0,0	0,0	4,4	2,9	0,0	0,0	0,0
326	Transmission eqm	19 609	1,5	8,4	5,1	0,0	0,0	0,0	0,0	8,4	5,1	0,0	0,0	0,0
327	Other specif. eqm	997	0,1	5,3	2,2	0,0	0,0	0,0	0,0	5,3	2,2	0,0	0,0	0,0
328	Other machinery	7 880	0,6	4,5	3,5	0,0	0,0	0,0	0,0	4,5	3,5	0,0	0,0	0,0
330	Office machinery	207	0,0	4,6	4,8	0,0	0,0	0,0	0,0	4,6	4,8	0,0	0,0	0,0
341	Electrical wires	2 643	0,2	6,5	3,4	0,0	0,0	0,0	0,0	6,5	3,4	0,0	0,0	0,0
342	Electrical motors	18 745	1,4	5,0	2,1	0,0	0,0	0,0	0,0	5,0	2,1	0,0	0,0	0,0
343	Industrial el. eqm	1 811	0,1	5,2	1,5	0,0	0,0	0,0	0,0	5,2	1,5	0,0	0,0	0,0
344	Telecommun. eqm	496	0,0	6,5	2,7	0,0	0,0	0,0	0,0	6,5	2,7	0,0	0,0	0,0
345	Radio-, TV sets	3 070	0,2	13,3	2,4	0,0	0,0	0,0	0,0	13,3	2,4	0,0	0,0	0,0
346	Domest. electr. eqm	7 909	0,6	4,1	0,3	0,0	0,0	0,0	0,0	4,1	0,3	0,0	0,0	0,0
347	Elec. lighting eqm	6 300	0,5	5,6	1,3	0,0	0,0	0,0	0,0	5,6	1,3	0,0	0,0	0,0
351	Motor vehicles	6 231	0,5	10,7	5,6	0,0	0,0	0,0	0,0	10,7	5,6	0,0	0,0	0,0
352	Bodies f. mot. veh.	2 185	0,2	4,6	0,3	0,0	0,0	0,0	0,0	4,6	0,3	0,0	0,0	0,0
353	Parts f. mot. veh.	4 428	0,3	6,9	2,0	0,0	0,0	0,0	0,0	6,9	2,0	0,0	0,0	0,0
361	Shipbuilding	4 582	0,4	1,1	3,2	0,0	0,0	0,0	0,0	1,1	3,2	0,0	0,0	0,0
362	Railway equipment	8 475	0,7	4,8	1,3	0,0	0,0	0,0	0,0	4,8	1,3	0,0	0,0	0,0
363	Cycles, mot.-cycles	96	0,0	11,0	8,7	0,0	0,0	0,0	0,0	11,0	8,7	0,0	0,0	0,0
364	Aerospace equipm.	5 167	0,4	3,0	1,5	0,0	0,0	0,0	0,0	3,0	1,5	0,0	0,0	0,0
365	Oth. transp. means	67	0,0	4,2	2,1	0,0	0,0	0,0	0,0	4,2	2,1	0,0	0,0	0,0
371	Precision instr	1 216	0,1	5,3	1,2	0,0	0,0	0,0	0,0	5,3	1,2	0,0	0,0	0,0
372	Medico-surg. eqm	70	0,0	5,3	5,5	0,0	0,0	0,0	0,0	5,3	5,5	0,0	0,0	0,0
373	Optical instr	1 178	0,1	8,6	3,5	0,0	0,0	0,0	0,0	8,6	3,5	0,0	0,0	0,0
374	Clocks, parts	47	0,0	5,7	3,8	0,0	0,0	0,0	0,0	5,7	3,8	0,0	0,0	0,0
43A	Yarns	5 442	0,4	6,4	5,0	4,6	3,7	2,8	0,0	1,8	0,4	0,9	0,9	2,8
43B	Woven fabrics	4 196	0,3	11,0	8,8	7,9	6,3	4,7	0,0	3,1	1,0	1,6	1,6	4,7
436	Knitting ind	94 475	7,2	13,5	12,7	9,6	7,7	5,8	0,0	3,8	3,1	1,9	1,9	5,8
438	Carpets, floor cov.	6 776	0,5	7,0	5,9	5,0	4,0	3,0	0,0	2,0	0,9	1,0	1,0	3,0
439	Other textile ind	455	0,0	6,7	3,5	4,7	3,8	2,8	0,0	2,0	-1,2	0,9	0,9	2,8
441	Tanning	1 326	0,1	1,0	2,6	0,1	0,0	0,0	0,0	0,8	2,4	0,1	0,0	0,0
442	Leather products	4 926	0,4	6,8	1,5	0,0	0,0	0,0	0,0	6,8	1,5	0,0	0,0	0,0
451	Footwear	68 311	5,2	6,8	6,6	3,3	2,2	0,0	0,0	3,5	3,2	1,2	2,2	0,0
453	Clothings	367 369	28,2	13,6	13,1	9,7	7,7	5,8	0,0	4,0	3,5	1,9	1,9	5,8
455	Househ. textiles	9 065	0,7	11,7	9,4	7,7	6,2	4,6	0,0	3,9	1,7	1,5	1,5	4,6
456	Furs, fur goods	2 019	0,2	5,8	5,3	0,0	0,0	0,0	0,0	5,8	5,3	0,0	0,0	0,0
461	Sawing of wood	7 591	0,6	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
462	Semi-fin. wood prods	8 139	0,6	8,9	4,8	0,0	0,0	0,0	0,0	8,9	4,8	0,0	0,0	0,0
463	Carpentry parts	3 961	0,3	5,9	2,9	0,0	0,0	0,0	0,0	5,9	2,9	0,0	0,0	0,0
464	Wooden containers	1 895	0,1	7,4	6,6	0,0	0,0	0,0	0,0	7,4	6,6	0,0	0,0	0,0
465	Other wooden prods	5 467	0,4	0,7	0,4	0,0	0,0	0,0	0,0	0,7	0,4	0,0	0,0	0,0
466	Cork-, straw prods	11 289	0,9	4,6	0,4	0,0	0,0	0,0	0,0	4,6	0,4	0,0	0,0	0,0
467	Wooden furniture	213 167	16,4	5,6	4,5	2,8	1,8	0,0	0,0	2,8	1,7	1,0	1,8	0,0
471	Pulp, paper, board	3 145	0,2	7,4	1,1	0,0	0,0	0,0	0,0	7,4	1,1	0,0	0,0	0,0
472	Paper processing	239	0,0	9,1	8,4	0,0	0,0	0,0	0,0	9,1	8,4	0,0	0,0	0,0
473	Printing industr.	469	0,0	0,3	1,0	0,0	0,0	0,0	0,0	0,3	1,0	0,0	0,0	0,0
481	Rubber products	7 361	0,6	5,6	1,9	0,0	0,0	0,0	0,0	5,6	1,9	0,0	0,0	0,0
482	Tyre retreading	3	0,0	5,8	5,8	0,0	0,0	0,0	0,0	5,8	5,8	0,0	0,0	0,0
483	Plastics process.	10 647	0,8	11,8	3,9	0,3	0,2	0,0	0,0	11,5	3,6	0,1	0,2	0,0
491	Jewellery	1 435	0,1	0,4	0,8	0,0	0,0	0,0	0,0	0,4	0,8	0,0	0,0	0,0
492	Musical instrum.	1 525	0,1	6,1	0,9	0,0	0,0	0,0	0,0	6,1	0,9	0,0	0,0	0,0
493	Photographic labs	36	0,0	7,0	4,8	0,0	0,0	0,0	0,0	7,0	4,8	0,0	0,0	0,0
494	Toys, sports goods	3 004	0,2	6,9	3,7	0,0	0,0	0,0	0,0	6,9	3,7	0,0	0,0	0,0
495	Misc. manuf. ind	147	0,0	7,1	0,0	0,0	0,0	0,0	0,0	7,1	0,0	0,0	0,0	0,0
620	Waste-, scrap trade	3 276	0,3	1,4	2,6	0,0	0,0	0,0	0,0	1,4	2,6	0,0	0,0	0,0
Total		1 303 210	100,0	8,9	6,2	4,8	3,6	2,2	0,0	4,2	1,4	1,2	1,4	2,2

Chapter 3

Economic evaluation of EC-CEEC trade

Economic evaluation of EC-CEEC trade[1]

Anne Bucher[2], Mark Hayden[2], Emma Toledano Laredo[3]

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[1] The study benefited from the valuable contributions of Yvette Deszö and John Sheehy.
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Introduction

The switch to a market economy in Central and Eastern Europe has been supported by an unprecedented intensification of trade between the Community and the CEECs. By its size and proximity, the Community was predisposed to play a major role in the integration of the CEECs in the world economy. Aware of this political and economic responsibility, the Community responded quickly to the challenge of market opening. In the late 1980s trade and co-operation agreements were concluded with Hungary and Poland, followed by similar agreements for the CSFR in 1990 and Bulgaria and Romania in 1991. Simultaneously quantitative restrictions (QRs) specific to the CEECs were progressively eliminated. In January 1990 Hungary and Poland were declared eligible to join the *Generalized system of preferences (GSP), followed by the* CSFR and Bulgaria at the beginning of 1991. For Romania which had received a restricted GSP treatment since 1974, the restrictions were lifted in January 1991. The main step in trade liberalization was the conclusion of the Europe Agreements (EAs) with six CEECs[1] aiming at the establishment of a free-trade area for non-agricultural products within 10 years following their entry into force. The Agreements provide for an immediate and complete liberalization of trade for most industrial products, but maintain temporary trade barriers for some sensitive products, steel, textile and clothing products being the most affected by these measures. The question arises as to whether the pace and extent of market opening granted by the EAs enable transition economies to fully realize their comparative advantages on the Community market and to restore dynamic growth based on a competitive export sector.

Judging by the growth in EC-CEEC trade over the last three years, trade responded quickly and massively to liberalization in Eastern Europe and the Community's market opening policy: between 1989 and 1992 Community imports from CEECs increased by 56% and exports to CEECs increased by 87%. The implementation of the EAs is too recent to assess how trade will further respond to the dismantling of protection. This response also depends on the outcome of transition in the CEECs and its impact on future trade patterns and potential comparative advantages. Looking at recent trends can, however, give some indications of the impact of market opening granted in the EAs.

The starting point of this study is that given the fact that the reform process in transition economies is a long haul, even longer than originally anticipated, the current export base is likely to determine CEEC export capacity for the next 5 to 10 years of the transitory trade regime of the Europe Agreements. It is thus justified to assess the impact of trade opening on the basis of past trade patterns. Section 1 identifies the CEEC export base and examines how and where the CEECs have recently strengthened their position in the Community market. In section 2, the extent to which these developments were stimulated or discouraged by Community trade policy is assessed. Systematic tests on the link between protection in the Community market and CEEC export performance are carried out. Finally, in section 3 trade with the CEECs is assessed in comparison with other Community partners' in order to assess whether the fact that the CEECs went from a low to a high position in the Community hierarchy of trade preferences has already resulted in new Community trade patterns.

The scope of the study is limited, for practical reasons, to manufactured products (defined as NACE 2-4) which represent about 80% of EC-CEEC trade turnover and recorded the fastest growth in recent years. Only the six associated countries,[2] which are the most advanced both in transition to a market economy and economic integration with the Community, are examined here. The study covers the period 1987-92, which combines equally the pre-transition period of 1987-89 and the transition experience of the 1990s. Community trade statistics are used with disaggregated trade flows down to the 107 industrial sectors of the NACE 3-digit level.

1. CEEC export performance in the Community market

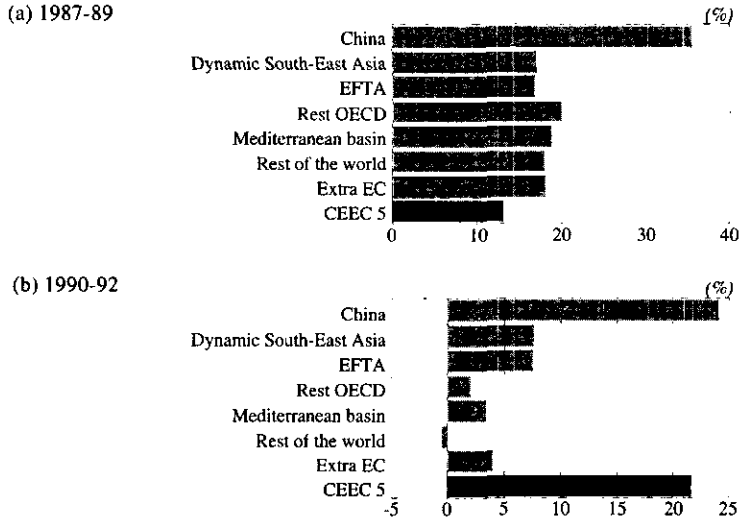
All indicators derived from EC-CEEC trade statistics point to an exceptional expansion of trade between the two regions, although in absolute terms Central and Eastern Europe is still a relatively marginal trade partner of the Community.

From 1987 to 1989 the value of Community imports in ecu from the five countries of Central and Eastern Europe increased by an average of 10% per year; from 1990 to 1992 the annual average growth in value was 16% (Table A.1). In relative terms, the change in the CEEC export performance is dramatic: from 1987 to 1989, EC imports from the CEECs grew more slowly than the average, by 4 percentage points per year; since then, they have out-performed the growth in all extra-EC imports by an average of 13 percentage points, and by nearly 20 percentage points in both 1991 and 1992. This basic pattern — relatively poor performance prior to transition, followed by sharp growth after 1989 — is common to all five countries except Romania, and even here imports recorded above-

[1] For a comprehensive presentation of the Europe Agreements, see D. Costello, E. Toledano-Laredo, and N. Nagarajan, 'The Europe Agreements: institutional provisions and implementation'.

[2] Bulgaria, the Czech and Slovak Republics combined, Hungary, Poland, Romania.

GRAPH 1: **Average annual growth rate of EC imports of manufactured goods, 1987-89 and 1990-92**



average growth in 1992. As a result, the CEECs increased their share in Community extra-EC imports from 2,8 to 3,3% between 1987 and 1992. For industrial products alone, which grew at a higher rate recently, the contrast between the pre- and post-transition periods is even sharper: the share of industrial products in the CEEC exports to the Community grew from 73,4% in 1987 to 88,6% in 1992, leading to a rise in the share in extra Community imports from 2,8 to 3,7% over the period. As the Community market for industrial products tended to become more open over the last six years (Table A.3), the increase in the CEEC share in Community imports overall underestimates the market gains the CEECs recorded in the Community market. The figures in absolute terms are, however, still very small: the CEEC market share in the Community increased for the industry as a whole from an average of 0,4% of Community domestic demand over the period 1987-89 to 0,5% on average over the period 1990-92, i.e. a gain of 0,1% of total Community demand (Table A.4).

This first part examines whether the expansion of trade with the Community was supported by a restructuring of CEEC exports at the product level. After having identified the CEEC export pattern at the sectoral level in Section 1.1., the assumption of stability of trade pattern is examined in Section 1.2. by reviewing recent changes.

1.1. The CEEC export base in the Community market: sector concentration and specialization

The CEEC export base in the Community market is identified on the basis of simple criteria of concentration and specialization. Concentration indicates the relative dependency of CEEC export performance on certain products. Concretely, this is measured by the product composition[1] of CEEC exports to the Community: at the NACE 2-digit level, a key sector is a sector which amounts to more than 5% of CEEC exports of industrial products. Specialization indicators reflect whether the CEECs are preferential suppliers of a given product in the Community market. The specialization index used below points to specialization in a given product if the share of that product in CEEC industrial exports to the Community is higher than the weight of that product in the Community's total extra-EC imports of industrial products. Table 1 presents summary statistics of concentration and specialization. As mentioned before, trade patterns have been sufficiently stable over time to

[1] The product share for the NACE sector J is defined by the share of CEEC exports of product J to the Community in total CEECs' exports of industrial products to the Community. The specialization index for product J is the ratio of the product share for J for CEECs to the product share for J in total extra-EC imports.

Table 1

Specialization and concentration of CEEC exports to the Community: summary statistics

	Bulgaria	CSFR	Hungary	Poland	Romania	CEEC 5
Export concentration						
Share of five largest NACE-2 sectors	66,5	45,9	63,4	66,4	73,6	60,2
Changes in export concentration						
Share of the five largest sectors						
in 1987	67,9	51,5	67,4	68,2	72,4	62,5
in 1992	67,4	48,7	62,5	63,5	75,6	55,6
Export specialization						
Number of NACE-3 sectors						
with average specialization 87-92 > 100	40	50	48	49	30	47
Changes in specialization						
Number of NACE-3 sectors where:						
1987 specialization > 100	35	41	41	45	29	44
1992 specialization > 100	37	51	47	47	27	52

Source: Commission services.

use indicators which are averages over the period 1987-92. Complete results on the two indicators at the NACE 2-digit level are given in Table 2 and details at the NACE 3-digit level are presented in Table A.2 in Annex 1.

Community trade with the region is rather concentrated, with the five largest sectors accounting for 60,2% of CEEC exports against 46% for extra-Community imports as a whole. Inter-country differences are important, with Romania showing the *greatest concentration and Czechoslovakia the greatest* dispersion. Between 1987 and 1992, the trend was in the direction of a diversification of the CEEC export base, but the changes remain small: for the CEEC 5 aggregate, the share of the five largest sectors declined by 7 percentage points in the last five years. The summary statistics on specialization reflect similar features: only about 30% of NACE 3-digit sectors benefit from a specialization above average; specialization results in the same country ranking with a relatively more favourable position for the CSFR and Romania at the other extreme; specialization also slightly improved over time both in *terms of the average level of specialization and increase in the* number of sectors in which the CEECs are specialized.

Detailed sectoral results shown in Tables 2 and 3 confirm the trends shown by summary statistics. Combining product share statistics and specialization indices confirm that the CEEC export base is limited to less than 10 NACE 2-digit sectors. The main ones are those where both concentration and specialization are high. It includes heavy industry, namely chemicals (25) and steel products (22), and traditional consumer goods industries, mainly food products (41), textiles (43), clothing and footwear (45), and wood products (46). Each of these sectors accounts for about 10% of CEEC exports to the Community. CEECs also have strong revealed comparative advantages for some intermediate goods, although these account for a small share of their export earnings. These are sectors which have a high energy content and are capital intensive: non-metallic mineral products (24), artificial fibres (26) or low technology products metal products (31). The highest values of the specialization index are to be found in this group: in particular for non-metallic mineral products, where CEECs supply 14% of EC imports, or for subsectors of the metal product industry where they also account for more than 10% of EC external supplies, against 3,3% for the industry as a whole.

Overall the CEEC export base is relatively narrow. At the NACE 3-digit product level (Table A.2), the concentration and specialization of CEEC exports is even clearer. ECSC products account for nearly all exports of metal products. For chemicals, exports are mainly petrochemicals. Food exports are concentrated on meat, fruit and vegetables. Ready-made clothing and footwear subsectors dominate the textile, footwear and clothing sectors. About 50% of wood product exports come from the furniture industry.

This common trade pattern does not exclude strong intercountry differences. Hungary does not export wood products (46), but has a relatively strong and diversified export base of electrical products (34). In addition, it has a relatively high dependence on food exports (41), which is the main sector both in terms of concentration and specialization indices. CSFR has a very weak food industry, but a diversified export base with significant exports of glassware and motor vehicles (35) as well as printing industry products (47). Polish textile (43) or textile-related (26) industries have not reached the degree of development of other CEEC either in terms of specialization or concentration. Like Hungary, Bulgarian timber exports are

significant only in the wooden furniture subsector. At the same time it has diversified exports of chemical products (25). Romania is the most atypical CEEC trade partner, with clothing and wooden furniture representing 40% of total exports. In spite of these intercountry differences, the dominant feature remains the great homogeneity of the region as a trade partner of the Community with an export base concentrated on a small number of sectors.

1.2. Recent changes in the CEEC export base

The massive expansion of trade is confirmed by statistics at the detailed sectoral level. There are only six NACE 3-digit sectors in the region which recorded negative export growth rates over the period 1990-92 representing only 5,7% of total exports, and 29 sectors representing 37,3% of exports which grew more slowly over the period 1990-92 compared to 1987-89. This confirms the expansion of trade across the board. This expansion occurred in the context of an overall slow-down of Community imports in the period 1990-92 compared to the subperiod 1987-89. It resulted in CEECs increasing their share of Community imports in all except 15 products. Agricultural and food products are well represented in these underperforming sectors; some were already declining before transition.

The product composition of CEEC exports to the Community has been extremely stable (Table 2): if we compare the average share of sectors between the two sub-periods 1987-89 and 1990-92, the weight of no NACE 2-digit sector in the region changed by more than 2 percentage points, with some exceptions at the country level:

The largest fluctuations are the decline in the share of food products by 4 percentage points in Hungary and Poland, and the upsurge in the share of clothing and footwear by 8 percentage points in Romania and Bulgaria. Although the magnitude of the change is generally small, the direction of the change is common to all CEECs and indicates a restructuring of exports away from the traditional sectors (steel, chemicals, but to a greater extent, away from food) towards sectors where CEECs had an initially strong specialization (non-metallic mineral products with the greatest increase in cement, or metal products) and to a lesser extent towards more processed products (mechanical and electrical engineering). The only

Table 2

CEEC export base in the EC market in 1987 and 1992: product composition of CEEC exports at NACE 2-digit level

Sectors		Bulgaria		CSFR		Hungary		Poland		Romania		CEEC 5	
		1987	1992	1987	1992	1987	1992	1987	1992	1987	1992	1987	1992
Extract. and prep. metal ores	21	0,0	0,4	0,1	0,1	0,0	0,1	0,5	0,4	0,0	0,0	0,2	0,2
Prod. and prelim. proc. of metals	22	**20,9**	15,3	**12,8**	**13,7**	9,9	6,5	14,6	15,9	9,7	9,0	12,4	12,7
Extraction of metals[1]	23	0,2	0,5	1,6	1,2	0,1	0,1	0,1	0,9	0,0	0,0	0,5	0,7
Manuf. of non-met. min. prod.	24	1,7	2,8	7,1	8,0	2,4	2,6	2,7	3,5	2,8	5,3	3,7	4,8
Chemical industry	25	16,7	11,2	12,7	9,6	12,5	10,8	11,6	8,5	8,0	5,9	11,6	9,2
Artificial fibres	26	1,0	0,7	1,0	1,0	0,4	0,4	0,2	0,4	1,7	0,9	0,8	0,6
Metal articles	31	1,2	2,0	2,4	7,0	3,4	5,1	3,2	6,6	2,9	2,9	2,9	5,9
Mechanical engineering	32	7,0	6,0	7,5	7,9	5,7	7,3	4,1	4,6	2,8	3,6	5,2	6,2
Office machinery, data processing equip.	33	0,9	0,4	0,1	0,4	0,2	0,6	0,1	0,1	0,1	0,0	0,2	0,3
Electrical engineering	34	4,0	4,7	3,7	5,8	7,1	11,1	4,0	4,1	2,8	3,1	4,4	6,1
Motor vehicles, parts and accessories	35	0,4	0,6	3,9	7,4	0,7	3,3	4,7	4,4	3,6	1,0	3,2	4,7
Other means of transport	36	0,1	0,3	0,7	1,2	0,1	0,2	2,3	1,5	1,9	1,4	1,2	1,1
Instrument engineering	37	0,2	0,4	0,5	0,5	0,5	0,7	0,4	0,3	0,2	0,2	0,4	0,5
Food, drink, tobacco	41	12,1	9,7	5,2	2,7	**20,7**	15,5	**17,5**	10,5	4,3	2,9	12,3	8,5
Textiles	43	8,3	8,6	7,5	5,8	6,5	5,7	4,3	3,5	9,2	8,3	6,7	5,3
Leather, leather goods	44	0,9	1,9	1,2	1,1	1,4	1,3	0,6	1,0	0,7	0,5	0,9	1,1
Footwear, clothing	45	9,9	**22,6**	8,0	9,5	17,2	**17,8**	14,9	**17,0**	22,1	**33,5**	**14,9**	**16,4**
Timber, wooden furniture	46	3,9	3,8	10,5	6,7	5,1	4,7	9,6	11,6	**23,4**	18,9	11,3	8,8
Paper, paper prod, printing	47	1,5	1,8	6,3	4,0	1,0	1,2	1,5	1,6	1,2	0,3	2,5	2,2
Rubber, plastics	48	1,4	2,8	3,0	3,1	2,3	2,8	1,1	1,6	1,7	1,4	2,0	2,3
Other manufacturing	49	7,6	3,8	4,2	3,3	2,8	2,1	2,0	2,4	0,8	1,0	2,7	2,5

[1] Other than metalliferous and energy-producing minerals.

NB: Bold numbers indicate the highest product share for each year and each country.

Source: Eurostat (Comext).

Table 3

CEEC export performance in 1987 and 1992: specialization indices (NACE 2-digit level)

Sectors		Bulgaria 1987	Bulgaria 1992	CSFR 1987	CSFR 1992	Hungary 1987	Hungary 1992	Poland 1987	Poland 1992	Romania 1987	Romania 1992	CEEC 5 1987	CEEC 5 1992
Extract. and prep. metal ores	21	0	8	7	5	0	6	25	26	0	0	9	13
Prod. and process. metals	22	**261**	202	160	181	123	86	182	209	121	119	155	167
Extraction of metals[1]	23	29	90	226	212	15	11	19	154	1	7	66	127
Manuf. of non-met. min. prod.	24	170	245	**728**	**692**	246	231	273	304	291	462	**377**	**417**
Chemical industry	25	177	120	134	103	132	115	123	91	85	63	123	99
Metal articles	31	59	81	114	282	161	204	152	266	139	117	137	237
Mechanical engineering	32	81	70	88	92	66	85	48	53	33	42	60	72
Office machinery, data processing	33	14	6	2	6	4	9	1	1	2	0	3	4
Electrical engineering	34	31	35	28	43	53	82	31	30	21	23	33	45
Motor vehicles, parts and accessories	35	7	9	64	119	12	53	77	70	59	15	52	74
Other means of transport	36	2	6	22	22	3	4	72	28	59	26	38	20
Instrument engineering	37	8	12	16	16	18	24	15	10	8	6	14	15
Food, drink, tobacco	41	169	172	73	48	289	275	245	185	60	51	172	151
Textiles	43	154	170	139	114	120	113	79	70	171	165	125	105
Leather, leather goods	44	75	200	101	117	123	138	50	101	60	49	82	114
Footwear, clothing	45	182	**371**	148	155	**318**	**292**	**275**	278	407	550	276	270
Timber, wooden furniture	46	101	112	271	197	131	138	246	**340**	**603**	**556**	291	260
Paper, paper prod, printing	47	25	36	104	78	16	24	24	32	20	6	41	42
Rubber, plastics	48	69	117	150	131	114	116	57	66	83	57	99	98
Other manufacturing	49	157	71	86	62	58	39	41	45	16	19	56	48

[1] Other than metalliferous and energy-producing minerals.
NB: Bold numbers indicate the highest specialization index for each year and each country.
Source: Eurostat (Comext).

exception to this pattern is the clothing industry, which gained importance in the exports of each CEEC.

Changes in the product composition of CEEC exports also reflect the trends in Community import demand. This dimension is eliminated if we focus on the specialization indices. The specialization index does not exhibit a very strong time trend either (Table 3). CEECs strengthened their market position only for metal products (31) in the last years.

Focusing on 1992 changes only, some discontinuity compared to the 1990-91 period can be detected: it would point to a greater concentration of CEEC exports in the steel sector (22), a greater specialization in the textile and clothing sectors (43 and 45), and a levelling-off of the export performance in the non-metal mineral sector (24).Would such a pattern indicate that steel and textile are among the traditional sectors of the export base where CEECs will be able to maintain a high competitive position?

If changes in concentration and specialization are combined, the overall picture of stability is confirmed. There are only three sectors where the trend in the CEEC export performance points to a uniform improvement or worsening across sectors and countries: these are chemicals (25) and food (41) on the negative side and metal tools (31) on the positive side. For the other key sectors, the stability at the aggregate level hides significant shifts in trade performance between countries or within NACE 2-digit sectors, although no systematic pattern which might point to a trend in the changes can be detected at this stage. It only suggests that, in the absence of major product restructuring in CEEC exports, the exports to the Community still underwent some reorganization around sub-sectors within the same NACE 2-digit category. In some sectors, it led to a diversification of exports, in others to a consolidation of past market positions. The outcome is quite different depending on the country and the sector considered and this *per se* might reflect the fact that restructuring started on a piecemeal basis but has in any case not reached a significant sectoral threshold in transition economies.

2. Impact of trade opening on EC-CEEC trade

2.1. Evaluation of trade protection

The main steps taken by the Community to open its market to the CEECs were the eligibility of CEECs to the join GSP in the early 1990s, followed by the conclusion of the Europe Agreements and the entry into force of their trade provisions in 1992 and 1993 depending on the country. These two steps

Table 4

Tariff reductions for industrial products

Country/sector	Average tariff in %						Tariff relief in %[b]			
	MFN[a]		GSP[a]		Year 1 of EA[a]		GSP/MFN		EA/GSP	
	c	d	c	d	c	d	c	d	c	d
Part A: by country for the industrial sector (NACE 2-4)[e]										
Bulgaria	5,5	6,0	3,8	5,2	0,7	3,0	– 31,0	– 13,0	– 82,5	– 42,4
CSFR	6,0	6,6	3,5	4,5	1,2	2,1	– 41,7	– 31,9	– 66,6	– 53,3
Hungary	5,8	7,4	2,8	4,6	0,8	2,5	– 51,2	– 36,9	– 71,3	– 46,0
Poland	5,9	6,2	2,7	4,2	0,9	2,4	– 54,0	– 32,6	– 65,9	– 43,3
Romania	3,8	7,1	3,2	6,6	0,7	4,5	– 15,2	– 6,8	– 77,6	– 32,6
CEEC 5	5,4	6,7	3,2	4,7	0,9	2,5	– 40,5	– 30,7	– 73,3	– 45,9
Part B: by NACE 2-digit sector for CEEC 5[e]										
21 Extract., prep. of metal ores	0,4	0,5	0,0	0,0	0,0	0,0	100,0	100,0	0,0	0,0
22 Prod. prelim. proc. of metals	5,1	4,0	3,8	2,9	1,7	1,9	– 26,5	– 28,0	– 53,8	– 33,5
23 Extract. of non-met/en. min.	3,1	0,4	1,2	0,2	0,8	0,1	– 60,5	– 33,0	– 34,6	– 63,7
24 Man. of non-met. min. prod.	4,8	7,3	2,6	3,9	0,6	2,1	– 45,5	– 47,1	– 77,2	– 45,5
25 Chemical industry	6,1	6,4	3,8	3,4	0,2	0,3	– 38,2	– 47,0	– 94,7	– 91,9
26 Artificial fibres	7,9	7,7	5,1	5,0	5,9	6,0	– 35,1	– 35,1	15,1	19,9
31 Metal article (excluding 32-37)	4,6	4,8	2,1	1,7	0,0	0,0	– 54,6	– 64,3	– 98,2	– 98,3
32 Mechanical engineering	4,6	5,2	2,8	2,6	0,1	0,2	– 39,6	– 49,6	– 97,2	– 92,8
33 Office machinery	4,5	4,5	3,5	3,1	0,0	0,0	– 22,7	– 31,5	– 100,0	– 100,0
34 Electrical engineering	5,4	5,7	3,1	3,0	0,2	0,2	– 43,6	– 47,1	– 94,8	– 92,2
35 Motor vehicles, parts and accessories	6,6	8,9	4,0	4,4	0,1	0,1	– 39,0	– 50,0	– 97,8	– 96,8
36 Other means of transport	4,3	4,6	2,6	1,3	0,0	0,0	– 40,5	– 71,0	– 100,0	– 100,0
37 Instrument engineering	5,1	5,5	3,6	3,1	0,0	0,0	– 29,6	– 43,6	– 100,0	– 100,0
43 Textiles	9,8	11,2	6,7	9,4	6,9	8,4	– 31,6	– 16,0	2,8	– 10,7
44 Leather, leather goods (excluding shoes, clothes)	4,6	5,0	2,1	2,1	0,1	0,1	– 54,0	– 58,7	– 93,8	– 93,9
45 Footwear, clothing	9,5	12,2	8,0	11,3	4,9	8,2	– 16,0	– 7,0	– 39,0	– 27,6
46 Timber, wooden furniture	5,4	4,3	2,2	1,9	0,1	0,5	– 59,4	– 55,2	– 93,4	– 74,7
47 Paper, paper products, printing, publishing	4,4	3,4	2,2	1,6	0,0	0,0	– 49,4	– 52,3	– 100,0	– 100,0
48 Rubber, plastics	6,9	7,7	3,6	3,2	0,6	0,9	– 47,7	– 58,5	– 83,9	– 71,1
49 Other manufacturing	5,0	5,8	3,0	3,7	0,0	0,0	– 40,4	– 36,2	– 100,0	– 100,0

[a] MFN calculations based on 1989 data, i.e. MFN rates for all CEECs except Romania which had GSP; GSP: given in 1990 to Hungary and Poland and in 1991 to Bulgaria and CSFR. Calculation based on 1991 data; First year of EA: 1992 for Hungary, Poland and CSFR, 1993 for Romania and Bulgaria.

[b] Tariff relief calculated as a rate of change in %.

[c] Arithmetic average of NACE 3-digit subsectors.

[d] Calculation weighted average using the weight of NACE 3-digit subsectors. In both cases [c] and [d], tariffs at the NACE 3-digit level are weighted averages of tariffs.

[e] NACE 2-4 aggregate excluding food industries (sector 41 of NACE 2-digit).

initiated a continuous process of reduction in tariffs and dismantling of non-tariff barriers (NTB) expected to lead to a complete liberalization of trade in industrial products two or three years before the end of the century, when trade protection on textile and steel products will have been completely eliminated. The implications of these packages of trade concessions for tariffs and NTBs are measured below.[1]

Prior to transition, CEECs received MFN treatment, implying an average duty rate for industrial products of the order of 6 to 7% (Table 4). Romania, which received GSP treatment was already benefiting from a lower average tariff, close to 4% if measured by an arithmetical average. With the eligibility for GSP, CEECs enjoyed an overall tariff reduction of the order of 30 to 40% depending on the measure of the average tariff. Upon entry into force of the EAs, the CEECs recorded an additional reduction in their average tariff of the order of 70% on an arithmetical basis and 45% when weighted by the 1992 structure of exports. It resulted in a low average tariff, around 1% on a non-weighted basis and 2,5% on a weighted basis. The first year of implementation of the EAs corresponds mainly to a consolidation of the GSP preferences and very limited tariff concessions are given on textile or steel products compared to other products: tariff reductions for textile, clothing, and steel products vary between 20 and 30%, while most of the other sectors benefit from tariff reductions of over 80%. In spite of the fact that tariff reduction affects sensitive sectors in which CEEC exports are strongly developed to a much lesser extent,

[1] The measures of protection are taken from Möbius and Schumacher (forthcoming), who provide an estimation of effective tariff rates applied to individual NACE 3-digit sectors and import coverage ratios for NTBs (including anti-dumping, QRs, etc.) from the UN database. Food industry sectors (41) had to be excluded from the scope of the study for this evaluation owing to the complexity of the trade barriers resulting from the common agricultural policy.

CEECs should be able to draw immediate gains from the complete liberalization granted in the EAs in sectors where they already have some comparative advantages, such as chemicals, electrical engineering, motor vehicles, timber, rubber and plastic products.

In addition to tariff reductions, the EAs grant an immediate withdrawal of quantitative restrictions except for MFA products which remain subject to quotas. Until entry into force of the Europe Agreements, NTBs affected on average between 20 and 30% of CEECs' exports of industrial products. They were concentrated in a limited number of sectors where their import coverage ratio was close to 100%: steel (22), textile (43), clothing and footwear (45), leather goods (44). They also affect some chemical products (25), including artificial fibres (26), some electrical products (34), rubber and plastics products (48) and other manufactured products (49).The weight of NTBs under the Europe Agreement trade regime is hard to predict as it depends mainly on the effective use of commercial instruments such as anti-dumping or safeguard clauses, particularly in the steel and chemical sectors, which are traditionally more hard hit by anti-dumping measures than other sectors.

Initially, we try to assess the total impact of protection in the Europe Agreements upon their entry into force by measuring in each NACE 2-digit sector the weight of products which do not benefit from an immediate complete liberalization. It covers 'sensitive products' as defined in Annex 3, MFA products in textile and clothing covered by Protocol 1 and ECSC products covered by Protocol 2 of the Agreements. Results of these calculations using 1992 trade structure are presented in Annex 2 (Table A.9). The variable can be interpreted as a kind of 'virtual' import coverage ratio for tariff and non-tariff barriers prevailing during the first year of implementation of the EAs. For the industry as a whole, the weight of 'sensitive' sectors in a broad sense varies between 45% in Bulgaria and 75% in Romania; with MFA products representing roughly half of this share and sensitive products of the Annex 3 making up the bulk of the residual. At the sectoral level, there is a first group of sectors where nearly 100% of exports face some kind of protection: these are mainly textile or textile related sectors (26, 43, 45), leather products (44) and non-metal mineral products (24). A second group of sectors with a weight of sensitive sectors close to 50% of sector exports includes steel (22), chemicals (25), motor vehicles (35), timber and wooden products (46) and rubber and plastics (48). The only key sector of the CEEC export base benefiting from a wide-ranging liberalization upon entry into force of the Agreements is metal products (31), the only sector for which a clear improvement in export performance over the transition period in all CEECs was found in Section 1.

2.2. Link between trade performance and protection

All conclusions reached so far about the CEEC export performance and protection on the Community market point to a strong link between these two variables. In this section the link is formally tested and quantified. Two hypotheses are examined.

(i) Does protection penalize CEEC competitive export sectors relatively more?

(ii) Did trade liberalization stimulate CEEC exports?

Both hypotheses are tested using standard correlation tests between export performance and measures of protection. Export performance indicators are the product share variable and the specialization index as defined in Section 1. Protection is measured by two indicators: tariff rates and import coverage ratios for quantitative restrictions and other non-tariff barriers (Möbius and Schumacher). The first hypothesis is equivalent to testing for a positive correlation between these two sets of indicators, reflecting the fact that CEEC exports are concentrated mostly in sectors which face relatively high protection. A negative correlation on the changes in these indicators would validate the second assumption, implying that CEECs increased their specialization or trade turnover in sectors where tariff reductions were the strongest. The first hypothesis was tested for two years: one year before transition (1989) and one year during transition (1991), which corresponds to the year of extension of the GSP to the whole region. A similar test was run on 1991 and 1992 data to estimate the likely correlation under the Europe Agreement regime, using the 'virtual' import coverage ratio of the EAs as defined in Section 2.1. The second hypothesis was tested for the whole transition period, 1990 to 1992 using the growth in exports and in the specialization indices as performance indicators and tariff relief[1] as a measure for liberalization.

(i) Correlation between export performance and protection (Table 5)

A significant and positive correlation is found in all CEECs between export performance (specialization and product share) and protection variables (tariffs and non-tariff barriers) both before and during transition. In other words CEEC exports are clearly concentrated in highly protected sectors. The results prove to be extremely robust and homogeneous between countries, over time and with respect to the various definitions

[1] Defined as $(t-t_{-1}) / (1 + t_{-1})$, with t being the yearly tariff rate of individual NACE 3-digit level sectors.

used for performance and protection. Overall correlation coefficients vary within the range of 0,1 and 0,5, the weakest correlation being observed for the specialization index and NTBs. In spite of the fact that the correlation is not systematically found significant for both years, no sign of instability could be detected.[1] In other words, there is no evidence of a stronger relationship between export flows and protection after 1989.

These conclusions on robustness, homogeneity and stability are confirmed by the test on the correlation under the EA regime. These results should, however, be interpreted with caution since they correspond more to a simulation exercise in which the export performance in 1991 and 1992 is tested against protection measures which took place later on (in 1992 for the Visegrad countries, in 1993 for Romania and in 1994 for Bulgaria). In addition, the EA protection measure combines both tariffs and NTBs. The correlation is weaker for the specialization index and EA protection, reflecting the fact that specialization is, as found before, less correlated with NTBs.

Overall the results widely confirm a strong link between protection and performance, which shows that market access granted to CEECs by the Community is relatively unfavourable given their export structure and competitiveness position. From this point of view the stability of the relationship observed over time is a negative factor as it rules out any significant breakthrough of CEEC exports in sectors where liberalization has been far reaching. However, when focusing on the result derived from the specialization index (lines 1a, 1b, and 2a, 2b in Table 5) which is a better proxy for revealed comparative advantages, the correlation becomes slightly weaker over time.

[1] Stability tests were performed using Chow tests on the simple regression relating performance variable and protection for 1989 and 1991.

Table 5

Correlation between export performance and protection[1]

	Bulgaria	CSFR	Hungary	Poland	Romania	CEEC 5
1. Tariff protection and export performance[2]						
Tariff and specialization:						
(1a) in 1989	0,2874**	0,2576**	0,3634**	0,2874**	0,1638	0,2854**
(1b) in 1991	0,2585**	0,1876*	0,1776	0,1571	0,1407	0,1756
Tariff and product share:						
(1c) in 1989	0,1457	0,1008	0,2869**	0,0494	– 0,0394	0,0735
(1d) in 1991	0,2773**	0,2711**	0,4484**	0,2859**	0,4439**	0,3432**
2. NTBs and export performance[3]						
NTB and specialization:						
(2a) in 1989	0,2004*	0,1503	0,1883*	0,1254	0,2003*	0,1734*
(2b) in 1991	0,178	0,1381	0,1619	0,1021	0,1655	0,1496
NTB and product share:						
(2c) in 1989	0,5321**	0,4296**	0,4131**	0,2526*	0,2809**	0,3592**
(2d) in 1991	0,4922**	0,3781**	0,3491**	0,2315**	0,3014**	0,3312**
3. EA protection and export performance[4]						
EA protection and specialization:						
(3a) in 1991	0,1685	0,2520*	0,2361*	0,2000*	0,3301**	0,2414**
(3b) in 1992	0,2145*	0,3025**	0,2697**	0,1267	0,3810**	0,2620**
EA protection and product share:						
(3c) in 1991	0,5256**	0,4832**	0,3808**	0,3111**	0,4458**	0,4099**
(3d) in 1992	0,5368**	0,5359**	0,3687**	0,2981**	0,4374**	0,4024**

* Significant at 5% level.

** Significant at 1% level.

[1] All correlation tests are performed on cross-section data encompassing the industrial NACE 3-digit sectors excluding food products (41-42), Calculations for the CEEC 5 aggregate are derived by pooling country data.

[2] Tariff rates are calculated in Möbius and Schumacher(1993). 1989 rates are MFN rates except for Romania where the GSP rate is calculated. 1991 rates correspond to GSP rates. Export performance can be measured either through the specialization index, calculated in logs, or the product share, as defined in Part 1.

[3] NTBs are calculated in Möbius and Schumacher (1993); it is a composite variable corresponding to import coverage ratios of QRs, anti-dumping, etc.

[4] EA protection is a 'virtual' import coverage ratio for protection (tariff and NTBs) applied in the first year of implementation of the Europe Agreements for sensitive sectors (Annex 3 and Protocols 1 and 2).

(ii) Correlation between changes in performance and protection (Table 2.3)

By contrast with the previous results, the correlation tests on the changes in performance and protection do not give any significant and robust results.[1] More than an absence of correlation, this probably reflects the complexity of the dynamic pattern between the two dimensions. Some tentative conclusions may still be drawn from this set of unstable and insignificant results.

If we refer to the whole period (lines 1a and 2a in Table 6), the results overall point to a negative correlation confirming the assumption of a beneficial effect of liberalization on export potential, except in Poland.[2] Not surprisingly given the complexity in the dynamic of the relationship, results are even less systematic on a yearly basis (lines 1b-1d and 2b-2d in Table 6). They do, however, point to a switch from a positive to a negative correlation over the period 1989-92. This trend is compatible with evidence found in Part 1 (Table 1 — summary statistics) of a slight diversification and improvement in specialization in recent years, which could thus partly be a positive trade response to the dismantling of trade barriers in non-sensitive sectors.

There are various factors involved in the link between trade and protection, among which some could be responsible for both the lack of a dynamic correlation between the two dimensions and the stability in the export base found in Part 1. Inertia in market structures is such a factor and encompasses conflicting elements. On the one hand, in sectors where CEECs start from a low position, which are also sectors where trade barriers are low, CEECs face an entry cost on the Community market, covering both the adjustment in production capacity and the development of a market strategy. This should reduce the speed of adjustment of exports to trade liberalization and delay the emergence of new exporting sectors. On the other hand, sectors where CEECs start from a high position, mostly sensitive sectors, are sectors where international competition is strong, involving numerous competitors and showing an excess capacity at the world level as well as stagnating demand in the Community. These are unfavourable conditions for a rapid market share response to trade liberalization. Both factors suggest that the dynamic correlation between trade performance and protection depends on the initial conditions.

One way of capturing such inertia effects is to weight protection at the sectoral level by the initial product share. The test was performed introducing independently the weighted and the non-weighted tariff relief. As for standard correlation tests, regression results are not significant, and might only indicate a smaller trade response to tariff changes in sensitive sectors. An alternative was to calculate correlation coefficients on subsamples regrouping sectors according to their weight in CEEC industrial exports. This was tested but did not provide any conclusive result either, probably reflecting the fact that

Table 6

Correlation between changes in export performance[1] and changes in protection[2]

	Bulgaria	CSFR	Hungary	Poland	Romania	CEEC 5
1. Correlation between changes in specialization and changes in tariff						
(1a) 1989/92	- 0,0794	- 0,0371	- 0,1383	0,1808	0,0681	0,0576
(1b) 1989/90	0,0284	0,102	0,1368	0,179	0,0177	0,0455
(1c) 1990/91	0,0902	- 0,0741	0,1337	- 0,1235	0,0265	0,0182
(1d) 1991/92	- 0,2893**	0,0136	- 0,1608	- 0,0764	0,0036	- 0,0458
2. Correlation between changes in export flows and changes in tariff						
(2a) 1989/92	- 0,1773	- 0,0515	- 0,1513	0,0903	- 0,0978	- 0,0411
(2b) 1989/90	0,0752	0,0794	0,1291	0,1455	- 0,148	- 0,0955
(2c) 1990/91	0,0433	- 0,1288	0,1219	- 0,1236	0,0687	- 0,0003
(2d) 1991/92	- 0,1947*	- 0,0232	- 0,1758	- 0,119	- 0,0129	0,0542

NB: See also notes attached to Table 2.3.
* = significant at 5%.
** = significant at 1%.
[1] Export performance is measured either by the CEEC export growth rate or by the growth in the specialization index.
[2] Tariff relief is defined as $\Delta T/(1+T_{-1})$.

[1] As in the case of EA protection in previous tests, the tests related to 1992 should be considered with caution for Bulgaria and Romania as they link the 1992 performance to the tariff rate of the first year of implementation of the EAs, i.e. to 1993 tariff rates.

[2] This possibly positive correlation for Poland is also found in Rosati (forthcoming).

there are a number of outlier sectors which have more weight in the variance of subsamples than in the whole sample.

The basic conclusion of these correlation tests is that CEEC exports are concentrated and specialized in sectors where they have a restricted access to the Community market and that their export structure did not overall adjust to recent changes in protection. Two elements allow a less pessimistic assessment. First, there is some evidence, though weak, that trade response to protection changes slightly increased in the last two years, giving some perspective for a greater response as EAs are fully implemented. Second, the impact of protection is estimated on the basis of the first three years of transition, characterized by great uncertainties and continuous changes in trade regime. It is, therefore, likely biased downward. But the switch with the EAs to a long-term and comprehensive framework governing EC-CEEC trade relationships should provide adequate conditions to allow exports to adjust quickly and completely to the new trade regime.

3. Comparison of EC imports from CEECs and other trade partners

The objective of this comparison is:

(i) to identify which of the Community's main trading partners has a pattern of trade with the Community which most closely resembles that of the CEECs, and may thus be regarded as CEEC competitor(s) on Community markets.

(ii) to determine if the recent growth in Community imports from Central and Eastern Europe has affected Community trade from these competitor countries.

At the outset of the study, nine groups of trading countries were identified. These were the CEECs themselves, China, the Mediterranean basin countries,[1] South-East Asia,[2] Intra-EC trade, extra-EC trade, EFTA, the rest of the OECD, and the rest of the world. To determine which of these groups' trade with the Community most closely resembled that of the CEECs, tests of significance of the product-moment correlation coefficient between the CEECs (individually and collectively) and each group were performed on a number of indicators at 3-digit NACE level, for 1987, 1992, average 1987-89 and average 1990-92.

The indicators used were:

(i) the share of each 3-digit NACE code in Community imports from the group;

(ii) the specialization index;

(iii)the trade coverage ratio;

(iv)the Grubel-Lloyd intra-industry trade index.

Annex 1 describes the basic methodology in more detail.

3.1. Identifying competitor countries

The presentation below concentrates on the CEECs as a group. Some notable country-specific results are included, however.

The simplest indicator of trade structure is 'product share', i.e. the share of each NACE code in Community imports from the trading group. As a determinant of the specificity of trading patterns, this is not a particularly discriminating indicator, since most correlations test significant at 1% in all four periods. The only exception is the 'Rest of OECD' group, which is the wealthiest country grouping. In the post-reform period, this coefficient has even turned negative for Romania.

Given that almost all correlations are highly significant, the relative sizes of the coefficients may be used to provide some further information on similarity of trade patterns. Based on this criterion, the Mediterranean basin group of countries is clearly most similar to the CEECs as far as exports to the Community are concerned. The value of the correlation coefficient is more than three times that needed for significance at the 1% level, and almost half as large again as the biggest value recorded for any other group. Not much change has occurred in the values of the coefficient in the pre- and post-reform periods, but there is some suggestion that the structure of CEEC exports to the EC has moved away from that of more-developed countries, and towards that of less-developed countries. Table 7 shows the values of the correlation coefficients.

Of 25 products accounting for on average at least 1% of Community imports from the Mediterranean basin during the period 1990-92, 17 also comprised 1% or more of imports from the CEECs. This is shown in graph 2. These 17 sectors account for over 60% of EC imports from both the CEECs and the Mediterranean basin, and include goods such as ECSC products (NACE 221), basic industrial chemicals (252, 253), electrical goods (342, 346), meat, fruit and vegetables (412, 414), textiles (431, 436), mass-produced footwear and ready-made clothing

[1] Ceuta-Mellila, Gibraltar, Malta, Turkey, Albania, Yugoslavia, Croatia, Slovenia, Bosnia-Herzegovina, Morocco, Algeria, Tunisia, Libya, Egypt, Cyprus, Lebanon, Syria, Israel, Jordan.

[2] Thailand, Indonesia, Malaysia, Singapore, Philippines, South Korea, Taiwan, Hong Kong.

Table 7

Correlation coefficients between the CEECs and selected country groups calculated on the share of each 3-digit NACE code in average 1987-89 and 1990-92 Community imports

Country group	Correlation coefficients 1987-89	1990-92
Mediterranean basin	0,7421	0,7758
Intra-EC	0,4952	0,5265
Extra-EC	0,4895	0,4910
China	0,4792	0,4399
EFTA	0,4005	0,3965
Rest of world	0,3829	0,3487
SE Asia	0,3230	0,3084
Rest of OECD	0,1177	0,0995

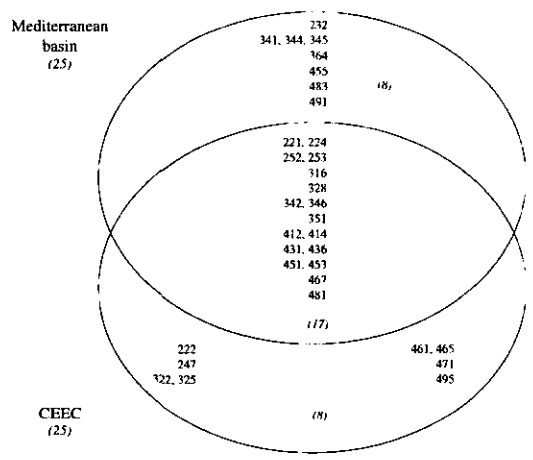
NB: All coefficients significant at 1%, except for 'Rest of OECD'.

(451, 453). These are the products most important to both the CEECs and the Mediterranean basin countries.

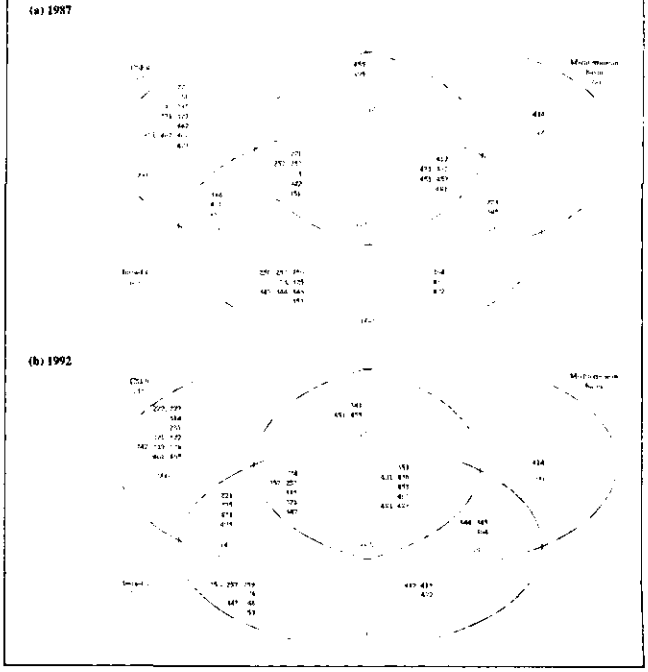
The CSFR is an exception to the overall picture. Its exports to the Community are less strongly correlated (as measured by the size of the coefficient) with the Mediterranean basin than the other CEECs. It is the only CEEC for which the structure of Community imports shows significant correlation with imports from the 'Rest of OECD' group. The largest coefficient is with Intra-EC trade, though at least at the beginning of the period, this is because CSFR-Community trade is less closely correlated with Mediterranean basin-Community trade, rather than because of a closer association with the structure of intra-Community trade. Over time, the structure of Community imports from the CSFR has moved closer to the structure of intra-EC trade and to the Mediterranean basin. The trend is not particularly marked, but this apparent simultaneous move towards trade in goods produced by developed and less developed countries deserves investigation.

Graph 3, which identifies the NACE 3-digit sectors accounting for at least 1% of intra-EC trade, or of Community imports from the CSFR or from the Mediterranean basin, offers some explanation. From 1987 to 1992, CSFR exports to the Community have become somewhat more diversified, with the number of 3-digit NACE sectors comprising 1% or more of Community imports rising from 28 to 31. This increase is partly in goods which are important in intra-Community trade, and partly in goods important in Community imports from the Mediterranean basin. The graphs also reveal that imports from

GRAPH 2: **Overlap in NACE 3-digit products comprising at least 1% of Community imports from Central and Eastern Europe, and from the Mediterranean basin, average 1987-92**



GRAPH 3: **Overlap in NACE 3-digit products comprising at least 1% of Community imports from CSFR, Mediterranean basin and intra-EC**



the Mediterranean basin are essentially in products where there is already 'a lot' of intra-Community trade: only three of the sectors important in the Mediterranean basin's trade account for less than 1% of intra-EC exchanges.

The correlation coefficients calculated on the other three indicators (specialization, trade coverage, intra-industry trade) confirm that the CEECs are closest to the Mediterranean basin group of countries in terms of the structure of trade with the Community. Out of 12 correlations (three indicators times four time periods), that with the Mediterranean Basin is the largest in 10 (and second largest in the other two), and it is always significant at 1%.

The Grubel-Lloyd intra-industry trade index is little more discriminating than the product share indicator as a measure of specificity of trading patterns: most coefficients are significant at 1%. The overall impression given by the correlations is one of little change in the pattern of CEEC-Community intra-industry trade, with a weak general trend towards lower coefficients in 1992 than in 1987. The largest correlations are those with the Mediterranean basin and intra-EC trade. The relatively high correlation with intra-Community trade probably only reflects that trade between the Community and Eastern Europe was approximately balanced between 1987 and 1992 — as by definition, intra-Community trade must be in balance with itself.

By 1992, two groups appear to be emerging within the CEECs. On the one hand, Poland and the CSFR show the closest correlation with intra- and extra-EC trade; on the other, Romania and Bulgaria's intra-industry trade with the Community most closely resembles that of EC-Mediterranean basin exchanges. Hungary occupies a position somewhere in between.

Analysis of the correlations obtained using the trade coverage indicator confirm the Mediterranean basin as the country group whose trade with the Community is closest to that of the CEECs. Again, this is not a very discriminating indicator: there are a large number of correlations significant at 1%. The coefficients with the more-developed country groups — EFTA, rest of OECD and intra-EC — tend to be the smallest, and are sometimes negative, though not statistically significant. Thus one may very tentatively suggest that the CEECs tend to run surpluses in goods where developed economies run deficits, and vice versa. As with the intra-industry index, the impression created by the trade coverage indicator is one of relative stability over time: this is unsurprising given the relatively simple functional relationship between the two. Only the coefficient with South-East Asia shows any notable change. Its value has halved from 1987 to 1992, but remains significant at 1%.

At the level of the individual CEECs, there have been some changes in the correlations which do not seem to have an obvious explanation. In the CSFR, the correlation with the Mediterranean basin group was non-significant in 1987; by 1992, it was significant at 1%, and was the largest coefficient for the CSFR. However, perhaps the most noticeable feature of the results for the CSFR is that its trade coverage ratio with the Community is less strongly correlated (in terms of the size of the coefficient) with the other country groups than is the case in the other CEECs — in other words, the CSFR has a more distinctive set of surpluses and deficits.

One peculiar result deserves attention. In 1987 and the period 1987-89, Bulgaria shows significant negative correlation with intra-Community trade on the trade coverage indicator. This result arises because Bulgaria ran a relatively large trade deficit with the Community in many goods. The overall value of the trade coverage indicator for 1987 was just 26, showing that the Community exported almost four times as much as it imported from Bulgaria.

The specialization index is the most discriminating indicator of specificity of trade pattern, based on the number of significant correlations. Over time, the specialization pattern of the CEECs on the Community market has moved closer to that of the Mediterranean Basin, and away from the 'Rest of OECD' group. Specialization in the CEECs is negatively correlated with the latter group of countries, and by 1992, the coefficient is significant at 1%. Pre-reform, CEEC and South-East Asian specialization were significantly positively correlated, but the coefficient is not significant in the period 1990-92. The coefficients with EFTA, and intra-Community trade have also decreased, while that with China has increased, giving an overall picture of a diminishing degree of specialization in Eastern Europe compared with more-developed countries.

The contrast in specialization between the CEECs and a group of developed countries such as the 'Rest of OECD' is well illustrated at 2-digit NACE level. The CEECs tend to be specialized in unfinished or semi-finished goods — iron and steel, building materials, artificial fibres, textiles — or labour-intensive items such as clothing and footwear, or food and drink. The 'Rest of OECD' group of countries, on the other hand, specialize in instrument, mechanical and electrical engineering goods, as well as data-processing equipment and motor vehicles. Comparing the pre- and post-reform periods, it is difficult to find any firm evidence for change in the CEECs' pattern of specialization.

Again, the CSFR differs from its Eastern European neighbours. The only significant positive correlation recorded is with intra-Community trade. From 1987 to 1992, the intensity of this association has changed little, but by 1992 it was no longer significant at 1%. Although the CSFR shares the

general pattern of CEEC specialization (with the notable exception of food and drink), it is noticeably more specialized (or more precisely, less unspecialized) in mechanical engineering and motor vehicles, paper and printing, and in rubber and plastics.

3.2. Has the growth in Community imports from Central and Eastern Europe affected Community imports from the Mediterranean basin?

The analysis above has revealed a strong association between the trading patterns of the CEECs and the Mediterranean basin group of countries with the Community. Given this result, it seems reasonable to examine whether the rapid increase of Community imports from Central and Eastern Europe in recent years has had an impact on Community trade with the Mediterranean basin. In particular, have imports from the CEECs 'displaced' those from the Mediterranean basin?

To try to answer this question, tests of significance were performed on growth rates in Community imports from the CEECs, correlated with growth rates in Community imports from each of the other eight country groupings identified above. The tests give a weak 'yes' as the answer to the question. The 1992 growth rates in Community imports from the CEECs and from the Mediterranean basin countries are negatively correlated, with the coefficient significant at 5%. This is not a very strong result: the value of the coefficient is –0,18, so only a relatively small part of the change in imports from the Mediterranean basin is 'explained' by the expansion in Community-CEEC trade. However, in earlier years, the growth rates were positively correlated, and significant at 1%. From 1990 to 1991, the coefficient halved, from 0,6 to 0,3, before turning negative in 1992. These results seem to indicate a gradual displacement of supplies from Mediterranean basin countries, in favour of goods from the CEECs. This tendency is clearly shown by Graph 4, which compares the growth rates in Community imports from the Mediterranean basin countries and the CEECs. Graph 5, shows the same information, 'standardized' by subtracting the growth rates in all extra-Community imports.

The charts in Graph 4 show separately the percentage change in the value of EC imports recorded for the total of all industrial sectors, and for the five sectors which took the largest share of Community imports from the CEECs over the period 1987 to 1992. These sectors account for on average over 30% of Community imports from both the CEECs and the Mediterranean basin countries. The picture is essentially the same in all six charts. Up to 1990, imports from the Mediterranean basin grew faster than imports from Central and Eastern Europe. By 1990 this was no longer the case, and in 1992, the Mediterranean basin countries saw the value of their exports to the Community decline, while Community imports from the CEECs increased by 23% in value.

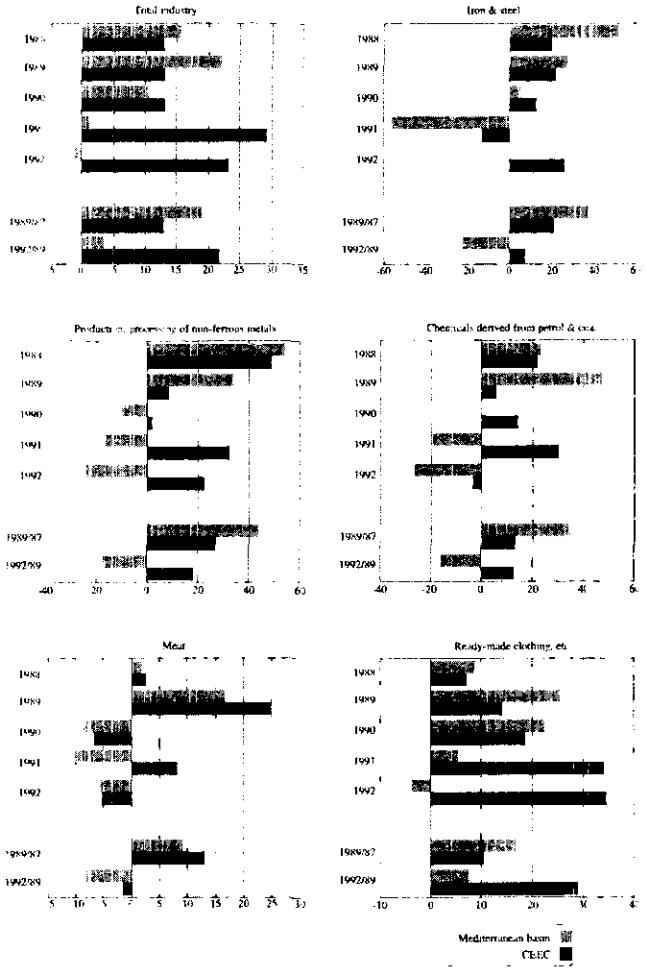
The lower part of each chart, which shows annual average growth rates for 1987 to 1989, and for 1989 to 1992, is, if anything, more striking. In the first period, Community imports from Mediterranean basin countries grew faster than those from the CEECs. Under transition, the situation is reversed. Furthermore, while the period from 1989 to 1992 saw an increase in Community imports from Central and Eastern Europe, in many sectors the Mediterranean basin countries experienced a decline in Community demand for their goods. Overall, Community imports from the CEECs grew more than six times faster than imports from the Mediterranean basin.

Two of the five sectors shown in Graph 4 are minor exceptions to this general pattern. Community imports of ready-made clothing (NACE 453) from the Mediterranean basin continued to grow from 1989 to 1992, though at barely one quarter the rate of increase recorded over the same period for similar items from the CEECs. The rate of growth in EC imports of meat products (NACE 412) from Central and Eastern Europe has consistently outstripped that achieved by equivalent goods from the Mediterranean basin countries. Part of the explanation may be that these goods form a relatively unimportant part of Community imports from the Mediterranean basin. It is also noticeable that meat products are increasingly less important in Community imports from the CEECs: their share has almost halved from 1987 to 1992.

The charts in Graph 5 demonstrate how much the performance of the two groups has changed relative to all exporters to the Community. From 1987 to 1989, EC imports from the Mediterranean basin grew faster than the average. Since then, they have lost ground on the Community market, as their exports have grown more slowly than total EC imports. For the five countries of Central and Eastern Europe, the situation is reversed. Up to 1989, their major exports to the Community seem to have been relatively uncompetitive. From 1989 to 1992, their exports to the Community have increased on average by 18 percentage points more than total Community imports. Of the five largest sectors in Community imports from Central and Eastern Europe, only meat products do not fit the overall pattern. Here, imports from both the CEECs and the Mediterranean basin have increased more slowly from 1989 to 1992 than from 1987 to 1989. In the case of the CEECs, the chart shows that this is due to strong growth in 1989, and a relative decline in 1992.

Part of the deterioration (but only part) in the performance of the Mediterranean basin countries on the Community market

GRAPH 4: **Growth rates of Community imports from CEECs and Mediterranean basin countries, total industry and five largest CEEC sectors, 1987-92 (annual average growth rates, 1989/87 and 1992/90)**

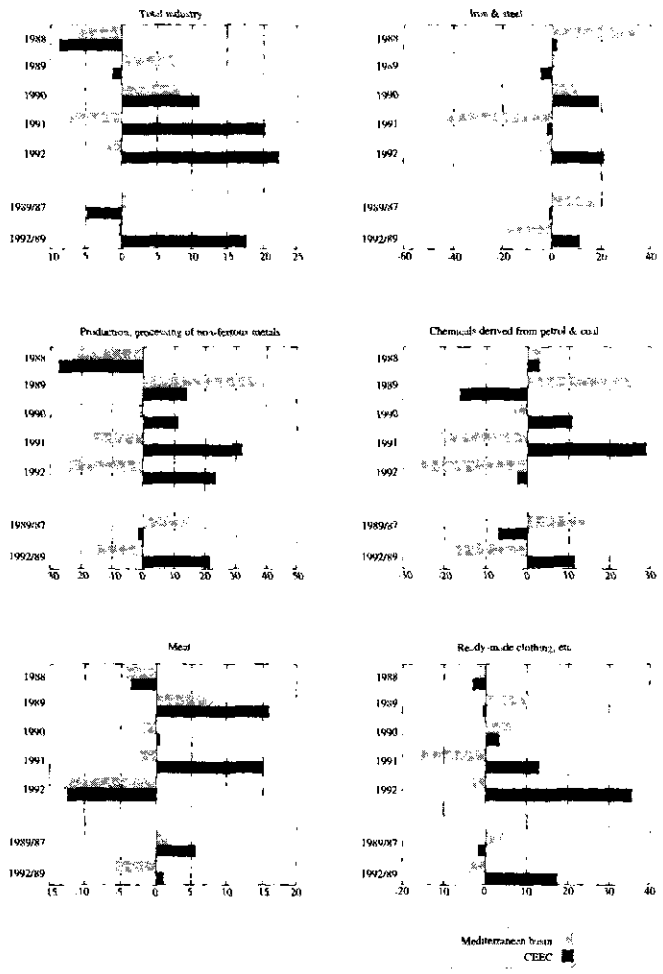


may be due to the break up of Yugoslavia. Up to 1992, about one third of Community imports of manufactured goods from the Mediterranean basin came from Yugoslavia.[1] In 1992, as imports from Yugoslavia fell by 20%, this share fell to one-quarter. Table 8 compares trends in EC imports from Central and Eastern Europe and from the Mediterranean basin, including and excluding Yugoslavia.

As Table 8 shows (the 'Yugoslav effect'), the fall in Community imports from Yugoslavia accounts for 9,1 percentage points of the total difference in growth rates between the Mediterranean basin and the CEECs in 1992. To put it another way, if Yugoslavia's trade with the Community had followed the same pattern in 1992 as the rest of the Mediterranean basin, Community imports from Central and Eastern Europe would have grown 'only' 15 percentage points faster than imports from the Mediterranean basin, instead of the 24 point difference which actually occurred. This 15 point differential in favour of the CEECs still represents a sizeable turnaround on the average 7 point difference recorded from 1987 to 1989 in favour of the Mediterranean basin countries.

[1] In this and the following paragraphs 'Yugoslavia' should be read as including all the successor states to the Yugoslav federation.

GRAPH 5: **Growth rates of Community imports from CEECs and Mediterranean basin countries relative to all extra-EC imports, total industry and five largest CEEC sectors 1987-92 (average annual growth rates for 1989/87 and 1992/89)**



It would be simplistic to assign all of the deterioration in the performance of Yugoslavia's exports to the Community to the effects of war and United Nations sanctions. In 1991, Yugoslavia's exports to the Community were already faring less well than those from the other Mediterranean basin countries. It seems reasonable to suggest that any displacement of goods from the Mediterranean basin by similar items from Central and Eastern Europe would disproportionately affect Yugoslavia. This is because the structure of EC imports from the CEECs is more similar to the structure of Yugoslavia's exports to the Community than it is to imports from the rest of the Mediterranean basin.

It is not possible, using data which are readily available, to examine developments in other OECD countries' imports from the CEECs and the Mediterranean basin countries. However, those data which are immediately accessible suggest that the shift in the relative growth of CEEC and Mediterranean basin exports has not been confined to the European Community market.

The information to hand comes from the International Monetary Fund's direction of trade statistics (DOT), and is

Table 8

Impact of former Yugoslavia on European Community imports of manufactured goods (NACE 2-4) from the Mediterranean basin

Exporter	1987	1988	1989	1990	1991	1992	Average 1987-89	Average 1990-92
				Value (ECU x 10^9)				
Total extra-EC	241,0	294,0	336,5	343,9	374,6	377,8	290,5	365,4
CEEC	7,3	8,2	9,3	10,5	13,6	16,7	8,3	13,6
Mediterranean basin	14,0	16,2	19,8	21,8	22,1	21,9	16,6	21,9
Yugoslavia	4,7	5,3	6,4	7,2	7,0	5,6	5,5	6,6
Mediterranean basin excluding Yugoslavia	9,2	10,8	13,3	14,7	15,1	16,3	11,1	15,3
% Yugoslavia in Mediterranean basin	33,9%	33,0%	32,5%	32,9%	31,8%	25,5%	33,1%	30,1%
				Growth rates (%)				
Total extra-EC		22,0	14,5	2,2	8,9	0,8	18,2	3,9
CEEC		12,9	13,1	13,1	29,2	23,1	13,0	21,6
Mediterranean basin		15,7	22,1	10,5	1,4	- 1,2	18,9	3,4
Yugoslavia		12,7	20,4	11,6	- 1,9	- 20,7	16,5	- 4,6
Mediterranean basin excluding Yugoslavia		17,3	22,9	10,0	3,0	7,8	20,1	6,9
				Growth rate differences (percentage points)				
Mediterranean basin - CEEC		2,8	8,9	- 2,6	- 27,8	- 24,3	5,8	- 18,2
Mediterranean basin excluding Yugoslavia - CEEC		4,4	9,7	- 3,1	- 26,2	- 15,3	7,0	- 14,7
Yugoslav effect		- 1,6	- 0,8	0,5	- 1,6	- 9,1	- 1,2	- 3,5

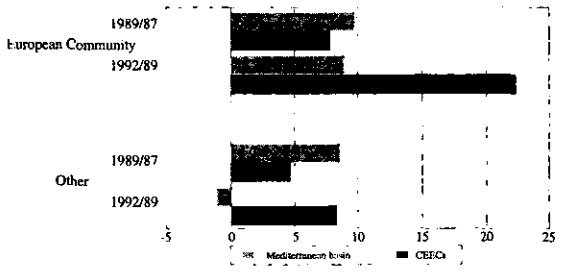
Table 9

Imports by industrialized countries (OECD less Turkey), and by the European Community from the Mediterranean basin and CEECs

Importer/ Exporter	1987	1988	1989	1990	1991	1992	Average 1987-89	Average 1990-92
				Value (million USD)				
Industrialized countries								
Mediterranean basin	46 045	49 076	55 046	69 138	67 803	66 554	50 055	67 832
CEECs	16 697	18 157	19 021	23 323	26 226	31 112	17 958	26 887
European Community								
Mediterranean basin	34 329	36 010	41 256	53 991	53 720	53 081	37 198	53 597
CEECs	11 558	12 454	13 400	17 408	20 156	24 530	12 471	20 698
				Growth rates (%)				
							Annual average 1989/87	Annual average 1992/89
Industrialized countries								
Mediterranean basin		6,6	12,2	25,6	- 1,9	- 1,8	9,3	6,5
CEECs		8,7	4,8	22,6	12,4	18,6	6,7	17,8
European Community								
Mediterranean basin		4,9	14,6	30,9	- 0,5	- 1,2	9,6	8,8
CEECs		7,8	7,6	29,9	15,8	21,7	7,7	22,3
Non-EC industrialized countries								
Mediterranean basin		11,5	5,5	9,8	- 7,0	- 4,3	8,5	- 1,2
CEECs		11,0	- 1,4	5,2	2,6	8,4	4,6	8,2

Source: DOT(IMF).

GRAPH 6: **Annual average growth rates in European Community and other industrialized country imports from the Mediterranean basin and CEECs**



summarized in Table 9 and Graph 6. These compare imports by the Community and other industrialized countries[1] from the CEECs and the Mediterranean basin countries.

The data are not directly comparable with those used above for the detailed analysis of EC trade. This is firstly because the DOT data cover total trade, rather than just trade in industrial goods, and secondly because the figures are expressed in US dollars. Bearing these differences in mind, it nonetheless seems that the same general pattern — a reduction in the growth rate of imports from the Mediterranean basin countries, accompanied by an increase in imports from the CEECs — may be observed for both European Community and other industrialized countries.

[1] The term 'industrialized countries' is defined in the DOT database to include all OECD countries, except Turkey. In the interests of clarity, this definition is also used in this paper.

Annex 1.1. Detailed statistics relating to Section 1.

Table A.1

Trends in EC-CEEC trade

(%)

	EC imports average		EC exports average	
	1987-89	1990-92	1987-89	1990-92
Total trade		Annual growth rate		
Total extra-EC	14,5	3,0	10,3	1,8
CEEC 5	10,3	16,1	13,6	23,1
Bulgaria	0,7	19,1	0,6	– 9,0
CSFR	11,5	29,4	7,1	38,0
Hungary	13,8	15,5	12,2	10,8
Poland	15,2	22,4	30,0	27,4
Romania	2,3	– 18,1	2,8	39,1
		Share in Community trade		
CEEC 5	2,8	3,3	2,7	4,0
Bulgaria	0,1	0,2	0,4	0,2
CSFR	0,6	0,9	0,6	1,0
Hungary	0,6	0,7	0,7	0,8
Poland	0,9	1,3	0,8	1,6
Romania	0,6	0,3	0,2	0,3
Trade in manufactured products		Annual growth rate		
Total extra-EC	18,2	3,9	10,8	2,2
CEEC 5	13,0	21,6	12,1	23,3
Bulgaria	7,0	24,2	– 0,3	– 9,6
CSFR	11,8	31,8	6,1	38,0
Hungary	15,2	17,7	11,2	11,9
Poland	17,7	28,2	27,4	28,3
Romania	6,7	– 6,9	4,3	34,4
		Share in Community trade		
CEEC 5	2,8	3,7	2,7	3,9
Bulgaria	0,1	0,2	0,4	0,2
CSFR	0,7	1,0	0,6	1,0
Hungary	0,6	0,8	0,7	0,8
Poland	0,9	1,4	0,8	1,5
Romania	0,5	0,3	0,2	0,3

Source: Eurostat (Comext).

Table A.2

Specialization and concentration of CEECs' exports to the Community: summary statistics

Export concentration, 1987-92 averages	Bulgaria	CSFR	Hungary	Poland	Romania	CEEC 5
(a) Share of the 5 largest NACE 2 sectors (%)	66,5	45,9	63,4	66,4	73,6	60,2
(b) No of NACE 3 sectors representing at least 1% of exports to EC	24	30	24	25	21	24
(c) Share of sectors in (b) in total exports to EC (%)	80,8	79	77,4	77,7	85	73,7
Changes in export concentration						
(a) Share of the 5 largest sectors						
(1) in 1987	67,9	51,5	67,4	68,2	72,4	62,5
(2) in 1992	67,4	48,7	62,5	63,5	75,6	55,6
(b) No of NACE 3 sectors representing at least 1% of exports to EC						
(1) in 1987	19	28	22	23	20	23
(2) in 1992	29	31	28	26	23	29
(1) Share of sectors on line (b.1)	80,6	80,6	78,7	78	84,4	76,2
(2) Share of sectors on line (b.2)	84,7	78	79,8	79,2	82,1	77,8

Export specialization at NACE 3-digit level, 1987-92 averages	Bulgaria	CSFR	Hungary	Poland	Romania	CEEC 5
No of sectors with specialization >100	40	50	48	49	30	47
Average specialization 1987-92 of all sectors	137	208	148	165	153	169
No of sectors with above average specialization	33	26	37	33	23	33
Changes in specialization at NACE 3-digit level						
No of sectors with 1987 specialization >100	35	41	41	45	29	44
No of sectors with 1992 specialization >100	37	51	47	47	27	52
Average specialization in 1987 of all sectors	131	184	136	163	134	154
Average specialization in 1992 of all sectors	122	232	148	160	137	175
No of sectors with above average specialization in 1987	28	25	32	32	21	35
No of sectors with above average specialization in 1992	33	24	33	34	19	34

Notes: Manufacturing industry (NACE 2-NACE 4) covers 107 NACE 3 sectors.
Source: Commission services.

Table A.3

Average 1987-92 specialization indices and product shares in the CEECs

Sectors	NACE	Bulgaria (a)	Bulgaria (b)	CSFR (a)	CSFR (b)	Hungary (a)	Hungary (b)	Poland (a)	Poland (b)	Romania (a)	Romania (b)	CEEC 5 (a)	CEEC 5 (b)
Iron & steel	221	10,25	708	9,3	643	4	270	4	278	5,5	384	5,8	402
Steel tubes	222	0,5	125	1,3	328	0,9	233	0,7	175	1,05	267	0,95	238
Steel drawing	223	0,7	206	1,65	485	0,6	163	0,85	263	0,35	105	0,9	272
Processing non-ferrous metals	224	5,6	90	1,75	29	3,9	61	10,85	170	5,35	79	6,05	95
Building materials	231	0,3	142	1,35	592		11	0,3	113		4	0,45	201
Salt	233		17		23				586		8		210
Clay products	241		667		993		172		334		41	0	452
Cement, lime, etc.	242	0,15	179	0,95	1 327		61	0,95	1 668	1,7	2 522	0,85	1 265
Concrete, etc.	243		79		999		223		197		21	0,1	384
Asbestos	244		6		109		255		26		9	0	97
Stone, etc.	245	0,2	232	0,25	235		70		105	0,1	72	0,15	133
Glass, glassware	247	0,85	202	4,75	1 080	1,4	328	1,5	340	2	448	2,35	534
Ceramic goods	248	0,6	207	1,05	351	0,8	261	0,4	135	1,05	366	0,75	255
Petrochemicals	252	7,2	187	8,95	234	8,2	213	4,35	114	3,7	96	6,4	168
Other basic chemicals	253	5,5	347	2,3	142	2,1	125	5,05	310	2,4	146	3,3	205
Other chemicals	256	1,3	109	0,7	57	0,7	53	0,8	65	0,2	19	0,7	56
Pharmaceutical products	257	*1,15*	*99*	*0,2*	*18*	*0,5*	*43*		*12*	*0,15*	*15*	*0,3*	*25*
Foundries	311	0,25	151	0,3	183	0,4	271	0,45	311	0,15	105	0,35	235
Forging	312	0,1	142	0,2	223		183	0,45	518	0,1	114	0,25	293
Treatment of metals	313	0,25	99	0,35	122		47	0,45	144	0,25	90	0,3	107
Structural metal products	314	0,15	69	0,75	471	0,7	334	1,3	614	0,15	61	0,85	378
Boilers	315	0,15	217	0,35	379	0,4	374		530	0,15	186	0,4	406
Tools	316	0,6	43	2,1	146	2,3	158		119	2,4	172	2	140
Agricultural machinery	321		36	*1,6*	*482*	*1,2*	371	0,5	156	0,3	99	0,9	274
Machine tools	322	1,95	183	2,1	196		82	0,75	68	0,65	61	1,15	107
Textile machinery	323		12	0,5	117		19		39		12	0,2	50
Mines, etc.	325	4,05	341	1,4	112	1,4	119	0,7	57	0,4	31	1,1	95
Transmission equipment	326	0,2	41	0,65	112	0,8	142	0,7	131	1,7	321	0,8	149
Other machinery	328	0,75	22	1,25	35	1,8	50	1,55	43	0,35	10	1,35	37
Insulated wires	341	0,2	50	0,5	134	0,3	295	1,1	315	0,15	41	0,8	213
Electrical machinery	342	1,9	89	1,8	83	1,9	85	0,85	40	1,45	68	1,45	68
Radio, TV, etc.	345	0,25	5	0,45	8	1,1	19	0,6	11	0,25	5	0,6	11
Domestic electrical goods	346	0,55	92	0,75	118	2	320	0,9	143	0,85	139	1,05	174
Electric lamps	347	0,25	98	0,35	150	1,9	706	0,45	188	0,4	163	0,75	288
Motor vehicles	351	0,1	2	4,65	94,5	0,5	9	3,25	67	1,35	27	2,6	53
Trailer, etc.	352	0,1	135		168	0,4	443	0,2	274	0,15	176	0,25	268
Shipbuilding	361	0,7	114		4		8	1,3	243	0,1	14	0,5	86
Rail/tram equipment	362	0,1	135	0,45	532		135	0,3	495	0,2	295	0,3	367
Other trans. equipment	365		37		176		89		103		32		108
Meat	412	3,6	292	2,35	182	13,7	1 107	4,4	349	2,4	192	5,65	452
Dairy products	413	2,1	850	0,45	185		115	1,55	641	0,45	172	0,85	350
Fruit & vegetables	414	3,85	403	0,6	62	3,4	350	4,6	484	0,4	40	2,65	279
Fish	415	0,25	33					2,3	308		3	0,8	104
Starch	418		5		7	0,2	96		10			0,1	28
Sugar	420		4		32		35	0,65	175		1	0,3	75
Cocoa, chocolate	421				78	0,2	132	0,45	279		4	0,2	138
Animal feedstuffs	422	2,5	1 278		39	0,6	317		35		4	0,3	151
Other food	423	0,25	67		39	0,9	268		22		12	0,3	82
Alcohol & spirits	424		14		18		72		158		7	0,05	73
Wine, etc.	425		476		22		113		7		21	0	58
Beer, etc.	427		242	0,75	3 542		123		37		1	0,2	949
Textile nes	431	2,5	128	3,35	170	1,8	91	1,05	52	1	49	1,85	94
Knitted goods	*436*	*4,05*	*191*	*1,95*	*91*	*3,3*	*156*	*1,95*	*96*	*6,25*	*298*	*2,9*	*141*
Floor coverings	438	0,4	93	0,25	66	0,5	95		41	0,6	146	0,35	75
Misc. textiles	439	0,25	60	0,55	161	0,3	86		55		8	0,3	83
Leather tanning	441	0,2	41		35	0,5	109	0,3	67		11	0,3	61
Leather, etc.	442	1,05	195	0,8	153	0,9	166	0,45	80	0,45	78	0,65	122
Mass-produced footwear	451	2,2	204	1,8	177	3,9	379	2,15	216	3,65	354	2,65	259
Ready-made clothing	453	9,5	237	4,75	119	11,5	291	11,7	296	20,8	521	10,95	277
Household textiles	455	1,5	390	1,2	321	0,8	215	0,75	186	0,75	194	0,95	236
Furs, etc.	456	0,15	157	0,2	215	0,4	432		161	0,15	185	0,2	236
Wood sawing & processing	461	0,7	38	4,1	220	0,8	45	2,95	159	1,2	64	2,4	130
Semi-finished wood products	462	0,85	147	0,8	132	0,3	45	1,1	180	1,05	178	0,85	137
Carpentery	463	0,1	43	0,25	100	0,4	200	0,25	111	0,2	104	0,2	126
Wooden containers	464	0,1	948		262		271		379	0,15	1 357	0,05	508
Other wood manufacturing	465	0,25	155	1	625	0,8	488	1,25	739	0,6	382	0,95	592
Cork, straw, etc.	466		46		84	0,2	134	0,2	138	0,85	650	0,25	189
Wooden furniture	467	1,9	308	2,25	363	2,1	331	4,35	691	17,75	2 869	5,05	823
Pulp, paper, board	471	2,1	47	4,05	90	0,4	8	1,15	26	0,85	19	1,7	39
Printing, etc.	473	0,15	27	0,9	191	0,6	119		13		10	0,4	83
Rubber goods	481	1,05	144	1,75	235	1,4	190	0,8	107	0,7	97	1,2	161
Remould tyres	482		119		229		474		454		20		327
Plastics processing	483	1	75	1,25	93	1,2	87	0,5	36	0,6	41	0,9	64
Musical instruments	492		26	0,55	271		12		43	0,1	55	0,2	95
Miscellaneous manufactured goods	495	3,4	178	1,65	89	1,6	84	1,5	80	0,3	18	0,85	79
Total trade		131	98,5	112,2	84	116,8	88	129,8	97,5	137,6	103	124	93

NB: (a) product share, average 1987/92, (b) specialization index, average 1987/92.
Source: Eurostat (Comext).

Table A.4

Evolution of specialization and export market shares in the CEECs

(%)

Sectors	NACE	Bulgaria (a)	Bulgaria (b)	CSFR (a)	CSFR (b)	Hungary (a)	Hungary (b)	Poland (a)	Poland (b)	Romania (a)	Romania (b)	CEEC 5 (a)	CEEC 5 (b)
Iron & steel	221	-3,7	-19	-2,4	-10,9	-1,7	-25,8	-0,4	6,3	0,2	21	-1,2	-6
Steel tubes	222	0	7,5	0,6	68,4	0	6,2	0,4	69	0,5	65,7	0,3	47,4
Steel drawing, etc.	223	0	14,6	0,1	12,7	0,1	16,7	-0,3	-23,2	-0,1	-21,4	0	6,8
Processing non-ferrous metals	224	2,8	103,4	1,5	207,1	-0,8	-1,6	-0,3	18,7	-4,9	-57,3	-0,3	17,2
Building materials	231	0,2	51,3	-0,3	-25,1		-30,8	0,4	669,2		err	0,1	24
Salt	233		625		25				134,9		300		178,4
Clay products	241	0,3	-73,4	0,1	1 197,9		35,6		-36,7		18,9	0	171,6
Cement, lime, etc.	242	0,3	1 590	1,5	252	-0,1	-1,6	0,3	-30,2	2	91,9	0,7	22,8
Concrete, etc.	243	0	323,3	0,1	12,7	0	-33	0,1	168,2		-89,2	0	34,9
Asbestos	244		900		65,9	0,1	2,95		164,3		400	0	202,1
Stone, etc.	245	0	-25,6	0,1	30,4	0,1	85,7	0	67,9	0	-20	0,1	41,8
Glass, glassware	247	-0,1	-14,3	-1,1	-25,4	0,2	8,9	0,2	3	0,2	5,5	-0,1	-9,8
Ceramic goods	248	0,2	30,7	0,1	-2	0	-6,7	0,2	22,3	0,1	0,8	0,1	-3,5
Petrochemicals	252	-6,4	-61,5	-2,7	-26,4	-0,2	-1,9	0,9	24,8	-0,6	-15,4	-0,6	-8,6
Other chemicals	253	1,8	56,7	0,4	35,8	-1,1	-32,9	-1,1	-8,6	-1,2	-32,8	-0,4	0
Other chemicals	256	-1,2	-62,7	0	1,8	-0,1	-23,3	0	3,1	0	-5,3	0	-5,3
Pharmaceutical products	257	-0,1	-27,2	0	-5,6	0,2	12,5	0	-35,7	-0,1	-47,4	0	-11,5
Foundries	311	0,3	218,1	0,2	78,6	0	10,1	0,1	22,9	0,1	32,2	0,1	41,7
Forging	312	0	3,6	0,2	89,6	0,1	-11,8	0,1	-13,8	0	-14,6	0,1	11,5
Treatment metals	313	-0,1	-27,2	0,1	21,8	0,1	38,5	0,1	19,8	-0,1	-17,3	0	18,37
Structural metal products	314	0,1	37,9	1,1	882,8	0,4	32,4	0,6	16,2	0,1	75	0,7	82,1
Boilers	315	-0,1	-52,9	0,5	264,4	0,3	88,4	0,6	168,1	0,1	-14,5	0,4	145,1
Tools	316	0,6	154,2	1,2	60,7	0,5	14,3		54,8	0	-10,5	0,6	27,6
Agricultural machinery	321	0,2	346,2	-0,4	-18	0,2	27,3	0	-5,6	0	6,3	0	4,5
Machine tools	322	-0,1	-3,8	-0,2	-8,8	0,4	67,2	-0,1	-16,2	0,3	65,2	0,1	9,8
Textile machinery	323	0,1	66,7	0	36,4	0	17,6	0,1	108	0,1	600	0	75
Mines, etc.	325	-1,5	-35,3	1	98,7	0,6	42,9	0	-8,5	0	-6,3	0,4	30,5
Transmisimission equipment	326	0	0	-0,1	-14,9	0,1	6,6	-0,2	-15,5	0,4	29,3	-0,2	-10,8
Other machinery	328	0,3	38,9	0,3	18,8	0,4	10,6	0,5	26,3	0,3	85,7	0,5	31,2
Insulated wires	341	0,2	141,4	0,6	-62,4	-0,1	402	-0,2	-32,9	0,1	21,6	0,6	64
Electrical machinery	342	-0,2	-16,5	0,6	29,2	0,5	23,7	0,3	22,2	0,3	15,9	0,3	17,7
Radio, TV, etc.	345	0,1	50	0,1	14,3	0,1	5,6	-0,2	-38,5	-0,1	-33,3	0	-9
Domestic electrical goods	346	0,5	200	0,1	29,1	0,1	7,8	0	11,9	0,1	13,1	0,1	14,8
Electric lamps	347	-0,1	-14,3	-0,1	-25,1	-0,3	-16,6	0,1	13,1	0	5,7	-0,1	-10,2
Motor vehicles	351	0	-50	1,9	48,7	0,3	140	-2,3	-52,7	-1,7	-80	-0,2	-9
Trailer, etc.	352	0	-34	0,3	514,9	0,6	419	0,2	81	0,1	-76,8	0,3	205,3
Shipbuilding	361	1,2	1 141,2		0	0,1	550	-1	-65,7	0	err	-0,2	-45
Rail/tram equipment	362	0	-35,4	0,7	444,8	0,1	86,2	-0,2	-60,9	0,4	653,6	0,2	48,8
Other transport equipment	365		408,3	0,1	100,9	0	88,5		53,1		-53,5		137,5
Meat	412	0,6	8,6	-1,9	-45,5	-3,6	-1,8	-2,2	-24	-1,2	-22,2	-2,1	-12,4
Dairy products	413	-1	-24,7	-0,3	-37	-0,1	-17,5	-0,9	-31,2	-0,7	-52,8	-0,5	28,7
Fruit & vegetables	414	0,9	27	-0,2	-29,2	-0,1	-2,3	0	-0,6	0	5,1	0,3	9,7
Fish	415	-0,1	-37,5					0	-11,9		-50	0,2	4,9
Starch	418		-100		-25	0	-26,4		800			0	-3,6
Sugar	420	0	500	0,1	120	0,1	87,5	-0,1	-8,7		-100	0	29,2
Cocoa, chocolate	421		err	0	-2,5	0	61,4	-0,5	-73,7		err	-0,2	-42,3
Animal feedstuffs	422	-1	-26,2	0,1	252,9	-0,2	-14,6	0	2,9		0	0	-9,5
Other food	423	0,1	48,1	-0,1	-25	0	16,1	0	9,5	0,1	100	0	13
Alcohol & spirits	424		-57,9		18,8	-0,1	-77,7	-0,1	-53,5		150	-0,1	-49,5
Wine, etc.	425		-64,8		9,5		-9,3		err		115,4	0	-25,7
Beer, etc.	427	-0,1	-94,1	0,1	-33,7		-73,7		-74,1		0	0	-28,5
Textile nes	431	-0,4	3,2	-1,1	-13,7	-0,6	-12,4	-0,3	-5,7	-0,6	-35,6	-0,5	-10,1
Knitted goods	436	1,5	15,8	0,5	4,5	0,7	-1,9	0,3	-7,1	1,1	-4,3	0,2	-15,1
Floor coverings	438	-0,4	-61,2	-0,1	-32,1	-0,1	-19	-0,1	-45,3	0,2	50,9	-0,1	-26,7
Misc. textiles	439	-0,1	-37	0,1	19,9	0	0	-0,1	-34,8		0	0	8,8
Leather tanning	441	0,2	185,7	0,3	1 525	0	26	0,4	544,4	-0,1	-16,7	0,2	193,5
Leather, etc.	442	0,5	49,4	-0,2	-26,7	0	3,1	-0,1	-22,2	-0,1	-19,8	-0,1	-13,7
Mass-produced footwear	451	3	308,8	0,6	15,9	0,9	4,6	-0,3	-27,2	1,5	28,8	0,5	-1,1
Ready-made clothing	453	4,8	41,3	1,5	14,4	-0,1	-16,1	2,6	5,9	6,2	14,4	1,1	-6
Household textiles	455	0,6	25,1	-0,2	-26,8	0,2	8,3	0,1	-3,2	0,1	0,5	0,1	-6,5
Furs, etc.	456	-0,1	13,6	-0,2	-32,4	-0,4	-39,9	-0,1	-17	-0,1	115,4	-0,2	-24,9
Wood sawing & processing	461	0,4	116,7	-3,2	-47,2	-0,2	-2,2	-1,3	-21,9	-1	-45,8	-1,2	-27,3
Semi-fin. wood products	462	0,3	66,4	-0,4	-29,7	-0,1	-20	-0,2	-1,1	-0,9	67,7	-0,3	-19,2
Carpentery	463	0	4,8	0,3	340,5	0,1	-5,4	0,3	181	0,2	28,6	-0,2	73,9
Wooden containers	464	0	-27,8	0,1	914,9	0,1	125,9	0,1	301,3	0,1	-27,9	0,1	30,7
Other wood manufacturing	465	0,1	8,8	0,2	-2,4	-0,1	-28,2	1,3	148,6	-0,2	-39	0,5	34,7
Cork, straw, etc.	466	-0,1	-44,1	0	10	0	-12,6	0	8,3	-0,1	11,9	-0,1	-19,6
Wooden furniture	467	-0,4	-31,7	0,3	-5,9	0,1	-7,8	1,3	14,9	0,3	-13,2	-0,9	-27,5
Pulp, paper, board	471	-0,8	-24,5	-1,7	-24,5	0,1	66,7	-0,1	8	-0,7	-53,8	-0,4	-12,2
Printing, etc.	473	-0,1	-67,5	-0,2	-19,8	-0,1	-11,9	0	27,3	-0,1	-41,7	0	-10,3
Rubber goods	481	0,9	134,9	-0,1	-7,4	-0,2	-12,8	0	-1,9	-0,4	-47,2	0	-5,4
Remould tyres	482		-66,1		472,1	-0,1	-54,1		-18,6		-18,2		0,3
Plastics processing	483	-0,2	-25,6	0,1	-7,3	0,4	21,8	0,2	18,2	0,2	25	0,2	9,8
Musical instruments	492	-0,1	12,5	-0,1	-8,5		-28,6	0	-13	0	42,2	0	0
Miscellaneous manufacturing goods	495	-3,4	-62,9	-0,5	-14,6	-0,5	-18,5	0	10,5	0,2	127,3	0,3	-3,7
Total trade		-10,5	-8,7	-4	-2,3	-4,5	-2,2	-9,1	-6,9	-22,3	-20,9	-10,2	-8,2

NB: (a) Growth rate of product share between 1987/89 and 1990/92, (b) Growth rate of the specialization index between 1987/89 and 1990/92. An empty cell indicates a share or specialization of 0 for all five years.

Source: Eurostat (Comext).

Annex 1.2. CEEC export performance: complementary indicators

The conclusions in Section 1 on the structure of the export base and revealed comparative advantages of CEECs are based exclusively on the two indicators of product composition of CEEC exports and specialization in the Community market. The robustness of these conclusions needs to be checked against other definitions of export performance. We focus on three main areas: market share analysis (which measures progress in the Community market at the product level), intra-industry trade indices and trade coverage ratios (which may be seen as a proxy for the degree of integration between the EC and Eastern Europe), and finally quality indicators, which are the only proxies available to assess the relative competitiveness of CEEC supply capacity.

1. Market share analysis

Initially, the relative competitiveness of CEEC exports was measured by the specialization index, which implicitly uses the CEEC share in total extra-EC imports in the Community as a proxy for market shares. The indicator captures the competition between CEECs and other Community trade partners, but says nothing about the competition taking place with Community producers. This is better achieved through a market share analysis.

This is not directly available from trade statistics. The VISA database of the Community permits the estimation of market shares at the NACE 3-digit level by combining data from the 'Annual enquiry of structure and activity of industry', with trade statistics. Import penetration rates by sector for the Community are defined as:

extra-EC imports/(total production + extra-EC imports – extra-EC exports)

This indicator has to be treated with caution for three reasons. The first one is that Member States' annual enquiry data are not all compatible with the NACE classification. In a lot of cases, mainly for recent years, data are not available for all variables, countries and sectors, and Eurostat has developed a method for estimating missing data. Finally, the Annual Enquiry data and trade statistics are not fully compatible and this makes the market share calculations less reliable.

The comparison of shares in extra-EC imports and Community market shares strengthens the conclusions in two directions:

(i) CEECs tend to be specialized in sectors for which the Community market is little or moderately open. The highest degree of opening is mainly seen for high technology products, office equipment or engineering, for which external suppliers account for about 40% of total Community demand. These are not sectors in which CEECs exhibit strong comparative advantages. In sectors which have a degree of openness around 20%, the CEEC high specialization index is combined with a high market share in the Community: this mainly applies to steel, textiles and timber where CEEC exports account for more than 1% of total Community demand; it also includes, at the NACE 3-digit level, glass (247) and rail/tram rolling stock (362). But sectors where high specialization was found for CEECs are closed markets, with non-EC supplies accounting for about 5% of the total supply in the market: non-metal mineral products (24 — except glass), metal products (31) and food products (41-42). The recent improvement of CEEC export performance in NACE 24 and 31 might thus not open long-term development prospects.

(ii) The two indicators, specialization and market shares, are, however, more correlated when considering their changes over time: both indicators confirm significant market gains in steel (22), non-metal mineral products (24), leather products (44), clothing (45). Only market gains in the metal products (31), mechanical engineering (32), food products (41-42) and timber (46) are not confirmed by a market share analysis. In the two latter cases, the divergence stems from the fact that these two sectors are the only ones where the share of external suppliers has reduced over the years in contrast to a general greater opening of the Community market over time.

2. Intra-industry trade and trade coverage ratios

Intra-industry trade intensity can be a proxy for the degree of integration between trade partners. There are various ways of measuring intra-industry trade. We found conclusions quite robust in respect of both the trade coverage ratio and the Grubel-Lloyd index. Results are presented below in Table A.6 for trade coverage ratios.

Table A.6 leads to the following conclusions:

(i) Trade coverage ratios mainly reflect macroeconomic conditions in individual countries. The trade coverage ratio for the CEEC 5 aggregate is mainly determined by the performance of the Visegrad countries and in particular Poland. But there are strong country differences. At the industry level, the trade coverage ratio is roughly stable and close to 100% over the period for the Visegrad countries reflecting the fact that trade opening in the transition has been a two-way movement which did not generate major trade imbalances. The differences between the Visegrad countries mainly reflect differences in the macroeconomic balance of payments constraint and in the start up of the reform. Bulgaria and Romania lie at the two extremes of the Visegrad average:

Table A.5

Comparison at NACE 3-digit level between CEECs' share in extra-EC imports and market shares

Sector	Penetration rates in the EC market		CEEC 5 share in Extra-EC imports		CEEC 5 share in the EC market	
	1987-89	1990-92	1987-89	1990-92	1987-89	1990-92
	Average (in %)					
Industry(NACE 2-4)	13,1	13,9	2,8	3,7	0,4	0,5
21 Extraction, preparation of metal ores	:	:	0,4	0,5	:	:
211 Extraction, preparation iron ore	:	:	0,0	0,0	:	:
212 Extraction, preparation non-ferrous metal ore	:	:	0,8	1,0	:	:
22 Production, preliminary processing of metals	20,4	21,1	4,3	6,2	0,9	1,3
221 Iron & steel (ECSC)	7,4	8,0	11,8	14,5	0,9	1,2
222 Steel tubes	12,2	13,7	5,5	10,5	0,7	1,4
223 Steel drawing, cold rolling, folding	9,0	9,8	7,5	10,5	0,7	1,0
224 Production, preliminary processing non-ferrous metals	39,5	40,2	2,5	3,8	1,0	1,5
23 Extraction of non-metal/energy minerals	:	:	1,8	3,6	:	:
231 Building materials, refractory clays	:	:	5,1	8,3	:	:
232 Potassium salt, natural phosphates	:	:	0,0	0,0	:	:
233 Salt	:	:	3,2	11,5	:	:
239 Other minerals, peat	:	:	0,5	1,1	:	:
24 Manufacture of non-metalic mineral products	3,5	4,1	11,4	15,9	0,4	0,7
241 Clay products for construction	0,2	0,5	6,9	24,6	0,0	0,1
242 Cement, lime, plaster	0,9	2,0	32,3	52,0	0,3	1,0
243 Concrete, cement, plaster products	0,3	0,4	9,3	16,4	0,0	0,1
244 Asbestos articles	3,6	7,4	1,4	5,4	0,0	0,4
245 Stone, non-metallic mineral products	3,9	4,6	3,1	5,8	0,1	0,3
246 Grindstones, other abrasive products	15,1	18,0	1,1	1,1	0,2	0,2
247 Glass, glassware	6,9	7,8	16,0	18,9	1,1	1,5
248 Ceramic goods	6,9	8,0	7,4	9,3	0,5	0,7
25 Chemical industry	10,2	11,7	4,0	4,7	0,4	0,6
251-253 Basic industries, chemicals and petrochemicals	14,4	17,0	5,2	6,4	0,8	1,1
255 + 256 Paint, fillings, varnish, printing ink & other chemicals	8,8	10,0	1,5	1,9	0,1	0,2
257 Pharmaceutical products	6,5	7,9	0,8	0,8	0,0	0,1
258 Soap, synthetic detergents, perfume, etc.	1,7	2,2	1,0	1,0	0,0	0,0
26 Artificial fibres	11,3	12,6	4,5	5,6	0,0	0,0
31 Metal articles (excluding 32-37)	4,3	4,9	4,1	8,1	0,2	0,4
311 Foundries	2,3	3,0	5,5	10,2	0,1	0,3
312 Forging, etc.	1,5	2,4	7,9	11,5	0,1	0,3
313 Secondary trans.,treat., coat. metals	4,2	4,4	2,8	4,3	0,1	0,2
314 Structural metal products	2,3	3,0	7,6	18,2	0,2	0,5
315 Boilers, tanks, reservoirs, etc.	1,4	1,9	6,7	21,5	0,1	0,4
316 Tools, finished metal goods (excluding electric)	7,5	8,0	3,5	5,9	0,3	0,5

Romania reduced its large surplus with the Community by about half to reach a nearly balanced trade and Bulgaria went through a catching up process reducing, without eliminating, its large deficit with the Community.

(ii) There is a strong positive correlation between the specialization index and the trade coverage ratio. Only chemicals (25) and textiles (43) exhibiting high specialization indices have low trade coverage ratios, pointing to a deficit

Table A.5 *(continued)*

Sector	Penetration rates in the EC market 1987-89	Penetration rates in the EC market 1990-92	CEEC 5 share in Extra-EC imports 1987-89	CEEC 5 share in Extra-EC imports 1990-92	CEEC 5 share in the EC market 1987-89	CEEC 5 share in the EC market 1990-92
	Average (in %)					
32 Mechanical engineering	16,0	17,2	1,9	2,8	0,3	0,5
321 Agricultural machinery, tractors	8,4	10,3	7,6	10,4	0,6	1,1
322 Machine tools, etc.	17,6	18,6	2,9	4,2	0,5	0,8
323 Textile machinery, etc.	25,9	26,2	1,0	2,3	0,3	0,6
324 Food, chemical, etc. industrial machinery	12,2	12,4	0,9	1,7	0,1	0,2
325 Mines, iron & steel, building, etc. plant	11,3	12,1	2,3	4,0	0,3	0,5
326 Transmission equipment	16,4	17,6	4,5	5,2	0,7	0,9
327 Industry-specific machinery & equipment	20,0	20,8	1,1	1,3	0,2	0,3
328 Other machinery & equipment	19,1	20,8	0,9	1,6	0,2	0,3
33 Office machinery data processing equipment	35,9	38,2	0,1	0,1	0,0	0,0
34 Electrical engineering	17,5	18,9	1,0	1,6	0,2	0,3
341+342+343 Insulated wires & cables + machinery + batteries	14,6	16,5	1,7	3,0	0,2	0,5
344 Telecommunications, meas./rec., elect.-med. equip.[1]	13,4	14,0	0,2	0,3	0,0	0,0
345 Radio, TV, etc.	34,7	38,2	0,3	0,4	0,1	0,1
346 Domestic electric goods	9,6	10,2	4,6	6,9	0,4	0,7
347 Electric lamps, etc.	10,9	11,5	8,6	10,1	0,9	1,2
35 Motor vehicles, parts & accessories	8,0	8,3	1,6	2,2	0,1	0,2
351 Motor vehicles and engines	8,6	9,0	1,6	1,9	0,1	0,2
352 Motor vehicle, trailer bodies	2,1	2,9	3,7	15,0	0,1	0,4
353 Motor vehicle parts, etc.	6,6	6,9	1,5	2,5	0,1	0,2
36 Other means of transport (excluding 365)	20,5	27,8	0,7	0,7	0,1	0,2
361 Shipbuilding	12,0	13,9	3,1	2,3	0,4	0,3
362 Rail/tram rolling-stock	4,4	7,2	8,4	16,4	0,4	1,2
363 Cycles, motorcycles, parts & accessories	28,8	39,0	0,9	0,9	0,3	0,4
364 Aerospace equipment	23,9	33,5	0,1	0,1	0,0	0,0
37 Instrument engineering	39,3	41,2	0,4	0,5	0,1	0,2
371 Metrology equipment	14,4	16,4	1,1	1,6	0,2	0,3
372 Medical, etc. equipment	30,8	33,1	0,4	0,6	0,1	0,2
373 Optical, photographic equipment	59,5	59,6	0,2	0,3	0,1	0,2
374 Clocks, watches & parts	76,7	84,4	0,2	0,3	0,2	0,2
41 Food, drink, tobacco	5,2	4,8	5,6	6,9	0,3	0,3
411 Oils and fats	23,1	18,9	0,4	0,9	0,1	0,2
412 Meat	6,5	5,2	13,7	15,7	0,9	0,8
413 Dairy products	1,4	1,2	11,6	10,9	0,2	0,1
414 Fruit and vegetables	17,9	17,8	7,6	10,9	1,4	1,9
415 Fish and other sea food	23,8	27,3	2,9	4,0	0,7	1,1
416 Grain	1,9	0,5	1,0	2,5	0,0	0,0
417 Pasta	0,6	0,7	0,1	0,3	0,0	0,0
418 + 420 Starch & sugar manufacturing	10,2	10,1	1,5	2,4	0,2	0,2
419 Bread and flour	0,8	0,8	0,4	0,9	0,0	0,0

[1] Manufacture of telecommunications equipment, electrical and electronic measuring and recording equipment, and electro-medical equipment.

Table A.5 *(continued)*

Sector	Penetration rates in the EC market		CEEC 5 share in extra-EC imports		CEEC 5 share in the EC market	
	1987-89	1990-92	1987-89	1990-92	1987-89	1990-92
	Average (in %)					
421 Cocoa, chocolate & sugar confectionery	2,8	2,4	5,0	3,8	0,1	0,1
422 Animal feedstuffs	2,2	2,3	4,5	5,3	0,1	0,1
423 Other food	3,9	3,6	2,2	3,3	0,1	0,1
424 Alcohol and spirits (not wine-based)	2,4	3,3	2,7	1,8	0,1	0,1
425 Wine, etc.	0,3	0,5	1,9	1,8	0,0	0,0
426 Cider, etc.	:	:	0,2	0,1	:	:
427 Beer	0,2	0,4	31,5	29,5	0,1	0,1
428 Soft drinks	0,4	0,4	0,3	0,3	0,0	0,0
429 Tobacco products	1,0	1,2	0,0	0,0	0,0	0,0
43 Textiles (including 455 household textiles)	17,3	20,1	3,6	4,3	0,6	0,9
431 Textiles nes (431-435-455-439)	11,0	9,7	3,2	4,2	0,4	0,6
436 Knitted goods	26,9	34,8	4,3	4,8	1,2	0,7
438 Floor coverings	18,8	19,7	2,5	2,3	0,5	0,5
44 Leather, leather goods (excluding shoes, clothes)	29,4	34,2	2,3	3,9	0,7	1,3
441 Leather tanning and dressing	22,4	24,4	0,9	3,4	0,2	0,8
442 Leather, etc. products	43,5	48,9	3,7	4,2	1,6	2,1
45 Footwear, clothing (excl. 455)	23,3	27,6	8,0	9,9	1,9	2,7
451 Mass-produced footwear	20,2	23,2	7,4	9,6	1,5	2,2
453 Ready-made clothing, etc.	23,8	28,8	8,1	10,0	1,9	2,9
456 Furs, etc.	77,3	62,3	7,6	7,5	5,8	4,7
46 Timber, wooden furniture	16,2	15,6	8,3	9,8	1,3	1,5
461 Wood sawing & processing	54,6	51,8	4,3	4,1	2,3	2,1
462 Semi-finished wood products	22,1	21,4	4,3	4,6	1,0	1,0
463 Carpentery/joinery components, parquet	4,3	6,2	2,6	6,0	0,1	0,4
464 Wooden containers	1,0	1,7	12,5	21,4	0,1	0,4
465 Other wood manufacture	13,4	16,6	14,3	25,3	1,9	4,2
466 Cork, straw, etc. articles	23,7	22,2	6,0	6,3	1,4	1,4
467 Wooden furniture	5,8	6,6	27,2	25,8	1,6	1,7
47 Paper, paper products, printing, publishing	11,9	11,4	1,2	1,5	0,1	0,2
471 Pulp, paper, board	34,9	35,1	1,2	1,3	0,4	0,5
472 Paper & board processing	5,7	6,3	0,7	1,2	0,0	0,1
473 Printing, etc.	2,0	2,1	2,5	2,9	0,0	0,1
48 Rubber, plastics	7,2	7,8	2,8	3,6	0,2	0,3
481 + 482 Rubber goods & tyres	9,0	10,5	4,7	5,9	0,4	0,6
483 Plastics processing	6,4	6,9	1,7	2,5	0,1	0,2
49 Other manufacturing	150,8	153,6	1,4	1,7	2,1	2,5
491 Jewellery, etc.	402,4	206,2	0,5	0,7	1,6	1,5
492 Musical instruments	55,0	58,5	2,7	3,5	1,5	2,1
493 Film developing, etc.	4,1	3,5	0,9	1,2	0,0	0,0
494 Tos/sports goods	43,4	53,9	1,2	1,1	0,5	0,6

NB: Market share = EC imports from CEEC5/(EC production - extra EC exports + extra EC imports).
Source: Eurostat — Comext & Visa

Table A.6

Trade coverage ratios (100 * EC imports/EC exports)

	NACE sectors	Bulgaria		CSFR		Hungary		Poland		Romania		CEEC 5	
		Average											
		1987-89	1990-92	1987-89	1990-92	1987-89	1990-92	1987-89	1990-92	1987-89	1990-92	1987-89	1990-92
	Industry (NACE 2-4)	28	67	99	98	81	97	96	86	260	101	94	92
21	Extraction, preparation of metal ores	18	58	71	98	28	69	480	765	0	16	66	112
211	Extraction, preparation iron ore	*	0	0	0	0	0	0	16 000	*	0	0	7
212	Extraction, preparation non-ferrous metal ore	18	58	71	98	28	70	481	758	0	19	66	122
22	Production, preliminary processing of metals	56	279	383	400	163	239	270	423	569	268	235	355
221	Iron & steel (ECSC)	94	466	4 593	1 110	188	251	187	262	616	527	315	438
222	Steel tubes	10	39	106	299	90	164	39	109	259	197	68	162
223	Steel drawing, cold rolling, folding	10	49	248	395	42	92	53	98	85	37	65	137
224	Production, preliminary processing non-ferrous metals	60	494	52	140	250	366	1466	1 334	886	233	399	510
23	Extraction of non-metal/ energy minerals	48	262	781	351	55	53	48	335	1	8	187	265
231	Building materials, refractory clays	116	2 152	3 631	3 169	37	26	32	363	0	10	338	569
232	Potassium salt, natural phosphates	*	0	*	28	*	0	*	42	*	*	*	30
233	Salt	0	3	252	0	10	0	6 765	1 126	700	188	158	16
239	Other minerals, peat	15	50	60	102	68	95	66	202	2	4	47	106
24	Manufacture of non-metal. mineral products	21	100	401	468	108	123	174	160	255	356	188	235
241	Clay products for construction	76	1 085	251	902	41	139	33	24	123	167	46	135
242	Cement, lime, plaster	28	1 398	1 084	4 204	1 567	100	9 993	5 466	56 715	38 524	4 111	3 811
243	Concrete, cement, plaster products	10	32	2 641	664	343	139	53	80	160	6	315	195
244	Asbestos articles	0	3	15	25	17	136	2	17	3	6	9	43
245	Stone, non-metallic mineral products	110	194	135	148	37	52	71	78	129	107	91	97
246	Grindstones, other abrasive products	1	12	15	15	2	2	17	24	2	1	9	12
247	Glass, glassware	61	165	2 522	1 165	212	242	364	169	1 844	807	601	366
248	Ceramic goods	10	66	105	153	76	79	54	67	93	109	68	96
25	Chemical industry	27	68	65	89	49	74	47	67	98	45	52	72
252	Chemicals derived from petroleum and coal	33	63	107	175	75	156	47	133	132	104	73	144
253	Other basic industrial chemicals	75	633	83	171	95	152	230	399	168	105	138	252
255	Paint, fillings, varnish, printing ink	0	2	2	9	2	3	1	5	1	0	1	5
256	Other chemicals, mainly industrial/ agricultural use	10	14	14	25	14	17	14	30	13	6	13	22
257	Pharmaceutical products	22	40	21	18	20	22	4	4	61	10	13	13
258	Soap, synthetic detergents, perfume, etc.	4	6	19	8	19	8	2	2	20	4	10	4
259	Other chemicals, mainly home/office use	18	78	10	11	3	22	9	13	24	13	9	18
26	Artificial fibres	16	45	127	231	22	71	29	157	2 530	342	67	147
31	Metal articles (excluding 32-37)	13	66	99	163	98	117	154	153	316	123	116	141
311	Foundries	19	171	212	266	124	158	332	257	573	108	181	212
312	Forging, etc.	15	82	252	320	95	131	326	420	162	40	165	241
313	Secondary trans.,treat., coat. metals	39	84	251	176	29	62	111	201	608	380	107	156
314	Structural metal products	10	42	67	213	217	194	393	218	171	109	198	203
315	Boilers, tanks, reservoirs, etc.	7	45	19	107	61	128	50	186	274	51	36	133
316	Tools, finished metal goods (excluding electric)	10	58	115	145	101	102	115	96	313	143	120	112
32	Mechanical engineering	8	21	24	29	22	39	18	23	148	29	21	28
321	Agricultural machinery, tractors	2	20	195	156	49	114	89	100	1075	39	90	112
322	Machine tools, etc.	9	66	41	60	24	43	21	23	336	89	27	44
323	Textile machinery, etc.	0	1	13	22	4	6	4	14	8	3	6	13
324	Food, chemicals, etc. industrial machinery	2	5	3	5	7	16	7	7	18	1	5	8
325	Mines, iron & steel, building, etc. plant	49	65	19	44	38	71	23	24	213	36	31	44
326	Transmission equipment	5	19	55	73	55	92	55	109	781	318	68	104
327	Industry-specific machinery & equipment	3	5	20	13	12	17	5	13	60	4	11	12
328	Other machinery & equipment	2	11	14	17	19	29	17	25	22	15	14	22
33	Office machinery, data processing equipment	27	23	4	6	10	15	4	2	42	4	8	7

Table A.6 *(continued)*

	NACE sectors	Bulgaria		CSFR		Hungary		Poland		Romania		CEEC 5 Average	
		1987-89	1990-92	1987-89	1990-92	1987-89	1990-92	1987-89	1990-92	1987-89	1990-92	1987-89	1990-92
34	Electrical engineering	14	41	33	38	59	90	60	38	208	56	50	51
341	Insulated wires & cables	9	100	81	100	71	273	260	283	180	29	142	184
342	Electrical machinery	32	60	91	61	47	80	52	51	433	187	66	67
343	Electrical equipment for industry, batteries, etc.	11	45	5	14	21	55	24	25	42	17	15	28
344	Telecoms, meas./rec, elect-med. equip.	5	9	5	7	10	11	9	6	4	2	7	7
345	Radio, TV, etc.	5	24	45	27	32	47	77	15	201	26	43	26
346	Domestic electric goods	38	74	143	82	371	220	288	84	2 033	302	284	119
347	Electric lamps, etc.	62	109	390	131	1 064	502	321	187	3 472	475	585	268
35	Motor vehicles, parts & accessories	3	4	213	101	19	27	147	39	616	29	103	49
351	Motor vehicles and engines	1	1	305	109	8	10	235	39	816	20	143	47
352	Motor vehicle, trailer bodies	4	6	14	35	18	90	27	48	708	28	20	48
353	Motor vehicle parts, etc.	9	26	84	124	45	76	36	34	324	83	56	61
36	Other means of transport	3	13	172	62	21	86	915	46	90	23	148	41
361	Shipbuilding	2	476	47	241	104	222	4 667	37	1	468	234	49
362	Rail/tram rolling-stock	27	68	87	312	29	253	278	73	50	124	118	158
363	Cycles, motor cycles, parts & accessories	1	14	404	143	5	16	357	289	114	15	244	132
364	Aerospace equipment	2	1	71	8	20	33	79	22	94	10	63	8
365	Other transport equipment	8	122	171	107	5	108	103	63	269	37	62	87
37	Instrument engineering	7	15	19	20	19	26	19	17	70	14	18	20
371	Metrology equipment	16	34	19	24	13	18	35	44	87	32	23	29
372	Medical, etc. equipment	2	5	5	8	27	36	8	12	5	1	12	16
373	Optical, photographic equipment	5	16	10	17	12	15	19	7	71	20	14	13
374	Clocks, watches & parts	1	5	354	107	40	53	37	12	638	17	94	56
41/42	Food, drink, tobacco	62	76	81	72	523	486	160	110	131	17	173	123
411	Oils and fats	10	36	12	36	293	56	27	30	90	3	33	30
412	Meat	71	130	125	178	1 070	2 190	222	190	141	49	286	324
413	Dairy products	50	65	456	115	682	109	181	144	207	9	161	95
414	Fruit and vegetables	223	728	197	220	1 826	2 374	2 414	748	205	53	891	678
415	Fish and other sea food	885	226	0	1	0	3	1 012	418	260	14	294	290
416	Grain	1	3	0	23	361	579	4	3	29	0	92	25
417	Pasta	0	9	0	2	293	8	0	0	48	0	6	1
418	Starch, etc.	12	0	106	85	578	462	27	76	67	11	231	162
419	Bread and flour	0	0	0	7	11	33	158	2	0	0	16	5
420	Sugar	5	1	18	115	1 091	358	238	569	357	0	130	125
421	Cocoa, chocolate & sugar confectionery	0	0	28	26	124	47	147	12	0	1	80	17
422	Animal feedstuffs	96	390	3	17	50	106	7	11	14	1	32	45
423	Other food	17	19	29	15	257	134	5	5	18	4	37	25
424	Alcohol and spirits (not wine-based)	1	0	8	5	42	10	20	39	7	2	16	11
425	Wine, etc.	47	66	1	2	33	47	0	1	19	3	3	5
426	Cider, etc.	*	0	14	11	116	0	0	0	*	0	1	0
427	Beer	68	3	8 516	7 174	55	11	7	1	1	0	298	124
428	Soft drinks	7	1	3	1	79	12	0	0	11	0	6	0
429	Tobacco products	0	0	0	0	0	0	0	0	0	0	0	0
43	Textiles	57	66	158	108	46	49	38	26	74	47	62	48
431	Textiles nes (431-435)	42	32	135	82	25	21	19	11	18	6	35	23
436	Knitted goods	195	192	385	225	135	126	153	117	304	213	204	152
438	Floor coverings	51	34	205	49	79	50	34	12	140	112	77	35
439	Misc. textiles	10	19	91	112	21	29	22	14	3	2	26	31
44	Leather, leather goods(excl. shoes, clothes)	180	200	373	147	47	52	121	95	58	26	80	77
441	Leather tanning and dressing	26	43	10	53	18	21	23	63	8	3	17	34
442	Leather, etc. products	999	697	1503	455	761	470	963	277	529	280	908	400
45	Footwear, clothing	280	415	649	469	602	404	869	559	1 912	771	817	511
451	Mass-produced footwear	38	161	276	289	381	229	499	197	1 379	351	402	235
453	Ready-made clothing, etc.	764	782	994	600	852	584	1 151	868	2 288	1 110	1 200	768
455	Household and other textile goods	1 060	2 253	2 518	954	636	548	682	333	572	436	904	544
456	Furs, etc.	56	32	326	95	184	125	210	109	782	73	214	97

with the Community for these products. In addition for artificial fibres (26), metal products (24), and food products (41-42), all countries do not achieve a surplus with the Community. The highest trade coverage ratios are recorded mainly for timber products (46) (above 500%), steel (22), clothing and footwear (45), presenting a slightly different sector ranking from the one derived from specialization indices. Within each NACE 2-digit level category, the subsectors revealing comparative

Table A.6 *(continued)*

NACE sectors		Bulgaria		CSFR		Hungary		Poland		Romania		CEEC 5	
								Average					
		1987-89	1990-92	1987-89	1990-92	1987-89	1990-92	1987-89	1990-92	1987-89	1990-92	1987-89	1990-92
46	*Timber, wooden furniture*	205	391	1 625	659	723	374	4 289	1 009	7 111	2 955	2 149	844
461	Wood sawing & processing	6 654	28 353	35 887	4 287	949	646	24 996	4 388	54 814	421	9 833	2 339
462	Semi-finished wood products	398	2 386	600	473	300	211	12 479	1 138	2 036	505	1 096	656
463	Carpentery/ joinery components, parquet	111	201	72	284	401	760	410	402	11 702	2 077	306	425
464	Wooden containers	714	3 226	143	1 668	644	611	232	2 041	6 389	12 871	979	1 670
465	Other wood manufacture	731	2 043	3 323	1 735	3 199	1 369	1 851	2 742	4 361	1 683	2 736	2 096
466	Cork, straw, etc. articles	7	7	63	69	106	102	433	177	701	733	167	139
467	Wooden furniture	630	451	1 413	438	1 494	307	3 993	747	17 008	7 133	4 262	791
47	Paper, paper products, printing, publishing	28	44	456	198	31	38	71	39	261	36	116	73
471	Pulp, paper, board	62	112	1 074	485	26	53	273	201	2 812	125	277	226
472	Paper & board processing	2	6	87	46	7	13	6	11	9	4	17	17
473	Printing, etc.	15	11	301	117	119	78	13	6	62	8	106	45
48	Rubber, plastics	17	59	139	98	62	79	35	31	92	40	62	58
481	Rubber goods	14	105	242	177	105	143	57	102	155	53	98	129
482	*Remould tyres*	*113*	*16*	*121*	*274*	*108*	*70*	*120*	*159*	*297*	*1*	*115*	*89*
483	Plastics processing	19	35	86	62	38	55	20	15	51	35	39	35
49	Other manufacturing	60	73	133	91	65	54	68	52	44	27	77	62
491	Jewellery, etc.	62	182	459	238	111	51	126	82	14	32	125	115
492	Musical instruments	37	67	658	686	64	34	150	85	272	594	310	256
493	Film developing, etc.	25	47	45	43	65	69	56	25	34	25	51	46
494	Toys/sports goods	179	77	298	68	131	42	233	42	1 782	74	236	53
495	Miscellaneous manufactured goods	55	49	80	65	55	59	53	51	22	17	57	53
Total trade		35	73	103	97	87	101	112	90	369	101	109	94

Source: Eurostat (Comext).

advantages on the basis of trade coverage ratios are the same as those derived when using specialization indices There are various country-specific features departing from these conclusions.

To mention the main ones, there are very few products in Bulgaria and Hungary where the trade coverage ratio exceeds 100%.

(iii) There is no systematic time pattern found for trade coverage ratios and to smooth fluctuations, we use averages over subperiods. Again the product trade coverage ratios reflect mainly trends at the aggregate industry level. Bulgaria and Hungary, which reduced their trade imbalances with the Community over the period, recorded increases in trade coverage ratios in nearly all NACE 2-digit sectors, except for four sectors in Hungary and one sector in Bulgaria, compared to seven sectors for the region as a whole. Inversely, in Romania, which reduced its trade surplus with the Community in the last six years, the trade coverage ratio decreased in 17 of the NACE 2-digit sectors. Across countries, the main losses have been recorded in the sectors where non-EC partners have lost market shares in the Community, food (41-42) and timber (46), and also in footwear and clothing where the decrease in trade coverage might to some extent reflect the increase in OPT trade. In sectors such as food industries, the decline in trade coverage ratios also reflects the breakthrough of Community exports in Eastern Europe.

3. Quality indicators

The quality indicator measures the quality gap between various competing exporters on a given market (see Landesmann). This is a relative price which relates the export price of an exporter to the export price of other competitors, a relatively low price reflecting poor quality of the exported products.

The quality gap indicator for country c in product j is defined as follows:

$$Q^{c}_{j} = \sum_{i \in j} \left(p^{c}_{i} / p^{l}_{i} \right) x^{c}_{i}$$

For each of the commodities i belonging to an industry j, the price p_i is measured for the country c, p^c_i, and its competitors on the Community market, p^l_i, taking the leading or highest price for this commodity item. At the industry level j, the

quality gap is a weighted average of the ratios p_i^c / p_i^j. The weights are the shares which commodity i currently has in industry j's total exports to EC markets, x_i^c.

The data used are trade statistics at the Combined Nomenclature 8-digit level on the basis of Comext data and they have been aggregated at the NACE 2- and 3-digit levels. The indices were normalized in order to have the Community index equal to one, implying that if Q_j^c is less than 1, there is a negative 'quality' gap of (Q_j^c * 100)% with respect to the Community standards.

Table A.7 presents 1988-91 average quality indicators for the five CEECs at the NACE 3-digit level. The indicators vary within the range of 0 to 2 with minor exceptions. On average quality indicators are below 1, indicating a relatively low quality of CEEC exports compared to overall Community imports. The indicator was found to be rather stable over time, showing that over the most recent period 1988-91, there has been very little closure in the 'price gaps' between Eastern and Western European industries. Some sectors exhibit very high values, which might reflect either specific features of the sectors or statistical discrepancies; these are salt extraction (233) in the CSFR exceeding 100, shipbuilding (361) in Bulgaria and Hungary respectively above 300 and 20, and animal food (422) in Bulgaria around 10, jewellery (491) in Poland in 1990 reaching 40.

There is a clear distinction between sectors where the indicator is close to 1 (between 0,8 and 1,2) and the great majority of sectors with indicators between 0,4 and 0,8.

At the NACE 3-digit level, sectors where the indicator is close to 1 for all the CEECs are: 221 (ECSC), 224 (non-ferrous metals), 252 (petrochemicals), 253 (other basic chemicals), 411 (oil and fats), 412 (meat). Given the dominant weight of these sectors at the NACE 2-digit level, this would suggest that CEECs' exports in the sensitive sectors of steel, chemicals and food industries are close to Community standards. Among the key CEEC export sectors, these are also the ones with the lowest value-added content, indicating that the convergence in quality standards is easier to attain for less-processed products, as suggested in Section 1 above.

To a lesser extent at the aggregated NACE 2-digit level, for the sector of non-metallic mineral products (24) the relevant subsectors (at the 3-digit level) exhibit indicators close to 1. Among these dominant subsectors (cement 242, glass 247, ceramics 248), only ceramics has a low quality indicator (0,52 on average).

At this stage, it would be premature to draw any conclusion for the wide range of sectors with quality indicators significantly below 1. Within most of the NACE 2-digit categories, quality indicators at the NACE 3-digit level are rather homogeneous, in particular for the sectors 32, 34, 35, 43, 44, 45, 47, 48. When there is no or less homogeneity within a NACE 2 category (31, 36, 46, 37), the smallest values of the indicators are to be found in subsectors where the content in value-added seems to be large compared to other subsectors in the same NACE 2 category.

Our calculations give no evidence of any significant quality improvement or deterioration for all the sectors. In particular, there is no sector which shifts from the category with indicators below 1 to the category with indicators close to 1, or vice versa, so that no significant closure of the 'price gaps' can be observed. This suggest, as in other cases, that the production restructuring process in Central and East European countries has not had any significant impact on their export competitiveness so far.

Table A.7

Quality indicators (1988-89 and 1990-91 averages)

NACE	Sector	Bulgaria 1988-89	Bulgaria 1990-91	CSFR 1988-89	CSFR 1990-91	Hungary 1988-89	Hungary 1990-91	Poland 1988-89	Poland 1990-91	Romania 1988-89	Romania 1990-91
		Average									
211	Extraction, preparation iron ore	0	0	0	0	0	0	0	0	0	0
212	Extraction, preparation non-ferrous metal ore	1,45	3,46	0,71	1,32	0,72	0,46	0,57	1,04	0	2,55
221	Iron & steel (ECSC)	0,84	0,78	0,87	0,87	0,9	0,84	0,83	0,81	0,86	0,9
222	Steel tubes	0,54	0,51	0,61	0,6	0,57	0,61	0,5	0,5	0,67	0,57
223	Steel drawing, cold rolling, folding	0,55	1,2	0,58	0,57	0,65	0,69	0,6	0,67	0,57	0,53
224	Production, preliminary processing non-ferrous metals	0,88	0,84	0,82	0,73	0,89	0,82	1,07	1,02	0,95	0,95
231	Building materials, refractory clays	0,79	0,99	0,92	0,87	6,29	2,43	0,81	0,81	0,38	1,01
232	Potassium salt, natural phosphates	1,47	0	0	0	0	0	0	2,93	0	0
233	Salt	0,96	1	125,03	83,83	0	0	0,88	0,94	1,4	2,21
239	Other minerals, peat	1,4	1,72	0,57	0,94	1,78	2,9	1,22	1,64	0,93	1,33
241	Clay products for construction	0	0,22	0,45	0,49	1,48	0,92	0	1,33	1,16	0,28
242	Cement, lime, plaster	0,74	0,72	0,83	0,75	1,51	2,81	0,83	0,73	0,86	0,84
243	Concrete, cement, plaster products	1,49	1,55	0,89	0,73	1,7	1,15	0,88	0,63	5,47	1,13
244	*Asbestos articles*	0	0,07	0,4	0,52	0,24	0,18	0,38	0,28	0,15	0,41
245	Stone, non-metallic mineral products	0,77	0,54	0,32	0,34	0,54	0,73	0,46	0,48	0,5	0,41
246	Grindstones, other abrasive products	1,27	0,43	0,34	0,32	2,42	1,03	0,41	0,35	1,65	0,59
247	Glass, glassware	0,49	0,49	0,81	0,78	0,84	1,02	0,62	0,56	1,74	1,83
248	Ceramic goods	0,47	0,41	0,58	0,53	0,89	0,87	0,46	0,3	0,37	0,34
252	Chemicals derived from petroleum and coal	1,17	0,91	0,91	0,9	1,08	0,99	0,93	0,92	0,93	0,74
253	Other basic industrial chemicals	0,98	0,96	0,88	0,86	1,06	1,19	1,65	1,02	0,88	0,79
255	Paint, fillings, varnish, printing ink	0,45	12,97	0,35	0,51	2,63	0,71	1,33	0,77	2,22	0,34
256	Other chemicals, mainly industrial/ agricultural use	5,24	2,12	0,63	0,61	1,3	0,88	1,12	0,89	0,66	0,62
257	Pharmaceutical products	0,23	0,66	0,5	0,77	1,05	2,23	1,22	0,84	0,49	0,69
258	Soap, synthetic detergents, perfume, etc.	1,62	0,6	0,71	0,91	0,57	0,67	0,67	0,71	1,89	0,4
259	Other chemicals, mainly home/ office use	0,37	0,33	0,45	0,42	0,64	0,64	0,61	0,71	0,62	0,55
311	Foundries	0,7	2,38	0,64	0,75	0,55	0,56	0,48	0,46	0,51	0,41
312	Forging, etc.	0,66	0,47	0,92	0,69	1,01	0,5	1,05	0,63	1,06	0,35
313	Secondary trans.,treat., coat. metals	0,28	0,22	0,32	0,38	0,39	0,51	0,35	0,34	0,28	0,32
314	Structural metal products	0,67	2,29	0,6	0,53	0,62	0,75	0,51	0,53	0,47	0,61
315	Boilers, tanks, reservoirs, etc.	0,36	0,31	0,51	0,43	0,44	0,48	0,36	0,37	0,59	0,63
316	Tools, finished metal goods (excluding electric)	0,4	0,47	0,47	0,46	0,46	0,55	0,27	0,34	0,31	0,35
321	Agricultural machinery, tractors	0,39	0,47	0,38	0,41	0,5	0,45	0,32	0,31	0,45	0,43
322	Machine tools, etc.	0,37	0,33	0,42	0,39	0,54	0,65	0,42	0,41	0,29	0,28
323	Textile machinery, etc.	0,58	0,76	0,77	1,18	0,44	0,73	0,27	0,21	0,46	2,83
324	Food, chemical, etc. industrial machinery	0,71	1,14	0,5	0,28	0,85	0,49	0,47	0,35	0,37	0,41
325	Mines, iron & steel, building, etc. plant	0,45	0,36	0,56	0,46	0,36	0,38	0,41	0,3	1,41	0,34
326	Transmission equipment	0,72	0,69	0,52	0,51	0,56	0,56	0,52	0,51	0,65	0,56
327	Industry-specific machinery & equipment	1,33	0,61	0,6	0,57	0,24	0,33	0,51	0,37	0,27	0,25
328	Other machinery & equipment	0,61	0,48	0,4	0,5	0,79	0,7	0,57	0,43	0,71	1,94
341	Insulated wires & cables	0,64	0,46	0,24	0,44	0,75	1,24	0,43	0,48	0,31	0,29
342	Electrical machinery	0,47	0,5	0,35	0,37	0,45	0,42	0,4	0,47	0,34	0,34
343	Electrical equipment for industry, batteries, etc.	1,64	0,58	1,23	1,22	0,85	0,57	0,83	0,77	0,26	0,22
344	Telecoms, meas./rec, elect-med. equip.	1,54	0,26	0,86	1,01	0,38	0,46	0,36	0,38	0,21	0,16
345	Radio, TV, etc.	0,59	0,97	0,46	0,33	0,49	0,82	0,31	0,34	0,16	0,17
346	Domestic electric goods	0,46	0,47	0,44	0,45	0,61	0,64	0,43	0,44	0,46	0,45
347	Electric lamps, etc.	0,25	0,37	0,74	0,63	0,37	0,34	0,35	0,35	0,26	0,3
351	Motor vehicles and engines	1,2	0,52	0,42	0,48	0,5	0,76	0,49	0,53	0,47	0,44
352	Motor vehicle, trailer bodies	0,1	0,4	0,47	0,21	0,77	0,41	0,45	0,28	0,18	0,31
353	Motor vehicle parts, etc.	1,09	0,74	0,82	0,75	0,58	0,5	0,64	0,41	0,55	0,41
361	Shipbuilding	34,83	163,02	0,59	0,58	12,02	0,19	1,22	1,48	0,15	6,46
362	Rail/tram rolling-stock	0,19	1,1	0,56	0,79	0,27	0,99	1,43	1,44	0,59	0,92
363	Cycles, motor cycles, parts & access.	0	0,05	0,34	0,33	0,46	0,38	0,31	0,24	0,62	0,09
364	Aerospace equipment	0,31	0,31	0,45	0,27	0,2	0,18	0,35	0,25	0,43	5,48
365	Other transport equipment	0,1	0,32	0,29	0,26	0,56	1,11	0,6	0,6	0,3	0,41
371	Metrology equipment	2,67	1,07	0,33	0,36	0,42	0,38	0,44	0,36	0,13	0,19
372	Medical, etc. equipment	2,93	1,03	1,47	1,14	0,56	0,67	0,63	0,72	0,3	0,24
373	Optical, photographic equipment	0,07	0,09	0,3	0,12	0,28	0,34	0,2	0,39	0,25	0,48
374	Clocks, watches & parts	0	0,08	0,55	0,44	0,48	2,4	0,38	0,36	0,2	0,08
411	Oils and fats	1,14	0,55	1,12	0,8	0,9	0,76	1,06	1,03	0,82	0,8
412	Meat	0,88	0,89	0,94	0,97	0,91	0,94	0,91	0,92	0,84	0,95
413	Dairy products	0,83	0,8	0,7	0,67	0,72	1,03	0,85	0,72	0,7	0,57
414	Fruit and vegetables	0,56	0,69	0,56	0,57	0,66	0,72	0,65	0,66	0,65	0,64
415	Fish and other sea food	0,62	0,46	1,31	7,66	0,93	1,89	0,61	0,76	1,23	0,45
416	Grain	0,52	0	0	0,44	1,47	0,87	2,05	1,18	1,2	0,43
417	Pasta	0	0,33	0	0	1,2	0,9	0	0,5	0,64	0
418	Starch, etc.	0,63	1,03	1,46	0,82	1,27	1,32	0,72	0,89	0,19	0,19
419	Bread and flour	0	0	1,25	0,78	0,26	0,89	0,39	0,61	0	0,19

Table A.7 *(continued)*

NACE	Sector	Bulgaria		CSFR		Hungary		Poland		Romania	
		1988-89	1990-91	1988-89	1990-91	1988-89	1990-91	1988-89	1990-91	1988-89	1990-91
		Average									
421	Cocoa, chocolate & sugar confectionery	0	0,33	0,8	0,69	0,53	0,54	0,38	0,48	0,39	0,42
422	Animal feedstuffs	9,07	13,98	2,93	1,89	1,38	1,45	0,94	0,81	3,6	4,59
423	Other food	0,41	0,55	0,7	0,67	0,72	0,85	0,45	0,42	0,43	0,59
424	Alcohol and spirits (not wine-based)	1,32	0,98	0,45	0,41	0,63	0,54	0,5	0,5	0,87	2,18
425	Wine, etc.	0,55	0,62	0,81	0,57	0,68	0,7	0,44	0,74	0,67	0,8
426	Cider, etc.	0	0	0,53	0,87	0,14	0	0,71	0,43	0	0
427	Beer	0,55	0,39	0,69	0,72	0,59	1,14	0,58	0,88	0,48	0,9
428	Soft drinks	1,23	0,66	1,12	0,92	0,77	1,07	0,5	1,14	2,2	0
429	Tobacco products	0	0,25	0	0	0,04	0,2	1,33	0,26	0	0
436	Knitted goods	0,47	0,49	0,45	0,46	0,63	0,68	0,43	0,48	0,52	0,49
438	Floor coverings	0,88	0,84	0,58	0,63	0,92	1,13	0,88	0,86	0,56	0,64
439	Miscellaneous textiles	0,62	0,7	0,72	0,67	1,17	1,03	1,11	1,12	0,88	0,83
441	Leather tanning and dressing	0,19	0,31	0,54	0,46	0,41	0,77	1,43	0,9	0,71	0,9
442	Leather, etc. products	0,24	0,26	0,57	0,65	1,1	0,96	0,47	0,39	0,6	0,74
451	Mass-produced footwear	0,33	0,43	0,35	0,38	0,54	0,82	0,51	0,56	0,43	0,41
453	Ready-made clothing, etc.	0,39	0,43	0,42	0,41	0,54	0,77	0,44	0,46	0,42	0,42
455	Household and other textile goods	0,48	0,47	0,67	0,75	0,76	0,87	0,6	0,63	0,6	0,77
456	Furs, etc.	0,26	0,21	0,62	0,57	0,83	0,74	0,49	0,29	0,53	0,45
461	Wood sawing & processing	0,67	0,6	0,66	0,63	0,81	0,57	0,75	0,63	1,08	1,13
462	Semi-finished wood products	0,41	0,35	0,43	0,42	0,56	0,55	0,53	0,5	0,43	0,36
463	Carpentery/joinery components, parquet	0,75	0,2	0,36	0,4	0,75	0,71	0,4	0,37	0,37	0,33
464	Wooden containers	0,46	0,55	0,46	0,47	0,45	0,56	0,71	0,55	0,82	0,57
465	Other wood manufacture	0,3	0,29	0,34	0,34	0,42	0,49	0,25	0,23	0,37	0,37
466	Cork, straw, etc. articles	1,15	0,93	0,47	0,34	0,53	0,53	0,66	0,51	0,6	0,55
467	Wooden furniture	0,35	0,29	0,36	0,33	0,43	0,42	0,32	0,29	0,34	0,34
471	Pulp, paper, board	0,77	0,67	0,84	0,73	0,73	0,73	0,75	0,7	0,75	0,74
472	Paper & board processing	0,45	0,29	0,51	0,44	0,55	0,53	0,87	0,57	0,52	0,52
473	Printing, etc.	0,9	0,64	0,32	0,39	0,39	0,45	0,65	1,8	0,21	0,33
481	Rubber goods	0,47	0,27	0,52	0,48	0,68	0,65	0,57	0,51	0,4	0,33
482	Remould tyres	0,56	0,46	0,44	0,42	0,6	0,68	0,54	0,41	1,64	1,22
483	Plastics processing	0,42	0,37	0,53	0,48	0,56	0,6	0,47	0,47	0,51	0,5
491	Jewellery, etc.	0,54	1,88	1,18	1,45	1,14	1,28	3,02	20,86	0	0
492	Musical instruments	0,1	0,11	0,62	0,6	0,42	0,64	0,63	0,53	0,18	0,23
493	Film developing, etc.	0,66	0	2,4	1,97	1,54	2,27	3,33	4,1	0,38	0,76
494	Toys/sports goods	0,43	0,41	0,5	0,69	0,64	0,59	0,47	0,46	0,47	0,52
495	Miscellaneous manufactured goods	0,97	0,55	0,77	4,62	0,67	0,54	0,75	5,15	0,48	0,45

Source: Landesmann.

Annex 2.1. Detailed statistics relating to Section II

Table A.8

Non-tariff barriers faced by CEECs in the Community market 1991: import coverage ratios

(%)

NACE	Sector	Bulgaria QRs (a)	Bulgaria ONTB (b)	CSFR QRs (a)	CSFR ONTB (b)	Hungary QRs (a)	Hungary ONTB (b)	Poland QRs (a)	Poland ONTB (b)	Romania QRs (a)	Romania ONTB (b)
21	Extraction, preparation of metal ores										
211	Extraction, preparation iron ore	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
212	Extraction, preparation non-ferrous metal ore	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
22	Production preliminary processing of metals										
221	Iron & steel (ECSC)	99,9	99,9	98,1	98,5	99,4	99,9	99,1	99,2	99,4	99,4
222	Steel tubes	0,0	23,7	0,0	18,9	0,0	21,4	0,0	20,2	0,0	14,2
223	Steel drawing, cold rolling, folding	0,0	2,5	0,0	25,9	0,0	46,0	0,0	51,8	0,0	18,5
224	Production, preliminary processing non-ferrous metals	4,3	4,3	26,0	26,0	1,7	1,9	1,3	1,3	0,0	0,0
23	Extraction of non-metal/energy minerals										
231	Building materials, refractory clays	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
232	Potassium salt, natural phosphates	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
233	Salt	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
239	Other minerals, peat	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
24	Manufacture of non-metalic mineral products										
241	Clay products for construction	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
242	Cement, lime, plaster	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
243	Concrete, cement, plaster products	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
244	Asbestos articles	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
245	Stone, non-metallic mineral products	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
246	Grindstones, other abrasive products	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
247	Glass, glassware	0,0	0,1	0,0	10,5	0,0	10,7	0,0	0,0	0,0	0,7
248	Ceramic goods	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
25	Chemical industry										
252	Chemicals derived from petrol and coal	0,0	1,1	0,0	0,2	0,0	0,0	0,0	0,1	0,0	0,4
253	Other basic industrial chemicals	0,0	12,5	0,0	14,6	0,0	8,3	0,0	5,4	0,0	15,8
255	Paints, fillings, varnish, printing ink	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
256	Other chemicals,mainly industrial and agricultural use	0,0	1,0	0,0	0,0	0,0	0,0	0,0	1,3	0,0	2,4
257	Pharmaceutical products	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
258	Soap, synthetic detergents, perfume, etc.	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
259	Other chemicals, mainly home/office use	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
26	Artificial fibres	48,4	0,0	57,0	0,0	25,1	0,0	10,4	0,0	14,3	10,9
31	Metal articles (excluding 32-37)										
311	Foundries	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
312	Forging, etc.	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
313	Secondary trans.,treat., coat. metals	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
314	Structural metal products	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
315	Boilers, tanks, reservoirs, etc.	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
316	Tools, finished metal goods (excluding electric)	0,0	0,7	0,0	2,8	0,0	0,1	0,0	0,0	0,0	0,4
32	Mechanical engineering										
321	Agricultural machinery, tractors	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
322	Machine tools, etc.	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
323	Textile machinery, etc.	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
324	Food, chemical, etc. industrial machinery	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
325	Mines, iron & steel, building, etc. plant	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
326	Transmission equipment	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
327	Industry-specific machinery & equipment	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
328	Other machinery & equipment	0,0	0,0	0,0	0,2	0,0	4,2	0,0	0,1	0,0	0,0

Table A.8 *(continued)*

(%)

NACE	Sector	Bulgaria QRs (a)	Bulgaria ONTB (b)	CSFR QRs (a)	CSFR ONTB (b)	Hungary QRs (a)	Hungary ONTB (b)	Poland QRs (a)	Poland ONTB (b)	Romania QRs (a)	Romania ONTB (b)
33	Office machinery, data-processing equipment	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
34	Electrical engineering										
341	Insulated wires & cables	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
342	Electrical machinery	0,0	14,8	0,0	16,4	0,0	3,8	0,0	16,4	0,0	10,8
343	Electrical equipment for industry, batteries, etc.	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
344	Telecoms, meas./rec, elect-med. equip.	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
345	Radio, TV, etc.	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
346	Domestic electric goods	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
347	Electric lamps, etc.	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
35	Motor vehicles, parts & accessories										
351	Motor vehicles and engines	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
352	Motor vehicle, trailer bodies	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
353	Motor vehicle parts, etc.	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
36	Other means of transport										
361	Shipbuilding	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
362	Rail/tram rolling-stock	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
363	Cycles, motor cycles, parts & access.	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
364	Aerospace equipment	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
365	Other transport means	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
37	Instrument engineering										
371	Metrology equipment	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
372	Medical, etc. equipment	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
373	Optical, photographic equipment	0,0	9,3	0,0	2,5	0,0	2,3	0,0	0,1	0,0	8,6
374	Clocks, watches & parts	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
43	Textiles										
431	Textile nes	80,5	0,0	92,3	0,0	78,2	0,0	85,1	0,0	91,9	22,9
436	Knitted goods	99,1	0,0	98,2	0,0	99,4	0,0	98,9	0,0	99,8	0,0
438	Floor coverings	100,0	0,0	99,4	0,0	99,7	0,0	100,0	0,0	100,0	0,0
439	Other textile industries	91,4	0,0	62,0	0,0	85,8	0,0	91,2	0,0	63,4	0,0
44	Leather, leather goods (excluding shoes, clothes)										
441	Leather tanning and dressing	0,0	100,0	0,0	99,9	0,0	99,6	0,0	100,0	0,0	100,0
442	Leather, etc. products	0,0	21,9	0,0	64,4	0,0	36,9	0,0	66,8	0,0	81,2
45	Footwear, clothing										
451	Mass-produced footwear	0,0	100,0	0,0	100,0	0,0	100,0	0,0	100,0	0,0	100,0
453	Ready-made clothing, etc.	98,1	1,2	95,0	1,6	93,4	3,4	96,4	1,0	97,4	0,7
455	Household and other textile goods	89,6	0,0	83,2	0,0	76,1	0,0	83,8	0,0	74,8	0,0
456	Furs, etc.	0,0	99,7	0,0	84,0	0,0	97,5	0,0	94,3	0,0	100,0
46	Timber, wooden furniture										
461	Wood sawing & processing	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
462	Semi-finished wood products	0,0	0,0	0,0	1,8	0,0	0,0	0,0	0,0	0,0	0,0
463	Carpentery/joinery components, parquet	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
464	Wooden containers	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
465	Other wood manufacture	0,0	0,5	0,0	1,9	0,0	0,3	0,0	0,3	0,0	3,5
466	Cork, straw, etc. articles	0,0	0,7	0,0	14,3	0,0	3,0	0,0	4,9	0,0	0,1
467	Wooden furniture	0,0	1,2	0,0	1,3	0,0	1,8	0,0	1,9	0,0	0,5
47	Paper, paper products, printing, publishing										
471	Pulp, paper, board	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
472	Paper & board processing	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
473	Printing, etc.	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

Table A.8 *(continued)*

(%)

NACE Sector	Bulgaria QRs (a)	Bulgaria ONTB (b)	CSFR QRs (a)	CSFR ONTB (b)	Hungary QRs (a)	Hungary ONTB (b)	Poland QRs (a)	Poland ONTB (b)	Romania QRs (a)	Romania ONTB (b)
48 Rubber, plastics										
481 Rubber goods	0,2	0,0	5,7	9,5	5,8	0,5	1,0	3,2	0,3	0,0
482 Remould tyres	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
483 Plastics processing	0,0	0,2	0,0	0,6	0,0	0,1	0,0	1,5	0,0	7,8
49 Other manufacturing										
491 Jewellery, etc.	0,0	1,9	0,0	4,8	0,0	8,5	0,0	27,7	0,0	0,6
492 Musical instruments	0,0	6,1	0,0	70,4	0,0	9,8	0,0	90,7	0,0	29,7
493 Film developing, etc.	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
494 Toys/sports goods	0,0	3,2	0,0	2,1	0,0	19,7	0,0	1,9	0,0	0,4
495 Miscellaneous manufactured goods	0,0	6,4	0,0	2,0	0,0	1,9	0,0	2,8	0,0	100,0

NB: (a) Defined as percentage of exports of the sector affected by quantitative restrictions, including MFA restraints, other textile restraints, and voluntary export restraints. (b) Defined as percentage of exports of the sector affected by other non-tariff barriers, including anti-dumping duties and undertakings, variable components of duties, import surveillance, basic import prices.
Source: Möbius-Schumacher (forthcoming).

Table A.9

Trade barriers remaining in the last year of the Europe Agreements: a 'virtual' import coverage ratio for 1992

(%)

NACE 2-digit sectors	Bulgaria	CSFR	Hungary	Poland	Romania	CEEC5
Total industry	43,3	47,8	45,1	49,8	74,6	50,0
21 Extraction, preparation of metal ores	0,3	0,0	0,0	2,2	0,0	1,6
22 Production, preliminary processing of metals	34,1	68,6	69,9	33,2	79,2	51,6
23 Extraction of non-metal/energy minerals	0,0	0,0	0,0	0,0	0,0	0,0
24 Manufacture of non-metallic mineral products	5,2	66,5	62,1	76,1	78,6	67,9
25 Chemical industry	43,7	41,6	41,2	60,5	40,8	47,8
26 Artificial fibres	100,0	100,0	100,0	100,0	100,0	100,0
31 Metal articles	0,0	11,1	3,7	9,1	19,3	9,1
32 Mechanical engineering	0,0	10,9	0,8	0,4	3,3	4,8
33 Office machinery, data-processing equipment	0,0	0,0	0,0	0,0	0,0	0,0
34 Electrical engineering	0,0	14,2	12,0	14,2	9,0	12,6
35 Motor vehicles, parts & accessories	0,0	75,6	17,6	78,4	40,5	66,7
36 Other means of transport	0,0	0,0	0,0	0,0	0,0	0,0
37 Instrument engineering	0,0	0,0	5,8	1,2	0,0	2,3
43 Textiles	100,0	94,1	99,0	99,5	99,9	97,7
44 Leather, leather goods (excluding shoes, clothes)	0,0	60,7	78,6	47,2	60,0	56,1
45 Footwear, clothing	86,6	90,8	87,9	93,6	92,2	91,1
46 Timber, wooden furniture	0,0	39,4	26,5	48,9	85,8	49,5
47 Paper, paper products, printing, publishing	0,0	0,0	0,0	0,0	0,0	0,0
48 Rubber, plastics	0,0	43,0	38,8	49,1	58,2	41,8
49 Other manufacturing	0,0	0,0	9,1	9,1	0,0	4,6

NB: Food industry is not included in these calculations.
Source: Möbius & Schumacher (forthcoming).

Annex 3.1. Basic methodology used to compare Community imports from the CEECs with imports from other countries

As outlined in Section 3, the potential competitor countries for the CEECs on the Community market were identified by performing tests of significance of the product-moment correlation coefficient between the CEECs (individually and collectively) and each group calculated at 3-digit NACE level, for 1987, 1992, average 1987-89 and average 1990-92 for the following indicators:

(i) the share of each 3-digit NACE code in Community imports from the group;

(ii) the specialization index;

(iii) the trade coverage ratio;

(iv) the Grubel-Lloyd intra-industry trade index.

Since the product-moment correlation coefficient measures linear correlation, it was necessary to transform two of these indicators before calculating the coefficients. Both the specialization index and the trade coverage ratio have asymmetric distributions: each has a minimum value of 0, an 'expected' mean of 1, but no upper bound. For example, if a country exports 10 times as much of a good as it imports, the trade coverage ratio is 10; if it imports ten times as much of a good as it exports, the trade coverage ratio is 0,1, so these two 'equal but opposite' situations give trade coverage ratios which are not equidistant from the value of the index when exports and imports of a good are equal.

Before calculating the correlation coefficients, the specialization index and trade coverage ratio were converted to logarithms, base 10. This transformation ensures that the possible range of values of these two indicators is centred about 0, and removes the possibility of distortions due to very large values. Working with the untransformed values of these indicators would bias the assessment of similarity in trade structure towards goods in which the countries were specialized, or in which they ran large trade surpluses, whereas similarity of trade structure may also result from, for example, being relatively unspecialized in similar commodities.

Finally, before calculating the correlation coefficients, the values of the intra-industry trade index, and the log-values of the trade coverage ratio and the specialization index were weighted by the share of each NACE code in Community imports from the trading group. This weighting was chosen to reduce the possibility of finding statistically significant correlations resulting from similar values of the indicators across a range of goods which were of minor importance in the Community's imports from the countries concerned.

'One-tail' significance tests at 5 and 1% levels were carried out for each coefficient calculated. In other words, a positive (negative) correlation is regarded as being significant at 5% if the probability of a larger (smaller) coefficient arising by chance is less than 0,05.

There are 107 3-digit NACE codes, so if the values of the indicators can be calculated for each code, the tests should be performed on 105 degrees of freedom. However, if, for example, the Community exported no goods in a given code to a given partner, the number of degrees of freedom is reduced by one for the correlation with that partner for intra-industry trade and specialization. Fortunately, the number of such codes is relatively small, so the number of degrees of freedom is not reduced by much. To simplify the work, the tests were actually carried out on 100 degrees of freedom in all cases. This simplification does not substantially affect the validity of the results. The minimum absolute values needed to reach significance on 100 degrees of freedom are 0,1638 at the 5% level, and 0,2301 at the 1% level.[1]

Having identified the group of countries whose trade with the Community most closely resembled that of the CEECs, correlation coefficients between the CEECs and the other trading groups were calculated for growth rates in Community imports at 3-digit NACE level. It was hoped that the results of these calculations would provide some indication of any 'displacement' effect, i.e. has the growth in Community imports from the CEECs been at the expense of the CEECs' competitors, or is it only due to a general increase in Community demand for the goods CEECs produce?

The correlation coefficients, identified as 'Rho', are shown in the Tables in Annex 3.2. Significant correlations are marked in these Tables, with 'XX' to denote significance at 1%, and 'X' to indicate significance at 5%.

[1] These values are taken from Table 10 of Murdoch and Barnes, *Statistical Tables* second edition; Macmillan, 1979.

Annex 3.2: Correlation coefficients

Table A.10

Correlation coefficients calculated on product share at 3-digit NACE level for 1987 EC imports

	Country group	Rho	
CEEC 5	Mediterranean basin	0,7421	XX
	China	0,5544	XX
	Extra-EC	0,4875	XX
	Intra-EC	0,4785	XX
	South-East Asia	0,3893	XX
	EFTA	0,3746	XX
	Rest of world	0,3523	XX
	Rest of OECD	0,1142	
Poland	Mediterranean basin	0,7298	XX
	Extra-EC	0,5306	XX
	China	0,4927	XX
	Rest of world	0,4456	XX
	Intra-EC	0,4355	XX
	EFTA	0,4004	XX
	South-East Asia	0,3465	XX
	Rest of OECD	0,1429	
CSFR	Intra-EC	0,5279	XX
	EFTA	0,5038	XX
	Extra-EC	0,4194	XX
	Mediterranean basin	0,3914	XX
	China	0,3162	XX
	Rest of world	0,2369	XX
	South-East Asia	0,1806	X
	Rest of OECD	0,1499	
Hungary	Mediterranean basin	0,6478	XX
	China	0,5374	XX
	Intra-EC	0,3842	XX
	Extra-EC	0,3603	XX
	South-East Asia	0,3425	XX
	Rest of world	0,2891	XX
	EFTA	0,1913	X
	Rest of OECD	0,0730	
Romania	Mediterranean basin	0,6923	XX
	China	0,5017	XX
	South-East Asia	0,4240	XX
	Extra-EC	0,3325	XX
	Intra-EC	0,2763	XX
	Rest of world	0,1876	X
	EFTA	0,1845	X
	Rest of OECD	0,0296	
Bulgaria	Mediterranean basin	0,5154	XX
	Intra-EC	0,4020	XX
	China	0,3856	XX
	Extra-EC	0,3401	XX
	Rest of world	0,3333	XX
	EFTA	0,3122	XX
	South-East Asia	0,2339	XX
	Rest of OECD	0,0727	

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on product share at 3-digit NACE level for 1992 EC imports

	Country group	Rho	
CEEC 5	Mediterranean basin	0,7675	XX
	China	0,5285	XX
	Extra-EC	0,5156	XX
	Intra-EC	0,4443	XX
	Rest of world	0,4087	XX
	EFTA	0,3503	XX
	South-East Asia	0,3140	XX
	Rest of OECD	0,1234	
Poland	Mediterranean basin	0,7258	XX
	Rest of world	0,5222	XX
	Extra-EC	0,5081	XX
	China	0,4645	XX
	Intra-EC	0,3524	XX
	EFTA	0,3350	XX
	South-East Asia	0,2580	XX
	Rest of OECD	0,0997	
CSFR	Intra-EC	0,6261	XX
	EFTA	0,5217	XX
	Extra-EC	0,5056	XX
	Mediterranean basin	0,4883	XX
	China	0,3105	XX
	Rest of world	0,2714	XX
	Rest of OECD	0,2385	XX
	South-East Asia	0,2093	X
Hungary	Mediterranean basin	0,6740	XX
	China	0,5201	XX
	Extra-EC	0,4100	XX
	Intra-EC	0,3924	XX
	South-East Asia	0,3179	XX
	Rest of world	0,2735	XX
	EFTA	0,2101	X
	Rest of OECD	0,1053	
Romania	Mediterranean basin	0,7822	XX
	China	0,5833	XX
	South-East Asia	0,3434	XX
	Extra-EC	0,2784	XX
	Intra-EC	0,1587	
	Rest of world	0,1491	
	EFTA	0,0504	
	Rest of OECD	-,0431	
Bulgaria	Mediterranean basin	0,8108	XX
	China	0,5775	XX
	Rest of world	0,4684	XX
	Extra-EC	0,4625	XX
	South-East Asia	0,3377	XX
	EFTA	0,2673	XX
	Intra-EC	0,2439	XX
	Rest of OECD	0,0208	

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on product share at 3-digit NACE level for average 1987-9 EC imports

	Country group	Rho	
CEEC 5	Mediterranean basin	0,7421	XX
	Intra-EC	0,4952	XX
	Extra-EC	0,4895	XX
	China	0,4792	XX
	EFTA	0,4005	XX
	Rest of world	0,3829	XX
	South-East Asia	0,3230	XX
	Rest of OECD	0,1177	
Poland	Mediterranean basin	0,7390	XX
	Extra-EC	0,5484	XX
	Rest of world	0,5173	XX
	Intra-EC	0,4557	XX
	China	0,4239	XX
	EFTA	0,4211	XX
	South-East Asia	0,2858	XX
	Rest of OECD	0,1443	
CSFR	Intra-EC	0,5493	XX
	EFTA	0,5081	XX
	Extra-EC	0,3880	XX
	Mediterranean basin	0,3756	XX
	China	0,2411	XX
	Rest of world	0,1930	X
	Rest of OECD	0,1569	
	South-East Asia	0,1303	
Hungary	Mediterranean basin	0,6304	XX
	China	0,4714	XX
	Intra-EC	0,3883	XX
	Extra-EC	0,3455	XX
	South-East Asia	0,2936	XX
	Rest of world	0,2784	XX
	EFTA	0,1956	X
	Rest of OECD	0,0767	
Romania	Mediterranean basin	0,6998	XX
	China	0,4476	XX
	South-East Asia	0,3616	XX
	Extra-EC	0,3381	XX
	Intra-EC	0,2674	XX
	Rest of world	0,2459	XX
	EFTA	0,2177	X
	Rest of OECD	0,0163	
Bulgaria	Mediterranean basin	0,5570	XX
	Intra-EC	0,4827	XX
	Extra-EC	0,4058	XX
	EFTA	0,4044	XX
	China	0,3661	XX
	Rest of world	0,3604	XX
	South-East Asia	0,1941	X
	Rest of OECD	0,1190	

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on product share at 3-digit NACE level for average 1990-2 EC import

	Country group	Rho	
CEEC 5	Mediterranean basin	0,7758	XX
	China	0,5265	XX
	Extra-EC	0,4910	XX
	Intra-EC	0,4399	XX
	Rest of world	0,3965	XX
	EFTA	0,3487	XX
	South-East Asia	0,3084	XX
	Rest of OECD	0,0995	
Poland	Mediterranean basin	0,7546	XX
	Rest of world	0,5117	XX
	Extra-EC	0,4940	XX
	China	0,4767	XX
	Intra-EC	0,3433	XX
	EFTA	0,3352	XX
	South-East Asia	0,2628	XX
	Rest of OECD	0,0809	
CSFR	Intra-EC	0,6233	XX
	EFTA	0,5198	XX
	Mediterranean basin	0,4708	XX
	Extra-EC	0,4686	XX
	China	0,2869	XX
	Rest of world	0,2419	XX
	Rest of OECD	0,2059	X
	South-East Asia	0,1772	X
Hungary	Mediterranean basin	0,6624	XX
	China	0,5017	XX
	Extra-EC	0,3786	XX
	Intra-EC	0,3776	XX
	South-East Asia	0,3008	XX
	Rest of world	0,2789	XX
	EFTA	0,1981	X
	Rest of OECD	0,0773	
Romania	Mediterranean basin	0,7548	XX
	China	0,5676	XX
	South-East Asia	0,3480	XX
	Extra-EC	0,2687	XX
	Intra-EC	0,1634	
	Rest of world	0,1564	
	EFTA	0,0728	
	Rest of OECD	–,0418	
Bulgaria	Mediterranean basin	0,7694	XX
	China	0,5195	XX
	Extra-EC	0,4419	XX
	Rest of world	0,4150	XX
	South-East Asia	0,3082	XX
	EFTA	0,3081	XX
	Intra-EC	0,3071	XX
	Rest of OECD	0,0371	

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on intra-industry trade at 3-digit NACE level for 1987 EC imports

	Country group	Rho	
CEEC 5	Mediterranean basin	0,6681	XX
	Intra-EC	0,6094	XX
	EFTA	0,6090	XX
	Extra-EC	0,5588	XX
	China	0,5117	XX
	Rest of world	0,3737	XX
	Rest of OECD	0,3488	XX
	South-East Asia	0,1062	
Poland	Mediterranean basin	0,6402	XX
	Intra-EC	0,6003	XX
	EFTA	0,5323	XX
	Extra-EC	0,5198	XX
	China	0,4655	XX
	Rest of OECD	0,3447	XX
	Rest of world	0,2670	XX
	South-East Asia	0,1031	
CSFR	China	0,5729	XX
	Intra-EC	0,5581	XX
	EFTA	0,5388	XX
	Extra-EC	0,4630	XX
	Mediterranean basin	0,4578	XX
	Rest of OECD	0,3689	XX
	Rest of world	0,2924	XX
	South-East Asia	0,1197	
Hungary	Mediterranean basin	0,5967	XX
	EFTA	0,5256	XX
	Extra-EC	0,4787	XX
	Intra-EC	0,4662	XX
	China	0,4230	XX
	Rest of world	0,3419	XX
	Rest of OECD	0,2388	XX
	South-East Asia	0,1065	
Romania	Mediterranean basin	0,7120	XX
	Extra-EC	0,5116	XX
	Intra-EC	0,4550	XX
	China	0,4516	XX
	EFTA	0,4501	XX
	Rest of OECD	0,2705	XX
	Rest of world	0,2621	XX
	South-East Asia	0,1138	
Bulgaria	EFTA	0,3846	XX
	Rest of world	0,3234	XX
	Mediterranean basin	0,3181	XX
	China	0,2878	XX
	Intra-EC	0,2820	XX
	Extra-EC	0,2417	XX
	Rest of OECD	0,0728	
	South-East Asia	0,0320	

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on intra-industry trade at 3-digit NACE level for 1992 EC imports

	Country group	Rho	
CEEC 5	Intra-EC	0,5838	XX
	Mediterranean basin	0,5763	XX
	Extra-EC	0,5517	XX
	EFTA	0,5167	XX
	China	0,3991	XX
	Rest of OECD	0,3041	XX
	Rest of world	0,2876	XX
	South-East Asia	0,2065	X
Poland	Intra-EC	0,6229	XX
	Extra-EC	0,5368	XX
	Mediterranean basin	0,5224	XX
	EFTA	0,4847	XX
	China	0,3475	XX
	Rest of OECD	0,3294	XX
	Rest of world	0,2994	XX
	South-East Asia	0,1361	
CSFR	Intra-EC	0,7604	XX
	Extra-EC	0,6120	XX
	EFTA	0,6054	XX
	Rest of OECD	0,4578	XX
	Mediterranean basin	0,4545	XX
	China	0,3915	XX
	Rest of world	0,2452	XX
	South-East Asia	0,2147	X
Hungary	Mediterranean basin	0,5527	XX
	Extra-EC	0,4683	XX
	EFTA	0,4471	XX
	China	0,4257	XX
	Intra-EC	0,4056	XX
	South-East Asia	0,2604	XX
	Rest of world	0,2265	X
	Rest of OECD	0,2155	X
Romania	Mediterranean basin	0,6605	XX
	Extra-EC	0,3632	XX
	Intra-EC	0,2609	XX
	South-East Asia	0,2042	X
	Rest of world	0,2006	X
	China	0,1971	X
	EFTA	0,1956	X
	Rest of OECD	0,0362	
Bulgaria	Mediterranean basin	0,6242	XX
	Extra-EC	0,3801	XX
	Rest of world	0,2926	XX
	EFTA	0,2584	XX
	Intra-EC	0,2547	XX
	China	0,2462	XX
	South-East Asia	0,2439	XX
	Rest of OECD	0,0578	

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on intra-industry trade at 3-digit NACE level for average 1987-9 EC imports

	Country group	Rho	
CEEC 5	Intra-EC	0,6539	XX
	Mediterranean basin	0,6525	XX
	EFTA	0,6095	XX
	Extra-EC	0,5350	XX
	China	0,4020	XX
	Rest of OECD	0,3586	XX
	Rest of world	0,3534	XX
	South-East Asia	0,0815	
Poland	Intra-EC	0,6288	XX
	Mediterranean basin	0,5895	XX
	EFTA	0,4829	XX
	Extra-EC	0,4785	XX
	Rest of OECD	0,3309	XX
	China	0,3188	XX
	Rest of world	0,3141	XX
	South-East Asia	0,0749	
CSFR	Intra-EC	0,5718	XX
	EFTA	0,5503	XX
	China	0,5132	XX
	Mediterranean basin	0,4716	XX
	Extra-EC	0,4413	XX
	Rest of OECD	0,3666	XX
	Rest of world	0,2880	XX
	South-East Asia	0,1042	
Hungary	Mediterranean basin	0,6405	XX
	EFTA	0,5610	XX
	Intra-EC	0,5039	XX
	Extra-EC	0,4746	XX
	China	0,3880	XX
	Rest of world	0,3265	XX
	Rest of OECD	0,2422	XX
	South-East Asia	0,1237	
Romania	Mediterranean basin	0,7083	XX
	Intra-EC	0,4976	XX
	Extra-EC	0,4873	XX
	EFTA	0,4626	XX
	China	0,3195	XX
	Rest of world	0,2765	XX
	Rest of OECD	0,2507	XX
	South-East Asia	0,0891	
Bulgaria	EFTA	0,4787	XX
	Mediterranean basin	0,4625	XX
	Intra-EC	0,3896	XX
	Rest of world	0,3403	XX
	Extra-EC	0,3264	XX
	China	0,3170	XX
	Rest of OECD	0,1276	
	South-East Asia	0,0067	

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on intra-industry trade at 3-digit NACE level for 1990-2 EC imports

	Country group	Rho	
CEEC 5	Mediterranean basin	0,6390	XX
	Intra-EC	0,5497	XX
	EFTA	0,5151	XX
	Extra-EC	0,5054	XX
	China	0,4191	XX
	Rest of world	0,3000	XX
	Rest of OECD	0,2688	XX
	South-East Asia	0,1524	
Poland	Mediterranean basin	0,6090	XX
	Intra-EC	0,4998	XX
	Extra-EC	0,4545	XX
	EFTA	0,4441	XX
	China	0,3711	XX
	Rest of world	0,3038	XX
	Rest of OECD	0,2220	X
	South-East Asia	0,1032	
CSFR	Intra-EC	0,7722	XX
	EFTA	0,6285	XX
	Extra-EC	0,5819	XX
	Mediterranean basin	0,5033	XX
	Rest of OECD	0,4944	XX
	China	0,4631	XX
	Rest of world	0,2623	XX
	South-East Asia	0,1606	
Hungary	Mediterranean basin	0,6142	XX
	EFTA	0,4752	XX
	Extra-EC	0,4567	XX
	China	0,4330	XX
	Intra-EC	0,4203	XX
	Rest of world	0,2362	XX
	South-East Asia	0,2249	X
	Rest of OECD	0,1948	X
Romania	Mediterranean basin	0,7359	XX
	Extra-EC	0,4036	XX
	Intra-EC	0,3202	XX
	EFTA	0,3070	XX
	China	0,2522	XX
	Rest of world	0,2167	X
	South-East Asia	0,1665	X
	Rest of OECD	0,0776	
Bulgaria	Mediterranean basin	0,6366	XX
	Extra-EC	0,4114	XX
	EFTA	0,4006	XX
	Intra-EC	0,3598	XX
	Rest of world	0,3387	XX
	China	0,3235	XX
	South-East Asia	0,1612	
	Rest of OECD	0,1139	

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on log(trade coverage) at 3-digit NACE level for 1987 EC imports

	Country group	Rho	
CEEC 5	Mediterranean basin	0,6268	XX
	South-East Asia	0,5630	XX
	China	0,5043	XX
	Extra-EC	0,3241	XX
	Rest of world	0,2382	XX
	EFTA	0,1124	
	Rest of OECD	0,0120	
	Intra-EC	–,1033	
Poland	Mediterranean basin	0,5567	XX
	Rest of world	0,4991	XX
	South-East Asia	0,4984	XX
	Extra-EC	0,4792	XX
	China	0,4167	XX
	EFTA	0,1894	X
	Rest of OECD	0,0524	
	Intra-EC	–,0713	
CSFR	Extra-EC	0,3247	XX
	EFTA	0,2955	XX
	South-East Asia	0,2845	XX
	Rest of world	0,1650	X
	Mediterranean basin	0,1177	
	China	0,1064	
	Rest of OECD	0,0657	
	Intra-EC	–,0394	
Hungary	Mediterranean basin	0,5768	XX
	China	0,5062	XX
	South-East Asia	0,3941	XX
	Extra-EC	0,1605	
	Rest of world	0,1172	
	EFTA	–,0169	
	Rest of OECD	–,0329	
	Intra-EC	–,0906	
Romania	Mediterranean basin	0,4025	XX
	South-East Asia	0,3227	XX
	China	0,3142	XX
	Extra-EC	0,0723	
	Rest of world	0,0612	
	EFTA	–,0097	
	Intra-EC	–,0483	
	Rest of OECD	–,0544	
Bulgaria	Mediterranean basin	0,8107	XX
	China	0,7054	XX
	South-East Asia	0,6460	XX
	Extra-EC	0,1996	X
	Rest of world	0,1233	
	EFTA	–,0391	
	Rest of OECD	–,0441	
	Intra-EC	–,4573	XX

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on log(trade coverage) at 3-digit NACE level for 1992 EC imports

	Country group	Rho	
CEEC 5	Mediterranean basin	0,7552	XX
	China	0,4851	XX
	Extra-EC	0,3898	XX
	Rest of world	0,3264	XX
	South-East Asia	0,2861	XX
	EFTA	0,0891	
	Intra-EC	0,0687	
	Rest of OECD	–,0817	
Poland	Mediterranean basin	0,6768	XX
	Rest of world	0,5592	XX
	Extra-EC	0,4956	XX
	China	0,4103	XX
	South-East Asia	0,2516	XX
	EFTA	0,1256	
	Intra-EC	0,0661	
	Rest of OECD	–,0205	
CSFR	Mediterranean basin	0,3725	XX
	Extra-EC	0,2302	XX
	China	0,2254	X
	EFTA	0,1992	X
	South-East Asia	0,1192	
	Rest of world	0,0966	
	Intra-EC	0,0952	
	Rest of OECD	–,1090	
Hungary	Mediterranean basin	0,5335	XX
	China	0,3489	XX
	Extra-EC	0,1927	X
	South-East Asia	0,1724	X
	Rest of world	0,1256	
	Intra-EC	0,0789	
	EFTA	–,0131	
	Rest of OECD	–,0911	
Romania	Mediterranean basin	0,6240	XX
	China	0,4142	XX
	South-East Asia	0,2584	XX
	Extra-EC	0,1615	
	Rest of world	0,0607	
	Intra-EC	–,0033	
	EFTA	–,0548	
	Rest of OECD	–,0823	
Bulgaria	Mediterranean basin	0,7312	XX
	Rest of world	0,5271	XX
	China	0,4682	XX
	Extra-EC	0,4555	XX
	South-East Asia	0,2616	XX
	EFTA	0,0899	
	Intra-EC	0,0747	
	Rest of OECD	–,0501	

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on log(trade coverage) at 3-digit NACE level for average 1987-9 EC imports

	Country group	Rho	
CEEC 5	Mediterranean basin	0,6730	XX
	South-East Asia	0,4855	XX
	China	0,4739	XX
	Extra-EC	0,3337	XX
	Rest of world	0,2692	XX
	EFTA	0,1189	
	Rest of OECD	–,0007	
	Intra-EC	–,0586	
Poland	Rest of world	0,6182	XX
	Mediterranean basin	0,5937	XX
	Extra-EC	0,5033	XX
	South-East Asia	0,3903	XX
	China	0,3635	XX
	EFTA	0,1761	X
	Rest of OECD	0,0347	
	Intra-EC	–,0304	
CSFR	EFTA	0,2953	XX
	Extra-EC	0,2632	XX
	South-East Asia	0,2238	X
	Mediterranean basin	0,1126	
	China	0,0899	
	Rest of world	0,0530	
	Rest of OECD	0,0488	
	Intra-EC	–,0257	
Hungary	Mediterranean basin	0,5463	XX
	China	0,4293	XX
	South-East Asia	0,3102	XX
	Extra-EC	0,1416	
	Rest of world	0,1090	
	EFTA	–,0151	
	Rest of OECD	–,0445	
	Intra-EC	–,0550	
Romania	Mediterranean basin	0,4803	XX
	China	0,3295	XX
	South-East Asia	0,3233	XX
	Rest of world	0,1534	
	Extra-EC	0,1519	
	EFTA	0,0303	
	Intra-EC	–,0207	
	Rest of OECD	–,0337	
Bulgaria	Mediterranean basin	0,7515	XX
	China	0,5869	XX
	South-East Asia	0,5166	XX
	Extra-EC	0,1976	X
	Rest of world	0,0931	
	EFTA	–,0365	
	Rest of OECD	–,0390	
	Intra-EC	–,3715	XX

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on log(trade coverage) at 3-digit NACE level for average 1990-2 EC imports

	Country group	Rho	
CEEC 5	Mediterranean basin	0,7542	XX
	China	0,5149	XX
	Extra-EC	0,3633	XX
	South-East Asia	0,3361	XX
	Rest of world	0,3176	XX
	EFTA	0,0872	
	Intra-EC	0,0742	
	Rest of OECD	–,0651	
Poland	Mediterranean basin	0,6518	XX
	Rest of world	0,5719	XX
	Extra-EC	0,4747	XX
	China	0,4129	XX
	South-East Asia	0,2752	XX
	EFTA	0,1209	
	Intra-EC	0,0879	
	Rest of OECD	–,0135	
CSFR	Mediterranean basin	0,2989	XX
	EFTA	0,2298	X
	Extra-EC	0,2283	X
	China	0,2036	X
	South-East Asia	0,1460	
	Intra-EC	0,0903	
	Rest of world	0,0667	
	Rest of OECD	–,0528	
Hungary	Mediterranean basin	0,4689	XX
	China	0,3265	XX
	South-East Asia	0,1731	X
	Extra-EC	0,1568	
	Rest of world	0,1232	
	Intra-EC	0,0410	
	EFTA	–,0162	
	Rest of OECD	–,0693	
Romania	Mediterranean basin	0,5583	XX
	China	0,3967	XX
	South-East Asia	0,2680	XX
	Extra-EC	0,1191	
	Rest of world	0,0614	
	Intra-EC	–,0242	
	EFTA	–,0458	
	Rest of OECD	–,0732	
Bulgaria	Mediterranean basin	0,7478	XX
	China	0,5089	XX
	Rest of world	0,3755	XX
	Extra-EC	0,3641	XX
	South-East Asia	0,3188	XX
	EFTA	0,0581	
	Intra-EC	0,0418	
	Rest of OECD	–,0598	

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on log(specialization) at 3-digit NACE level for 1987 EC imports

	Country group	Rho	
CEEC 5	Mediterranean basin	0,4798	XX
	South-East Asia	0,2762	XX
	China	0,2533	XX
	Intra-EC	0,0988	
	Rest of world	–,0672	
	EFTA	–,1110	
	Rest of OECD	–,1743	X
	Extra-EC	,	
Poland	Mediterranean basin	0,5782	XX
	South-East Asia	0,2581	XX
	China	0,2381	XX
	Rest of world	0,0194	
	Intra-EC	–,0456	
	EFTA	–,1360	
	Rest of OECD	–,2127	X
	Extra-EC	,	
CSFR	Intra-EC	0,2376	XX
	EFTA	0,1072	
	China	0,0171	
	Mediterranean basin	0,0041	
	Rest of world	–,0609	
	South-East Asia	–,0666	
	Rest of OECD	–,1482	
	Extra-EC	,	
Hungary	Mediterranean basin	0,3433	XX
	China	0,2038	X
	South-East Asia	0,1944	X
	Intra-EC	0,1429	
	Rest of world	–,0251	
	Rest of OECD	–,0979	
	EFTA	–,1108	
	Extra-EC	,	
Romania	Mediterranean basin	0,3712	XX
	South-East Asia	0,2725	XX
	China	0,1884	X
	Intra-EC	–,0341	
	Rest of world	–,0556	
	Rest of OECD	–,0837	
	EFTA	–,0886	
	Extra-EC	,	
Bulgaria	Intra-EC	0,2400	XX
	Mediterranean basin	0,1579	
	Rest of world	0,0984	
	EFTA	0,0746	
	China	0,0670	
	South-East Asia	0,0279	
	Rest of OECD	–,1186	
	Extra-EC	,	

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on log(specialization) at 3-digit NACE level for 1992 EC imports

	Country group	Rho	
CEEC 5	Mediterranean basin	0,6101	XX
	China	0,2938	XX
	South-East Asia	0,1183	
	Intra-EC	–,0194	
	Rest of world	–,0545	
	EFTA	–,1131	
	Rest of OECD	–,2624	XX
	Extra-EC	,	
Poland	Mediterranean basin	0,6190	XX
	China	0,2703	XX
	Rest of world	0,1289	
	South-East Asia	0,1111	
	EFTA	–,1284	
	Intra-EC	–,1551	
	Rest of OECD	–,2628	XX
	Extra-EC	,	
CSFR	Intra-EC	0,2181	X
	EFTA	0,0589	
	Mediterranean basin	0,0581	
	China	–,0131	
	South-East Asia	–,1022	
	Rest of world	–,1576	
	Rest of OECD	–,1665	X
	Extra-EC	,	
Hungary	Mediterranean basin	0,3917	XX
	China	0,2000	X
	Intra-EC	0,1093	
	South-East Asia	0,0620	
	Rest of world	–,0453	
	EFTA	–,1077	
	Rest of OECD	–,1752	X
	Extra-EC	,	
Romania	Mediterranean basin	0,6297	XX
	China	0,3306	XX
	South-East Asia	0,2195	X
	Rest of world	–,0740	
	Intra-EC	–,0953	
	EFTA	–,1003	
	Rest of OECD	–,1301	
	Extra-EC	,	
Bulgaria	Mediterranean basin	0,7483	XX
	China	0,3992	XX
	South-East Asia	0,2294	X
	Rest of world	0,0382	
	Intra-EC	–,0928	
	EFTA	–,1414	
	Rest of OECD	–,2553	XX
	Extra-EC	,	

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on log(specialization) at 3-digit NACE level for average 1987-9 EC imports

	Country group	Rho	
CEEC 5	Mediterranean basin	0,4776	XX
	South-East Asia	0,2146	X
	China	0,1945	X
	Intra-EC	0,1516	
	EFTA	–,0825	
	Rest of world	–,0840	
	Rest of OECD	–,1692	X
	Extra-EC	,	
Poland	Mediterranean basin	0,6073	XX
	South-East Asia	0,2021	X
	China	0,1869	X
	Rest of world	0,0491	
	Intra-EC	0,0134	
	EFTA	–,1260	
	Rest of OECD	–,2278	X
	Extra-EC	,	
CSFR	Intra-EC	0,2952	XX
	EFTA	0,1331	
	Mediterranean basin	0,0135	
	China	–,0205	
	South-East Asia	–,0912	
	Rest of world	–,0961	
	Rest of OECD	–,1329	
	Extra-EC	,	
Hungary	Mediterranean basin	0,3136	XX
	Intra-EC	0,1540	
	China	0,1481	
	South-East Asia	0,1424	
	Rest of world	–,0427	
	EFTA	–,0861	
	Rest of OECD	–,0911	
	Extra-EC	,	
Romania	Mediterranean basin	0,3926	XX
	South-East Asia	0,2470	XX
	China	0,1638	
	Intra-EC	–,0195	
	Rest of world	–,0521	
	EFTA	–,0680	
	Rest of OECD	–,0909	
	Extra-EC	,	
Bulgaria	Intra-EC	0,3481	XX
	Mediterranean basin	0,2062	X
	EFTA	0,0624	
	China	0,0498	
	Rest of world	0,0269	
	South-East Asia	–,0170	
	Rest of OECD	–,1256	
	Extra-EC	,	

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on log(specialization) at 3-digit NACE level for average 1990-2 EC imports

	Country group	Rho	
CEEC 5	Mediterranean basin	0,5808	XX
	China	0,2849	XX
	South-East Asia	0,1376	
	Intra-EC	0,0421	
	Rest of world	–,0649	
	EFTA	–,1022	
	Rest of OECD	–,2359	XX
	Extra-EC	,	
Poland	Mediterranean basin	0,6344	XX
	China	0,2851	XX
	South-East Asia	0,1347	
	Rest of world	0,0981	
	Intra-EC	–,1148	
	EFTA	–,1191	
	Rest of OECD	–,2587	XX
	Extra-EC	,	
CSFR	Intra-EC	0,2722	XX
	EFTA	0,0722	
	Mediterranean basin	0,0443	
	China	–,0225	
	South-East Asia	–,1039	
	Rest of OECD	–,1403	
	Rest of world	–,1439	
	Extra-EC	,	
Hungary	Mediterranean basin	0,3365	XX
	China	0,1730	X
	Intra-EC	0,1346	
	South-East Asia	0,0735	
	Rest of world	–,0372	
	EFTA	–,0961	
	Rest of OECD	–,1396	
	Extra-EC	,	
Romania	Mediterranean basin	0,5326	XX
	China	0,2947	XX
	South-East Asia	0,2270	X
	Intra-EC	–,0590	
	Rest of world	–,0779	
	EFTA	–,0832	
	Rest of OECD	–,1071	
	Extra-EC	,	
Bulgaria	Mediterranean basin	0,5740	XX
	China	0,2768	XX
	South-East Asia	0,1365	
	Intra-EC	0,0678	
	Rest of world	–,0230	
	EFTA	–,0482	
	Rest of OECD	–,2087	X
	Extra-EC	,	

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on 1988 growth rates at 3-digit NACE level for EC imports

	Country group	Rho	
CEEC 5	Extra-EC	0,6425	XX
	Rest of world	0,6280	XX
	Mediterranean basin	0,6246	XX
	EFTA	0,5464	XX
	Intra-EC	0,4702	XX
	Rest of OECD	0,1502	
	China	0,0852	
	South-East Asia	–,0212	
Poland	Extra-EC	0,6301	XX
	Rest of world	0,6239	XX
	Mediterranean basin	0,6083	XX
	Intra-EC	0,4189	XX
	EFTA	0,4064	XX
	Rest of OECD	0,1889	X
	China	0,1090	
	South-East Asia	–,0226	
CSFR	EFTA	0,4489	XX
	Intra-EC	0,3945	XX
	Mediterranean basin	0,2840	XX
	Extra-EC	0,1523	
	Rest of OECD	0,1020	
	Rest of world	0,0806	
	South-East Asia	–,0785	
	China	–,0910	
Hungary	Mediterranean basin	0,3894	XX
	Extra-EC	0,2938	XX
	Rest of world	0,2457	XX
	Intra-EC	0,2376	XX
	EFTA	0,2365	XX
	China	0,1912	X
	Rest of OECD	0,1097	
	South-East Asia	0,1011	
Romania	Rest of world	0,5838	XX
	Extra-EC	0,5270	XX
	Mediterranean basin	0,4715	XX
	EFTA	0,3822	XX
	Intra-EC	0,2363	XX
	China	0,0497	
	South-East Asia	–,0272	
	Rest of OECD	–,0694	
Bulgaria	EFTA	0,2931	XX
	Extra-EC	0,2529	XX
	Rest of world	0,2365	XX
	Intra-EC	0,1770	X
	Rest of OECD	0,1736	X
	Mediterranean basin	0,0154	
	South-East Asia	–,0312	
	China	–,0479	

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on log(specialization) at 3-digit NACE level for average 1990-2 EC imports

	Country group	Rho	
CEEC 5	Rest of world	0,3105	XX
	Intra-EC	0,3004	XX
	Extra-EC	0,2177	X
	Rest of OECD	0,0734	
	EFTA	0,0549	
	China	–,0490	
	South-East Asia	–,1527	
	Mediterranean basin	–,1828	X
Poland	Intra-EC	0,4012	XX
	Rest of world	0,2838	XX
	Extra-EC	0,2249	X
	Rest of OECD	0,1009	
	EFTA	0,0832	
	South-East Asia	–,0937	
	China	–,1291	
	Mediterranean basin	–,2346	XX
CSFR	Rest of world	0,2809	XX
	Extra-EC	0,2371	XX
	Intra-EC	0,2250	X
	Rest of OECD	0,0443	
	China	0,0393	
	EFTA	0,0178	
	South-East Asia	0,0016	
	Mediterranean basin	–,0365	
Hungary	Intra-EC	0,2213	X
	Extra-EC	0,1920	X
	EFTA	0,0949	
	Rest of world	0,0905	
	China	0,0793	
	Rest of OECD	0,0438	
	Mediterranean basin	–,0825	
	South-East Asia	–,1120	
Romania	Rest of world	0,3053	XX
	Rest of OECD	0,0164	
	EFTA	0,0063	
	Extra-EC	0,0051	
	Intra-EC	–,0084	
	China	–,1601	
	Mediterranean basin	–,1804	X
	South-East Asia	–,3841	XX
Bulgaria	Rest of world	0,2676	XX
	Intra-EC	0,0833	
	Rest of OECD	0,0478	
	China	0,0412	
	Extra-EC	0,0362	
	EFTA	–,0807	
	Mediterranean basin	–,2319	XX
	South-East Asia	–,2585	XX

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on average 1987-9 growth rates at 3-digit NACE level for EC imports

	Country group	Rho	
CEEC 5	Mediterranean basin	0,6473	XX
	Intra-EC	0,4748	XX
	Rest of world	0,4424	XX
	Extra-EC	0,4415	XX
	EFTA	0,4347	XX
	China	0,1747	X
	Rest of OECD	0,0909	
	South-East Asia	0,0315	
Poland	Mediterranean basin	0,6599	XX
	Rest of world	0,5185	XX
	Extra-EC	0,4641	XX
	Intra-EC	0,4552	XX
	EFTA	0,3704	XX
	China	0,1852	X
	Rest of OECD	0,1210	
	South-East Asia	0,0308	
CSFR	Intra-EC	0,5719	XX
	EFTA	0,4868	XX
	Extra-EC	0,3300	XX
	Mediterranean basin	0,3003	XX
	Rest of OECD	0,1926	X
	Rest of world	0,1477	
	South-East Asia	–,0238	
	China	–,0388	
Hungary	Mediterranean basin	0,4704	XX
	Intra-EC	0,3339	XX
	Extra-EC	0,2771	XX
	Rest of world	0,2683	XX
	China	0,2201	X
	EFTA	0,1853	X
	South-East Asia	0,0799	
	Rest of OECD	0,0778	
Romania	Mediterranean basin	0,4787	XX
	Rest of world	0,3167	XX
	EFTA	0,2565	XX
	Extra-EC	0,1665	X
	China	0,1228	
	Intra-EC	0,0359	
	South-East Asia	–,0069	
	Rest of OECD	–,2308	XX
Bulgaria	EFTA	0,2914	XX
	Extra-EC	0,1243	
	Rest of OECD	0,0728	
	Rest of world	–,0245	
	Mediterranean basin	–,0354	
	South-East Asia	–,0398	
	China	–,0488	
	Intra-EC	–,0809	

XX : significant at 1%,
X : significant at 5%

Correlation coefficients calculated on average 1989-92 growth rates at 3-digit NACE level for EC imports

	Country group	Rho	
CEEC 5	China	0,5601	XX
	Extra-EC	0,4630	XX
	Mediterranean basin	0,3407	XX
	Intra-EC	0,2415	XX
	Rest of world	0,1890	X
	Rest of OECD	0,1824	X
	South-East Asia	0,1102	
	EFTA	–,0390	
Poland	China	0,4531	XX
	Extra-EC	0,2702	XX
	Rest of world	0,1656	X
	Mediterranean basin	0,1586	
	Intra-EC	0,0960	
	Rest of OECD	0,0581	
	South-East Asia	0,0188	
	EFTA	–,2166	X
CSFR	Extra-EC	0,4282	XX
	Intra-EC	0,3566	XX
	Rest of OECD	0,3542	XX
	China	0,3300	XX
	South-East Asia	0,1710	X
	Mediterranean basin	0,1472	
	Rest of world	0,0522	
	EFTA	0,0443	
Hungary	China	0,6111	XX
	Extra-EC	0,5537	XX
	Mediterranean basin	0,4694	XX
	Intra-EC	0,2766	XX
	Rest of world	0,1958	X
	Rest of OECD	0,1925	X
	South-East Asia	0,1710	X
	EFTA	0,1591	
Romania	Mediterranean basin	0,5491	XX
	EFTA	0,5270	XX
	Extra-EC	0,3746	XX
	China	0,2165	X
	Intra-EC	0,1931	X
	Rest of OECD	0,1682	X
	Rest of world	0,1275	
	South-East Asia	0,0717	
Bulgaria	China	0,5173	XX
	Mediterranean basin	0,3840	XX
	Rest of world	0,3414	XX
	Extra-EC	0,3029	XX
	Intra-EC	0,0478	
	South-East Asia	0,0429	
	Rest of OECD	–,0467	
	EFTA	–,1866	X

XX : significant at 1%,
X : significant at 5%

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Chapter 4

Foreign direct investment in the CEECs

Foreign direct investment in the CEECs

John Sheehy[1]

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Introduction

Market reforms in the CEECs[1] and implementation of the Interim Europe Agreements (owing to provisions opening up mutual trade and establishing full mobility of capital flows between the EU and the CEECs) are undoubtedly two major factors which have encouraged the recent growth in foreign direct investment flows (FDI) to the different CEECs from developed countries, especially the EU. New market opportunities and interesting potential investment projects within the CEECs are being thrown up for companies inside and outside the EU to consider exploiting, either to supply the CEEC domestic markets or to supply EU markets from a low-cost base in the CEECs. Such investment flows are important because countries around the world in which FDI has concentrated are believed to have enjoyed, through a variety of channels, accelerated economic growth rates, easier integration into world markets and less painful structural transformation of their economies. There is a hope that, provided sufficiently large volumes of FDI can be attracted, the CEECs may also enjoy all these potential benefits.

The first part of this chapter on FDI in the CEECs presents in some detail the potential benefits for the CEECs of attracting significant quantities of FDI. The second part describes how FDI has actually developed inside the individual CEECs. Something is said about the relative importance of FDI for each CEEC in terms of numbers of operations and value of accumulated stock, the types of organizational arrangement foreign investors seem to prefer, the geographic origin of foreign investors and the sectors which have been the target for most FDI. The third part then tries to identify and rank the most important problems facing foreign investors in the CEECs which discourage potential FDI flows (and therefore adversely affect economic growth). In the fourth part, evidence so far on the sensitive issue of CEEC competition with southern European Member States for FDI is reviewed. The chapter concludes with a part devoted to raising the main issues and questions associated with FDI to the CEECs and offers some very tentative conclusions.

1. The potential advantages for the CEECs of foreign direct investment

In this part, the advantages of foreign direct investment (FDI) for the CEECs are highlighted. No attempt is made to draw out the problems FDI may bring the CEECs. This is not to say that FDI never has drawbacks for the host CEEC (or any country) receiving FDI but experience from around the world suggests that on balance the effect of FDI on a host country is probably positive — such an assessment would explain why countries around the world often compete to lure firms to invest and set up production sites inside their frontiers. Certainly, for now and probably for some time to come, the problems facing CEECs once they have attracted FDI are probably much less significant than the problems posed by failure to attract FDI.

If the CEECs are to become competitive on world markets, their economies need to be developed and restructured. FDI is very important to such a process. It not only helps to generate enhanced output for a given amount of inputs (i.e. raise the general productivity or efficiency of the host country economy), but also to improve the quality of output and increase sales potential on international markets. As a result, export-led growth and prosperity become more likely. Appropriate use of domestic resources alone could have a similar effect, but at a markedly slower pace. An attempt is made below to explain the paths by which FDI generates these salutary effects, taking into account the particular characteristics of the CEECs:

(i) FDI often entails a transfer of technology from the home country (the country from which the FDI originates) to the host country, thereby raising the general level of technology in the economy. The advantages of this are obvious, because the CEECs are notoriously technologically backward;

(ii) FDI involves the transfer of management techniques honed in the investing multinational (FDI and multinationals are inextricably linked — the latter almost always carry out the former) to the host country. Better management techniques lead to better use of existing resources and consequently greater output for a given amount of inputs. Via learning by example or in-house training courses, these management techniques can percolate through the economy. In the CEECs, nearly 50 years of centralized economic planning have left a legacy of non-market oriented managerial traditions so that this effect of FDI is especially valuable;

(iii) with FDI will come all the experience and tricks of sales techniques acquired by the investing multinational during its corporate life. During the period of economic planning, the CEEC economies were characterized as having sellers' markets and extremely limited competition, so selling output was never a problem. Sales techniques were consequently neglected and undeveloped. On international markets however, especially as CEEC products are relatively unknown, marketing efforts are essential. Otherwise, the danger is

[1] In this note, as in the overall interpenetration project, the CEECs (Central and East European countries) are Bulgaria, Hungary, Poland, Romania and the CSFR — i.e. the Czech and Slovak Republics are treated as still being a united country because data distinguishing the two countries is limited and extremely recent.

that increased economic efficiency and production quality will not be matched by increasing international demand.

(iv) FDI is one way that CEECs can access foreign savings to fund essential capital investment. This is important firstly, because domestic capital for investment is insufficient due to the low rates of CEEC domestic savings. Secondly, because of the inadequacy of the financial services sector in mobilizing those savings. Furthermore, an investing multinational may be able to tap into international capital markets for investment finance more cheaply than any CEEC or any enterprise originating in a CEEC, because it is viewed as less risky. In this way, CEECs may be able indirectly to acquire more capital than they could have done in the absence of FDI or else acquire the capital more cheaply. The accumulation of capital is essential to raising productivity and economic growth, thereby leading to income growth. Moreover, it is sometimes argued that much of the existing CEEC capital stock is obsolete, poorly maintained, of low quality or simply tied to unprofitable industries, so CEEC capital needs are therefore all the greater if they are to grow fast enough to approach average EU income levels.

(v) FDI will be sectorally concentrated in a host country so as to be able to exploit its comparative advantages. In considering whether to invest, a multinational will investigate which activities the host country may have strengths in relative to the rest of the world. This means knowing what factor endowments the country has (including sources of raw materials, geographic location, industrial traditions and labour endowments). Naturally, multinationals will tend to invest in these strength activities and this will help to raise domestic economic efficiency. This is, again, particularly important in the CEEC context where central economic planners up to 1989 often pursued policies which went against the grain of comparative advantage (such as the creation of excessively large industrial sectors and neglect of light industry). We should note in passing that the use of FDI to exploit comparative advantage is a powerful argument for analysing it in the CEEC context where clues are still being sought to forecast the region's future sectoral specialization.

(vi) the entry of a multinational inside a country may stimulate competition in the domestic economy. The presence of an extra company in a domestic market will put pressure on existing players' market shares, especially where import penetration of the market is for some reason low. Extra competition will force all enterprises supplying a market to strive harder or face failure. This should mean the promotion of more dynamic, innovative enterprise behaviour.

The implication of the above list of FDI advantages is that a certain amount of FDI can have more powerful effects on an economy than the equivalent amount of domestic investment. Therefore, if, as is often argued, investment is an essential component of future economic growth, a substantial flow of FDI to any country must be an encouraging sign of its growth prospects. However, there is at least one further advantage of FDI for a host country, which is certainly true for the CEECs:

(vii) FDI can lead to the development of new activities in the host country whose profits (or rate of return on capital invested) can be taxed, helping to raise government revenue. This is an important issue in the CEECs where rational, market-oriented tax reform is still being carried out and tax revenues are still often inadequate to cover government expenditure.

2. The evolving characteristics of foreign direct investment (FDI) to the CEECs

The first part of this section describes the recent evolution of FDI and the number of foreign operations in the CEECs (for definitions of the different possible types of CEEC operations with foreign participation as well as some of the statistical problems affecting CEEC FDI statistics, see Box 1). The second part describes the various types of organization which can be, and are being used by foreign investors to become involved in the CEECs. The third part identifies the principal Western investor nations in the CEECs and comments on the nature of their investment (small-scale or large-scale), whilst the fourth highlights the sectors into which most FDI is directed.

2.1. The historical evolution of foreign operations in the CEECs

By numbers of operations with foreign partners

The first laws permitting foreign investment and establishing conditions for the creation of joint ventures were passed in Romania and Hungary over 20 years ago. However, it was only during the 1980s that significant numbers of investors began to start operating in the CEECs, especially Hungary, thanks to its increasingly liberal economy (at least by the standards of the rest of the CEECs). However, the turning point for all the CEECs in terms of FDI activity came from 1989 on, when regimes throughout the region collapsed, taking the system of highly centralized economic planning with them. The systemic change led to much more liberal foreign investment laws, and operations involving foreign investment mushroomed (see Table 1) in the new environment.

Table 1

Cumulated number of registered investment projects with foreign participation

	Bulgaria	CSFR	Czech Republic	Slovak Republic	Hungary	Poland[2]	Romania
1985	8	0			44	0	9
1986	8	0			60	0	9
1987	15	7			102	13	5
1988	25	16			270	53	5
1989	30	60			1 000	90	5
1990	140	1 600			5 693	2 799	1 501
1991	900	4 000			9 117	4 796	8 022
1992	1 200	5 995	3 120	2 875	13 218	5 740	20 684
1993[1]	1 300		3 700	3 948	15 311	6 300	26 249

[1] As of 1.7.1993.

[2] Cumulated figures for Poland do not take into account the small-scale foreign investment projects set up by investors of Polish descent (so-called 'Polonia firms') authorized before 1989 (OECD figures).

Source: UN-ECE.

Table 1 shows that in terms of the number of operations with foreign participation, Hungary has remained a great favourite with foreign investors. However, all the other CEECs (apart from Bulgaria) have also seen many more operations with foreign involvement start-up since 1989. Even Bulgaria, although lagging way behind the other CEECs in terms of the numbers of such operations, has seen a seven-fold increase in numbers from 30 in 1989 to 220 in 1992. Nevertheless, for the other CEECs the increase has been even more spectacular. Indeed, Romania is now apparently the leading CEEC in terms of numbers of operations with foreign participation. It is not clear why this should be, but it could be that the capitalization threshold used to compile FDI data is much lower in Romania than elsewhere in the CEECs. In any case, the capitalization of these operations must be very small, so that the overall impact on the economy is still quite insignificant.

One can get a little further information about the sheer numbers of investors interested in each of the CEECs and the way this has developed from Table 2. This gives the results of a survey done for Commission services, as well as data on EU mergers and acquisitions (M&A) activity in the CEECs. As we would expect from the picture painted by Table 1, Table 2 shows that foreign investors were most interested in Hungary prior to 1989 and the start of the marketization process, followed by the CSFR and Poland. However, it is surprising how much closer Poland and the CSFR are to Hungary as locations favoured for investment than the figures giving the numbers of operations might have led us to believe. It is also surprising that Poland appears to have been less attractive to investors than the CSFR, but the difference is small and probably not statistically significant given the number of survey respondents. Overall, the message from the survey matches the results of Table 1, that is, that Hungary was the most favoured location followed by Poland and the CSFR. Meanwhile, Bulgaria and Romania were very unattractive.

Perhaps a little more surprising are the survey figures for the post-1989 period. Once again, Hungary tops the list as the prime investment location. Furthermore, the survey shows it to have been caught up by the CSFR and Poland, which tallies with the results of Table 1. On the other hand, the survey continues to show Bulgaria and Romania as being unattractive to Western investors, and even more so relative to their CEEC neighbours than in the past. This does not at all square with the evidence showing that Romania has the largest number of operations with foreign partners in the entire region given in Table 1 and is further evidence that the Romanian threshold for FDI data collection may be much lower than the other CEECs.

In terms of the gross value of foreign capital invested (Table 3)

Hungary, with a 46% share of all five CEECs' stock of FDI, has clearly been the favourite of foreign investors. Many factors probably contribute to this leading position including its relatively stable business environment, proximity to the EU and Austria and its relatively long market experience. Hungary is followed by the combined Czech and Slovak Republics (25% share) and Poland (21%). Romania (7%) and, especially,

Table 2

Foreign investment in the CEECs pre- and post-1989

	Presence pre-1989 %	Presence post-1989 %	
	(A)	(A)	(B)
Bulgaria	9	3	1
CSFR	24	30	27
Hungary	30	31	50
Poland	21	28	19
Romania	15	8	3

Sources: (A) NERA survey. Based on the results of a telephone survey covering 144 companies selected from the top 500 (by turnover) in Europe and companies of similar size in Japan and the USA.
(B) AMdata. Covers M&A activity by major EC firms in the CEECs and is provided by *Mergers and Acquisitions Monthly*. There were 150 M&A operations recorded between 1989 and 1992.

Bulgaria (1%) are lagging the other countries in the region by a substantial margin.

Table 4, which gives some record of FDI flows to the CEECs, offers a similar view with Hungary, Poland and the former CSFR generally experiencing quite substantial and growing flows since 1989 whilst Romania and Bulgaria have had quite modest inflows. As a consequence, Romania and Bulgaria have been falling further and further behind their neighbouring CEECs. Amongst the three rather successful CEECs, it is interesting to note in 1992 the catch-up in terms of flow of FDI by Poland especially, but also the CSFR compared with Hungary. The Polish experience may reflect its performance as the first CEEC to start coming out of the CEEC-wide economic slump. Meanwhile, flows to Hungary appear to have levelled off. The figure for the CSFR in the first three-quarters of 1993 is also notable because of the apparent slump in FDI flows. This may reflect investors' nervousness over the disunion of the former CSFR into two countries.

Relative importance of FDI to each CEEC

Other synthetic indicators of the importance of FDI to the CEECs are given in Table 5. These too can be used to rank the CEECs by relative attractiveness for foreign investors. Unfortunately, it is not clear which indicator best presents the relative situations. Obviously bigger countries will have larger stocks and flows of FDI as a rule, but smaller countries may well have larger FDI per capita or GNP results than big countries. Of course, where various FDI indicators for one country all show it to be doing better than another, then the message is clear. Thus, Table 5 shows unambiguously that Hungary has the best FDI record of the CEECs because it leads in every indicator, whilst Bulgaria just as clearly has the worst record. It is also clear that the former CSFR follows Hungary in terms of success at attracting FDI. However, the situation is not quite so clear when comparing Poland's record with that of Romania. In terms of FDI stocks and flows per IMF-calculated US dollar GNP, although not for PPP-calculated GNP,

Table 3

Stock of foreign capital invested in the CEECs (million USD)

Year	Bulgaria	CSFR	Hungary	Poland	Romania
1989		256	550	100	
1990		436	1 460	374	112
1991		1 100	3 000	480	269
1992	57	900	3 423	1 546	538
	(1%)	(25%)	(46%)	(21%)	(7%)
1993		>2 349[1]	3 875[2]		679[2]

NB: Figures in parentheses give the percentage breakdown of total foreign investment in Eastern Europe in 1992 by individual country.
[1] 1 October 1993.
[2] July 1993.
Sources: OECD, UN-ECE.

Table 4

Net inflows of foreign direct investment, 1988-92 (flows of capital committed or invested in million USD)

Year	Bulgaria	CSFR	Czech Republic	Slovak Republic	Hungary	Poland	Romania
1989		256	171		187	91	
1990	4	199	120		337	88	- 18
1991	56	594	511		1 459	117	37
1992	42	1 054	983	71	1 471	284	73
1993[1]	50		561	75	1 200	580	50

[1] Preliminary estimates
NB: The net inflows data does not tally well with the FDI stock data in the previous table.
This is because the data has come from disparate sources. Nonetheless, the general picture remains the same.
Source: OECD, UN-ECE, PlanEcon (for Czech Republic between 1989 and 1991).

Romania does better than Poland. Still, Romania's apparent superiority in these indicators is marginal, whilst Poland is superior in all other indicators. Therefore, Poland is still revealed to be considered a better target for FDI than Romania amongst the CEECs.

The CEECs' FDI record in an international context

Although the period since 1989 and the collapse of State-planned socialism throughout the CEECs has seen a surge in FDI flows to the region, nonetheless they remain small by comparison with FDI activity around the world. The most up to date data gives the value of the current stock of FDI in the CEECs as less than USD 20 billion. Contrast that with the recorded global investment flows in 1993 alone of around USD 200 billion. Nor was the CEECs' share of FDI going to emerging markets (principally Asia and Latin America) around the world in 1993 impressive — at the very most only 10% of the USD 56 billion total.

Amongst the CEECs, only Hungary seems to be achieving a flow of FDI which compares with the flows achieved by Western countries known to have benefited from FDI. In the period since 1989 up to the end of 1992, Portugal enjoyed an increase in its stock of FDI equal to about USD 675 per capita. This is at least double Hungary's record, but is six times or more than the FDI record of the other CEECs.

Table 5

Importance of FDI relative to population and GNP

	1 (million USD)	2	1/2 (USD)	3 (billion USD)	1/3 (%)	4 (billion USD)	1/4 (%)	5 (million USD)	5/2 (USD)	5/3 (%)	5/4 (%)	4/2 (USD)	2 x USD 675 (million USD)
Bulgaria	57	8,7	7	6,2	0,9	38,5	0,1	42	4,8	0,7	0,1	4 425	5 873
CSFR	1 900	15,6	122	33,2	5,7	109,4	1,7	1 054	67,6	3,2	1,0	7 013	10 530
Hungary	3 423	10,3	332	32,8	10,4	57,1	6,0	1 471	142,8	4,5	2,6	5 544	6 953
Poland	1 547	38,3	40	75,5	2,0	154,7	1,0	284	7,4	0,4	0,2	4 039	25 853
Romania	538	23,2	23	23,2	2,3	63,4	0,8	73	3,1	0,3	0,1	2 733	15 660
Portugal			675										

[1]: FDI as of 1.1.1993.
[2]: Population in millions.
[3]: IMF-based 1991 GNP figures.
[4]: PPP-based 1991 GNP figures as published in PlanEcon.
[5]: FDI flow in 1992 according to OECD.

Table 6

Investment structure chosen

Investment structure chosen[1]	CEEC-5		Investment structure chosen[2]	CEEC-5
Joint venture	31,5%		Acquiring other companies	
Acquisition	9,6%	57,5%	or forming JVs	59,0%
JV-acquisition	16,4%			
Greenfield	35,6%	35,6%	Working alone	41,0%
No response	6,9%			

Sources: [1] Business International/Creditanstalt.
[2] Deloitte Touche Tohmatsu International.

2.2. The various organizational types into which FDI is flowing

As we can see from Table 6, in terms of numbers of foreign operations sited in the CEECs, FDI tends to occur most often in the form of a joint venture (JV) with a CEEC enterprise or an acquisition of a CEEC enterprise. This is to be expected as JV-type operations were, until 1989, more or less the only type of organization permitted for foreign investment. However, even if the legal form in which FDI can occur within the CEECs is no longer constrained, nonetheless there continue to be various advantages for a Western firm choosing the joint venture option to investment in the CEECs. Firstly, investment via a JV could help Western firms avoid some of the difficult administration complications which arise in attempting to purchase a CEEC enterprise outright from State privatization agencies. Secondly, the tax chargeable on initial investments is often lower than for the other legal forms available for foreign investment. Thirdly, investment via a JV may offer the Western partner a lower profile and help it to avoid becoming the target of political vitriol.

The second most important organizational type for foreign investment in the CEECs is greenfield development. Table 6 shows that some 40% of investors in the CEECs have entered the market this way. It implies that Western investors are often unwilling to become involved with existing CEEC enterprises with their associated antiquated management and production structure problems.

As for link-ups between CEEC enterprises and foreign partners, Table 7 (based partly on survey results, partly on AMdata) shows that most foreign investors are acquiring a controlling share (with the possible exception of Hungary where the longer experience of markets may make foreign investors feel more confident about not having control). Apparently, foreign investors are keen to ensure that they can stamp their working practices, techniques and strategies on any operation that they are involved in the CEECs. Since 1989, the acquisition of a minority shareholding in a CEEC enterprise has never exceeded 20% of the total number of M&As.

Table 7

Percent participation in CEEC investment

Percent participation in CEEC investment	CEEC-5[1]		CEEC-5[2]
up to 30%	2,7%		
31 to 49%	6,9%	12,3%	9,3%
50%	2,7%		
50% + 1 share/51%	5,5%		
52 to 99%	26,0%	72,6%	90,7%
100%	41,1%		
no response	15,1%		

Sources: [1] Business International/Creditandstalt.
[2] AMdata (cumulative figures for 1989-92).

Table 8

FDI by origin of investment (% of number of projects in each CEEC)

Geographic origin	CSFR 1.4.1991	Hungary 2Q 1993[1]	Poland 10.1991 to 7.1993	Romania 1.7.1993	Bulgaria 1.1.1991
EC + EFTA	84,2	58,5	65,4	38,0	60
EC[2]	39,5	38,9	52,3	32,9	60,0
Germany	24,5	23,4	24,9	11,8	
Belgium	0,9	1,0	2,5	1,1	
Italy	3,9	6,0	5,6	9,9	
France	3,1	2,1	5,2	3,5	
United Kingdom	3,1	2,8	3,5	1,4	
Netherlands	3,1	2,4	6,2	1,4	
Denmark	0,4	0,3	1,9	0,3	
Other EC		0,8	2,5	3,5	
EFTA	44,7	19,6	13,1	5,1	
Austria	35,1	14,0	5,4	2,2	
Switzerland	7,0	3,5	2,1	1,3	
Finland	0,9	0,4	0,4	0,0	
Sweden	1,7	1,4	4,2	1,2	
Japan	0,0	0,3	0,4	0,1	
USA	1,8	6,4	8,6	5,2	
Others	32,5	34,8	25,5	56,7	

[1] First two quarters of 1993.
[2] Minimum possible share coming from the EC.
Sources: OECD.

Table 9

FDI by origin of investment (% of foreign capital inflow)

Geographic origin	CSFR			Hungary			Poland			Romania			Bulgaria
	1.4.1991 (1)	1.10.1992 (2)	1.4.1993 (3)	1.1.1991 (1)	1.1.1992 (4)	1992 to 2Q 1993[1] (7)	1.1.1991 (1)	1.1.1992 (5)	10.1991 to 7.1993 (7)	1.1.1991 (6)	1.7.1992 (2)	1.7.1993 (7)	1.1.1991 (6)
EC + EFTA	54,6	66,8	57,5	61,7		77,2	79,3	80,0	58,5	60,0	40,4	67,3	60,0
EC[2]	40,6	60,2	53,1	29,9		53,6	53,4	58,0	50,6	53,0	38,1	63,2	53,0
Germany	9,7	39,8	32,2	9,3	17,0	18,4	29,2		6,5		14,0	8,0	
Belgium	0,1	5,8	7,1	6,6		16,0	2,2		0,2		0,0	0,2	
Italy	0,2	0,0	0,0	5,1		3,9	5,2		30,1		5,1	12,7	
France	9,9	14,6	13,8	1,0	10,0	5,9	3,8		2,0		14,1	11,3	
United Kingdom	5,0	0,0	0,0	5,2		3,2	3,7		2,6		0,0	12,0	
Netherlands	6,3	0,0	0,0	2,0		5,7	7,1		5,9		4,9	8,1	
Denmark	9,4	0,0	0,0	0,7		0,1	2,2		2,6		0,0	0,0	
Other EC						0,5			0,7			10,8	
EFTA	14,0	6,6	4,4	31,8		23,6	25,9	22,0	7,9	7,0	2,3	4,1	7,0
Austria	9,0	6,6	4,4	23,7	13,0	18,0	5,9		1,7		2,3	1,4	
Switzerland	4,8	0,0	0,0	3,6		5,0	3,9		1,0		0,0	1,4	
Finland	0,0	0,0	0,0	0,0		0,1	5,3		0,1		0,0	0,0	
Sweden	0,2	0,0	0,0	1,7		0,4	8,7		1,6		0,0	0,5	
Japan	0,0	0,0	0,0	0,1	8,0	0,5	0,3	0,5	0,2		0,0	0,1	
USA	0,0	21,1	29,5	10,8	33,0	5,1	7,9	14,0	38,9	9,0	11,4	9,9	9,0
Others	32,5	12,1	13,0	25,5		17,2			2,4			22,7	

[1] First two quarters of 1993.
[2] Minimum possible share coming from the EC.
Sources: (1) OECD report, p. 90.
(2) Coopers and Lybrand report, p. 29.
(3) OECD report, p. 100.
(4) OECD report, p. 91 + own calculations for %.
(5) OECD report, p. 87.
(6) OECD report, p. 86.
(7) UN-ECE.

2.3. The geographical origin of Western investors in the CEECs

By number of operations

At the more general level (see Table 8), EFTA and the EU together (Western Europe) are extremely important as a source for FDI going into the CEECs. The EU dominates in terms of the numbers of projects in Hungary, Poland, Romania and Bulgaria, whilst EFTA dominates in the CSFR. Within the EC, it is German-originating companies that lead by a large margin. In Poland, the CSFR and Hungary, they are behind roughly a quarter of operations with foreign participation. Amongst EFTA countries, it is Austrian and Swiss enterprises that are most involved in the CEECs, although Finnish investors seem noticeably interested in Poland. In fact, in the CSFR Austrian partners are the most numerous of all foreign investors. The main non-West European partners in FDI activity in the CEECs are American, especially in Poland, Romania and Hungary where they generally represent the second or third most important group by investor nationality.

By value of operations

From this perspective (see Table 9) the EU and EFTA have again dominated in the CEECs. Everywhere in the CEECs the EU has been the prime source for FDI. Once again, Germany tends to be the leading Member State, although the gap between it and other Member States is tending to narrow. Indeed, in Poland, Italy has eclipsed Germany (possibly due to the large FIAT investment for production of the Cinquecento and the Lucchini steel investment). Conversely, in the CSFR, Germany's importance has grown a lot since 1991, which probably reflects the VW-Skoda link-up. Apart from Germany, France, Belgium, Italy and the Netherlands are all quite important investors in the CEECs.

Amongst EFTA countries, Austria tends to dominate FDI flows, especially in Hungary. As for non-West European investors, the USA is very important, especially in the CSFR and Poland. Its importance as a source for FDI is relatively more than in terms of numbers of project involvements, suggesting that projects with US involvement are relatively

Table 10

FDI operations by number of operations

Bulgaria (1)		CSFR (1)		Hungary (2)			Poland (2)			Romania (2)[1]		
Activities	% share	Activities	% share	Activities	No operations	% share	Activities	No operations	% share	Activities	No operations	% share
				Agriculture, hunting, forestry	255	1,7		113	1,1	Agriculture	8 079	6,9
				Mining	43	0,3	Mining + manufacturing	3 463	34,2	Mining	589	0,5
Production activities	30,0			Manufacturing, of which:								
				• Textiles, apparel, leather	400	2,6	Other material production	618	6,1	Light industry	12 593	10,8
				• Wood, paper and publishing	520	3,4						
				• Refined petroleum and chemicals	309	2,0						
				• Non-metallic prods	128	0,8						
				• Basic metals and metal products	343	2,2						
				• Recycling and other manuf	140	0,9						
		Food	11,7	• Food and tobacco	335	2,2				Food	14 854	12,7
				• Machinery and equipment	801	5,2				Machine-building	2 973	2,5
										Electronics	5 702	4,9
										Electrotechnics	5 404	4,6
Manufacturing and mining	30,0		11,7		3 019	19,7		4 081	40,3		NA	NA
				Electricity, gas, water	15	0,1						
		Construction	12,7	Construction	850	5,6	Construction	757	7,5	Infrastructure	8 533	7,3
Commerce	26,0	Trade	6,0	Wholesale/retail	7 152	46,7	Trade	3 605	35,6	Trade	25 277	21,6
Services/tourism	22,0			Hotels/restaurants	544	3,6				Tourism	14 346	12,3
		Transport/communication	29,4	Transport/communications	599	3,9	Transport	345	3,4	Transport	16 222	13,9
							Communication	25	0,2	Telecommunications	1 706	1,5
		Banking	10,5	Financial	122	0,8	Finance and insurance	130	1,3	Banking	828	0,7
				Real estate/business	2 171	14,2	Real estate activities	9	0,1			
				Education	79	0,5	Education	36	0,4			
				Health/social work	112	0,7	Health/social work	53	0,5			
				Other social/ personal services	393	2,6	Other social services	680	6,7			
R&D and engineering consultancy	17,0											
Services	65,0		58,6		1 203 7	78,6		5 640	55,7		NA	NA
Other			29,6	others				297	2,9			
Total					15 311			10 131			26 249	

Sources: (1) National statistics/OECD.
(2) UN-ECE.

[1] Totals and shares are meaningless for Romania because of double-counting.

larger than projects with West European involvement. Indeed, at the end of 1992, six of the top 10 acquisitions in the CEECs were bought by US companies.[1] The statistics also suggest that US foreign investors are most interested in putting their money into the CSFR or Poland of all CEECs.

2.4. Sectoral distribution of FDI

Table 10 shows that the number of operations with foreign partners set up to provide services in each of the CEECs constitute the bulk of such operations. Especially important within the services sector have been operations with foreign participation starting up in wholesale or retail trading.

Conversely, as Table 11 shows, manufacturing or production activities have been the focus for the bulk of FDI flows, reflecting their relatively high start-up costs when compared with services. An interesting point to note is the relatively high share of FDI into Hungary absorbed by the food and tobacco industries. This may reflect Hungary's sectoral privatization strategy, which is as yet incomplete and which began with the food and tobacco industries. In this case, we would expect the sectoral shares of FDI in Hungary to change significantly as the privatization programme progresses.

1 According to the *Financial Times*, 14.1.1993, based on UN-ECE data.

3. Main obstacles facing foreign investors in the CEECs

As we have seen, investors are increasingly interested in the CEECs following the start of the marketization process (especially Hungary, Poland and the former CSFR), but they nevertheless remain rather cautious about making heavy commitments (except, perhaps, in Hungary or one-off projects in other CEECs). There are numerous reasons for their caution, which can be classified under the global headings of macroeconomic, microeconomic and legal or institutional problems. This part tries to identify the most important problems under each of these global headings, and then makes use of various surveys on investors in the CEECs to try to rank the importance of the problems.

3.1. Macroeconomic problems

Thanks to the previous system of centralized economic planning, the CEECs were left with excessively developed

Table 11

FDI operations by value (million USD)

CSFR		Hungary			Poland			Romania[1]		
Activities	% share	Activities	Value	% share	Activities	Value	% share	Activities	Value	% share
		Agriculture, hunting, forestry	32,1	0,8				Agriculture	73,7	4,6
		Mining	48,9	1,3	Mining and manufacturing	1 226,5	76,5	Mining	86	5,4
		Manufacturing, of which:								
		• Textiles, apparel, leather	114	2,9				Light industry	72,3	4,6
		• Wood, paper and publishing	144,5	3,7						
		• Refined petroleum and chemicals	255,2	6,6						
		• Non-metallic prods	187,7	4,8						
		• Basic metals and metal products	165,6	4,3						
		• Recycling and other manuf	28,3	0,7						
Food	11,7	• Food and tobacco	688	17,8				Food	181,4	11,4
		• Machinery and equipment	566,3	14,6				Machine-building	102,5	6,5
								Electronics	41	2,6
								Electrotechnics	33	2,1
Manufacturing and mining	11,7		2 198,5	56,7		1 226,5	76,5		NA	NA
		Electricity, gas, water	18,8	0,5						
Construction	12,7	Construction	156,3	4,0	Construction	50,5	3,2	Infrastructure	119,3	7,5
Trade	6,0	Wholesale/retail	480,4	12,4	Trade	285,8	17,8	Trade	451,4	28,4
		Hotels/restaurants	125,2	3,2				Tourism	200,8	12,6
Transport/communication	29,4	Transport/communications	72,8	1,9	Transport	39,6	2,5	Transport	183,5	11,6
								Telecommunications	24,3	1,5
Banking	10,5	Financial	437,4	11,3				Banking	18,8	1,2
		Real estate/business	316,9	8,2						
		Education	1,8	0,0						
		Health/social work	14,4	0,4						
		Other social/personal services	20,6	0,5						
Services	58,6		1 644,6	42,4		375,9	23,5		:	:
Other	29,6	Others				216	13,5			
Total			3 875,2			1 818,4			:	:

[1] Totals and shares are meaningless for Romania because of double-counting.

Table 12

What investors perceive to be problems about investing in the CEECs

		Survey score (a)	(b)	(c)
Macroeconomic problems	Economic environment too uncertain/investment too risky	1	—	1
	Political and social environment unsuitable	2	—	3
	Lack of developed market economy	—	3	—
	Uncertainty with regard to price trends	—	5	—
Microeconomic problems	Lack of suitable business partner	4	—	2
	Lack of finance/lack of capital market	3	4	—
	Likely profitability too low	5	—	—
	Valuation	—	—	5
	Restructuring costs too high	—	—	6
	Lack of physical infrastructure	—	—	6
	Clear corporate governance	—	—	8
Legal problems	Lack of clearly defined legislation/legal system too ambiguous	—	1	3
	Lack of property rights/establishing clear ownership	—	2	5
	Takes too long to set up/negotiating with public authorities difficult	6	—	4
	Environmental liabilities	—	—	7

NB: The lower the score, the more important the reason.
'—' Indicates that question was not asked in the relevant survey.
Sources : summary of surveys in: (a) Deloitte Touche Tohmatsu International.
(b) EBRD.
(c) Business International/Creditandstalt.

heavy industrial sectors (highly dependent on cheap energy imports) and rather neglected agricultural sectors at the start of their reform process. Compounding their problems, the CEECs had to contend with various external shocks just as they began to reform, including the collapse of intra-CMEA trade and the difficulty of accessing commercial credit against a background of high net national debt. The result was a drastic cut in industrial production, leading to rapid falls in GDP and increases in unemployment. At the same time, inflation and budget deficits have tended to remain difficult to control. Under these circumstances, consumer demand has slumped, making it more difficult for companies to succeed in making sales, and therefore justify investment.

Survey results — potential investors

For potential foreign investors, the chief macroeconomic obstacle to investment is indeed the sheer uncertainty of the CEECs' economic environment (see Table 12). Indeed, it appears in two out of three surveys reported in Table 12 to be the most important of all obstacles discouraging investment in the CEECs. Unfortunately, it is not too clear what precisely respondents to the survey were thinking about when they gave this reason for avoiding the CEECs. It does not appear from the Table that they were as concerned about price inflation, so that cannot be the reason. Nor did they seem to mean that the CEECs are not mature market economies. Perhaps the answer is that investors may still be wary about the durability of the market reforms or the stability of economic policy when domestic economic conditions are so bad that a social backlash is plausible. Certainly, investors do seem concerned about the political and social environment, if we can accept the survey results.

Table 13

Ten worst problems encountered with operating and managing companies in the CEECs

1	'Red tape' delays or problems relating with officialdom
2	Internal organizational problems
3	Weakness of banking system
3	Lack of adequate communication systems
4	Political instability
5	Lack of managerial skills
6	Non-convertibility of currency
7	Lack of commercial circuits
8	Lack of information on the local situation
9	Lack of foreign sources of financing
10	Lack of investment guarantees
10	Difficulties of guaranteeing supplies

Source: Summary of survey in EBRD report.

Survey results — operating investors

Supposing that despite these formidable reasons to be cautious about the CEECs, Western economic agents nevertheless go ahead and make an investment. In this case, an interesting result of a survey carried out by the EBRD (see Table 13) on the problems encountered in operating enterprises in the CEECs was that only one macroeconomic problem figured amongst the 10 worst problems — namely, currency convertibility.

3.2. Microeconomic obstacles

There are numerous microeconomic problems facing foreign investors, and an attempt is made to split them into two types in what follows:

Structural difficulties which hinder optimal enterprise operations

Despite evidence that labour in the CEECs is relatively skilled, nonetheless there is a deficiency of understanding about how markets operate. This deficiency takes various forms — lack of rigorous accounting experience, ignorance of marketing, and apparently perverse practices lingering on from the era of central planning such as the accumulation of vast stocks (including labour) or the desire to maintain vertically integrated enterprise structures. Training programmes, market-driven incentives and privatization are all helping to rectify this deficiency, but as the skills necessary to operate under free markets are quite different from those necessary under planning, they take time to develop.

Finding effective partners in the CEECs with whom to embark on an investment is difficult. The reasons for this depend on whether the partner is an enterprise or a person or persons. In the former case, enterprises that existed in the central planning era will have structural difficulties in being able to adapt to market forces. In the case of partners being individuals, then the problem could partly be because entrepreneurial activity in the CEECs was suppressed under central planning and is still not widespread. Or it could partly be because in choosing an effective partner in the CEECs Western investors cannot expect to be able to find a long track record of market success in the past which could give them confidence. Once partners are chosen and the Western investor does not have a controlling share of the equity or management board, there is evidence that the CEEC partners are very inflexible in adapting to the changing market environment.

The CEECs' capital stock is obsolete, being rather old, technologically backward, and adapted to cater for the rather undemanding standards of the former CMEA markets. As a result, its productivity is low by international standards.

Infrastructure is another difficulty. Roads and railways are inadequate and have been poorly maintained, telecommunications are rather primitive, and the electricity supply often outstripped by demand in some CEECs. Transport inadequacies become more important the further away an enterprise is from Western markets, especially EFTA and the EU (if it was set up to supply those markets). Romania and Bulgaria are at a disadvantage here compared to the other three countries.

Making sales within the CEEC region, especially for a foreign investor who has avoided linking up with any existing CEEC enterprise, can be very difficult. Markets are very undeveloped and so arranging distribution of output is not easy. As a corollary to this, it can also be very difficult to obtain inputs essential for production.

Finally, enterprise operation is hindered by the lack of supporting services, especially financial ones.

Financial problems

Acquiring assets in the CEECs, especially equity in an enterprise, is prone to serious valuation difficulties. First of all, the absence of property rights and markets under central planning means that asset evaluation experience is recent and still being learned. Furthermore, stock markets in the CEECs are small and new, so the rigorous market evaluation that faces Western public limited companies is just not possible in the CEECs, making investment in the region much more of a jump in the dark. To these difficulties we can add the fact that internationally acceptable accounting practices are still being learned, that existing CEEC enterprises have built up huge and extensive debts with each other, that taxation is often still rather opaque and in need of reform (which is being tackled), and that the regime of incentives for foreign investment is in flux.

What is clear is that many existing enterprises have antiquated production stock and production processes, and are often very inefficiently vertically integrated. Under these circumstances, Western investors face heavy costs in building up an enterprise's capital stock and making it economically rational through restructuring. However, this is unavoidable if an existing enterprise is to be made viable by becoming internationally competitive.

Foreign investors face financing difficulties in the CEECs whether from CEEC sources or, to a lesser extent, from external sources. Previously, banks simply helped to implement the central plan. Risk assessment skills and sophisticated financial instruments were unheard of in the CEECs. As foreign

investment in the banking sector remains restricted and many CEEC banking personnel (as in other CEEC sectors) resist changes to their working practices, this situation is improving only gradually. Currently, banks in the CEECs still display a preference for lending to the same large enterprises that they always used to, and are wary of new enterprises seeking funding.

Something else that can be a problem is currency convertibility. The CEECs have introduced currency convertibility to an extent, most of all in the CSFR, Poland and Hungary, where current account convertibility is completely free. However, there are still difficulties with capital account convertibility which means that capital flows, including repatriated profits or individual earnings, can be restricted.

Survey results — potential investors

There is no very clear message to be had from the survey results shown in Table 12. It does appear that microeconomic problems in general are of less concern to potential investors than macroeconomic or legal and institutional problems. There is some evidence too that potential investors do believe quite strongly that they will have difficulties with local partners. On the other hand, although establishing clear corporate governance in the CEECs is felt to be a problem, nonetheless it is not felt to be so important. This may reflect investors' realization that purchasing majority stakes in CEEC enterprises or starting greenfield developments is possible.

Survey results — operating investors

On the other hand, after a foreign investor establishes an operation in the CEECs, microeconomic problems apparently come to dominate the top 10 worst problems encountered (Table 13). Topping the list are internal organizational problems, presumably affecting foreign investors involved in acquisitions or joint ventures. After that, the weakness of the banking system and the poor communication system are cited.

3.3. Legal or institutional obstacles

To be permitted to operate in the CEECs, Western investors must register with various CEEC authorities and obtain permissions from them (such as permission to build, purchase land, factories, etc.). However, it is not always apparent to which authorities one must go — local, regional or national, or some combination of the three. Furthermore, even if it is clearly established which authorities must be approached, problems remain. For the administrators, as is true elsewhere in the CEECs, have old habits which persist making them obstructively bureaucratic. Unfortunately, it is also true that with the legal system changing rapidly it is often difficult even for the domestic authorities to keep abreast of developments. In that case, they naturally tend to be cautious and act slowly.

Indeed, the rapidly changing legal system makes it generally difficult to know clearly what the law obliges or requires. This ambiguity is not appreciated by foreign investors, even if it is part of a process whose goal is to produce a modern, market-oriented legal system.

One particular area of the law which still remains unresolved (at least to the satisfaction of foreign investors) concerns property rights. Laws covering this area are still new and accumulating, so there is plenty of uncertainty.

Another problem is the CEECs' widespread environmental degradation. Cleaning this up is still a contentious issue, and investors are worried that they may be landed with the extremely expensive bill.

Survey results — potential investors

For potential investors, the still-evolving legal situation is clearly seen as the most serious problem. Indeed, it is perceived as almost as important a problem as the depressed macroeconomic climate. The danger of being made liable for environmental degradation is also mentioned as a problem, but it seems to be considered one of the less serious problems in investing in the CEECs.

Survey results — operating investors

For investors already operating in the CEECs, the biggest problem of all is a legal one: the red tape and difficulties involved in dealing with public authorities.

4. How much competition is there between the CEECs and southern European Member States for FDI?

In the context of growing economic interpenetration between the EU and the CEECs, it is interesting to know how much the CEECs compete for FDI against the southern European Member States (especially Spain and Portugal) given that FDI is often held to have been one of the main factors underlying southern Europe's strong economic growth rates in the 1980s. Furthermore, the very recent slowdown in FDI to at least some of the southern Member States in the most recent period may perhaps be contributing to reduced growth by those economies. Given that the southern European economies have incomes per

capita lower than the EU average, that they are in recession and that they have relatively high levels of unemployment, such a development would naturally be viewed with some concern. Consequently, much effort is being put into finding answers as to why FDI flows might be tailing off in this way. A plausible answer is that, thanks to their reform processes, it may be that the CEECs are succeeding in diverting FDI flows away from southern Europe. This section reviews some of the existing work that has been done to answer this question. Unfortunately, most work done so far discusses the point only in relation to Spain. However, any lessons that can be drawn about Spain probably apply to Portugal and Ireland as well.

NERA (1992) argues that to the extent that FDI is designed to create production facilities which supply local or proximate markets, then Spain, Portugal and Ireland have little to fear from an overall competitive threat from the CEECs. Even Greece and Italy, which are closer to the CEECs are insulated from competition because amongst their nearest CEEC neighbours are Bulgaria and Romania, whose economies are much less developed in human capital at least (and their reform processes are relatively retarded). On top of that, NERA argues that being a prominent target for FDI requires a country to have significant political and economic credibility. Judging by the Spanish experience, where significant FDI flows did not begin for five to 10 years after the death of Franco, this takes some time for a reforming country to establish. It is, therefore, unlikely that FDI flows to the CEECs will grow much for a few more years at least (on the other hand, it is already five years since transformation began in the CEECs and, secondly, five years after Franco's death there was an attempted military coup in Spain — the point being that sufficient time may now have passed for investors to feel confident in at least some CEECs, especially Hungary, Poland and the Czech Republic, where serious market-oriented reforms have been undertaken). On the other hand, the CEECs may be able to attract FDI which would otherwise have gone to southern Europe in sectors which are dependent on low labour costs (such as semi-finished clothing and footwear). This comparative advantage of the CEECs may also lead to some outflow of FDI from southern Europe. The development of OPT trade is an indicator that this is indeed happening.

Another point made by NERA is that the countries which are providing the bulk of FDI to the CEECs such as Germany and Austria are not countries which are leading investment sources for southern European Member States. Therefore, this is also evidence that the CEECs are not diverting FDI from southern Europe.

The NERA report also provides an investment survey of major companies which gives some further indications about FDI competition between the CEECs and southern Europe. The conclusions of the survey were that despite the current recession, the new potential opportunities available in the CEECs due to the potential of large new markets has attracted much interest by these companies, even though not to any significant degree. However, only 15% of companies said that their FDI into the CEECs had been money which was initially meant for southern Europe. Generally, the money had come from a completely different budget, usually involving small amounts which do not require significant cutbacks elsewhere. Also revealed is that potential foreign investors are not making decisions based on the costs of capital or reserves of cheap labour. Nor do the investors surveyed see any significant comparative difference between the CEECs and southern Europe in the underlying skill levels of their respective labour forces.

The NERA report also highlights two sectors where FDI has been particularly significant in the CEECs. One is telecommunications, where competition between companies has caused a herd effect[1] so that even reluctant investors have become involved in what is considered to be a potential major new market. The other sector is chemicals, although no reason is given why this should be.

It is also possible to argue that foreign investors may be tempted to increase the total volume of foreign investment to the whole of Europe (some of which may flow to southern Europe) because they believe that the growing integration of the CEECs with the EU provide new profitable opportunities. If this is so, even if the CEECs are taking a larger share of total FDI flows to Europe, the effect on southern Europe is minimal because the total FDI flows are larger than they would have been in the absence of marketization in the CEECs.

In a forthcoming report, Gual and Martin (1994) are extremely dubious about the proposition that the CEECs may be serious competitors for FDI. According to their findings, FDI into Spain has been aimed at exploiting and controlling larger and larger shares of a large and growing domestic market, and not to use Spain as an export base whose international competitivity is assured by low wage costs. First of all, manufacturing industries which have received significant FDI do not show a pronounced bias to export and, secondly, FDI into Spain after 1986 especially has been mainly directed at the services sector — characteristically non-tradables such as real estate, retailing, finance and insurance in particular. On top of that, the geographic location of FDI in Spain has been extremely concentrated and predominantly to the more advanced, high-income, industrialized parts of the country where labour costs are highest (but infrastructure, market access, and the pool of human capital is also best). In other words, foreign investors in Spain are revealed to not be

[1] The phenomenon of 'hysterical' FDI is well recognized whereby FDI takes place only where previous FDI has already occurred because many firms are unwilling to invest in an area until others have done so.

particularly interested in low labour costs because they are not locating to the parts of Spain where labour is cheapest but, rather, to those parts where labour is actually most expensive. On the other hand, the authors argue that low labour costs are the supreme locational advantage of the CEECs for foreign investors. Therefore, Spain cannot be facing significant competition for FDI from the CEECs.

This argument is completely supported by the findings of Bajo-Rubio and Sosvilla-Rivero (1994). Using econometrics to evaluate certain hypotheses concerning the determinants and evolution of foreign investment in Spain, they find, first of all, that Spain's relatively large, stable and growing economy is a significant attractant. The implication of this is that the recent decline in FDI flows to Spain is not contributing to the slowdown in economic growth, rather it is the slowdown in growth which is putting off potential investors. Secondly, rising unit labour costs are only found to impact negatively on FDI into Spain which is directed towards non-manufacturing activities. Otherwise, it is found to have no significant effect. The authors speculate that this may even be evidence that foreign investors prefer skilled labour over the availability of cheap unskilled labour. To back up their argument, the authors point to the poorer Portuguese record in attracting FDI compared to Spain, despite Portugal having relatively lower wage costs than Spain. This, they argue, clearly shows that large domestic markets with a plentiful supply of skilled labour more than compensates for competitively low wages.

5. Main issues and questions

In order to know better what impact significant flows of FDI into the CEECs could have, both within the CEECs themselves and on the EC, we need to know more about the flows. Three broad categories of questions can be asked which, if they could be answered, would give an insight into the future industrial restructuring of the CEECs:

5.1. Investing to exploit domestic supply shortfalls?

There is a perception that the CEECs could become an expanding market which, especially as consumers were traditionally poorly catered for, may offer many opportunities to enterprises willing to make the existing supply shortfalls. Are foreign investors seeking to plug these gaps? An essential condition for this type of investment is unrestricted currency convertibility and profit repatriation, or the cast-iron assurance that they will be introduced in the not too distant future. The CEECs are fulfilling these conditions and so probably are increasingly attractive to investors. Investors would also, however, be looking for economic stability and growth because that would help stoke up aggregate demand. On this score, the CEECs are unimpressive. However, investors may have expectations of a brighter future. Certainly, survey results in NERA (1992) and Business International (1992) suggest that foreign investors are most interested in the CEECs' domestic markets above all other possible virtues.

5.2. Investing in export-oriented industries?

Will the CEECs attract investors seeking a low-cost springboard from which to export to Western Europe? This could be the case if labour costs are low and expected to remain low by West European standards (despite the apparently high level of skills available), labour productivity is fine and transport costs are not serious. Export industries requiring sophisticated infrastructure — good transport links and communication — seem unlikely to be the target for FDI given that lack of adequate communication links do seem to be a serious problem. Furthermore, foreign investors are only going to consider production for export if Western TBs and NTBs are insignificant or likely to become so. In this regard, the Europe Agreements must encourage export-oriented investors. And if foreign investment is forthcoming for this purpose, is it flowing into sectors where Western demand is growing slowly or into fast-growing sectors? If to the latter, the competitive effect on the EU may be much less. Once again, the surveys conducted by NERA (1992) and Business International (1992) suggest that investment to create export sites is not as important an attraction as domestic market opportunities, although investors do seem attracted by the possibilities of reducing production costs, especially labour costs. This does suggest that export possibilities to the EU are kept in mind. Certainly, some of the big individual investment projects in the CEECs such as VW in the former CSFR and FIAT in Poland are clearly involved in both exports and domestic supply.

5.3. Investing in high or low technology industries?

Recent studies have suggested that the CEECs are quite well endowed with skilled labour. Consequently, it is concluded that their future specialization could be in products which are human-capital intensive, not labour-intensive. Do FDI flows so far suggest any such trend? The evidence does not offer many clues, but the fact that it is not even mentioned as a factor in the various surveys reviewed suggests that such a trend is not appearing.

Box 1: Definitions and statistical problems

Foreign direct investment in the CEECs is not rigorously defined. Any participating interest by a foreign entity in the capital of a domestic enterprise (regardless of the amount of such participation) has served as the basis for inclusion in FDI statistics. Furthermore, reporting of statistics covers either registered or operational enterprises. For registered enterprises, the statistics include commitments by foreign and local partners to invest certain capital assets in a new company. However, such commitments do not necessarily mean that a real transfer of resources occurs. In fact, only in Hungary and the CSFR are investments registered after payment of the statutory capital.

The operations with foreign partnerships recorded in a CEEC's foreign investment statistics are newly created joint ventures (wholly CEEC-owned enterprises with foreign partners), newly established wholly foreign-owned subsidiaries, and privatized enterprises which have had some or all of their equity taken over by foreign investors. Until recently, foreign operations were synonymous with joint ventures, and the vast majority of operating enterprises with foreign partners in the CEECs continue to be joint ventures.

Another problem in the compilation of statistics covering the stock of FDI in the CEECs is that it covers only the committed monetary contributions of the foreign and local partners in a JV at the moment of registration. Increments due either to later additional paid-in capital or capitalization of reinvested earnings of the company are ignored.

Owing to rapid inflation and consequent currency devaluation in some of the CEECs, estimates of the actual flows (and, therefore, accumulated stocks) of FDI depend significantly on the exchange rate used to convert values given in national currencies back into the US dollar standard. In this note, UN-ECE figures are used which means that average yearly exchange rates are used to make the necessary conversion. However, the IMF and the OECD recommend that end-of-period exchange rates should be used for such a purpose. In the case of Poland, the sum of FDI invested at the end of 1992 would have 21% lower than is recorded in this note had the IMF/OECD method been used.

Even if one tries to obtain FDI flow figures based on the capital account in the CEECs' balance of payments, this still leads to an underestimation because FDI in kind is not included (i.e. the transfer into the CEECs of physical assets from elsewhere in the world).

The quality of the statistics is further undermined by differences amongst the CEECs as to just how much FDI data is available, the non-uniformity of indicators collected by each CEEC, and the differing time periods in which the data are collected. This makes cross-country comparison extremely difficult.

Nonetheless, to end on an encouraging note, the CEECs are making considerable progress in harmonizing their FDI data collection systems with internationally agreed standards, so that the quality and comparability of the data is beginning to improve.

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Chapter 5

Trade access issue

Transition through trade: Do the Europe Agreements go far enough? An assessment of the market access provisions of the interim Europe Agreements

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1. Trade: cornerstone of the transition process

With the collapse of their command economy systems, and the virtual cessation of intra-regional trade organized under the auspices of CMEA,[1] the Central and Eastern European countries (CEECs) have been forced to search out new markets and sources of hard currency earnings. Access to Western markets is, therefore, the economic and political cornerstone of the transition process to a market economy. From an economic perspective, trade is imperative for several reasons — as an outlet for goods and services hitherto traded with the former command economies, as a source of hard currency earnings, to encourage foreign direct investment (FDI), and finally to *introduce competitive forces into previously centrally planned* markets. Politically, trade with Western economies signifies the process of renewed integration with the industrialized democracies, and is a necessary stepping stone towards accession to the EU.

The key role of the EU in promoting the transition process through trade is highlighted by the rapid growth in trade flows with the CEECs since 1989. The CEECs in the space of five years, have jumped from registering a declining share in extra-EU imports to the ranks of the most dynamic trade partners. As indicated in Table 1, growth rates for the value of imports from the CEECs reached over 20% in 1992, with domestic supply side conditions in the CEECs, rather than remaining EU trade barriers, apparently acting as the constraining factor on additional growth.

The growth in trade has meant that the EU has become the dominant trade partner for the CEECs in a very short time period, see Table 2. In 1989, the EU accounted for some 22% of total exports from the CEECs, ranging from 6% in Bulgaria to 30% in Poland. By 1992, this share had jumped to 48%, with the share of Bulgarian exports undergoing a fivefold increase to 30% and that of Poland to 56%. A corresponding increase was recorded in the sourcing of CEECs imports from the EU. On average, 19% of total CEECs imports in 1988 came from the EU: by 1992 this figure had risen to 44%.

The EU has sought to support the transition process through trade by undertaking a fundamental reorganization of market access conditions for the CEECs. Trade liberalization by the EU culminated in the signing of six Europe Agreements (EAs) between 1991 and 1993, which will establish a (bilateral) free trade area for non-agricultural products within 10 years. As made clear by the EU Heads of State or Government following their meeting in Copenhagen in June 1993, the ultimate goal of the EAs is the accession of the CEECs to the European Union. Prior to the transition process, the CEECs had fallen under a special (and restrictive) trade regime which is applied to State-trading economies.

Declaration on enlargement of the EU Heads of State or Government at the Copenhagen Council of 21 and 22 June 1993

'The European Council today agreed that the associated countries in Central and Eastern Europe that so desire shall become members of the European Union. Accession will take place as soon as an associated country is able to assume the obligations of membership by satisfying the economic and political conditions required.'

Some of the provisions contained in the EAs go beyond trade, and deal with matters such as the harmonization of legislation and technical cooperation. They therefore, fall within the exclusive competence of the Member States, and can only enter into force following their ratification by all EU and CEEC national legislatures. This is a time-consuming process, and the legal state of play of the Agreements is set out in Annex 1. Pending the ratification of the EAs, so-called interim Europe Agreements (IAs) are in operation, which essentially pertain to the trade and some trade-related aspects of the EAs. The immediate entry into force of the IAs was possible since trade policy lies within the competence of the EU, and hence did not require approval by national EU legislatures.

This paper examines in detail the market access conditions for industrial products in the IAs, with a view to determining whether EU trade liberalization sufficiently supports the transition process. The overall conclusion is positive, with the speed and depth on EU trade liberalization being without precedent, and is more substantial than that undertaken by other industrialized countries *vis à vis* the CEECs. Furthermore, the massive expansion of EU-CEECs trade, as illustrated in Table 1, has coincided with EU trade liberalization.

All trade agreements are long, complex documents, which can only be properly understood by a detailed examination of the fine print. To this end, this paper is divided into four sections. Section 2 reviews the market access conditions in the IAs, with special consideration given to sectors where the EU did not undertake full liberalization immediately (for example, 'sensitive' sectors, ECSC products, textiles and clothing, etc.). Section 3 examines EU recourse to contingent protection (i.e. safeguard actions and anti-dumping measures), the scale and scope of EU recourse to such measures and their impact on trade and investment. Section 4 analyses the rules of origin set out in the IAs, which are an essential operational component

[1] Council for Mutual Economic Assistance.

Table 1

EC-CEEC trade in manufactured goods 1987 to 1992

EU imports (billion ECU)

	1987	1988	1989	1990	1991	1992	average 1987-89	average 1990-92
CEECs	7,28	8,22	9,30	10,52	13,60	16,74	8,27	13,62
Poland	2,05	2,55	2,84	3,96	4,97	5,98	2,48	4,97
ex-CSFR	1,78	1,95	2,23	2,40	3,68	5,10	1,99	3,73
Hungary	1,64	1,82	2,18	2,55	3,14	3,55	1,88	3,08
Romania	1,45	1,55	1,65	1,17	1,21	1,33	1,55	1,24
Bulgaria	0,35	0,35	0,40	0,44	0,60	0,76	0,37	0,60

EU exports (billion ECU)

	1987	1988	1989	1990	1991	1992	average 1987-89	average 1990-92
CEECs	8,02	8,41	10,08	10,52	15,21	18,87	8,84	14,87
Poland	2,03	2,46	3,30	3,72	6,66	6,97	2,60	5,78
ex-CSFR	1,90	1,97	2,14	2,34	3,43	5,63	2,00	3,80
Hungary	2,16	2,12	2,67	2,62	3,14	3,75	2,32	3,17
Romania	0,59	0,56	0,64	1,02	1,09	1,56	0,60	1,22
Bulgaria	1,33	1,30	1,32	0,82	0,89	0,98	1,32	0,90

EU trade balance (billion ECU)

	1987	1988	1989	1990	1991	1992	average 1987-89	average 1990-92
CEECs	0,74	0,19	0,78	– 0,00	1,61	2,14	0,57	1,25
Poland	– 0,02	– 0,09	0,46	– 0,25	1,69	0,98	0,12	0,81
ex-CSFR	0,12	0,02	– 0,09	– 0,06	– 0,25	0,53	0,02	0,07
Hungary	0,52	0,31	0,49	0,08	– 0,00	0,19	0,44	0,09
Romania	– 0,86	– 1,00	– 1,01	– 0,15	– 0,12	0,22	– 0,96	– 0,02
Bulgaria	0,98	0,95	0,93	0,38	0,30	0,30	0,22	0,95

Percentage growth rate in the value of EU imports

	1987	1988	1989	1990	1991	1992	average 1987-89	average 1990-92
CEECs		5	20	4	45	24	12	23
Poland		21	34	13	79	5	27	28
ex-CSFR		4	9	9	46	64	6	38
Hungary		– 2	26	– 2	20	19	11	12
Romania		– 5	15	59	7	43	4	34
Bulgaria		– 2	2	– 38	9	9	0	– 10

Percentage growth rate in the value of EU exports

	1987	1988	1989	1990	1991	1992	average 1987-89	average 1990-92
CEECs		13	13	13	29	23	13	22
Poland		24	11	39	26	20	18	28
ex-CSFR		9	14	8	53	39	12	32
Hungary		10	20	17	23	13	15	18
Romania		7	6	– 29	3	10	7	– 7
Bulgaria		1	14	11	36	27	7	24

Source: Eurostat (Comext).

Table 2

Percentage of total CEECs trade accounted for by EU

	Exports					Imports				
	1988	1989	1990	1991	1992	1988	1989	1990	1991	1992
Bulgaria[1]	5,8	6,7	10,4	15,7	30,8	16,7	16,5	14,8	20,7	32,6
CSFR[2]	24,2	25,7	32,0	40,7	49,5	17,7	17,8	32,1	34,3	42,0
Hungary	22,5	24,7	34,2	47,6	49,5	25,2	28,5	31,5	40,4	42,4
Poland[3]	30,3	32,1	46,8	55,6	55,6	27,2	33,8	42,5	49,9	53,1
Romania	24,0	26,7	31,4	34,2	32,5	6,2	6,1	19,6	27,4	37,5
Total[4]	22,5	24,5	33,5	44,6	48,2	19,2	20,8	27,8	39,5	44,7

[1] Basic data comes from Planecon except for flows with the EC, Eastern Europe includes Yugoslavia.
[2] Import data from national customs statistics in crowns converted into dollars at current exchange rates.
[3] *Note:* the total includes Albania.
[4] The various sources are not compatible between each other. Totals for the region and country trade balances are given for illustrative purposes only.
Source: United Nations, Economic Commission for Europe, 1993.

of any preferential trade agreement. Finally, Section 5 compares the provisions of the IAs with similar bilateral trade agreements negotiated between the EFTA countries and the CEECs.

2. The market access conditions of the Europe Agreements: an overview

2.1. General provisions

The creation of a free-trade area between the EU and associated CEECs within 10 years is the principale objective of the IAs. To this end, the EU eliminated all tariffs and quantitative restrictions on industrial products on the date of entry into force of IAs, save for products listed in various annexes (Article 3 in IA, Article 9 in EA). Although these moves partly reflect the confirmation of previous concessions, including the granting of GSP[1] eligibility, they nevertheless show a fundamental improvement in market access compared to the pre-1989 situation. This rapid liberalization is in sharp contrast to the lengthy negotiations on market access which formed part of the Uruguay GATT Round (and which took more than seven years to complete), and reflects the high priority which the EU has attached to supporting economic transformation in the CEECs.

The scale of CEEC exports falling under this general provision depends on the commodity composition of their trade with the EU. As indicated in Table 3 tariffs and quantitative restrictions were immediately removed on some 50% of the value of all industrial imports from CEECs were abolished. Bulgaria recorded the highest percentage, over 55%, which achieved unrestricted access to the EU. Only Romania recorded a significantly lower figure (25%), a result almost entirely explained by the importance of textiles and clothing in Romanian exports to the EU.

Exceptions to the general provision are some basic industrial products listed in Annexes IIa and IIb to the IAs, sensitive products listed in Annex III, textiles and clothing products (Protocol 1) and certain ECSC products (Protocol 2). All quantitative restrictions (QRs) were removed when the IAs took effect with the exception of certain textile and clothing products (which remain subject to quantitative restrictions until these have been progressively phased out), and certain coal products imported into Spain and Germany. Tariff reductions on the abovementioned product categories are phased so as to achieve complete liberalization by 1 January, 1997 for the Czech and Slovak Republics, Hungary, and Poland, and 1 January 1998 for Bulgaria and Romania. The 1997 deadline is somewhat misleading, since tariffs on all industrial products will be abolished by 1 January 1995, with the exception of residual and substantially reduced tariffs on textiles and some coal and steel products: moreover, zero tariffs already apply to most outward processing trade (textiles). Liberalization timetables are similar but not identical for associated, and hence are outlined per country in Tables A to E in Annex 2.

[1] Generalized system of preferences.

Table 3

Breakdown of market access conditions of imports from CEECs in 1992

	ex-CSFR		Hungary		Poland		Romania		Bulgaria	
	% trade	MFN	% trade	MFN	% trade	MFN	% trade	MFN	% trade	MFN
Basic products A (Annex IIa)	1,1	5,3	0,2	5,0	0,3	7,5	0,0	4,3	0,4	4,0
Basic products B (Annex IIb)	0,0	6,2	0,2	6,0	0,7	3,7	0,4	6,0	0,6	3,6
Sensitive products	26,3	8,8	20,1	8,8	23,4	7,9	29,9	6,7	8,7	8,7
Textiles (Protocol 1)	12,9	12,1	21,3	12,5	18,8	13,3	37,8	13,3	28,1	12,8
ECSC coal (Protocol 2)	2,4	1,3	0,0	0,5	7,2	3,4	0,0	0,4	0,2	8,3
ECSC steel (Protocol 2)	8,2	4,0	3,7	3,5	4,9	3,3	6,5	4,6	6,5	3,9
Other industrial products	49,1	5,1	54,5	5,1	44,7	3,6	25,4	6,1	55,5	4,6
Total	100	6,8	100,0	7,5	100,0	6,4	100,0	8,9	100,0	7,2

Note: % trade = % share in total imports of EU from respective CEEC partner.
MFN = 1992 MFN tariff in %.
References in parentheses refer to the text of the IAs.
Source: Möbius and Schumacher, 1994.

2.2. Basic industrial products — Annexes IIa and IIb to the interim Europe Agreements (IAs)

A first category of products not covered by the general provision are certain basic industrial products and raw materials listed in Annex IIa and Annex IIb to the IAs. The products affected include salt, sulphur, earths and stone, alkali metals, leather, ferro-alloys, unwrought aluminium and lead, and other base metals, see Table 4. Note that the products listed are not the same for all associated countries. These products, however, represent only a small percentage of the total exports from CEECs to the EU, as presented in Table 3, with the highest figures of 1% for the ex-CSFR, Poland and Bulgaria.

As regards tariffs on items in Annex IIa, the EU reduced duties to 50% of the basic duty when the IAs entered into force, and eliminated the remainder one year later. This implies that as of 1 January 1994, the EU has not applied these tariffs on imports from any associated country. On products listed in Annex IIb, EU tariffs were reduced by 20% of the initial duty on the date of entry into force, and by a further 20% at the beginning of the second calendar year after the entry into force. Total abolition is to be achieved by the end of the second year. Therefore, they no longer are applied to imports from Hungary, Poland and the Czech and Slovak Republics, and will be eliminated at the end of 1994 on imports from Romania and Bulgaria. Initially, the IAs provided for complete removal of tariffs after four years: however, liberalization was speeded up as part of the Copenhagen conclusions.

Table 4

Main products listed in Annex IIa and IIb of the interim Europe Agreements

	Bulgaria	ex-CSFR	Hungary	Poland	Romania
Annex IIa	Leather	Tantalum	Aluminium oxide and hydroxide	Ferro-chromium	Leather
	Unwrought lead	Aluminium	Leather	Leather	Tungsten
	Cadmium	Ferro-(silico-)chromium	Titanium	Salt	Zirconium
	Aluminium		Ferro-silico-manganese		
Annex IIb	Unwrought zinc	Ferro-silicon	Aluminium	Zinc	Unwrought aluminium

Source: Möbius and Schumacher, 1994.

2.3. Sensitive products (Annex III to the IAs)

The products listed in Annex III to the IAs roughly correspond to the 'sensitive products' within the generalized system of preferences (GSP). For these products, all quantitative restrictions were abolished on the date of entry into force of the IAs, but remain subject to either tariff quotas or tariff ceilings. The products affected vary for each associated country, and are listed in Table 5. They represent a sizeable share of total CEEC exports to the Community, ranging from 8,7% in Bulgaria to 29,9% in the Czech and Slovak Republics in 1992.

Tariff ceilings and tariff quotas as provided for in the IAs are a very light and transparent market access condition. In both cases, tariffs on imports below a predetermined threshold are suspended. With tariff quotas, duties are automatically reintroduced once this threshold level is breached. In contrast, with tariff ceilings, the Commission retains discretion as regards their reimposition.

In any event, the protection afforded by both tariff ceilings and tariff quotas will decline rapidly over time for two reasons. Firstly, the actual tariff levels on imports exceeding tariff quotas and tariff ceilings are reduced annually by 15% of the basic duty (10% for Hungary). Furthermore, the actual thresholds for tariff quotas or ceilings are being increased by 20% per annum (15% for Hungary). All tariff quotas and ceilings will be phased out three years after the IAs take effect, i.e. end 1994 for Hungary, Poland and Czech and Slovak Republics and end 1995 for Romania and Bulgaria. The initial IAs provided for complete liberalization of products listed in Annex III after five years, but this was accelerated as part of the package agreed in Copenhagen.

The overall liberalization undertaken by the EU as regards sensitive products has therefore been very substantial. Many tariff quotas are non-binding, in that supply side factors prevented the CEECs reaching the quota levels. In addition, tariff ceilings are unlikely to constitute a significant trade barrier as the reimposition of tariffs only occurs if ceilings are broken by a very large amount, and also if the proposal for their reintroduction is supported by several Member States. Furthermore, a ceiling is only likely to be breached well into the calendar year, and delays in administrative procedures mean that the reimposition of tariffs may take several months to be enacted. This means that the reimposition of relatively low tariff rates will tend to occur towards the end of the calendar year, which subsequently will be suspended at the beginning of the following calendar year.

Table 5

Most important products listed in Annex III of the IAs, 1992

Bulgaria		ex-CSFR		Hungary		Poland		Romania	
Product	Share[1] in %	Product	Share[1] in %	Product	Share[1] in %	Product	Share[1] in %	Product	Share[1] in %
Footwear, uppers of leather	3,2	Passenger cars	4,5	Footwear, uppers of leather	3,2	Furniture (metal, etc,)	3,3	Furniture (metal, wooden, etc,)	11,7
Disodium carbonate, sodium bicarbonate	1,6	Cement	2,1	Polymers of styrene	1,6	Passenger cars	3,3	Seats	5,1
Mixtures of urea	1,2	Furniture (metal, wooden, etc)	1,9	Seats	1,5	Seats	2,5	Footwear, uppers of leather	2,9
Ammonium nitrate	0,8	Footwear, uppers of leather	1,8	Electric filament or discharge lamps	1,2	Cement	1,2	Cement	2,0
Certain mineral or chemical fertilizers, nitrogenous	0,6	Tubes, pipes, etc, of iron or steel	1,7	Polyvinyl chloride	1,1	Footwear, uppers of leather	1,0	Glassware for table, etc,	1,4
Ethylene glycol	0,5	Seats	1,4	Pneumatic tyres and inner tubes, of rubber	0,9	Copper bars, rods, profiles, wire	0,7	Tubes, pipes etc, of iron or steel	1,0
Urea	0,2	Glassware for households, etc,	1,2	Sheets, bands	0,8	Casein	0,7	Mixture of ammonium nitrate	0,4
Vitamin C	0,2	Trucks	1,0	Polythene	0,8	Pneumatic tyres and inner tubes, of rubber	0,7	Passenger cars	0,4
Tableware, porcelain or china	0,2	Pneumatic tyres and inner tubes, of rubber	1,0	Suitcases, bags	0,8	Mixtures of urea	0,6	Tableware, porcelain or china	0,4
Mixtures of ammonium nitrate	0,1	Tractors	0,9	Horticultural sheet glass, wired glass	0,8	6-Hexanelactam	0,6	Pneumatic tubes and inner tubes, of rubber	0,4

[1] Share in EC imports of industrial products from the respective country.
Source: Möbius and Schumacher, 1993.

2.4. Textiles and clothing (Protocol 1 of the IAs)[1]

Textiles and clothing represent an important and growing share of CEEC exports to the EU. In 1992, textiles and clothing represented 16,7% of the total value of CEEC exports to the EU, compared with 13,5% in 1988. In 1992, the share of textiles and clothing in total exports to the EU (in value terms) ranged from 12,6% in the case of the ex-CSFR to 35% in the case of Bulgaria. Table 6 presents an overview of the EU-CEEC trade in textiles and clothing over the period 1988-92. In general, exports of textiles and clothing from the CEECs to the EU performed strongly over this period compared to exports from all third countries. Table 6 shows that the EU has a trade surplus with the CEECs in textiles and a trade deficit in clothing. This partly reflects the importance of so-called outward processing trade (OPT), i.e. international subcontracting whereby the EU exporting fabrics which are then re-imported as clothing. Hence, the picture that emerges is

[1] *This section is largely drawn from Nagarajan (1994).*

Table 6

Overview of EU-CEECs trade in textiles and clothing 1988-92

	Textiles						Clothing				
Imports (million ECU)											
	1988	1989	1990	1991	1992		1988	1989	1990	1991	1992
CEEC	339	356	415	498	581	CEEC	1 072	1 185	1 406	1 917	2 580
Poland	64	66	85	116	129	Poland	304	336	508	750	979
CSFR	154	159	179	233	287	CSFR	108	116	141	277	411
Hungary	68	74	98	99	98	*Hungary*	274	307	362	456	573
Romania	37	37	32	29	29	Romania	352	389	337	343	463
Bulgaria	16	20	20	21	38	Bulgaria	34	38	57	91	154
Extra-EC	9 699	10 730	11 425	11 890	11 630	Extra-EC	15 958	17 985	20 551	25 553	26 511
Annual growth rate of imports (%)											
	1988	1989	1990	1991	1992		1988	1989	1990	1991	1992
CEEC		5,0	16,6	20,1	16,7	CEEC		10,5	18,6	36,4	34,6
Poland		3,8	28,8	36,0	11,3	Poland		10,3	51,3	47,7	30,6
CSFR		3,2	12,2	30,3	23,4	CSFR		7,1	22,3	95,5	48,6
Hungary		8,9	33,6	1,1	- 1,5	Hungary		12,1	18,1	26,0	25,5
Romania		- 0,8	- 12,0	- 10,7	1,9	Romania		10,5	- 13,4	1,7	34,8
Bulgaria		23,4	1,5	5,1	78,7	Bulgaria		11,7	51,5	59,2	69,6
Extra-EC		10,6	6,5	4,1	- 2,2	Extra-EC		12,7	14,3	24,3	3,7
Share in total EU imports from the CEECs (%)											
	1988	1989	1990	1991	1992		1988	1989	1990	1991	1992
CEEC	3,2	2,9	3,2	3,1	3,1	CEEC	10,3	9,8	10,8	11,9	13,7
Poland	1,9	1,7	1,7	1,9	1,8	Poland	9,1	8,7	9,8	12,1	13,8
CSFR	7,0	6,2	6,6	5,7	5,2	CSFR	4,9	4,5	5,3	6,8	7,4
Hungary	3,1	2,8	3,4	2,7	2,5	Hungary	12,7	11,9	12,4	12,6	14,4
Romania	1,7	1,4	2,0	2,0	2,1	Romania	15,8	15,3	21,0	23,4	33,0
Bulgaria	3,5	3,7	3,4	2,8	4,2	Bulgaria	7,3	7,1	9,8	12,1	17,2
Trade balance (million ECU)											
	1988	1989	1990	1991	1992		1988	1989	1990	1991	1992
CEEC	348	462	551	809	1 196	CEEC	- 936	- 994	- 1 147	- 1 530	- 2 075
Share in total extra-EU imports of textiles (%)											
	1988	1989	1990	1991	1992		1988	1989	1990	1991	1992
CEEC	3,5	3,3	3,6	4,2	5,0	CEEC	6,7	6,6	6,8	7,5	9,7

Source: Comext, SITC categories 65 and 84.

Table 7

Quota utilization rates 1986-93

	1986[1]	1989[1]	1992[1]	1993[1]	AQUR[2] import	AQUR[2] OPT[3]	AQUR[2] average
CEEC	71 (47)	54 (37)	44 (5)	34	33	39	35
Bulgaria	25 (8)	11 (1)	15 (2)	11	47	44	46
CSFR	55 (37)	40 (26)	25 (1)	23	50	36	47
Hungary	37 (22)	29 (17)	19 (0)	16	24	32	28
Poland	37 (21)	31 (20)	20 (0)	15	33	38	35
Romania	42 (25)	35 (20)	35 (2)	28	19	54	25

Note: Figures in parentheses represent the absolute number of binding quotas.
[1] Absolute number.
[2] AQUR = average quota utilization rate for 1992.
[3] OPT = outward processing trade.
Source: Nagarajan, 1994.

Table 8

Direct quota utilization rate, 1993

	(%)
Poland	34
Hungary	26
Czech Republic	54
Slovakia	35
Romania	32
Bulgaria	36

Source: Commission services.

one of significant two-way trade between the EU and the CEECs, with much of this trade resulting from the growing internationalization of the location of production. However, the EU market share of CEEC products in 1992 was only 0,6% for textiles and 3,5% for clothing (including OPT).

Prior to the beginning of economic transition in Central and Eastern Europe, EU imports of textiles and clothing products from the CEECs were managed through bilateral agreements negotiated under the Multifibre Arrangement (MFA). The MFA is the multilateral agreement which aims at the orderly and equitable development of trade in certain textile and clothing products through the reduction of trade barriers and the avoidance of disruptive effects in individual markets. EU policy is to negotiate bilateral agreements whereby the exporting countries agree to restrict their exports to agreed levels. Since the administration of these quantitative restrictions is the responsibility of the exporting countries themselves, they function as a form of voluntary export restraint.

In order to encourage economic recovery in the CEECs and support the transition to a market economy, the EU increased certain important quotas in 1990 and 1991, for the Visegrad[1] countries, and similarly in 1991 and 1992 for Romania and Bulgaria. The additional quotas for outward processing trade (OPT) operations were improved in 1991 on being incorporated into the bilateral textiles agreement. OPT occurs when firms export semi-finished products for further processing and subsequent re-import. These measures, together with the granting of GSP tariff treatment, therefore predate the IAs themselves.

The market access conditions for textiles and clothing are contained in Protocol 1 to the IAs as regards tariff concessions, and in the additional Protocol on textiles as regards quantitative aspects. Although outside the scope of the MFA, the additional Protocols follow the normal structure of MFA type bilateral agreements and they use the standard EU product categorization system.

The IAs provide for the elimination of tariffs over five years (originally six years but reduced to five by a decision of the European Council at Copenhagen) while quotas between the parties will be eliminated on 1 January 1998 (Visegrad countries) and 1 January 1999 (Romania and Bulgaria). In

[1] The Czech Republic, Hungary, Poland and the Slovak Republic.

addition, a special tariff exemption is already granted for OPT operations under the relevant EU regulation.

Erzan and Holmes (1992) examined EU imports from the CEECs over the period 1985-89. They concluded that the CEECs were as constrained as other MFA suppliers but speculated that this situation would improve as the CEECs negotiated preferential access to the EU market. In order to assess whether this has indeed been the case, Nagarajan (1994) presents a number of measures of restrictiveness based on 1992 EU imports which are reviewed in Table 7. Firstly, the number of quotas applied to the CEECs has dropped significantly from 71 in 1986 to 44 in 1992 and 34 in 1993. More significantly, the number of binding quotas has fallen even more from 47 in 1986 to five in 1992. A complementary measure is provided by average quota utilization rates for 1992.[1] There are problems associated with the interpretation of each of these measures: nonetheless the EU has granted considerable liberalization to the CEECs, and that there is little evidence to suggest that they are constrained suppliers, at least in a direct sense.

More recent data for 1993 presented in Table 8 indicates very low average quota utilization rates for direct quotas in 1993. The highest figure is for the Czech Republic at 54% and the lowest for Hungary at 26%. These figures further reinforce the conclusion of a lack of restrictiveness of EU measures.

2.5. ECSC products (Protocol 2 of the IAs)

(i) Steel products (Chapter 1, Article 2 of the Protocol): the share of these various ECSC products in total imports varies considerably from 3,7% for Hungary to 8,2% for the Czech and Slovak Republics. All quantitative restrictions were removed when the IAs took effect, and tariffs, with the exception of Bulgaria, follow an identical liberalization timetable, i.e. to 80% of the basic duty on the entry into force, and subsequently to 60%, 40%, 20%, and 0% at the beginning of subsequent years. Hence, January 1996 will mark the end of tariffs for Bulgaria, Poland, Hungary and the Czech and Slovak Republics followed by Romania one year later. In the case of Bulgaria, duties are reduced by 20% annually from the entry into force of the agreement so as to abolish all duties by the end of the fourth year.

(ii) Coal products (Chapter 2, Article 6): tariffs were reduced to 50% of the basic level on 1 January 1994. On 1 January 1996 the remaining duties will be eliminated. Some minor exceptions to these rules apply to Bulgaria. Romania does not export coal products to the EU, however these products represented 7,2% of total Polish exports to the EU in 1992. Coal products, along with textiles, are the only commodity for which the IA permits the EU to retain quantitative restrictions. All QRs were abolished one year after the entry into force of the agreements with the exception of imports going to Germany and Spain, where national quantitative restrictions must be eliminated at the latest four years after the entry into force of the agreement.

2.6. Overall assessment of the market access granted by the EU

Overall, the interim Europe Agreements constitute a very substantial trade liberalization package, the scale and pace of which is without precedent in the EU, or in other industrialized countries. Over 50% of CEEC exports to the EU trade achieved entry free of tariffs and quantitative restrictions on the day of entry into force of the IAs. For many of the products which were not liberalized immediately, only light forms of trade measures were retained, which do not constitute significant barriers to trade. For example with respect to basic industrial products, tariffs which were initially retained have since been terminated for Hungary, Poland and Czech and Slovak Republics, and will cease to be applied to imports from Romania and Bulgaria at the end of 1994.

The main exceptions to immediate free trade concerned sensitive products, ECSC products, textiles and clothing: even in these sectors, liberalization has been substantive and rapid. For sensitive products, all quantitative restrictions were immediately revoked, and tariffs below tariff quotas and ceilings have been suspended. Tariff-quotas have not proved binding in many cases due to supply-side constraints, and tariff-ceilings in practice are not likely to be a big constraint. Complete liberalization of sensitive products will be achieved by the end of 1994 for Hungary, Poland and the Czech and Slovak Republics, and at the end of 1995 for Romania and Bulgaria. This means that taking account of the general provisions, products listed in Annexes IIa, IIb and III, some 75% of industrial imports from Hungary will be free of tariffs and quantitative restrictions by the end of 1994, with equivalent figures of 77% for the Czech and Slovak Republics and 69% for Poland.[2] With a delay of one year, similar conditions will prevail for 65% of imports from Bulgaria and for 56% of imports from Romania.

[1] Quotas are considered to be binding according to the measure proposed by Erzan and Holmes (1992), i.e. a utilization rate of above 90%.

[2] It should be noted that the real percentage of CEEC imports entering the EU will be higher than the figures presented above, given the zero percent tariffs applied to outward-processing traffic (textiles).

Table 9

Tariff reduction as foreseen in the Europe Agreements and Copenhagen conclusions

	MFN 1992[1]	GSP 1991[2]	1992[3]	1993	1994	1995	1996	1997	1998
CSFR	6,8	4,4	2,1	:	1,4	0,7	:	0,0	0,0
Hungary	7,5	4,5	2,5	:	1,9	1,2	:	0,0	0,0
Poland	6,4	4,0	2,4	:	1,7	1,1	:	0,0	0,0
Romania	8,9	6,2	:	4,8	:	3,6	2,2	:	0,0
Bulgaria	7,2	5,2	:	3,0	:	2,3	1,6	:	0,0

[1] MFN duty rate weighted by eight-digit CN imports within each NACE sector.
[2] GSP duty actually paid.
[3] Duties as foreseen in the interim Europe Agreements and the Copenhagen conclusions.
Source: Möbius and Schumacher, 1994.

The pace and depth of liberalization can be gauged from Table 9, which illustrates the (estimated) average tariff rates resulting from the provisions in the Europe Agreements and the Copenhagen Council conclusions. These average tariff rates are weighted according to the commodity structure of imports in 1992, and hence differences among CEECs occur due to divergent trade patterns. The average MFN (most favoured nation) rate in 1992 ranged from 8,9% for Romania (on account of a high share for textiles) to 6,4% for Poland. GSP status considerably lowered the actual levels of tariffs paid (approximately by one third), and these reductions were more or less doubled on the entry into force of the IAs.

3. Contingent protection

3.1. Anti-dumping measures

3.1.1. The scope of EU anti-dumping measures against CEECs

Both the EAs and IAs contain provisions which allow the EU to apply contingent protection measures (anti-dumping[1] and safeguard actions[2]) against the CEECs under specified conditions. Unlike trade policy measures of a general nature (e.g. tariffs), contingent protection measures are selective and result directly from the behaviour and/or performance of the affected (foreign) industry. This has raised the issue of whether such measures could impose high explicit and 'implicit threat' costs on CEEC exporters, could damage EU consumers and intermediate users, could deter FDI investment in the CEECs, and finally could encourage collusion among CEEC enterprises so as to avoid anti-dumping measures, thus conflicting with the goal of establishing a competitive (multiproducer) market economy. This chapter examines the actual scope of EU anti-dumping actions against the CEECs, the changes brought about by the implementation of the IAs, and possible means for reducing the number of EU anti-dumping actions in the coming years.

Prior to the collapse of the Communist regime, the CEECs accounted for roughly 20% of all EU dumping actions, far higher than their share in total extra-EC imports. However, since the mid-1980s, the number of investigations initiated annually has fallen sharply, from over 20 per year to only two cases each in 1992 and 1993, see Table 10.

Once adopted, EU anti-dumping measures remain in force for five years, implying that the CEECs inherited a considerable legacy of measures from the State-trading era. As illustrated in Table 11, there were 19 anti-dumping measures in force at the end of 1993. Poland faces the highest number of measures (six) followed by Romania (five).

An interesting feature of EU anti-dumping measures against CEECs is the high preponderance of price undertakings. Defendants prefer this outcome to the imposition of duties since they benefit from higher prices. Of the 272 cases between 1980 and 1987, some 72% were terminated with price undertakings, of which 55% concerned East European countries (Tharakan, 1991 b).[3] The most striking feature of

[1] Article 23 of the IA, Article 29 of the EA.
[2] Article 24 of the IA, Article 30 of the EA.

[3] The exporting enterprise may gain if increased revenues from higher prices offset any reduction in producer surplus brought about through constrained production. Account should also be taken of general welfare losses for the exporting economy, if factors of production shift away from the constrained industry to less efficient sectors.

Table 10

Initiation of anti-dumping cases against CEECs, 1988-93

	1988	1989	1990	1991	1992	1993
Bulgaria	1	1				1
ex-CSFR	1	1		1		
Hungary	1	1		1		1
Poland	1	1		2	1	
Romania	2	2			1	
Total	6	6	0	4	2	2

Source: various annual reports on the Community's anti-dumping activities.

Table 11

Anti-dumping measures in force against CEECs as at 31.12.1993

Czech and Slovak Republics		
Product	Measure	Publication
Artificial corundum	Undertakings	OJ L 275, 2.10.1991
Methenamine	Undertakings	OJ L 104, 24.1.1990
Hungary		
Product	Measure	Publication
Artificial corundum	Undertakings	OJ L 275, 2.10.1991
Seamless steel tubes	Duty + undertakings	OJ L 120, 15.5.1993
Urea	Undertakings	OJ L 52, 24.2.1989
Bulgaria		
Product	Measure	Publication
Copper sulphate	Duties	OJ L 23, 27.1.1989
Methenamine	Undertakings	OJ L 104, 24.1.1990
Sodium carbonate	Duties	OJ L 131, 13.5.1989
Poland		
Product	Measure	Publication
Artificial corundum	Undertakings	OJ L 275, 2.10.1991
Ferro-silicon	Duty + undertakings	OJ L 369, 18.12.1992
Methenamine	Undertakings	OJ L 104, 24.1.1990
Seamless steel tubes	Duty + undertakings	OJ L 120, 15.5.1993
Silicon carbide	Undertakings	OJ L 287, 10.10.1986
Sodium carbonate	Duties	OJ L 131, 13.5.1989
Romania		
Product	Measure	Publication
Methenamine	Undertakings	OJ L 104, 24.4.1990
Sodium carbonate	Duties	OJ L 131, 13.5.1989
Synthetic textile fibres of polyester	Duties	OJ L 306, 22.10.1992
Welded tubes of iron or steel	Duties	OJ L 91, 06.4.1990
Urea	Undertakings	OJ L 52, 24.2.1989

Source: Commission services.

Table 12

Evaluation of imports from CEECs subject to anti-dumping measures in 1992 (ECU 1 000)[1]

	Measure[2]	Poland	ex- CSFR	Hungary	Romania	Bulgaria	Total	% imports
Artificial corundum	U	**1 543**	**2 727**	**2 862**	11	0	**7 132**	12,8
Copper sulphate	D	3 067	914	0	326	**14**	**14**	0,1
Sodium carbonate	D	**8 326**	129	5	**701**	**10 873**	**19 900**	17,4
		907	2 542	1 842	2	**165**	**1 074**	0,3
Silicon carbide	U	**1 050**	814	74	45	0	**1 050**	1,6
Methenamine	U	**163**	**67**	83	**8**	**79**	**317**	10,6
Urea	U	10 203	13 045	**0**	**3 734**	1 708	**3 734**	3,7
		5	21	**269**	**0**	0	**269**	21,3
Synthetic polyester	D	6 135	1 935	34	**979**	3 451	**979**	0,9
Ferro-silicon	D + U	**81**	1 023	217	0	23	**81**	0,0
		14	0	0	0	0	**14**	0,1
		14	4	95	0	53	**14**	0,1
Seamless steel	D + U	**465**	2 063	**54**	2 954	45	**519**	1,8
pipes and tubes		**566**	667	**0**	927	0	**566**	1,9
iron or non-alloy		**113**	514	**235**	0	4	**348**	4,9
steel		**6 818**	35 380	**3 756**	739	929	**10 574**	13,4
		7 401	6 152	**1 409**	9	7	**8 810**	29,3
Welded tubes of	D	62	5 225	2	**0**	0	**0**	0,0
iron or non-alloy		2 834	9 594	69	**3 999**	1	**3 999**	12,6
steel		0	1 235	87	**0**	104	**0**	0,0
		1 530	1 546	804	**349**	0	**349**	0,7
Total (ECU 1 000)		**27 461**	**2 794**	**8 585**	**9 772**	**11 131**	**59 743**	
% imports[3]		0,39	0,05	0,22	0,70	1,24	0,32	
% industrial imports[4]		0,44	0,05	0,26	0,73	1,42	0,36	

Note: Figures in bold are those on which anti-dumping measures currently apply.

1 Anti-dumping measures are sometimes applied to several different specifications of the same product, i.e. several tariff lines are listed in the Commission's Decision,which is printed in the Official Journal. For example, anti-dumping measures were applied against two different specifications of urea coming from Hungary.

2 D = duties; U = undertakings.

3 % of total EU imports from the respective CEEC country.

4 % of total industrial EU imports from the respective CEEC country.

Source: Commission services: trade data from Eurostat (Comext): authors calculations.

Table 11 is that dumping measures are applied to very specific tariff lines across a narrow range of industrial products, mostly basic steel and chemical products.

The limited nature of anti-dumping actions against CEECs is underlined Table 12, which measures the percentage of CEEC trade which is affected by EU anti-dumping measures.[1] In total, only ECU 60 million imports from CEECs were subject to anti-dumping measures, representing 0,32% of total imports and 0,36% of total industrial imports from the CEECs. Bulgaria was most affected with 1,24% of all their exports to the EU being affected, followed by Romania with 0,7%. The CSFR recorded an incidence of virtually zero (0,05%). It should be noted, however, that the low trade coverage figures understate the impact of anti-dumping measures on the CEECs, on account of the implicit threat of anti-dumping measures and also due to the fact that duties/undertakings almost certainly reduce the actual levels of trade flows.

It is not possible from this data to determine the scale of injury to EU producers. Nonetheless, figures in the final column

[1] These figures refer to anti-dumping measures in force against CEECs on 31 December, 1993, using trade data for 1992. However, the orders of magnitude should not have altered substantially.

which show the share of these imports from CEECs as a percentage of total extra-EU imports, suggest that injury, if any, is likely to be limited. Of the products subject to anti-dumping measures in 1992, the CEEC share in extra-EU imports was highest for seamless steel pipes and tubes, 29%. However, the CEEC market share (share of CEEC imports in total EU consumption) is likely to be small given that steel is an industry where domestic producers tend to have high domestic market shares. Hindley (1993), has pointed out that in this case, the Commission used methods of calculation applicable to State-trading economies (basing the dumping calculations of production costs of a like good in Croatia) and offered evidence of dumping for only one out of the five goods affected, namely steel tubes.

3.1.2. Anti-dumping provisions in the IAs

According to the basic dumping Regulations of the EU,[1] a product is considered to be dumped if its export price to the EU is less than the 'normal' value of the like product. Hence, the normal value is the crucial factor in determining whether dumping has taken place and different rules are set out for calculating the normal value of exports from market economies (Article 2.3) and from State-trading economies (Article 2.5). Essentially the anti-dumping provisions of the IAs imply that associated countries fall under market economy rules in the calculation of dumping margins as opposed to the special provisions relating to State-trading economies applied hitherto. In other words, the CEECs now receive exactly the same treatment as all other industrialized trade partners with the exception of members of the European Economic Area.

To determine what this switch-over in rules implies in practical terms requires a detailed review of EU legislation. The box below considers the calculation methods employed with respect to State-trading economies, methodologies which yield high rates of affirmative findings (Tharakan, 1991).

With the shift to market economy rules, the calculation methodologies have changed substantially. A detailed explanation of calculation methods is described in the box below. In particular, the Commission should cease to use reference countries in calculations, and instead examine prices or costs on the domestic market of the CEEC concerned. This change in rules, however, does not settle the issue as many problems remain.

The calculation of dumping duties for State-trading economies

Article 2.5 of Council Regulation (EEC) 2423/88 states that for imports coming from non-market economies, the normal value 'shall be determined in an appropriate and not unreasonable manner on the basis of one of the following criteria

(a) the price at which the like product of a market economy third country is actually sold:

(i) for consumption on the domestic market of that country, or

(ii) to other countries, including the Community;

(b) the constructed value of the like product in a market-economy third country

(c) if neither price nor constructed value as established under (a) or (b) provides an adequate basis, the price actually paid or payable in the Community for the like product, duly adjusted, if necessary, to include a reasonable profit margin'.

The likelihood of an affirmative finding is high with these three calculation methods. For example with method (c), the initiation of anti-dumping procedures usually occurs precisely because the price of imports is higher than the price of a like product on EC markets, and hence by definition dumping will be deemed to occur. Furthermore, EC producers can raise the dumping margin simply by putting up their prices (Jacobs, 1989).

As regards the other two calculation methods, the crucial factor is the selection of the reference country. A significant bias in favour of an affirmative finding may be introduced into the calculations if there is a large difference between the levels of economic development in the defendant and reference countries. With method (a) which is based on sale price of a like product from a third market economy, no account is taken of price differences among products from different companies which arises in the normal course of trade. Similarly regarding constructed costs method (b), the Commission makes no allowance for claims of comparative cost advantages.

For instance, the difficulties in assessing dumping in an economically meaningful manner are likely to be compounded in a situation of economies undergoing a transition from a command-based regime. For example, domestic prices may be difficult to ascertain if markets are dominated by an enterprise which hitherto enjoyed a monopoly position under the Communist regime. Furthermore, the construction of costs will be difficult, especially if certain inputs such as energy are subsidized. Finally, lack of proper accounting systems and statistics will hamper rigorous calculations.

[1] Council Regulation (EEC) No 2423/88 of 11.7.1988 on protection against dumped or subsidized imports from countries not Members of the European Economic Community, OJ L 209, 2.8.1988. Commission Decision No 2424/88/ECSC, 29.7.1988 relates to ECSC products.

The calculation of dumping duties for market economies

The Commission has a preference for using domestic market prices to determine 'normal' value, which is subsequently compared to export prices in order to assess whether dumping has occurred. This approach is used in approximately 50% of cases. Even this measure of dumping, or rather its implementation, has been criticized as being biased in favour of an affirmative finding (Hindley, 1989).[1]
Where there are or no (or insufficient) sales in the exporter's domestic market, the Commission then constructs a 'normal' value, which is compared to the export price in order to determine the dumping margin. Three possibilities exist for constructing normal value which shall be examined in turn, namely,

- the export price of the good from the dumping country on third country export markets;
- the sum of production costs, selling and general administration costs plus a representative rate of profit;
- any other reasonable method;

Export prices: According to Messerlin (1991), the export price method is the most reliable since it based on actual price observations, but has not been applied in the EC since 1980, with two minor exceptions. It is therefore unlikely to be employed in future cases involving the CEECs.

Constructed value of costs: Of the anti-dumping cases brought against market economies where domestic market prices are not employed to measure normal value, nearly all fall under procedures relating to constructed costs, i.e. where the Commission aggregates production costs, selling and general administration costs and a representative rate for profit. The complexity of such a construction and the discretion allowed to the Commission (e.g. determining a representative rate of profit) has led to consistent criticism of a bias in favour of an affirmative findings. This procedure will be very difficult to apply to the CEECs, where production costs are not transparent (e.g. transport and energy subsidies), are often influenced by the investment legacy of the previous regime, and are subject to the vagaries of inflation and exchange rate instability.

Other reasonable method: If neither of the above two procedures are feasible then the Commission services may construct normal value according to any other reasonable method. This might for example involve examining production costs in a Community country.

[1] This is because the Commission undertakes the comparison between the normal and export price at the ex-factory stage of trade. To arrive at the ex-factory price in the affected export market, the Commission deducts from the selling price all expenses directly related to sales (salaries of sales staff and expenses), as well as allowances for advertising, overheads and profits. However, to arrive at the ex-factory price in the domestic market of the producer, the Commission only deducts directly related selling expenses (i.e. no deduction for advertising, overheads, profits). Assuming that all costs are identical in both markets, the ex-factory price in the domestic market will be higher than that in the export market (since fewer deductions are made) and dumping will be deemed to have been found.

One common feature of past anti-dumping cases against the CEECs has been the high proportion which have been settled with price undertakings. The willingness of the Commission in the past to accept price undertakings was largely explained by the relative ease with which they could be monitored, given that imports were sourced through a sole exporting authority. This may change as the transition process progresses, as monopolies break-up in CEECs and EU imports become sources for many producers in the CEECs. Whether or not the frequency of price undertakings alters remains to be seen.

The treatment of the CEECs in anti-dumping actions will differ from other countries in one respect. Article 27.3c of the IA (Article 33 of the EA) provides that before any action is taken after having determined the existence of dumping 'the Community or the relevant associated country, as the case may be, shall supply the Association Council with all relevant information with a view to seeking a solution acceptable to the two parties'. Article 27.3c of the IA continues: 'the Association Council may take any decision necessary to put into effect an end to the difficulties; if it has not taken such a decision within 30 days of the matter being referred to it, the exporting party may apply appropriate measures on the exportation of the product concerned'. In short, the Europe Agreement gives a grace period of 30 days from the time the definitive decision is announced to the time the measures take effect. This may be important in that it will allow the CEEC countries to plead their case to an international audience prior to the actions entering into force.

3.1.3. Overall assessment and options for change

From the above, it appears that the application of anti-dumping provisions cannot be considered as a deterrent to 'serious' foreign investors. Only two cases have been initiated since the IAs entered into force. Furthermore, anti-dumping measures currently in force affect a marginal percentage of total imports from CEECs, and are concentrated across a narrow range of tariff classifications, mostly basic chemical and steel products. There is no indication that the EU will extend the scope of anti-dumping measures into sectors where the CEECs are acquiring a comparative advantage. Nonetheless, the implicit costs of EU anti-dumping measures should not be ignored, in particular as a potential deterrent to foreign direct investment

An alternative to anti-dumping rules is the application of competition rules on a cross-border basis. Precisely how such a change could occur is beyond the scope of this paper, requiring considerable input from the expert practitioners in the field. In any event, such a change would probably need to occur in stages, whereby both parties would acquire confidence in the rigorous application of competition rules in respective jurisdictions. There are a number of economic arguments in favour of such an approach, which are enumerated below.

Are the CEECs likely to engage in dumping?

A first form of dumping highlighted by economists, and the main rationale for anti-dumping measures, consists of predatory pricing, i.e. setting prices below cost in the short run in the attempt to drive out competitors and secure monopoly power (and profits) in the long run. In practice, however, the necessary conditions to conduct predatory pricing (market power, ability to prevent market entry, ability to endure losses) arise infrequently, especially for financially weak enterprises from the CEECs which tend to have very small market shares in the EU.

Cyclical dumping occurs when firms set prices below average costs (but only to the point that at least average variable costs are covered) in industries where excess capacity prevails. This type of dumping is particularly prevalent in industries with large fixed costs, for example, steel, chemicals. Given the production structure of the CEECs and the collapse of traditional sources of demand, excess capacity exists in many CEEC industries with high fixed costs. Any resulting cyclical dumping does cause harm to EC producers who are often faced with similar problems of overcapacity However, account should also be taken of the benefits through lower prices to EU consumers, and to enterprises who use CEEC imports as intermediate imports. Hence, there is a need to take a balanced approach in such cases weighing up all the costs and benefits. Where dumping does occur, the first best response may be to strengthen the competition framework in the CEECs.

Government subsidies, whether direct or indirect, may lead to dumping. However, disputes of this nature would be better handled via cooperation as regards competition policy. Also, while the CEECs are no longer classified as State-trading economies, certain practices may have been carried over from the centrally planned era which results in dumping. For example, failure to create fully operational market structures in CEECs may mean that many enterprises are not operating according to normal business principles: survival, regardless of profits/losses, is the primary concern, and this is leading to asset-stripping and below-cost sales.

Certain business practices may fall foul of legal definitions of dumping margins. These practices are not harmful to public welfare since they do not lead to monopolistic competition. For example, international price discrimination cannot be regarded as an indication of predatory behaviour, since there are other explanatory factors such as exchange-rate volatility, trade barriers, transactions and transport costs, promotional pricing, etc. All countries, not just the CEECs, may be affected by these regulations. Nonetheless, particular attention should be paid to calculations of dumping margins involving the CEECs given the complications imposed on calculation methodologies due to the transition process.

(i) The objectives of competition and anti-dumping policies are identical, i.e. to prevent monopolies from operating on domestic markets (Hoekman, 1993). Therefore policy spillovers occur, a process which intensifies as integration proceeds. However, large differences prevail as regards policy implementation. Anti-dumping policy focuses on the issue of damage to specific enterprises whereas competition policy focuses on damage to the competition process *per se*, i.e. ensuring that neither market concentration nor State subsidies thwart the efficient functioning of markets. By focusing on the objective rather than the outcome, competition rules tackle the problem at source, and thereby yield more economically efficient outcomes.

(ii) The interaction of anti-dumping provisions and competition rules in the IAs may produce conflicting results. Scope exists for rent-seeking interest groups in the EU to exploit anti-dumping measures against CEEC enterprises for projectionist purposes through collusive behaviour. Similarly, CEEC enterprises faced with the threat of anti-dumping actions may have an incentive to collude as regards prices and quantities, a practice at odds with the competition goals of the IAs. The potential for such outcome warrants attention, and could be resolved through the application of cross-border competition rules.

(iii) The main economic justification from anti-dumping actions is predation. As argued in the box above, CEEC enterprises are not in a position to engage in predation strategies, and hence a major justification for having recourse to anti-dumping actions is redundant.

(iv) Cyclical dumping and dumping financed via public subsidies are more appropriately tackled via competition policy

(v) A necessary condition for dumping to take place is that markets are segmented. However, the goal of the IAs is precisely to diminish market segmentation, and hence the cessation of anti-dumping actions between countries/regions undergoing an integration process is a rational action.

The idea of substituting recourse to anti-dumping with competition rules is not a new idea. However, several factors now prevail which suggest that a move by the EU might be opportune. Firstly, a number of precedents for such a move already exist. Most importantly, Article 91 of the Treaty of Rome allowed the Commission to undertake anti-dumping actions against infringing Member States during the transitional period, a possibility which lapsed thereafter. Interestingly, Article 91 required no implementation legislation. It simply required that goods having entered one Member State from another Member State free of duties, could be re-exported to the home country also free of duties. In other words, it allows for arbitrage to take place, thereby rendering dumping

impossible. A more recent example of the suspension of dumping actions between integrating economies is found in the European Economic Area. Although the CEECs are far less integrated with the EU than EEA members and have less developed competition authorities, the need to politically and economically support the transition process calls for greater endeavours on the part of the EU.

Secondly, the international coordination of competition policies is moving to the top of the trade policy agenda in 1994 and is likely to feature prominently in the work programme of the soon-to-be created World Trade Organization. Thirdly, concern has been raised about the actual implementation of competition rules within the CEECs. A gesture in favour of competition rules by the EU would encourage CEECs to rigorously support their competition authorities. In any event, a move in favour of competition rules should be accompanied with an upgrading of technical assistance to CEEC competition authorities.

3.2. Safeguard actions

As with other EU preferential trade agreements, a general safeguard clause (Article 24) is contained in the IAs, which can be enacted by both parties, is provided for. It states,

'Where a product is being imported in such increased quantities and under such conditions as to cause or threaten to cause (a) serious injury to domestic producers of like or directly competitive products in the territory of one of the contracting parties, or (b) serious disturbances in any sector of the economy or difficulties which could bring about serious deterioration in the economic situation of a region, the Community or the CEEC may take appropriate measures under the conditions and in accordance with the procedures laid down in Article 27.'

Article 27 of the IAs stipulates that in case of presumed threat to domestic producers, the 'injuring' party is to be informed and all relevant information should be made available with a view of seeking an agreement between both parties: failure to resolve the dispute results in 'any appropriate measure' being taken, but 'in the selection of measures, priority must be given to those which least disturb the functioning of the Agreement'.

In addition to the general safeguard clause, there are a number of sector-specific provisions such as Article 15 of the IAs which pertains to agricultural products. There are supplementary safeguard clauses which only the CEECs can introduce reflecting the particular weakness of economies undergoing transition. Amongst others, Article 22 of the IAs allows the CEECs to apply exceptional measures for a limited duration to protect infant industries and sectors undergoing restructuring or facing serious difficulties. However, these additional safeguard measures are beyond the scope of this study, which is limited to the general provisions set out in Article 24.

Safeguard actions in GATT

The GATT Agreement allows contracting parties to introduce temporary safeguard measures on two grounds, balance of payment disequilibria (Article XII) and large increases in imports causing injury to domestic producers (Article XIX): only the latter justification is examined in this study. Article XIX states:

(1) If due to unforeseen developments, any product is being imported into the territory of a contracting party at such increased quantities, absolute or relative to domestic production, and under such conditions as to cause, or threaten to cause, serious injury to domestic industry that produces like or directly competitive products, that contracting party shall be free to suspend or modify tariff concessions in order to remedy such an injury.

(2) Before taking such action, advance notice shall be given to the contracting parties and the exporters concerned.

(3) If no agreement is reached among the interested parties, the contracting party may take the action and the affected contracting party may respond after 30 days by suspending equivalent concessions.

Provisional measure: if serious injury causing damage difficult to repair can otherwise not be prevented, action may already be taken during the period of consultation.

The restrictiveness of the provisions has meant that GATT contracting parties seldom introduced safeguard measures: for example the EU has employed Article XIX measures only 19 times since 1950. The strict conditions require that measures must not be applied on a bilateral or selective basis. Secondly, compensation must be provided to injured parties. Thirdly, safeguards must be imposed in the form of tariff modifications and not quantitative measures. Fourthly, safeguards can operate for the duration necessary to prevent or remedy serious injury.

On the date of entry into force of the IAs, the CEECs were no longer regarded as State-trading economies and as such, no longer fall under the specific Regulation which regulates trade with such regimes.[1] Whether or not the safeguard provisions of IA allow for greater recourse to this trade instrument remains to be seen.[2] Since the entry into force of the IAs, the EU has

[1] Council Regulation (EEC) No 1765/82, 30.6.1982 on common rules for imports from State-trading countries.

[2] Messerlin (1992), Winters (1992).

activated safeguard clauses twice. In August 1992, the Commission authorized Germany, France and Italy to impose quotas on imports of certain iron and steel products coming from the Czech and Slovak Federal Republic, after bilateral discussions on voluntary action had failed,[1] the measures lapsed on 31 December 1992. However, the Joint Committee decided to limit for a three-year period, from January 1993 until the end of 1995, the growth rate of exports in volume terms of these products calculated on the basis of the 1991 figure. It should be borne in mind, that this case occurred during a crisis period for the EU steel industry, which has been requested to reduce production by up to one quarter. The second safeguard action concerned the import of sour cherries from, *inter alia*, Poland, Hungary and Turkey. As such, Article 15 of the IAs pertaining to safeguard measures with respect to agricultural goods was employed. The measure imposed by the EU was a minimum import price.

In the absence of actual safeguard measures adopted by the EU, a comparison is presented below between safeguard provisions in the IAs and those of GATT Article XIX as well as (the implementing) EC Regulation (EEC) No 288/82). The provisions differ in the following respects:

(a) implementation conditions are identical to GATT Article XIX, i.e. 'such increased quantities and under such conditions'. However, the definition of injury in the IAs differs somewhat in that references to 'serious disturbances' and 'serious deterioration in the economic situation' are not precisely defined. Unlike Regulation (EEC) No 288/82, there is no reference to the concept of 'unforeseen developments'.

(b) administrative procedures: unlike (EEC) No 288/82, IA does not provide for a formal investigation. Similar to Article XIX of GATT, parties must seek an agreement to avoid the implementation of safeguards. If discussions fail to resolve the dispute, the Commission can then decide to implement safeguard measures and communicates this to the Council The Council may then indicate its intention to adopt or revoke the Commission decision under qualified majority voting rules. However, if no decision is taken within 20 days, the Commission's decision remains in place, contrary to what occurs under (EEC) No 288/82.

(c) sanctions are identical to (EEC) No 288/82 as they allow for any 'appropriate measure' to be taken. In contrast, Article XIX of GATT explicitly refers to suspension or modification of tariff concessions The IA does not provide for compensation to be provided.

(d) duration of safeguard measures: no specific time-limit is set in the IAs as required under Article XIX of GATT.

(e) regional differentiation: by its very nature, safeguard actions under the IAs are bilateral, contrary to their multilateral application under GATT rules.

To summarize, this comparison of legal provisions shows that in theory potential application of IA safeguard provisions is somewhat broader compared with existing EU and GATT rules, that no formal investigation is provided for and that the Council has slightly less power to refuse the proposal of application of the safeguard by the Commission. In practice, however, frequent EU recourse to Article 24 safeguard measures is unlikely for a number of reasons. Firstly, only one measure has been recorded since the entry into force of the IAs. Secondly, despite operating on a bilateral basis, safeguard actions under the IAs are closely associated with multilateral GATT rules, and the political cost of their use remains high especially, *vis à vis* countries undergoing painful transition. Thirdly, although the administrative burden associated with adopting safeguard measures remains cumbersome compared with other trade policy instruments

4. Rules of origin

4.1. The operation of EU rules of origin

Rules of origin determine the economic nationality of goods, and are usually attached in a separate protocol to all preferential trade agreements. They ensure that only products originating in an associated country benefit from preferential market access, and define the conditions required for origin to be conferred on a product.

Two principles are generally used for conferring origin. Firstly, there are goods which are wholly obtained in a given country. These include mineral products extracted in a territory, domestically produced agricultural products and fish caught by registered vessels. Secondly, origin can be conferred on materials if a substantial transformation takes place. There are three general methods to determine substantial transformation which are usually applied on an industry-specific basis. The three methods are: (i), a change of tariff heading in a specified nomenclature, (usually at four-digit disaggregated level); (ii) the undertaking of a prescribed list of manufacturing or processing operation; and (iii) an *ad valorem* rule, either referring to a threshold amount of value-added from a manufacturing process, or an upper limit on the value of the imported materials and/or components in the final product.

[1] Commission Recommendation 92/434/ECSC of 14.8.1992 and Commission Decision 92/433/EEC of 14.8.1992, OJ L 238, 21.8.1992.

EU rules of origin

EU rules of origin distinguish between countries with which it has and does not have a preferential trade regime.

Countries to which the EU does not offer derogations from MFN tariffs fall under Regulation (EEC) No 802/68.[1] Origin is conferred to products wholly obtained in one country (Article 4). Where two or more countries produce the good, origin is conferred to the country where 'the last substantial process or operation has taken place, economically justified, carried out in an undertaking equipped for the purpose and resulting in the manufacture of a new product or representing an important stage of manufacture' (Article 5).

Member States regularly meet in the Committee of Origin to develop a common interpretation of rules of origin and to ensure, with respect to specific goods, their uniform application.[2] Three types of criteria have been retained for the determination of origin of the products, namely, the type of processing operation which is most commonly used in the industry concerned; the value-added method, where the percentage of value-added in a country must be at least 45% of total value-added; and a change of tariff heading at four-digit level.[3]

For countries with whom the EU has preferential trade agreements, rules of origin are specific to each agreement. Nonetheless there are common criteria for determining origin, the transport of products originating from associated countries and the mandatory certificate of origin. However, significant difference arise as regards cumulation; of which there are three types:

(i) bilateral cumulation operates between two associated partners, for example, EU-Bulgaria IA, and concerns materials only, i.e. excludes intermediate products (inputs);

(ii) partial multilateral or diagonal cumulation: allows cumulation for materials when several countries participate in an agreement, or participate in similar agreements, for example, IAs with Visegrad countries;

(iii) total multilateral cumulation: allows for the cumulation of all processing and transforming occurring within associated countries. It is applied in the EEA agreements.

An additional important element of the rules-of-origin rule is the issue of cumulation, i.e. whether materials from an associated country which are processed by other parties to the agreement are considered to have origin status.[4] This is an important factor in promoting integration between associated countries for two reasons. Firstly, it encourages foreign direct investment (FDI) as enterprises produce efficiently in accordance with factor market conditions and use inputs from associated countries. For example, an EU enterprise may locate a labour-intensive phase of the production process in Hungary using inputs from the EU (bilateral cumulation) or from another Visegrad country (diagonal cumulation) which are considered to be domestically sourced for the purposes of rules of origin. Secondly, differential treatment of associated partners as regards rules of origin can lead to trade diversion. For example, diagonal cumulation permitted among Visegrad countries may result in a Hungarian enterprise favouring a Czech supplier over a lower cost Romanian enterprise in order to fulfil origin requirements for goods to be exported to the EU. However, the degree of cumulation can vary in accordance with the depth of economic integration being undertaken. These forms of cumulation are set out in the box above.

Rules of origin have compliance costs given the need to document origin. If these costs are significant in comparison to the value of products traded, then the rules of origin in effect amount to non-tariff barriers (Hoekman, 1993). The lower the tariff, the more restrictive is the rule of origin in proportional terms, and the more one is likely to observe exporters/importers paying the tariff rather than attempting to document origin. Analyses of preferential tariff schemes such as the GSP and EC free trade agreements have documented the restrictive effects of the rules of origin, i.e. where the costs associated with satisfying the rules of origin were so high as to induce exporters to pay the relevant MFN (most favoured nation) tariff instead. If the type of trade barrier is tariff, then exporters face a relatively simple decision, i.e. they compare the tariff rate (MFN) with the tariff equivalent of the costs of satisfying the rules of origin. Alternatively, if the type of trade barrier consists of quotas, the decision is much more complicated.

[1] Commission Regulation (EEC) No 802/68 of 27.6.1968 on common definition of the notion of origin of goods, OJ L 148/1, 28.6.1968.

[2] This is different to EC anti-dumping action and proceedings under Regulation (EEC) 288/82 (safeguard actions), in which private parties have no formal right to a hearing.

[3] A change of tariff heading does not necessarily imply a substantial degree of transformation, therefore it is rarely used.

[4] For example, imported EU textiles used by a CEEC enterprise for clothing would not be considered as an input from a third country if the clothes were subsequently sold in the EU. Without cumulation, the CEEC enterprise would favour domestic as opposed to EU suppliers of textiles in order not to fall foul of minimum local content rules.

4.2. Rules of origin in the IAs

The rules of origin in the IAs are contained in Protocol 4 and are similar to those contained in Regulation (EEC) No 802/68 which applies to non-associated countries and to the basic rules contained in most EU preferential trade agreements. However, they do differ in a number of respects, as follows:

(i) specific conditions are attached as regards products wholly obtained in one party, for example, fish caught by national vessels (Article 1);[1]

(ii) a change of tariff heading is the general rule used for determining sufficient transformation. However, exceptions are listed in the Annex II of Protocol 4. The existence of a definitive list means that there is no provision for a Technical Committee on Origin to mediate disputes, as occurs in trade with countries with whom the EU does not have a preferential trade arrangement. The exceptions concern the maximum percentages in value-added of third country inputs[2] and certain specific processing operations required to confer origin;

(iii) cumulation is allowed between the Visegrad countries along the lines of diagonal cumulation set out in the box in Section 4.1. Hence, EU inputs and inputs from other Visegrad countries are not counted as constituting foreign value content. In contrast, no intra-CEEC cumulation is permitted with respect to Bulgaria and Romania as they do not participate in the Visegrad process.

The key issues are whether the requirements for confirming origin set out in the IAs are appropriate, and whether compliance costs are high compared with tariffs. According to Messerlin (1992), the conditions for awarding origin may pose serious constraints. Winters (1992) argues that the 60% 'local' content requirement is rather strict, and may preclude CEECs from undertaking many relatively light processing tasks applied to non-EU materials. However, our analysis of the IA provisions suggest that they are not substantially different or more restrictive from those in other preferential agreements. For example, the value-added requirements of the IAs which are similar to the provisions contained in Annex II[3] of the EEA Agreement. Finally as regards cumulation, the Copenhagen Council requested the Commission to study the impact of the various rules of origin operating within Europe, and possible means for creating a uniform system. To this end the Commission has launched a number of studies of specific sectors, the results of which are expected shortly.

5. The EFTA-CEECs trade agreements [4]

5.1. The scope and purpose of the accords

EFTA countries to date have signed Agreements with the CSFR (effective from 1 July 1992), Poland (effective from 1 March 1993) and Romania (effective from 1 May 1993). An overview of the market access conditions in these Agreements is set out in Annex 2. Two further Agreements were signed on 29 March, 1993, with Bulgaria and Hungary which entered into force on 1 June and 1 October 1993, respectively. In addition, the EFTA-CSFR Agreements were converted into separate accords for the Czech and Slovak Republics.

The EFTA-CEEC Agreements are very similar to the Europe Agreements already negotiated between the EU and certain CEECs. They have as their goal the progressive establishment of a free-trade area by 31 December 2001 for Poland, by 30 June 2002 for the CSFR and by 31 December 2002 for Romania. Similar to the IAs, liberalization will occur on an asymmetric basis, with EFTA countries granting trade concessions at a faster pace than the CEECs.

To this end, Article 4 of the respective Agreements state that customs duties and charges having equivalent effect, save for those specified in Annex III of the EFTA-CEEC Agreements, are to be abolished upon the date of entry into force of the respective Agreements. In addition, Article 8 states that quantitative restrictions (QRs) on EFTA imports from the CEECs are to be abolished upon the entry into force of the Agreement, save for the exceptions specified in Annex VI (Annex VII for Poland). These provisions are similar to the general provision of the IAs.

[1] The term 'national vessels' is defined in the text and subject to specific conditions which are the same as in the EEA Protocol on rules of origin (Article 3(2)).

[2] Forty and 50% limits apply for chemicals, metal articles, machinery, clothing, electric engineering articles, tape recorders, TV sets, radios, integrated circuits, insulated wires, motor vehicles, etc.

[3] Annex II of the EEA Agreement, as Annex II of the EAs, lists all the products for which the change in tariff-heading criterion was not retained and, instead, a specific operation or the value-added criterion, or both, are indicated to confer origin.

[4] The authors would like to thank Yvette Deszo for research assistance undertaken for this chapter.

Aside from provisions specifying market access conditions, the EFTA-CEEC Agreements detail other trade-related rules, for example, rules of origin, competition rules, information on draft technical regulations, public procurement, protection of intellectual property rights, competition rules, State aids, anti-dumping measures and emergency safeguards (conditions and procedures).

5.2. Annex III: exemptions from provisions on customs duties

Five Tables (four in the case of Romania) are listed which contain provisions for the progressive (as opposed to immediate) abolition of certain customs duties. These exemptions are specified in bilateral terms, i.e. specific EFTA country relations with specific CEEC. Switzerland and Liechtenstein (also Finland in the case of Romania) have sought no exemptions in this annex. They do, however, retain a safeguard clause (Article 21), which states that the EFTA country concerned may reintroduce tariffs on goods listed in specified tables if serious disturbances on domestic markets occur 'providing for a level of protection not higher than the one prevailing at that time for other EFTA States and in any case not higher than the MFN duties in force at that time'. Three broad categories of exemptions are provided for, namely:

(i) Table A: concerns the import of ECSC steel products into Austria and Sweden. Leaving aside differences due to the dates when the Agreements entered into force, duties on the listed products should fall to 40% of their pre-agreement levels by January 1994, 20% by January 1995, 10% by January 1996 and be completely abolished by January 1997. Two deviations from the standard case arise. First, Sweden will immediately phase out these tariffs on ECSC imports from the CSFR. Secondly, Sweden applies a one-year lag on the abovementioned tariff reductions on ECSC imports coming from Romania. These provisions are identical to those specified in the IAs. However, the EFTA countries shall immediately remove all tariffs on coal products, which will be subject to EU duties until 31 December 1995.

(ii) Table B:[1] concerns exports from the CSFR and Poland (not Romania) of certain chemical products to Norway and Sweden. Customs duties shall be reduced to 40% of their pre-agreement levels by January 1994 and to 20% to January 1995: for the CSFR, the duties must be reduced to 10% by January 1996 and abolished a year later: for Poland, the duties must be completely abolished by January 1996. Some of these listed products fall under the provisions of Annex III (sensitive sectors) in the IAs.

(iii) Table C, D, E: concerns the export of certain textiles and clothing products to Austria, Norway and Sweden. Although there are minor differences in the rate of tariff reductions in 1993, the liberalization converges in 1994 to that specified in the IAs, i.e. progressive reduction of tariffs to complete abolition by January 1998. Note however, that the product coverage is not identical to that contained in the IAs.

5.3. Protocol C: customs duties of a fiscal nature

Article 6 of the EFTA-CEEC Agreements states that customs duties of a fiscal nature must be immediately abolished except where otherwise specified in Protocol C. Iceland is allowed to maintain indefinitely such custom duties on a very long list of items set out in Table I of the protocol. Such customs duties are a major revenue source for the Icelandic Government, and are applied in a non-discriminatory fashion to all trading partners. The list is identical to the one attached to the EC-EFTA Free Trade Agreement.

Switzerland and Liechtenstein are also allowed to retain customs duties of a fiscal nature on certain petroleum products, cinematographic film and motor vehicle parts and components as set out in Table II of the protocol. During the negotiations of the Agreement, the Swiss Federal Government stated that the retention of these duties was necessary given the rejection by the Swiss electorate of plans to introduce VAT. They have given the commitment to abolish the duties once (and if) VAT is introduced.

For both Iceland and Switzerland, there is a provision stating that such duties must be immediately abolished if production of a listed item commences in the EFTA State concerned: otherwise imports would be at a disadvantage.

5.4. Quantitative restrictions (Annex VI, Annex VII for Poland)

Annex VI lists the exceptions to Article 8 which calls for the immediate removal of quantitative restrictions and measures having equivalent effect. Very few exemptions are provided for (for example, lignite into Austria, fish products into Iceland). The only major exemption is the export of textiles and garments to Norway. Norway has negotiated a protocol with the CSFR already, and to date, the latter has been unable to fully utilize the quota. All such restrictions must be abolished by January 1998, on the basis of bilateral negotiations between the parties concerned. This deadline is the same as that

[1] Table B in the Agreement with Romania is in fact Table C in the other Agreements. The numbering of subsequent Tables is duly affected.

specified in the Europe Agreements, although the Community does retain the right to have a longer transition period.

5.5. Brief comparison of the IAs and EFTA-CEEC Agreements

The crucial difference between the IAs and the EFTA-CEEC Agreements is scope. Whereas the EFTA-CEEC Agreements cover trade and trade related matters for industrial products, the IAs cover issues such as the harmonization of legislation, technical cooperation, right of establishment, etc. More importantly, the IAs cover trade in services, whereas the EFTA-CEEC Agreements only contain a general provision (Article 30) calling on parties 'to cooperate with the aim of achieving a gradual liberalization and mutual opening of markets for investments and trade in services'. This wider scope of the IAs offers considerable advantages to the CEECs above and beyond what the EFTA-CEEC Agreements can provide.

A first glance at the EFTA-CEEC Agreements might suggest that more liberal market access conditions are on offer compared with the Europe Agreements. This is because the EFTA-CEEC Agreements contain fewer exemptions from the general provision as regards immediate liberalization for industrial products. More specifically, the differences between the two sets of agreements are as follows:

(i) ECSC steel products: the agreed tariff reductions are the same in both sets of agreements: however, of the EFTA countries only Norway and Sweden retain tariffs. Furthermore, EFTA countries have agreed to remove all duties on imports of coal products, in contrast to the EU where their abolition is not foreseen until December 1995.

(ii) MFA products: unlike the EU, only Norway, Austria and Sweden retain tariffs on these products. These shall be progressively reduced according to the timetable set out in the IAs.

(iii) the only other special provisions provided for in the EFTA Agreements are for the progressive reduction of tariffs on some chemicals in Norway and Sweden, and the retention of some minor customs duties of a fiscal nature in Iceland and Switzerland. This compares with the very long list of sensitive sectors contained in Annex III of the IAs.

These differences in market access conditions, however, do not yield the conclusion of a more liberal attitude on the part of EFTA countries. There are cases where tariffs applied by EFTA countries are higher than those maintained by the EU. Furthermore, the EFTA countries have been able to liberalize in sectors considered sensitive by the EU on account of lack of (or limited) domestic production. Moreover, differences in market access conditions are far less than appears to be the case at first sight. As argued in Section 2.6, many trade measures retained by the EU are extremely light — remaining tariffs are extremely low and most shall be abolished by the end of 1995 — many quotas are not-binding implying many affected products *de facto* enter the EU without restrictions.

As regards contingent protection, both sets of agreements contain provisions for anti-dumping and safeguard measures. EU recourse to contingent protection is discussed in Section 3 of this paper. It should be noted, however, that some EFTA countries, Austria in particular, have made recourse to emergency safeguard measures, under Article 21 of the Agreement, against the Czech and Slovak Republics, Hungary and Romania. The products affected are cement, fertilizer and agricultural machinery, items on which no quantitative restrictions were provided for in the Agreement.

An important issue for the CEECs is the impact on market access of the accession of certain EFTA countries to the EU. Acceeding countries shall take over the *acquis communautaire* as regards trade policy, which *inter alia*, includes the IAs. For certain sectors, this may involve the acceptance of less favourable EU market access conditions. On balance, however, the CEECs shall not be disadvantaged for the same reasons as argued above, i.e. many remaining EU restrictions are light, non-binding and due to be eliminated in the near future. Furthermore, the wider scope of IAs to include services and right of establishment marks a considerable improvement over the provisions of the EFTA-CEEC Agreement.

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Annex 1: Market access conditions and institutional provisions[1]

1. The legal state of play of the Europe Agreements

As indicated in Table 13, this has been a phased approach to EU trade liberalization, beginning with the signing of trade and economic (and commercial) cooperation Agreements with Hungary in 1988, Poland in 1989 and subsequently the CSFR, Romania and Bulgaria in 1990. Simultaneously, quantitative restrictions specific to the CEECs were lifted. In January 1990, Hungary and Poland were unilaterally declared eligible for the generalized system of preferences (GSP) by the EU, status which was accorded to the CSFR and Bulgaria in early 1991. Romania had received restricted GSP status since 1974, and the remaining restrictions were removed in January 1991.

Trade liberalization culminated in the signing of six Europe Agreements (EAs) between 1991 and 1993, which have as their aim the establishment of a bilateral free-trade area for non-agricultural products over a 10-year period. The removal of trade restrictions is to occur on an asymmetric basis, with the EU liberalizing faster and earlier than each of the CEECs. In addition to the creation of a bilateral free-trade area, the EAs provide for political dialogue, the approximation of laws, the 'national treatment' of enterprises as well as economic, financial and cultural cooperation. As some of these policies fall within the competence of the Member States, the EAs can only enter into force following their ratification by all EU and CEEC national legislatures, a time-consuming exercise. In the intervening period, so-called interim Europe Agreements (IAs) have been applied which concern essentially the trade and some trade-related aspects of the full Europe Agreements. This was possible since trade policy lies within the exclusive competence of the EU. As made clear by the declaration of the EU Heads of State or Government following their meeting in Copenhagen in June 1993, the ultimate goal is the accession of these countries to the European Union.

Given that the EAs were signed at different times and hence subject to diverging ratification timetables, the legal state of play is somewhat diverse.[2] Regarding Hungary and Poland, Europe Agreements were signed on 16 December 1991 and came into effect on 1 February 1994, and Interim Europe Agreements have been in operation since 1 March 1992. The IAs have been supplemented with Community legislation necessary for their legal implementation.[3] For example, these legal acts removed the associated countries from the list of countries classified as State-trading economies, and therefore subject to a special trade regime. They further specified administrative procedures for provisions in the interim Agreements that involve the discretionary introduction by the EU of trade policy measures, for example, anti-dumping measures, safeguard actions, the functioning of tariff quotas and ceilings. Some of the measures with respect to tariff quotas and ceilings must be reintroduced on an annual basis.[4]

The former Czech and Slovak Federal Republic signed Europe Agreements on the same date as both Hungary and Poland, and an interim Europe Agreement also came into force on 1 March 1992. However, following the division of the CSFR, separate Agreements were negotiated with the Czech and Slovak Republics which were signed on 4 October, 1993. The separate EAs differ in a number of respects *vis à vis* the original, in that they contain a preamble with respect to human rights and the treatment of minorities,[5] they contain an emergency provision clause allowing the implementation of the agreement to be suspended without prior consultation in special emergency cases, the import quotas and ceilings are divided between the two republics, and finally, they allow for the cumulation of

[1] This annex is entirely based on notes drafted by Joris Declerck.

[2] Furthermore, as ratification is an ongoing process, the information provided in this supplement may be out of date even by the time of publication. The information presented reflects the status quo as at 16.2.1994.

[3] Council Regulation (EEC) No 521/92 of 27.2.92 opening and providing for the administration of Community tariff quotas and ceilings for certain agricultural and industrial products originating in Hungary, Poland and the Czech and Slovak Federal Republic (1992), OJ L 56, 29.2.1992.
Council Regulation (EEC) No 517/92 amending the autonomous import arrangements for products originating in Hungary, Poland and the Czech and Slovak Federal Republic, OJ L 56, 29.2.1992.
Commission Decision 523/92/ECSC on certain modalities for the application of the interim Agreement on trade and trade related matters between the ECSC and EEC, of the one part, and the Republic of Hungary, of the other part, OJ L 56, 29.2.1992.
Council Regulation (EEC) No 519/92 on certain procedures for applying the interim Agreement on trade and trade-related matters between the EEC and the ECSC, of the one part, and the Republic of Hungary of the other part, OJ L 56, 29.2.1992.
Commission Decision 522/92/ECSC on certain modalities for the application of the interim Agreement on trade and trade related matters between the ECSC and EEC, of the one part, and the Republic of Poland, of the other part, OJ L 56, 29.2.1992.
Council Regulation (EEC) No 518/92 on certain procedures for applying the interim Agreement on trade and trade-related matters between the EEC and the ECSC, of the one part, and the Republic of Poland of the other part, OJ L 56, 29.2.1992.

[4] Council Regulation (EEC) No 3918/92 of 28.12.1992 opening and providing for the administration of Community tariff quotas and ceilings for certain agricultural and industrial products and establishing a reduced variable component for certain agricultural products originating in Hungary, Poland and the territory of the former Czech and Slovak Federal Republic (1993), OJ L 396, 31.12.1992.

[5] The stipulations are identical to those in the EAs with respect to Romania and Bulgaria, which were concluded prior to the negotiation of separate agreements with the Czech and Slovak Republics.

Table 13

The legal state of play of the Europe Agreements at 1.2.1994[1]

Trade and Cooperation Agreements	Signed	In force	Reference
Poland[2]	19.9.1989	1.12.1989	OJ L 339, 22.11.1989
Hungary[2]	26.9.1988	1.12.1988	OJ L 327, 30.11.1988
CSFR[3]	7.5.1990	1.11.1990	OJ L 291, 23.10.1990
Romania	22.10.1990	1.5.1991	OJ L 79, 26.3.1991
Bulgaria	8.5.1990	1.11.1990	OJ L 291, 23.10.1990
Europe Agreements	**Signed**	**In force**	**Reference**
Poland	16.12.1991	1.2.1994	OJ L 348, 31.12.1993
Hungary	16.12.1991	1.2.1994	OJ L 347, 31.12.1993
Czech Republic	4.10.1993	not yet	PO Cat No CB-CO-93-433-.-c
Slovakia	4.10.1993	not yet	PO Cat No CB-CO-93-433-.-c
Romania	1.2.1993	not yet	PO Cat No CB-CO-93-533-.-c
Bulgaria	8.3.1993	not yet	PO Cat No CB-CO-93-049-.-c
Interim Europe Agreement[4]	**Signed**	**In force**	**Reference**
Poland[2]	16.12.1991	1.3.1992	OJ L 144, 30.4.92
Hungary[2]	16.12.1991	1.3.1992	OJ L 116, 30.4.92
Czech Republic	16.12.1991[4]	1.3.1992	OJ L 115, 30.4.92
Slovakia	16.12.1991[4]	1.3.1992	OJ L 115, 30.4.92
Romania	1.2.1993	1.5.1993	OJ L 81, 2.4.93
Bulgaria	8.3.1993	31.12.1993	OJ L 323, 23.12.93

[1] Also covers the additional protocols to EA/IA on acceleration of implementation of EU trade concessions (following conclusions of Copenhagen European Council in June 1993): provisional application (Poland, Hungary, Czech Republic, Slovakia) as of 1.7.1993: OJ L 195, 4.8.1993. The additional protocols with each of these countries, as well as with Romania and Bulgaria, were signed in December 1993, and are published in OJ L 25 of 29.1.1994.
On trade in textiles: provisional application (Poland, Hungary, Czech Republic, Slovakia) as of 1.1.1993. OJ L 410, 31.12.1992.

[2] Replaced by Europe Agreement as of 1.2.1994.

[3] Czech and Slovak Federal Republics.

[4] On basis of IA signed on 16.12.1991 with the former CSFR; supplementary protocols to the IA take account of the dissolution of the CSFR, see OJ L 349, 31.12.1993.

rules of origin from both republics (and hence cumulation with Hungary and Poland). The negotiation of separate EAs has no impact on the actual implementation of trade liberalization.

Finally, Europe Agreements with Romania and Bulgaria were signed on 1 February, 1993, and 8 March 1993 respectively. The IA with Romania entered into force on 1 May 1993. However, an internal EU trade debate delayed implementation of the IA with Bulgaria until 31 December 1993. In order to redress this delay, the EU considered that 1 January 1994 marked the second year of application of the IA with Bulgaria, bringing the trade liberalization schedule back in line with Romania.

The market access provisions in all six interim Europe Agreements were upgraded, by speeding up the liberalization timetable, as a result of the decision by the EU Heads of State or Government at the Copenhagen Council in June 1993. The General Affairs Council of July 1993 adopted the necessary legal texts to accelerate the implementation of trade concessions,[1] and final amendments to the protocols (as well as with Romania and Bulgaria) were signed in December 1993.[2]

[1] Council Decision (EEC) No 93/421 on the provisional application of the additional protocols to the interim Agreements on trade and trade-related matters between the EEC and the ECSC, of the one part, and certain third countries, of the other part, and to the Europe Agreements between the European Communities and their Member States and the same countries, OJ L 195, 4.8.93.
Council Regulation (EEC) No 2232/93 amending Regulation (EEC) No *3918/92* opening and providing for the administration of Community tariff quotas and ceilings for certain agricultural and industrial products and establishing a reduced variable component for certain agricultural products originating in Hungary, Poland and the territory of the former Czech and Slovak Federal Republic (1993), OJ L 200, 10.8.1993.

[2] OJ L 25, 29.1.1994.

2. Other trade-related issues

2.1. Right of establishment

It is agreed in principle that both EU and associated CEECs will grant each others' companies and nationals 'national treatment' (i.e. non-discriminatory treatment) for the establishment of new economic and professional activities in each other's territories. As with market-access conditions, implementation occurs on an asymmetric basis. The EU granted national treatment upon entry into force of the Europe Agreements, while transitional periods are foreseen for this application by the associated countries. During the transition period, these countries may also derogate from granting national treatment to Community companies and nationals in order to protect newly emerging industries and sectors undergoing restructuring.

2.2. Competition rules and the approximation of laws

Competition rules, similar to those applied in the Community will have to be introduced in the associated countries (Articles 31 and 32 of the IA). The EU rules concerning agreements between undertakings, abuse of dominant position and State aids shall be assessed 'on the basis of criteria arising from the application of the rules of Articles 85, 86 and 92 of the Treaty establishing the European Economic Community'. The Joint Committee has three years from the entry into force of the IAs to adopt the necessary rules for the implementation of these provisions. However, the six associated countries are considered as low income regions where, according to the EC Treaty, development-oriented State aids may be authorized. Specific rules to be applied to the coal and steel sectors are provided.

The approximation of laws of the associated countries to Community law is a major precondition for economic integration into the Community. The associated countries are required to ensure compatibility of their legislation with EU laws and the Community will provide technical assistance for this purpose. The following areas will be concerned in particular: customs laws, company law, banking law, company accounts and taxes, intellectual property, protection of workers at the workplace, financial services, rules on competition, protection of health and life of humans, animals and plants, consumer protection, indirect taxation, technical rules and standards, transport and the environment.

2.3. Some additional areas

Payments and financial transfers: both parties undertake to authorize, in freely convertible currency, any payments related to movement of goods, services or persons, as well as the financial transfers related to investments, including repatriation of capital or investment benefits.

Intellectual, industrial and commercial property: the associated countries will, within five years from the entry into force of the interim Agreements, provide similar levels of protection to those existing in the Community.

Public procurement: non-discriminatory access to public contracts is also provided following a transitional period.

Economic cooperation: a major objective of this cooperation is to enable the associated countries to meet the challenge of restructuring their economies and achieving competitiveness by the end of the transitional period. Economic cooperation refers to all areas of mutual interest. In particular, it concerns industry including industrial standards, investment promotion and protection, education, training, science and technology, agriculture, transport; telecommunications, postal services and broadcasting, banking, insurance and other financial control, money laundering, regional development, social issues, tourism, small and medium-sized enterprises, information and communication; customs; statistics; economics; public administration and drugs.

3. Institutional arrangements

The EAs provide for the creation of Association Councils at ministerial level whose task is to monitor the implementation of the Agreements. They will have decision-making powers within specific areas and will be assisted by Association Committees, to which they may delegate any of their powers. In addition, Association Parliamentary Committees are established for members of the parliaments of the associated countries and of the European Parliament to meet and exchange views. They are entitled to request information from the Association Councils and to make recommendations. The Association Councils also inform the Association Parliamentary Committees of all decisions taken.

Annex 2: Overview of the market access conditions for industrial products in the Europe Agreements and in the EFTA-CEEC Agreements

Table A

Overview of access to the EU for industrial products in the EU-Hungary interim Europe Agreement

	March 1992	January 1993	January 1994	January 1995	January 1996	January 1997	January 1998
General provisions							
Tariffs	0	0	0	0	0	0	0
QRs	abolished	none	none	none	none	none	none
Basic products							
Annex IIa — tariffs	50	0	0	0	0	0	0
Annex IIb — tariffs	80	60	(40) 0	(20) 0	0	0	0
Sensitive products (Annex III)	**March 1992**	**January 1993**	**July 1993**	**January 1994**	**January 1995**	**January 1996**	**January 1997**
Within tariff-quota							
Tariffs	suspended				abolished		(abolished)
Quota-level	115	130	(130) 140	(145) 165	(160)	(175)	
Outside tariff-quota	**March 1992**	**January 1993**	**January 1994**	**January 1995**	**January 1996**	**January 1997**	**January 1998**
Tariffs	90	80	70	(60)0	(50) 0	0	0
QRs	abolished	none	none	none	none	none	none
ECSC products (Protocol 2)							
Steel: tariffs	80	60	40	20	(10) 0	0	0
QRs	abolished	none	none	none	none	none	none
Coal: tariffs	100	100	50	50	0	0	0
QRs (except)		abolished					
QRs in Annex II					abolished		
MFA products (Protocol 1)							
Tariffs	5/7	5/7	4/7	2/7	1/7	0/(1/7)	(0)
QRs	Unspecified rate of reduction to 0 after (six) five years begining 1.1.1994						

Note: The figures presented represent those agreed at the Copenhagen Council. Those in parentheses represent those agreed in the initial interim Europe Agreements.
Figures with respect to tariffs reflect rates as % of those applied prior to the IA.
Figures with respect to quantitative restrictions (QRs) reflect quotas as % of those applied at beginning of IA.

Table B

Overview of access to the EU for industrial products in the EU-Poland interim Europe Agreement

	March 1992	January 1993	January 1994	January 1995	January 1996	January 1997	January 1998
General provisions							
Tariffs	0	0	0	0	0	0	0
QRs	abolished	none	none	none	none	none	none
Basic products							
Annex IIa — tariffs	50	0	0	0	0	0	0
Annex IIb — tariffs	80	60	(40) 0	(20) 0	0	0	0
Sensitive products (Annex III)	March 1992	January 1993	July 1993	January 1994	January 1995	January 1996	January 1997
Within tariff-quota							
Tariffs	suspended				abolished		(abolished)
Quota-level	120	140	(140) 150	(160) 180	(180)	(200)	
Outside tariff-quota	March 1992	January 1993	January 1994	January 1995	January 1996	January 1997	January 1998
Tariffs	90	80	70	(60)0	(50) 0	0	0
QRs	abolished	none	none	none	none	none	none
ECSC products (Protocol 2)							
Steel: tariffs	80	60	40	20	(10) 0	0	0
QRs	abolished	none	none	none	none	none	none
Coal: tariffs	100	100	50	50	0	0	0
QRs (except)		abolished					
QRs in Annex III					abolished		
MFA products (Protocol 1)							
Tariffs	5/7	5/7	4/7	2/7	1/7	0/(1/7)	(0)
QRs	Unspecified rate of reduction to 0 after (six) five years begining 1.1.1994						

Note: The figures presented represent those agreed at the Copenhagen Council. Those in parentheses represent those agreed in the initial interim Europe Agreements.
Figures with respect to tariffs reflect rates as % of those applied prior to the IA.
Figures with respect to quantitative restrictions (QRs) reflect quotas as % of those applied at beginning of IA.

Table C

Overview of access to the EU for industrial products in the EU-Czech and Slovak Republics interim Europe Agreements

	March 1992	January 1993	January 1994	January 1995	January 1996	January 1997	January 1998
General provisions							
Tariffs	0	0	0	0	0	0	0
QRs	abolished	none	none	none	none	none	none
Basic products							
Annex IIa — tariffs	50	0	0	0	0	0	0
Annex IIb — tariffs	*80*	*60*	*(40) 0*	*(20) 0*	*0*	*0*	*0*

Sensitive products (Annex III)	March 1992	January 1993	July 1993	January 1994	January 1995	January 1996	January 1997
Within tariff-quota							
Tariffs	suspended				abolished		(abolished)
Quota-level	120	140	(140) 150	(160) 180	(180)	(200)	

Outside tariff-quota	March 1992	January 1993	January 1994	January 1995	January 1996	January 1997	January 1998
Tariffs	*90*	*80*	*70*	*(60)0*	*(50) 0*	*0*	*0*
QRs	abolished	none	none	none	none	none	none
ECSC products (Protocol 2)							
Steel: tariffs	80	60	40	20	(10) 0	0	0
QRs	abolished	none	none	none	none	none	none
Coal: tariffs	100	100	50	50	0	0	0
QRs (except)		abolished					
QRs in Annex IV					abolished		
MFA products (Protocol 1)							
Tariffs	5/7	5/7	4/7	2/7	1/7	0/(1/7)	(0)
QRs	Unspecified rate of reduction to 0 after (six) five years begining 1.1.1994						

Note: The figures presented represent those agreed at the Copenhagen Council. Those in parentheses represent those agreed in the initial interim Europe Agreements.
Figures with respect to tariffs reflect rates as % of those applied prior to the IA.
Figures with respect to quantitative restrictions (QRs) reflect quotas as % of those applied at beginning of IA.

Table D

Overview of access to the EU for industrial products in the EU-Romania interim Europe Agreement

	May 1993	January 1994	January 1995	January 1996	January 1997	January 1998
General provisions						
Tariffs	0	0	0	0	0	0
QRs	abolished	none	none	none	none	none
Basic products						
Annex IIa — tariffs	50	0	0	0	0	0
Annex IIb — tariffs	80	60	(40) 0	(20) 0	0	0
Sensitive products (Annex III)						
Within tariff-quota:						
Tariffs	suspended			abolished		(abolished)
Quota-level	120	140-150 (140)	180(160)	(180)	(200)	
Outside tariff-quota:						
Tariffs	85	70	55	0(40)	(25)0	(0)
QRs	abolished	none	none	none	none	none
ECSC products (Protocol 2)						
Steel: tariffs	80	60	40	20	0(10)	0
QRs	abolished	none	none	none	none	none
Coal: tariffs	100	50	50	0	0	0
QRs (except)		abolished				
products in Annex III					abolished	none
MFA products (Protocol 1)						
Tariffs	5/7	5/7	4/7	2/7	1/7	0(1/7)
QRs	Unspecified rate of reduction to 0 after five years begining on 1.1.1994					

Note: The figures presented represent those agreed at the Copenhagen Council. Those in parentheses represent those agreed in the initial interim Europe Agreements.
Figures with respect to tariffs reflect rates as % of those applied prior to the IA.
Figures with respect to quantitative restrictions (QRs) reflect quotas as % of those applied at beginning of IA.

Table E

Overview of access to the EU for industrial products in the EU-Bulgaria interim Europe Agreement

	December 1993	January 1994	January 1995	January 1996	January 1997	January 1998
General provisions						
Tariffs	0	0	0	0	0	0
QRs	abolished	none	none	none	none	none
Basic products						
Annex IIa — tariffs	50	0	0	0	0	0
Annex IIb — tariffs	80	60	(40) 0	(20) 0	0	0
Sensitive products (Annex III)						
Within tariff-quota:						
Tariffs	suspended			abolished		(abolished)
Quota-level	120	140-150 (140)	180(160)	(180)	(200)	
Outside tariff-quota:						
Tariffs	85	70	55	0(40)	0(25)	(0)
QRs	abolished	none	none	none	none	none
ECSC products (Protocol 2)						
Steel: tariffs (except)	80	60	40	0(20)	10	0
QRs	abolished	none	none	none	none	none
Coal: tariffs	100	50	50	0	0	0
QRs (except)		abolished				
products in Annex V					abolished	
MFA products (Protocol 1)						
Tariffs	5/7	5/7	4/7	2/7	1/7	0(1/7)
QRs	Unspecified rate of reduction to 0 after five years begining on 1.1.1994					

Note: *The figures presented represent those agreed at the Copenhagen Council. Those in parentheses represent those agreed in the initial interim Europe Agreements.*
Figures with respect to tariffs reflect rates as % of those applied prior to the IA.
Figures with respect to quantitative restrictions (QRs) reflect quotas as % of those applied at beginning of IA.

Table F

Overview of access to EFTA markets for industrial products as set out in the EFTA-CSFR Agreement

	July 1992	July 1993	July 1994	July 1995	July 1996	July 1997	July 1998
General provisions[1]							
Tariffs[2]	0	0	0	0	0	0	0
QRs	abolished	none	none	none	none	none	none

Annex III: exemptions from provisions on customs duties[3]

	July 1992	January 1993	January 1994	January 1995	January 1996	January 1997	January 1998
Table A (Austria)[4]	50	50	40	20	10	0	0
Table B (Norway, Sweden)[5]	80	60	40	20	10	0	0
Tables C, D, E[6]							
(Austria)	65	65	57	43	29	14	0
(Norway, Sweden)	71	71	57	43	29	14	0

Protocol C: customs duties of a fiscal nature

General provisions	abolished	none	none	none	none	none	none
Table I (Iceland)[7,8]	Specified duties which may be retained: no timetable for their abolition						
Table II (Switzerland, Liechtenstein)[8,9]	Unspecified duties which may be retained: no timetable for their removal						

Annex VI: quantitative restrictions

	July 1992	July 1993	July 1994	July 1995	July 1996	July 1997	July 1998
Austria[10]	100	100	100	100	Unspecified rate of reduction to 0 by the year 2002		
Iceland[11]	Provisions on the abolition of such restrictions do not apply						

	July 1992	January 1993	January 1994	January 1995	January 1996	January 1997	January 1998
Norway[12]	100	Unspecified rate of reduction to 0 in 5 years					0

1 Agriculture products are treated in Protocol A. Fish and other marine products fall under the provisions of Annex II.
2 As % of MFN duty applicable on 1 October 1991.
3 No special provisions are contained in Annex III for Switzerland or Liechtenstein. However, if a serious disturbance occurs resulting from lower protection on products listed in Tables A to E, then Switzerland and Liechtenstein may reintroduce duties if the level of protection is not higher than that prevailing for the other EFTA countries, and in any case not higher than MFN duties.
4 Products covered by the ECSC Treaty.
5 Chemical products; e.g. polymers of ethelyene, styrene and vinyl choride, polyvinyl chloride and derivatives.
6 Textiles and fabrics: same rate of reduction as in Europe Agreements: believe the product coverage is also identical.
7 174-page list of products on which duties may be retained: same list as in EC-EFTA free-trade Agreement.
8 When production commences in the relevant EFTA country of an item mentioned in a relevant table, the duty must then be abolished.
9 Oil and refined products, cinematographic film (exposed and developed), components/parts for motor vehicles, motor vehicles for the tranport of more than 10 persons, motor vehicles for the transport of goods.
10 Lignite.
11 Petroleum and oils, brooms and brushes (for reasons of social employment).
12 Textiles and garments: to be negotiated bilaterally beween the parties concerned.

Table G

Overview of access to EFTA markets for industrial products as set out in the EFTA-Poland Agreement

		March 1993	March 1994	March 1995	March 1996	March 1997	March 1998
General provisions[1]							
	Tariffs[2]	0	0	0	0	0	0
	QRs	abolished	none	none	none	none	none
Annex III: exemptions from provisions on customs duties[3]							
		March 1993	January 1994	January 1995	January 1996	January 1997	January 1998
Table A	(Austria)[4]	50	40	20	10	0	0
	(Sweden)[4]	60	40	20	10	0	0
Table B (Norway, Sweden)[5]		60	40	20	0	0	0
Table C, D, E[6]							
	(Austria)	65	57	43	29	14	0
	(Norway, Sweden)	71	57	43	29	14	0
Protocol C: customs duties of a fiscal nature							
General provisions		abolished	none	none	none	none	none
Table I (Iceland)[7,8]		Specified duties which may be retained: no timetable for their abolition					
Table II (Switzerland, Liechtenstein)[8,9]		Unspecified duties which may be retained: no timetable for their removal					
Annex VI: *export duties and charges having equivalent effect*							
Table A (Iceland)[10]		Provisons on the abolition of such duties do not apply					
Table B (Switzerland, Liechtenstein)[11]		100	none	none	none	none	none
Annex VII: quantitative restrictions							
		March 1993	March 1994	March 1995	March 1996	March 1997	March 1998
Austria[12]		100	100	100	100	unspecified rate of reduction to 0 by 2002	
Iceland[13]		Provisions on the abolition of such restrictions do not apply					
		March 1993	January 1994	January 1995	January 1996	January 1997	January 1998
Norway[14]		Unspecified rate of reduction to 0 by end 1997					0

1 Agriculture products are treated in Protocol A. Fish and other marine products fall under the provisions of Annex II.
2 As % of MFN duty applicable on 29 February 1992.
3 No special provisions are contained in Annex III for Switzerland or Liechtenstein. However, if a serious disturbance occurs resulting from lower protection on products listed in Tables A to E, then Switzerland and Liechtenstein may reintroduce duties if the level of protection is not higher than that prevailing for the other EFTA countries, and in any case not higher than MFN duties.
4 Products covered by the ECSC Treaty.
5 Chemical products; e.g. polymers of ethelyene, styrene and vinyl choride, polyvinyl chloride and derivatives.
6 *Textiles and fabrics: same reduction schedule as in Europe Agreement: believe product coverage to be the same.*
7 174-page list of products on which duties may be retained: same list as in EC-EFTA free-trade Agreement.
8 When production commences in the relevant EFTA country of an item mentioned in a relevant table, the duty must then be abolished.
9 Oil and refined products, cinematographic film (exposed and developed), components/parts for motor vehicles, motor vehicles for the tranport of more than 10 persons, motor vehicles for the transport of goods.
10 Fish products.
11 Ash and residues, copper waste and scrap, aluminium waste and scrap.
12 Lignite.
13 *Petroleum and oils, brooms and brushes (for reasons of social employment).*
14 Textiles and garments: to be negotiated bilaterally between the parties concerned.

Table H

Overview of access to EFTA markets for industrial products as set out in the EFTA-Romania Agreement

		May 1993	May 1994	May 1995	May 1996	May 1997	May 1998
General provisions[1]							
	Tariffs[2]	0	0	0	0	0	0
	QRs	abolished	none	none	none	none	none
Annex III: exemptions from provisions on customs duties[3]							
		May 1993	January 1994	January 1995	January 1996	January 1997	January 1998
Table A	(Austria)[4]	50	40	20	10	0	0
	(Sweden)[4]	80	60	40	20	10	0
Table B, C, D[5]							
	(Austria)	65	65	57	43	29	14
	(Norway, Sweden)	71	71	57	43	29	14
Protocol C: customs duties of a fiscal nature							
General provisions		abolished	none	none	none	none	none
Table I (Iceland)[6,7]		Specified duties which may be retained: no timetable for their abolition					
Table II (Switzerland, Liechtenstein)[7,8]		*Unspecified duties which may be retained: no timetable for their removal*					
Annex VI: quantitative restrictions							
		May 1993	May 1994	May 1995	May 1996	May 1997	May 1998
Austria[9]		*100*	*100*	*100*	*100*	*unspecified rate of reduction to 0 by 2002*	
Iceland[10]		Provisions on the abolition of such restrictions do not apply					
		May 1993	May 1994	May 1995	May 1996	May 1997	May 1998
Norway[11]		Unspecified rate of reduction to 0 by end 1997					0

1 Agriculture products are treated in Protocol A. Fish and other marine products fall under the provisions of Annex II.
2 As % of MFN duty applicable on 30 April 1993.
3 No special provisions are contained in Annex III for Finland, Switzerland or Liechtenstein. However, if a serious disturbance occurs resulting from lower protection on products listed in Tables A to D (also Table E for Finland), then Finland, Switzerland and Liechtenstein may reintroduce duties if the level of protection is not higher than that prevailing for the other EFTA countries, and in any case not higher than MFN duties.
4 Products covered by the ECSC Treaty.
5 Textiles and fabrics: same reduction schedule as in Europe Agreements: believe product coverage to be the same.
6 174-page list of products on which duties may be retained: same list as in EC-EFTA free-trade Agreement.
7 When production commences in the relevant EFTA country of an item mentioned in a relevant table, the duty must then be abolished.
8 Oil and refined products, cinematographic film (exposed and developed), components/parts for motor vehicles, motor vehicles for the tranport of more than 10 persons, motor vehicles for the transport of goods.
9 Lignite.
10 Petroleum and oils, brooms and brushes (for reasons of social employment).
11 Textiles and garments: to be negotiated bilaterally between the parties concerned.

Part B

Country studies

Chapter 1

The economic interpenetration between the EC and Eastern Europe: Hungary

The economic interpenetration between the EC and Eastern Europe: Hungary

J. Gàcs[1]

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[1] IIASA, Laxenburg.

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1. Introduction

After the First World War, following the collapse of the Austro-Hungarian Empire and the adoption of the Trianon treaties Hungary became a small country, poorly endowed with mineral resources and with shrivelling internal markets. Despite the outstanding performance of some industries (like electrical engineering, or vacuum technology), the dominant and surplus sectors of the country were still agriculture and the food industry.

Protectionist tendencies in the world economy between the two world wars had their impact on the slow development of the Hungarian economy. The strong trade orientation of Hungary toward the successor countries of the former Empire gradually decreased and by the early 1940s, through political and military alliance, Germany emerged as the major trading partner.

The political changes after the Second World War modified the pace and the direction of development in Hungary in a radical way. A fast reconstruction was followed by aprogramme of rapid, forced industrialization. Industrial production expanded at a remarkable pace and many new industries were built up within a short period of time. Annual growth rate of industrial output was 10,3% in the 1950s, 7,0% in the 1960s and 4,9% in the 1970s. As a result of favouring industrial activity, manufacturing industry became the dominant sector in the production of GDP.

In its first stage, during the 1950s, industrialization was characterized by autarky, while in its second stage (from the early 1960s on) by 'CMEA-autarky'. This meant a strong orientation towards members of the CMEA, primarily towards the Soviet Union, and many efforts to build a self-sufficient, closed regional community.

International trade in Hungary reached a comparatively high level, i.e. 35 to 40% in export to GDP ratio. However, much of this trade was highly dependent on the special arrangements of division of labour in respect to the Soviet Union. Following the distorted ideology of socialist industrialization, Hungary established and developed a relatively large heavy industry, with a high proportion of primary heavy industries like metallurgy, petrochemical and other heavy chemical industries. The first source of dependence was related to the material base of these new industries: here fuel and raw materials almost exclusively originated from supplies of the Soviet Union. The second source of dependence was that the primary market for both more processed manufactured products and agriculture and food industry products was again the Soviet Union.

In the second half of the 1980s, several factors pushed Hungarian enterprises to turn to Western, and mostly EC markets, at the expense of trade with CMEA economies, and production for the domestic markets. These factors were the following:

(i) Cooperation within the framework of CMEA became gradually more and more erratic, and the evolving tensions pushed the Hungarian Government to curtail exports in that direction in 1988-90.

(ii) The elimination of transferable rouble payments and annual bilateral protocols in CMEA trade in 1991, the shift to world market prices, as well as the termination of the practice of promptly honouring the claims of Hungarian exporters for export revenues in Hungarian currency, have made trade with CMEA (and then ex-CMEA) economies more troublesome and consequently less attractive for Hungarian enterprises. Systemic changes and the ensuing recession in the countries of CMEA, the dissolution of the CMEA and the collapse of the USSR, with the uncertainties that followed all inhibited the maintenance of trade with Eastern European countries on former levels.

(iii) Regulations on how to start and conduct trading activity with the West became gradually liberalized. As a consequence, thousands, even tens of thousands, of Hungarian enterprises found it much easier to make market research and conclude contracts in the West on their own, rather than carry this out through the specialized and monopolized foreign trade enterprises, as they did before. The liberalization of entry into trading activity boosted trade with the West substantially.

(iv) In 1989 a programme of gradual liberalization of imports from Western markets was started.

(v) Successive agreements with EC and EFTA made access of Hungarian enterprises to these markets easier. At the same time the introduction of tariffs to trade with ex-CMEA economies made trade less attractive with these traditional partners.

(vi) Several changes in the regulation of joint ventures, market entry, acquiring property rights etc. made it easier for Western companies to establish joint or fully-owned businesses in Hungary, and make ties of trade, capital, intellectual property etc. between Hungarian and Western businesses closer.

As a joint impact of the factors listed above, Hungarian and Western activities became more interrelated than they had been for many decades, and the interpenetration of the two sides has become more and more palpable.

One of the major fields of this penetration is trade and this is the subject matter of this study. What are the dimensions of the recent process of interpenetration, what sectors, what countries of the EC are affected? What effects can be attributed to, and expected from past and further dismantling of trade barriers? On the ground of past experiences and recent developments in the structure of industry, what potential can be attributed to Hungarian manufacturing industry for further progress in Western markets? These are the basic questions we are going to answer in the course of our analysis.

2. Recent evolution and current position of Hungary's industrial structure and foreign trade

2.1. Definition of industrial and trade structure

The structure of Hungarian manufacturing industry is shown in the Statistical Annex in Tables 14-15.[1]

1 The adjustment between the Hungarian system of sectors and NACE 2-digit industries is difficult and imprecise. This is why some NACE 2-digit industries are consolidated in these tables.

Data reveals that in 1988, Hungary had a relatively advanced structure in manufacturing industry. The share of engineering industries in output was about 25%, that of the chemical industry 20%, while production of food another 20%. There was a substantial metallurgical industry (13%) and a comparatively modest labour intensive sector (13 to 15%).

As for the sensitivity of production to exports, we can observe that, given the usual homogeneity assumption, about two thirds of the labour force have been engaged in the production for domestic use. Within exports, already in 1988, a larger part of the working force was engaged in production for sale to market economies, than for sale to traditional CMEA markets. Two qualitatively distinctive sectors present themselves as the most export-oriented branches: the labour-intensive 44, 45, footwear, clothing and leather goods industry, and the R&D-intensive 33, 37, instrument and office machinery engineering.

Data in Table 1 give a picture of Hungary's changing geographical structure of trade in the last 60 years. Recently, we can observe that from among the past partners of Hungary in the Austro-Hungarian Empire, by 1992 Austria had quickly gained back a part of her earlier share (up to 10,68% from the lowest level of 3,25%). This is not the case, however, with

Table 1

Changes in the geographical distribution of Hungary's exports its major trade partners between 1928 and 1992

(%)

	1928	1938	1978	1988	1992
Austria	34,02	18,26	3,25	5,72	10,68
Germany	11,89	27,44	16,78	16,23	27,73
West Germany			8,40	10,95	
East Germany			8,38	5,28	
Italy	6,56	8,46	4,20	4,21	9,52
United Kingdom	2,87	8,08	1,49	1,88	2,00
Czechoslovakia	17,62	4,14	6,61	5,39	2,71
Romania	5,33	4,01	2,72	1,71	1,77
Poland	3,28	1,03	4,76	3,33	1,34
Soviet Union	0,41	0,09	30,46	27,61	13,14
EUR 12 countries	25,01	49,73	27,75	22,56	49,76
European CMEA countries (Bulgaria, Czechoslovakia, Poland, Romania, Soviet Union)	27,46	10,25	45,86	39,29	19,33

Sources: Collins-Rodrik (1991), Magyarország 1938. évi Külkereskedelmi forgalma, Statisztikai Évkönyv 1978, 1989, Külkereskedelmi termékforgalom 1991 January-December, 1992.

Table 2

Geographical distribution of Hungary's trade in manufacturing products, by region

	Exports to (%)		Imports from (%)	
	1988	1992	1988	1992
OECD	39,78	73,25	49,34	79,62
- EC	24,10	51,65	30,24	49,39
- EFTA	9,58	15,04	14,31	23,86
- Japan	1,08	1,01	1,72	2,81
ex-USSR	27,03	10,21	16,37	6,50
other ex-CMEA	17,78	6,33	20,78	7,35
ROW	15,41	10,21	13,51	6,53
Total	100,00	100,00	100,00	100,00
Total in millon ECU	7 634,56	7 347,28	6 747,59	7 173,46

Source: Kopint-Datorg database and own calculations.

Czechoslovakia and Romania (parts of these two also belonged to the Empire). Given the proximity and the level of development of these two (or from January 1993, three) partners of Hungary, their share in Hungary's trade has fallen to an unreasonably low level in recent years. The table also indicates that trade with Germany gained a lot, reaching a record share of 27,73% in 1992.

Table 2 provides information on the geographical distribution of the Hungarian foreign trade in manufacturing products. For many decades Hungary conducted 40 to 50% of her trade in manufacturing products with CMEA partners; in 1988 this share still stood at 45% in exports, and at 37% in imports. By 1992, the ratio had fallen to 17% in exports, and to 14% in imports. The decline in trade was pronounced both with the ex-USSR and with other ex-CMEA members.[1] Balancing, despite this shrinkage, trade surged with OECD countries, especially, EC economies. The EC's share has increased by 20 to 25 percentage points in four years, clearly a remarkable shift. The EFTA's share also increased substantially, mostly due to intense trade relations with Austria.

[1] The drop in other ex-CMEA trade may be partly explained by the disappearance of the GDR and its trade from CMEA (or ex-CMEA) trade statistics since 1991.

Table 3

Distribution of Hungary's exports and imports in manufacturing products, by EC country

	Exports to (%)		Imports from (%)	
	1988	1992	1988	1992
Belgium-Luxembourg	3,70	4,12	3,78	4,38
Denmark	1,76	0,98	1,81	1,02
Germany	52,24	58,98	59,54	58,31
Greece	1,43	1,09	0,35	0,47
Spain	1,61	1,96	1,03	1,79
France	10,69	7,66	8,36	7,12
Ireland	0,19	0,10	0,65	0,33
Italy	14,86	16,35	11,89	15,93
Netherlands	4,99	4,38	5,75	4,93
Portugal	0,21	0,17	0,30	0,18
United Kingdom	8,31	4,20	6,54	5,53
EC total	100,00	100,00	100,00	100,00

Source: Comext database.

As for the distribution of Hungary's trade with members of the EC, we refer to Table 3. Data here again gives evidence of an increasing German dominance, and also of Hungary's traditionally close relation to the Italian economy. The rearrangements in the period 1988 to 1992 are remarkable for three additional instances: (1) Germany's share in Hungary's exports[1] increased significantly, but not in her imports; (2) Italy's share increased significantly in Hungary's imports; and (3) the share of the United Kingdom in Hungarian manufacturing exports declined substantially.

Table 4 on the sectoral distribution of exports in 1988 reveals the two sides to Hungarian exports. Apart from 41, 42, food, drink and tobacco, and 25, 26, chemical industry, there was a clear split between sectors which were leading exporters to the CMEA, on the one hand, and sectors which were leading exporters to non-CMEA economies, on the other. Highly-processed, advanced manufacturing products were exported to the CMEA, while less-processed or labour-intensive products (metallurgy, footwear, clothing and leather goods industry) to the EC and to other developed market economies. Changes of the last four years resulted in a painful cut in the share of exports of highly-processed engineering products to the ex-CMEA (sectors 32, 33, 34, 35, 36, 37; see Table 4). Note, that output in most of these sectors relied on CMEA markets to a very high degree: for instance 33, 37, instrument and office machinery engineering, by 57% and 35, 36, motor vehicle engineering, by 46% in 1988. This sectoral rearrangement took place as export turnover to ex-CMEA countries declined to one third of its previous (current) ecu value.

As far as changes in the structure of exports to OECD economies, and within it to the EC, are concerned, we can see significant, but not so pronounced shifts as compared to the trade with ex-CMEA economies as a whole. A logical change was the decline of the share of exports of 22, 31, metallurgical products, following the gradual abandonment of export subsidies and other subsidies that had made this sector competitive in Western markets earlier. A similar explanation applies to the decline of the share of 44, 45, food, drink and tobacco industry.[2] The increase of export shares characterizes several industries and is, among other factors, a response to the decline in domestic and CMEA demand for Hungarian production. Industries that show fast-growing export shares in the OECD area are 25, 26, chemical industries, 34, electrical

[1] Only a small part of this shift can be attributed to German unification, since the new *Länder* cut back their East European trade substantially — by 60-75% — in 1991.

[2] The problems of food production and trade, however, are also related to a series of other factors, like the discontinuation of cross-financing of Western exports from domestic subsidies and high CMEA prices, the loss of CMEA markets, recent ownership changes in Hungarian agriculture, etc.

Table 4

Manufacturing exports to regions, by sectors, in 1988 and 1992

NACE code	Category	ex-USSR (%)		other ex-CMEA (%)		OECD (%)		of which EC (%)	
		1988	1992	1988	1992	1988	1992	1988	1992
21,23	Extraction of minerals	0,78	0,01	0,36	1,11	0,10	0,04	0,07	0,03
22,31	Metallurgy	3,90	15,10	7,32	6,65	14,85	9,30	13,21	8,65
24	Manufacture of non-metallic mineral products	0,37	0,90	0,77	2,19	2,30	2,45	2,50	2,45
25,26	Chemical industry	9,83	13,37	10,90	25,74	18,82	12,63	15,28	10,61
32	Mechanical engineering	13,52	9,58	18,35	6,95	6,34	7,89	6,56	8,24
33,37	Instrument & office machinery engineering	10,98	3,16	10,19	2,18	1,41	1,44	1,30	1,54
34	Electrical engineering	11,83	7,43	13,01	6,12	5,78	11,31	6,58	10,36
35,36	Motor vehicle engineering	22,27	19,12	17,13	7,89	2,26	4,88	0,96	3,77
41/42	Food, drink and tobacco industry	14,88	22,18	9,75	28,22	20,21	15,80	22,22	16,19
43	Textile industry	3,98	2,17	4,20	2,62	5,09	5,42	4,69	6,07
44,45	Footwear, clothing and leather goods industry	5,63	3,16	4,58	1,25	15,23	20,23	18,72	22,75
46	Timber and wooden furniture industry	0,29	0,78	0,59	1,68	3,58	4,03	3,77	4,50
47	Manufacture of paper, printing, publishing	0,49	0,32	0,71	3,18	1,06	1,32	1,23	1,50
48	Processing of rubber and plastics	1,06	2,53	1,53	3,50	2,34	2,29	2,30	2,43
49	Other manufacturing industries	0,18	0,21	0,62	0,72	0,63	0,96	0,61	0,91
	Total	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00
	Total in million ECU	2 063,30	750,24	1 357,67	465,11	3 036,94	5 381,82	1 839,63	3 794,70

Source: Kopint-Datorg database, own calculations.

Table 5

Correlations for trade structures, 1988 and 1992

Exports in 1988	Exports in 1992			
	Ex-USSR	Other ex-CMEA	OECD	EC
Ex-USSR	0,7865			
Other ex-CMEA		0,4399		
OECD			0,8796	
EC				
Imports in 1988	**Imports in 1992**			
	Ex-USSR	Other ex-CMEA	OECD	EC
Ex-USSR	0,9189			
Other ex-CMEA		0,4321		
OECD			0,8655	
EC				0,8555

Source: Kopint-Datorg database and own calculations.

engineering, 35, 36, motor vehicle engineering, and 44, 45, footwear, clothing and leather goods. All these modest structural rearrangements took place within radically-expanding flows of exports: exports to OECD increased by close to 80%, and to the EC by more than 100% from 1988 to 1992 in current ecu terms.

Imports from the OECD and EC went through fundamental restructuring between 1988 and 1992 and became less concentrated than before. This was the result of two factors: the elimination of earlier quantitative restrictions on Hungary's imports, which had distorted trade flows earlier, and the demise of the CMEA system.

When regressing the trade structures between 1988 and 1992 (Table 5) we find that the most substantial structural changes have taken place in trade with 'other ex-CMEA economies' (correlation coefficient of 0,4339 and 0,4321). If, given their marginal significance, we exclude these countries from the analysis, we find the largest rearrangements (the lowest correlation coefficients) in exports to the ex-USSR (0,7865) and imports from the EC (0,8655). The least changing structures were exports to the EC and imports from the ex-USSR.

2.2. Trade performance *vis-à-vis* the EC

Data for trade in NACE 3-digit industries facilitates a more detailed analysis of trade between Hungary and the EC.
As Table 6 demonstrates, in 1992, Hungary's leading export sectors to the EC were mostly natural-resource based or labour-intensive industries. Among them, by 1992 the natural-resource-based ones (412, 252, 414, 221) had lost some of their earlier share in EC exports, while the labour-intensive ones (453, 451, 436) gained shares. As a rule, we can assert that loss of share in exports to the EC has been connected with either the elimination of export subsidies and additional blows that have hit the agriculture and food industry (221, and 412, 224, 414, 413), or the recession on world commodity markets combined with (alleged) dumping by other countries in transition (221, 224) (see the lower block of the table). Gains on EC markets, on the other hand, have been due to successful attempts at reorienting production earlier targeted to domestic or CMEA markets (451, 352, 351, 342) (see the middle block of the table).

As for the most favoured sectors in Hungary's imports from the EC, we find a diversity of industries with a high ratio of engineering sectors (351, 328, 344, 324). The list of the 10 industries with the largest import increase shows that consumer products have played a pivotal role in boosting Hungary's imports from the EC. The list of the industries with the largest import decrease reflects partly the current recessionary (or even depressionary) phase of the Hungarian economy, i.e. the decline of investment activities, and partly a decline in the purchase of various chemicals.

In Table 7, we see the correlation between trade structures in different years between 1980 and 1992. The most apparent result here is that changes in Hungary's import structure were much more substantial throughout the whole period than shifts in the structure of exports (i.e. smaller correlation indices for imports than for exports). In the previous section on the basis

Table 6

Ten industries with the highest share in manufacturing exports to the EC in 1992, and with the largest positive and negative changes in export shares between 1988 and 1992

NACE code	Category	1992 %	1992/88 percentage point change
	Industries with highest export share		
412	Slaughtering, preparation and preserving of meat	10,21	-5,06
453	Manufacture of ready-made clothing	11,95	0,25
252	Manufacture of petrochemicals and coal-source chemicals	8,20	-0,12
451	Manufacture of mass-produced footwear	4,74	1,54
414	Processing and preserving of fruit and vegetable products	3,07	-0,42
436	Knitting industry	4,01	1,20
224	Production of non-ferrous metals	2,95	-1,40
316	Manufacture of tools, finished metal goods	2,64	0,54
221	Iron and steel industry	2,41	-2,59
467	Manufacture of wooden furniture	2,43	0,38
	Industries with largest export increase		
341	Manufacture of insulated wires and cables	2,82	2,61
451	Manufacture of mass-produced footwear	4,74	1,54
436	Knitting industry	4,01	1,20
352	Manufacture of bodies for motor vehicles	1,16	1,16
351	Manufacture and assembly of motor vehicles, engines	1,18	0,87
342	Manufacture of electrical machinery	2,41	0,80
314	Manufacture of structural metal products	1,14	0,80
328	Manufacture of other machinery	2,21	0,66
325	Manufacture of mines, iron and steel industry	1,69	0,55
316	Manufacture of tools, finished metal goods	2,64	0,54
	Industries with largest export decrease		
412	Slaughtering, preparation and preservation of meat	10,21	-5,06
221	Iron and steel industry	2,41	-2,59
253	Manufacture of other industrial chemicals	0,78	-1,76
224	Production of non-ferrous metals	2,95	-1,40
43B	Woven fabrics	0,67	-0,60
43A	Yarns	0,48	-0,42
414	Processing and preserving of fruit and vegetable products	3,07	-0,42
456	Manufacture of furs and fur goods	0,19	-0,41
465	Other wood manufactures	0,53	-0,32
413	Manufacture of dairy products	0,12	-0,25

Source: Comext database and own calculations.

of more aggregate data, a stunning discrepancy was revealed between the correlations which is worthy of a detailed analysis. As a general explanation, here we should refer to the difference between the softness/hardness of the domestic (Hungarian) and the EC market. The structure of imports by Hungary from Western Europe could have been heavily influenced by the past changes in the Hungarian economic and trade policy in the widest sense (i.e. including the recent reforms), while exports to the West could be influenced by domestic policy measures, like export promotion, to a limited extent only: in most sectors, Western markets themselves decide what shipments they accept and what they refuse.

It is remarkable, that by 1992-91 the characteristic discrepancy between the changes of the structure of imports and exports seems to disappear: the structure of exports and imports transform at similar rates. This may signify the beginning of a

Table 7

Correlation matrix of trade structures, 1980-92

Hungarian exports to the EC	1980	1985	1988	1989	1990	1991
1992	0,9224	0,8974	0,9434	0,9343	0,9573	0,9832
1991	0,9503	0,9499	0,9763	0,9726	0,9823	
1990	0,9699	0,9623	0,9933	0,9910		
1989	0,9709	0,9832	0,9966			
1988	0,9786	0,9766				
1985	0,9568					
Hungarian imports from the EC	**1980**	**1985**	**1988**	**1989**	**1990**	**1991**
1992	0,6564	0,7169	0,7950	0,8653	0,9098	0,9825
1991	0,7293	0,7936	0,8621	0,9225	0,9551	
1990	0,8161	0,8831	0,9393	0,9708		
1989	0,8824	0,9388	0,9800			
1988	0,9306	0,9713				
1985	0,9728					

Source: Own calculations.

new era, when economic and trade policies of Hungary are no longer interventionist (as before 1989), and the systemic changes already have a balanced impact on exports and imports.

In Table 8 the NACE 3-digit sectors that occupied the 10 first and the 10 last places in the order of sectors in respect to sectoral trade coverage ratios (sectoral exports/imports) are selected. The table also contains the corresponding values of the sector's share in manufacturing exports, the specialization index[1] and the intra-industry trade index.[2]

The table demonstrates again that Hungary's major surplus industries in her trade with the EC are mostly natural-resource based or labour-intensive sectors.[3] Given that Hungary is not exceptionally rich in wood, it is a surprising feature that there are four wood-related industries in the first 10 surplus sectors, and nearly all among them show high export specialization. However, their weight in manufacturing exports is rather low (see the second column), and with the disappearance of cheap wood supplies from the ex-Soviet Union they do not seem to be especially prospective sectors. The only sector that we find here from the group of engineering industries is (347) electric lamps, Hungary's strong, advanced sector with a long tradition. On the other hand, it is not by chance that the group of 10 deficit sectors contains three engineering industries.

As for the third column of the table, it is interesting to learn that most of the industries with high coverage ratios also achieved a high level of export specialization in EC markets. This is partly a reflection of the fact that the EC is not a marginal market for Hungary, and partly that industries capable of a substantial surplus in trade with the EC also manage to utilize their potential to realize a significant level of specialization there.

Intra-industry trade was traditionally on a low level in centrally-planned economies, partly due to the special division

1 The specialization index is the ratio of the given Hungarian sector's exports to the EC to Hungary's total manufacturing exports to the EC, divided by the ratio of EX imports of the products of the given sector from the world to total manufacturing imports of the EC from the world. I.e.:

$$\frac{X^{HEC_i} / \Sigma X^{HEC_i}}{m^{ECW_i} / \Sigma m^{ECW_i}}$$

where X^{HEC_i} stands for exports by the Hungarian manufacturing sector i to the EC, and m^{ECW_i} for import by the EC of the products of the manufacturing sector i from the world.

2 This index is the Grubel-Lloyd index of intra-industry trade: $1 - (| (X_i - m_i) | / (X_i + m_i))$, where X_i and mi are respectively sectoral exports to and imports from the EC.

3 We found the same above for the leading exporter sectors.

Table 8

Sectors with the 10 highest and the 10 lowest coverage ratios, 1988-92

NACE code	Industry	Trade cover	Export structure	Export specialization	Intra-industry trade
414	Processing and preserving of fruit and vegetable products	21,29	3,32	3,50	0,09
465	Other wood manufactures	16,53	0,74	4,48	0,11
412	Slaughtering, preparation and preserving of meat	16,15	13,09	11,17	0,12
463	Carpentry, joinery, parquet flooring	7,16	0,38	1,98	0,24
461	Sawing and processing of wood	6,62	0,75	0,43	0,26
453	Ready-made clothing	6,48	11,38	2,83	0,27
347	Electric lamps and lighting equipment	6,00	1,77	6,75	0,29
464	Manufacture of wooden containers	5,85	0,04	3,38	0,29
455	Household and other textile goods	5,70	0,86	2,19	0,30
418	Starch and starch products	5,43	0,19	0,96	0,31
472	Processing of paper and board	0,11	0,18	0,24	0,20
344	Telecommunications equipment, meas./rec.[1] elect.-med. equip.	0,11	0,32	0,10	0,19
258	Soap, synth., detergents, perfume, etc.	0,10	0,08	0,46	0,18
417	Manufacture of spaghetti, macaroni	0,10	0,00	0,16	0,18
351	Manufacture and assembly of motor vehicles, engines	0,09	0,50	0,10	0,17
323	Manufacture of textile machinery	0,05	0,07	0,18	0,10
255	Manufacture of paints	0,03	0,03	0,17	0,05
415	Processing and preserving of fish and other sea foods	0,02	0,00	0,00	0,05
246	*Production of grindstones, other abrasive products*	0,02	0,00	0,06	0,04
429	Manufacture of tobacco products	0,00	0,00	0,00	0,00

1 Electronic measuring and recording equipment.

NB: Sectors 221, 232 and 233, with no export at all, were not taken into account since the low level of trade coverage was clearly caused by the lack of the respective natural resources.

Source: Own calculations.

of labour between the raw material-supplying Soviet Union and the manufacturing product exporting East European economies.[1] On the other hand, trade with the rest of the world could incorporate more intra-industry trade. According to Gács (1989) the intra-industry trade ratio in Hungary's trade (manufacturing and non-manufacturing combined) with market economies went through a steady growth in the period of 1972 to 1986. Calculations for 108 NACE 3-digit manufacturing sectors show a continuously growing intra-industry trade in Hungary's trade with the EC. From a level of 44% in 1980, it gradually grew to 47% by 1988 and jumped to 53% by 1992. The acceleration of the expansion of intra-industry trade has most probably been connected with the abandonment of earlier administrative barriers of trade, as well as with the activity of a great number of joint ventures (many of them in the network of multinational companies), that were established in Hungary in the last five years.

As a summary of this chapter we can state the following: Hungary's trade has been characterized with a strong attachment to her CMEA partners for many decades. This close relation first gradually and then abruptly collapsed and gave way to the reconstruction of the historically close relation to West European economies, especially Germany, Austria and Italy. As a region the EC became the primary trading partner for Hungary. The pendulum of reorientation, however, swung to the extreme in 1991, the share of ex- CMEA trade falling to a particularly low level. Data for 1992 show that trade with neighbouring ex-CMEA countries may recover in the near future.

Hungary's trade has long been characterized by a dual nature: some industries exported almost exclusively to the CMEA, others almost exclusively to the OECD economies. Highly-processed, advanced manufacturing products belonged to the first group of products, while less-processed, resource-based or labour-intensive products to the second one. The sectors that comprised an exception to this rule of separation were some chemical industries and food, drink and tobacco production. Hungary's major surplus industries in her trade with the EC were mostly natural-resource based on the one hand, and labour-intensive sectors, on the other.

In the course of recent trade reorientation it was mostly labour-intensive industries which gained shares in EC markets, while resource-based industries lost their earlier export shares. These changes notwithstanding, up to 1991, the structural changes in

1 See Halpern-Korösi-Richter (1985).

Hungary's exports to the EC were much less pronounced than changes in her imports from that area. Within imports, the share of consumption goods has increased substantially and continuously, while the ratio of engineering products is still very high, even if the recent decline in investment activity in Hungary is felt on engineering import flows.

The earlier growth of intra-industry trade in Hungarian-EC relations has accelerated in the last few years, and by 1992 it accounted for more than half of this trade.

3. Current trade performance and market distortions

Most of the changes in conditions that led to a closer, more intense relationship between the Hungarian economy and the EC meant in fact the elimination of formerly pervasive distortions to trade. Hungary had a trading system characterized by strong State intervention even after the establishment of relative independence for enterprises after 1968. At the same time, the EC treated Hungary as a State-trading country, belonging to a bloc hostile to Western Europe. Accordingly, trade with Hungary was treated in the least favourable way by the EC. The years 1988 to 1993 saw a fast, spectacular dismantling of former trade barriers in Hungarian-EC relations, the effects of which form the subject of this chapter.

3.1. EC barriers to Hungary's exports

An improvement in the treatment of the Hungarian exports by the EC started in December 1988, when the so-called Trade and Cooperation Agreement between the two parties came into force. That was followed by granting Hungary the GSP status in 1990, and the agreement on Hungary's association with the EC (the Europe Agreement). Since March 1992 an interim agreement on the association status of Hungary has been in existence and will remain until the Association Agreement is ratified in all the countries of EC. The provisions of the agreement were supplemented by a market access package of the Copenhagen summit of the EC in June 1993, which basically accelerates the phasing out of tariffs on East European exports to the EC.

In the course of negotiating these agreements Hungary's major target was to push for a phasing out of specific quotas and other non-tariff barriers applied by the EC against Hungary. While these quotas affected only a small portion of the whole product range, the incidence on Hungary's exports was high. Accordingly, the removal of these quotas implied a high potential for these exports to increase.[1] As late as 1988, the incidence in the application of non-tariff barriers against Hungary was, in most SITC 2-digit product groups, significantly higher than against other groups of countries and even against other CMEA economies.[2]

Another direction of negotiations aimed at a reduction of tariff rates applied to Hungarian products. Hungary exported many kinds of labour-intensive products that attracted relatively high protection. This is why in 1983 the average of tariff rates applied for imports from Hungary was in fact more than double the average of the rates applied on imports from other East European economies.[3]

In the last few years, the situation went through some change as reflected in the series of analyses by Schumacher and Möbius on more disaggregated data.[4] The authors distinguish between different forms of trade protection: these are tariff protection, quantitative restrictions, other non-tariff barriers, and government procurement and technical standard regulations. They also make a detailed calculation for the strength of each of these forms of protection effected by the EC. According to their results, by 1991, quantitative restrictions on Hungarian exports concentrated on a few sensitive sectors only in iron and steel industry, textile and clothing, leather, fur and footwear production. The ratio of products within these sectors exposed to quantitative restrictions was extremely high, in most cases close to 85%.

As for tariffs, the Hungarian sectors most hit by high — 11 to 15% — tariffs were to some extent the same sectors as those covered by quantitative restrictions, i.e. 436, knitting industry, 453, ready-made clothing, and 483, processing of plastic, these three making up close to 20% of Hungary's exports to the EC. Another group of products also facing high (8-10%) tariffs were 222, steel tubes, 252, petrochemicals, 345, radio and TV receivers, 438, carpets, and 351, manufacture and assembly of motor vehicles. All these made up another 15% of the country's exports.

The combined effect of tariffs, different kinds of quantitative restrictions as well as restrictions due to public procurement and technical standard requirements, all for 1991, were summarized by Schumacher and Möbius and are reproduced in the Statistical Annex in Table 16. The strength of restrictions is

1 See Pinder (1991).
2 See Tovias and Leer (1991).
3 See Tovias and Leer (1991).
4 See Schumacher and Möbius (1992a, 1992b, 1993).

evaluated with points ranging between 0 and 9, the larger indices marking stronger protection.

(A) The expected effects of the Europe Agreement[1]

Information on the expected impact of the Europe Agreement is only tentative for different reasons. Given the scheduled nature of the agreement, its impact is deemed to change from year to year. Also some regulations, like the application of tariff quotas and tariff ceilings make it difficult to forecast the future level of tariffs even if trade flows could be perfectly predicted.

As is well-known, in the field of industrial products the Europe Agreements aim at establishing free trade areas between the EC and each of the East European countries.

From the point of view of Hungary's manufacturing export goods the following changes have been the most important. The EC abolished quantitative restrictions on all products but textiles and coal products. The pattern of removal of restrictions on textile products are dependent on the results of the Uruguay round.[2] In Hungary's exports in 1991 the most important textile items were those of 436, knitting industry (ECU 112 million) and 453, clothing (ECU 344 million). In each industrial category the coverage of quantitative restrictions (i.e. the share of products constrained by quotas) was 56 to 57%, and this did not decline by more than 3 to 5 percentage points from 1991 to 1992. The utilization of the quotas by Hungarian exporters was on average not high: 22 to 27% in these two industries, and usually much less in others. The low level of this average does not necessarily imply, though, that there were no products where quotas would have been effective.

The EC also abolished customs duties on all imports except for the following groups:

(i) 'basic products',

(ii) 'sensitive products',

(iii) textiles, coal and steel products.

The share of those industrial products whose exports are exempt from duties without any qualification is 54% (on the base of 1991 exports).

'Basic products' is a virtually unimportant category for Hungary. In the case of 'sensitive products', duties are to be phased out by 1995, with the application of tariff quotas and ceilings. This means that annually increasing amounts of imports are to be free of tariffs, but tariffs will be applied to imports over that predetermined volume (in the case of quotas), or the Community may decide to reintroduce duties (in the case of ceilings). Ceilings are applied in two thirds of the sensitive products, and quotas are applied in the rest. Sensitive products made up close to 21% of Hungary's exports to the EC in 1991. The special feature of the EC's Europe Agreement with Hungary is that it applies much less favourable parameters than the agreements concluded with Czechoslovakia and Poland. The export of Hungarian sensitive products in 1991 exceeded the volumes predetermined for 1992 on average by 60%, which shows that tariff quotas and ceilings in most cases were effective. The practice in 1992 shows that EC authorities tend to apply very rarely the reintroduction duties on imports above the ceiling.[3]

Duties on textiles and clothing are to be phased out by 1997. Textiles and clothing made up another 21% of Hungary's export of industrial goods to the EC. Re-imports are to be exempt from duties from 1994 only if processing of imported materials takes place in Hungary. Since this kind of outward processing made up 68% of Hungary's textile and clothing exports to the EC in 1992, the above provision may mean a considerable advantage to Hungarian exporters.

The phasing out of duties on steel products (4% of Hungarian exports) will be completed by 1996.

Schumacher and Möbius (1993) calculated the actual and expected EC tariff rates on Hungarian exports of manufacturing products. Their results are the following: 1989 — 7,0%, 1990 — 5,0, 1991 — 4,5%, 1992 — 2,5%, 1994 — 1,9%, 1995 — 1,2%, 1997 — 0,0%.

On the base of the above listed changes and the data published in Schumacher and Möbius (1993), I made some tentative calculations for the combined sectoral trade protection indices for 1992. It turned out that as compared to protection points in Table 16 of the Annex, in the majority of industries only a 1 point decline of protection could be experienced. The most significant changes occurred in sectors 221, iron and steel, 224, non-ferrous metals, and 341, insulated wires, where a 2-3 points fall of protection met a 2-3% share of total exports.

1 The following description is based on Schumacher and Möbius (1992b, 1993).

2 The length of the removal period would be half that decided in the Uruguay Round, but not shorter than five years, starting 1 January 1993.

3 See Schumacher and Möbius (1993).

Table 9

The first 30 most protected sectors by the EC against Hungarian exports

	NACE code	Industry	Export share	Index of trade protection	
			1992	1991	1992
1	427	Brewing and malting	0,01	9	n.a.
2	425	Champagne, sparkling wine, wine-based aperitifs	0,01	9	n.a.
3	417	Manufacture of spaghetti, macaroni	0,00	9	n.a.
4	414	Processing and preserving of fruit and vegetables	3,93	9	n.a.
5	453	Manufacture of ready-made clothing	10,96	9	8
6	421	Cocoa-based products, sweets, ice lollies	0,23	9	n.a.
7	43B	Woven fabrics	0,86	8	8
8	247	Manufacture of glass and glassware	1,78	8	3
9	438	Manufacture of carpets	0,42	8	5
10	221	Iron and steel industry	2,42	8	1
1-10		Cumulated export share	20,62		
11	455	Manufacture of household textiles	0,96	8	6
12	412	Slaughtering, preparation and preserving of meat	12,53	7	n.a.
13	451	Manufacture of mass-produced footwear	4,19	7	7
14	43A	Yarns	0,61	7	3
15	494	Manufacture of toys and sports goods	0,34	7	2
16	481	Manufacture of rubber products	1,26	7	3
17	423	Manufacture of other food products	0,92	7	n.a.
18	422	Manufacture of animal and poultry foods	0,59	6	n.a.
19	439	Miscellaneous textile industries	0,28	6	2
20	A13	Manufacture of dairy products	0,13	6	n.a.
1-20		Cumulated export share	42,43		
21	419	Bread and flour confectionary	0,03	6	n.a.
22	260	Man-made fibres industry	0,47	6	2
23	342	Manufacture of electrical machinery	2,07	6	3
24	436	Knitting industry	3,57	6	6
25	418	Manufacture of starch and starch products	0,21	6	n.a.
26	222	Manufacture of steel tubes	0,89	6	2
27	416	Grain milling	0,03	6	n.a.
28	428	Mineral water, non-alcoholic drinks	0,00	6	n.a.
29	326	Manufacture of transmission equipment	0,80	5	2
30	345	Radios, TV, sound equipment	0,93	5	2
1-30		Cumulated export share	51,43		

Source: Own calculations, based on Schumacher and Möbius (1992 and 1994).

Given that at time of writing, the combined index of protection in its complete form was available for 1991 only, in the following we will use mostly those data.

(B) The weight of the most protected industries

Table 9 shows the first 30 export sectors of Hungary meeting the strongest trade restrictions in EC markets. The strength of restrictions is represented by the combined index of Schumacher and Möbius calculated for 1991. The table unambiguously asserts the finding that EC restrictions are strongly biased against Hungary's leading export industries. The turnover of the first 30 most severely hit export sectors amounts to half of Hungary's export to the EC. In contrast to this, the 30 least restricted export sectors (not reproduced here) amount to less than 8% of this export. It is interesting and highly disturbing that apart from the well-known sensitive industries (like 453, 221, 412, 451, 436), some of Hungary's other leading exports sectors were also drastically restricted in

their export activities. These are 247, glass and glassware, 481, rubber products, and 342, electrical machinery.

To inspect the first tentative impact of the Europe Agreement on the formerly most protected industries we also incorporated the 1992 protection points in the last column of Table 9. As the data indicates, strong protection, as a rule, did not change, or was reduced only moderately.

3.2. Market imperfections in Hungary

In the last five years, in the Hungarian economy, most of the market distorting elements have been dismantled or substantially reduced. These developments can be listed as follows:

(i) Liberalization and deregulation of economic activity in a general way and, through this, the reinforcement of basic principles of the market. This entailed, *inter alia*, the reduction of the interference of State administration into business and the liberalization of prices.

(ii) Trade related relaxations ensured the possibility to carry out trade without the need of a licence for this; the consequent gradual liberalization of imports from 1989 on led to a liberalization ratio (ratio of liberalized imports to all imports) of 92% by 1991; a similar, although slower relaxation of licencing of exports; the gradual reduction of specific export subsidies.

(iii) Measures connected with the rearrangement of relations with CMEA (ex-CMEA) economies.

Due to the special price-setting principles that had been introduced in Hungary back in 1980, producers in Hungary had to buy imported energy sources and raw materials at world market prices while the difference between the low price paid by foreign trade enterprises to foreign suppliers in other CMEA economies and the price paid by Hungarian users was collected by the budget. Because of this special arrangement, the shift to world market prices in trade with CMEA partners did not imply a serious supply shock for Hungarian importers. The majority of the burden of price adjustment fell on the Hungarian budget. Due to this peculiar feature, in this field Hungarian business meets less pressure to adjustment than respective producers in other small East European economies.

As for an account of the remaining factors that would encourage/discourage exports and imports to and from the EC, we are left with almost no measures used by the Hungarian Government in a differentiated way.

Among the factors encouraging exports, subsidies granted to exporters must be mentioned. In 1990-91 agricultural and food industry products, almost exclusively, enjoyed export subsidies. The justification for the use of these subsidies was the need to counterbalance protectionist measures and outright subsidization of agriculture and food industry in foreign countries, like the support granted by the procedures of the common agricultural policy in the EC. Data for the years 1989 to 1991 show that no manufacturing sector enjoyed a significant[1] export subsidization outside the food industry. Actual subsidization of the different sectors of food industry varied between 1 and 42% of the value of exports with an average of 28%.[2]

If instances of discouragement of exports are to be assessed, one has to refer to the narrowing, but still visible, domain of export licencing. It is in existence in the case of numerous products, however, in most cases there is not a genuine national initiative. Hungarian authorities here make efforts to enforce Western restrictions before they become effective and would have their — allegedly — widespread harmful impact on Hungary's trade.[3]

Special note should be given to the so-called self-governed commodity councils. These institutions were organized in recent years to assist the Ministry of Foreign Economic Relations in enforcing voluntary export restraints, quantity restrictions and quality requirements, as well as threat of anti-dumping measures that Hungary has had to accept in her relations to the EC, EFTA, the USA and other countries. The recommendation of these Councils for the allocation of export quotas, as well as for the qualification of would-be exporters is not binding for the ministry. Anecdotal evidence shows that these councils tend to be dominated by large traditional producers and trading companies which make efforts to limit the access of new agents to Western markets.

In addition to reducing export subsidization the Hungarian Government has slashed product- and producer-specific subsidies substantially in the past four years. The bulk of the remaining subsidization is related to non-tradeable activities. There has been a certain amount of subsidization of near

1 We considered a subsidy to be significant if it exceeded 2% of exports sales value.

2 For a further calculation with the relative strength of these subsidies in section 3.3, we weighted the level of subsidization with weights between 0 and 5. The weight 0 is applied under 2% of subsidization (in terms of exports sales value), 1 for subsidization between 2 and 5%, 2 for 5-10%, 3 for 10-15%, 4 for 15-20% and 5 for subsidization over 20%.

3 For the purpose of further calculations, we determined numerical values (ranging between 0 and 3) to reflect the coverage of export licencing in each sector. This index serves as a proxy for discouragement of exports in the given sector.

bankrupt large State enterprises through debt- and tax-amnesties in 1992 and this subsidization expanded in 1993. The effect of this latter form of subsidies on export, however, could not be taken into account.

In the years 1988 to 1990, the Hungarian Government has encouraged the inflow of foreign direct investments by generous tax holidays for joint ventures. In addition, special concessions were granted for some individual investments of exceptionally large value. It is not easy to take into account benefits like this in a systematic way. The sectors most visibly benefiting from this were 351, 352, 353, industries related to motor vehicle manufacturing, and — to a lesser extent — 247, glass and glassware.

When trying to make a composite index of encouragement/discouragement of exports, one cannot avoid the dubious exercise of combining the effects of export subsidies and export licencing (including the effect of the self-governed product councils). Since mostly the same sectors are subject to effective licencing and subsidies, the impact of the two measures may neutralize each other. Another difficulty is that only those exports overcoming the hurdles of licencing can enjoy subsidies. It is also not easy to establish a 'normal' level of subsidies in the case of food industry products. All these puzzles notwithstanding, a composite index was established to serve as the base of analysis in Section 3.3 of this paper.[1]

As for encouragement/discouragement of EC imports to Hungary, due to the recent process of liberalization of imports we cannot identify significant quantitative barriers. In 1991-92 5 to 10% of imports were exposed to quantitative restrictions, most of these products being industrial consumer products and food products. The form of regulation is either individual licencing or determination of global quotas for a wide range of goods and the allocation of these. Experience has shown that many quotas are soft. In some fields, however, they have been really effective in containing imports. In 1992, effectively-restricted products were footwear, certain kinds of clothing and used passenger cars.

To make a tentative assessment for the level of discouragement of imports for Section 3.3, both the estimated coverage of licencing and the perceived effectiveness of import control were taken into account.

3.3. Trade performance and trade distortions

This section combines the results of different sections of Chapters 2 and 3. Table 10 gives results of a classification of manufacturing sectors according to Hungarian trade performance in EC markets on the one hand and EC trade protection that Hungarian exports face on the other. Trade performance is represented by trade coverage ratios (x/m for each sector, see Annex Table 13), while trade protection classification makes use of the Schumacher-Möbius indices for 1991 (Annex Table 16).[2]

In principle, the sectors that faced high protection and showed good performance were prospective candidates for a rapid expansion if trade barriers were removed or reduced in the future. In contrast to this, in principle sectors that faced low trade protection and achieved bad trade performance were the least prospective ones, since these sectors had already had the chance in the past to achieve better results in EC markets, but were not successful in doing this (at least not in achieving a high trade coverage ratio).

It was not by chance that we stressed the expression 'in principle'. Future trade performance will be determined not only by the expected reduction of trade barriers, but by a multitude of factors (for a review of further factors see Chapter 4). As a consequence, some of the seemingly prospective sectors are in fact declining, and some of the less prospective ones may in fact soon show progress.

As for prospective sectors, we must recognize that these are not simply sectors with good performance (in terms of exports exceeding imports), but eight sectors that produce 36% of Hungary's exports to the EC. If these industries have a solid basis in the period when trade restrictions disappear, they can really contribute to the expansion of Hungary's exports in the future. The problem lies in the condition 'if'. Some of the industries are declining, because they cannot maintain their former level of activity after most of earlier subsidies were phased out, old institutional structures modified and import competition crowds them out even from the Hungarian market. Category 221, iron and steel industry, is thus experiencing a 30% decline in the ecu value of exports from 1990 to 1992 following an upsurge of a similar extent in 1988 to 1990. According to forecasts, 412, slaughtering, is to follow the same path even if its performance still shows a spectacular (31%) export expansion from 1988 to 1992. Other sectors in this column have exhausted much of their sales possibilities with

[1] Levels of encouragement and discouragement, as well as the presence of support for FDI (as a sign of enhancing economic activity in Hungary, including exports) were confronted in each sector. As a consequence, 8 industries were found to be 'encouraged', 11 'discouraged', and the overwhelming majority were classified as 'neutral', i.e. exports in these sectors were not affected by government measures.

[2] The classification according to trade performance is as follows: good (i) over 1,3; medium (ii) between 0,7 and 1,3; bad (iii) under 0,7.
The classification of trade protection is arranged in the following way: low (*) for values of 0, 1, 2 and 3; medium (**) for 4, 5 and 6; high (***) for 7, 8 and 9.

Table 10

The level of export performance and trade protection in EC markets

Hungary's performance in EC markets, 1992	EC trade protection 1991	Hungary's performance in EC markets, 1992	EC trade protection 1991
Good	High	Bad	Low
221 Iron and steel industry		211 Extracting iron ore	
247 Manufacture of glass and glassware		231 Extracting of building materials	
412 Slaughtering, preparation and preserving of meat		233 Salt extraction	
414 Processing and preserving of fruit and vegetables		242 Manufacture of cement, lime and paper	
451 Manufacture of mass-produced footwear		245 Working of stone and non-metallic mineral products	
453 Manufacture of ready-made clothing		246 Production of grindstones	
455 Manufacture of household textiles		255 Manufacture of paints	
481 Manufacture of rubber products		258 Manufacture of soaps, synth. detergents, perfume, etc.	
		259 Manufacture of other chemical products (household)	
		313 Secondary transfer of metals	
		324 Manufacture of machinery for food, chemicals industries	
		327 Manufacture of other machinery for specific industry branches	
		343 Manufacture of electrical apparatus for industry, batteries, etc.	
		363 Manufacture of cycles and motor cycles	
		364 Aerospace equipment	
		371 Manufacture of measuring and precision instruments	
		374 Manufacture of clocks, watches and parts	
		411 Manufacture of vegetable and animal oils and fats	
		426 Manufacture of cider and of wines, beverages	
		429 Manufacture of tobacco products	
		471 Manufacture of pulp, paper and board	
		472 Processing of paper and board	
		482 Retreading and repairing of rubber products	

Sources: Own calculations based on Schumacher and Möbius (1992a) and Comext database.

their old marketing strategy by 1992, and cannot significantly expand unless they find the necessary Western partners for an effective further penetration to established EC markets. These are 414, processing and preservation of fruit and vegetables, 451, mass-produced footwear, and 453, ready-made clothing. As the events of 1993 show (see Section 5.2), these exports are extremely vulnerable to the harvest (food industry sectors) and to changes in the business cycle in Western Europe (consumer products).

From among the allegedly less-prospective industries (second column), some really deserve the adjective 'unpromising', partly because of the lack of necessary mineral resources in the country (like sectors 211, 233), and partly because they produce goods usually not profitable to transport a long way (like most sectors of the building materials industry). Some sectors, however, showed a bad performance in trade with the EC because of their specialization in relation to the CMEA (like 371, measuring and precision instruments). Still, in the case of many, especially engineering sectors in this column, it is justified to say that, unless substantial investments involving transfer of know-how and the provision of good marketing opportunities are made, little can be expected from them in the near future in EC markets.

For a further analysis, we classified manufacturing sectors according to trade performance and domestic restricting/-supporting measures affecting Hungarian exports. In principle, sectors falling into the class of 'good' export performance and 'discouraging' measures may be considered prospective sectors if we assume a further dismantling of restrictions. Since the share of the sectors falling into this category makes up 27% of Hungary's exports to the EC in 1992, dismantling the remaining domestic restrictions on Hungarian exports might be beneficial for Hungary's export performance. Here we find sectors related to the steel industry (221, 222): for them the same applies as expressed in the paragraphs above. Other sectors (453, 455), however, have some potential if restrictive measures, mostly coerced by VERs and other bilateral agreements on the Hungarian authorities, are to be relaxed.

If for another analysis, we take the sectors in which EC showed good trade performance in Hungary (inverse coverage ratios), and imports in Hungary are strongly discouraged then we have those sectors that in principle are prospective for a future penetration into Hungary (since they have been performing well against the odds). Here we get, among others, 351, manufacture and assembly of motor vehicles, which is really important. Hungarian authorities already partially liberalized imports, in terms of not favouring the import of motor vehicles from CMEA economies and enlarging quotas for vehicle imports. While the import of this sector stood at 0,62% of total manufacturing imports from the EC 12 years ago, it surged to 7,01% in the last few years. Further liberalization, especially those of used cars, could enhance additional penetration. Most of the other sectors in this category, however, are food industry products, where restrictions can be expected to persist, at least in the first years covered by the Europe Agreement.

We should add that further industries in this category have attracted foreign direct investment in the recent years (sectors 351, 411, 421, 427, 429). This development indicates that investors envisage a bright future in these sectors. Their short-term ambition is most probably to dominate domestic markets and crowd out imports. This endeavour has the implication of strong lobbying for the maintenance of some sort of trade protection and preventing future penetration of imports from EC in these sectors.

As a summary of this chapter we may state the following: the last five years have brought massive, but partial dismantling of trade barriers to Hungary's exports to the EC. Even now, those industries of Hungary that show outstanding trade performance and produce a determinant share of Hungarian exports face the strongest and most persistent restrictions in Community markets. A reduction of quantitative restrictions and tariff barriers is vital for these industries, but one must also understand that dismantling trade barriers is only one of the prerequisites necessary to make prospective Hungarian industries competitive in Western markets. Accordingly, several industries that can expect easier access to EC markets in the future (like iron and steel and slaughtering) are bound to decline, due to reasons other than the intensity of trade measures.

Hungarian markets are not exceptionally restrictive against imports from the EC. However, firms in food and consumer goods industries that are still protected, may fight ferociously for the prolongation of their protection, since the new, private owners of these firms are mostly experienced Western investors.

4. Factor endowments and market imperfections

4.1. EC tariff and non-tariff barriers and factor endowments

The analysis of development of trade structures naturally raises the question of the role factor endowments have played in the past in the formation of trade and what role they may play in future restructuring.

To study these relations, factor-intensity data collected for a group of representative countries of the EC, for most of NACE 3-digit sectors and for different years of the period 1988 to 1990 were used. The data was made available by the DG-II of the Commission of the EC.

Because of a lack of similar data for Hungary, the rudimentary assumption was made that factor intensities of sectoral production in Hungary are similar to those of EC economies. Accepting this assumption, we can refine our previous analysis concerning EC trade barriers to Hungary's exports on the one hand and the nature of trade distortions in Hungary on the other.

Table 11 gives the cumulated export and import shares of the sectors with highest factor intensity. The result is more proof of the dominance of labour intensive industries in Hungary's export's to the EC, both in the past and at present. The share of these sectors even increased in the course of the last few years.

It is a remarkable and a new finding that the importance of R&D- and skill-intensive sectors visibly increased in Hungary's exports between 1988 and 1992. The protagonists here were four sectors that were both highly R&D- and skill-intensive: 341, insulated wires, with a 2,61 percentage point increase, 352, bodies of motor vehicles, with 1,16 percentage points, 342, electric machinery, and 351, manufacture and assembly of motor vehicles. While the double face of former structure of Hungarian exports (i.e. resource- and labour-intensive exports to the West, and R&D- and skill-intensive engineering exports to the East) predetermined, to some extent, the necessary expansion of research- and skill-intensive exports to the West, the progress is still encouraging.

To balance the increasing share of labour-, R&D- and skill-intensive products in Hungary's exports to the EC, we see a slight drop in the share of capital- and energy-intensive exports.

Hungary's imports reflect naturally a substantially different structure of factor intensities: high R&D- and skill-intensity, and a growing share of capital-, labour-, and R&D-intensive imports.

Table 11

Hungarian manufacturing exports to and imports from the EC — Share of total exports/imports of NACE 3-digit sectors with the highest factor intensity

(%)

	Capital	Labour	R&D intensity	Skills	Energy
Export					
1988					
- first 10	1,59	17,84	8,35	4,12	7,95
- first 20	8,97	23,33	10,44	10,72	12,24
- first 30	17,27	28,32	16,11	14,20	15,77
1992					
- first 10	1,80	19,81	12,47	6,02	6,79
- first 20	8,42	26,90	16,41	15,46	10,46
- first 30	16,78	31,35	24,79	19,92	14,25
Import					
1988					
- first 30	23,01	14,72	44,08	39,10	20,35
1992					
- first 30	27,95	17,88	48,95	38,42	16,67

Source: Own calculations.

Table 12

EC trade protection and factor intensity of exports (export share for 1992, first 20 most factor-intensive sectors)

EC trade protection	Capital-intensive sectors		Labour-intensive sectors		R&D-intensive sectors		Skill-intensive sectors		Energy-intensive	
High	417	427	451	455					247	
	423		453	494					481	
Share in total exports %		0,99		18,06		0,00		0,00		2,91
	224	418	248	419	256	345	256	345	222	418
	256	422	326	436	257	346	257	346	223	
Medium	260	428	361	442	330	347	330	347	224	
	330		362	492	341	372	341	372	248	
	351		372	493	342	373	342	373	256	
	416		373	495	344		344		260	
Share in total exports %		6,35		8,48		12,99		12,99		6,02
	211	462	244		255	364	255	471	211	312
	241	471	258		258	371	258	472	241	313
Low	242		259		259	374	259	473	242	420
	245		343		343		343		243	471
	411		352		352		371		245	482
	420		353		353		374		311	
Share in total exports %		1,07		0,35		3,42		2,47		1,53
Total share %		*8,42*		*26,90*		*16,41*		*15,46*		*10,46*

Source: Comext database, Schumacher-Möbius (1992a), own calculations.

Table 12 analyses the distribution of the first 20 most resource-intensive sectors (out of a total of 95) in respect to the level of trade protection in the EC against Hungary's exports. The table testifies again that Hungary's export is mostly hurt in the EC by the high level of protection of labour-intensive industries, notably 453, ready-made clothing, and 451, mass-produced footwear. These two make up almost 17% of Hungary's exports. In both sectors Hungary established a broad base of capacities. In footwear production a dominant share (over 40%) used to be exported to CMEA markets, while cloth manufacturing was less dependent on these markets (15%). Consequently, facing the demise of CMEA was more difficult for footwear manufacturers. The barriers of high protection on the side of the EC notwithstanding, in 1992 in cloth manufacturing 74% of exports and 86% of footwear production exports found their way to the EC, a substantial part through outward processing. Still, non-utilized capacities and expertise are present that could be revitalized were protection in EC less severe. Let us remind the reader that protection by the EC in these sectors did not become palpably less severe in the first effective year of the Europe Agreement, in 1992.

Two energy-intensive sectors (247, glass and glassware, and 481, rubber products) are also facing high protection in EC markets. For an observer who knows that Hungary is especially poor in energy resources, this constrained access to EC markets may seem to be of not much importance. However, additional features of business in these sectors should also be taken into account. First, that in Hungary fuels have been close to being priced realistically for users for many years, so the level of export of energy-intensive products, as a rule, may not have been artificially high for reasons of cheap energy. Second, both industries are strong in one way or other: glass industry attracted substantial foreign direct investment while the manufacture of rubber products has gained a good international reputation in the last decades and built up a diversified export market.

An interesting characteristic feature of EC trade protection revealed by the table is that no R&D- and skill-intensive sector is highly protected in EC markets. Many such sectors are protected though by medium strength. In the case of Hungary, the most important ones are 341, insulated wires and cables, 342, electrical machinery, 346, domestic type electric appliances, and 347, electric lamps and lighting equipment. All these industries are important sectors of Hungarian manufacturing industry. Some of them (like those producing electric lamps and refrigerators, the latter as part of sector 346) have long traditions of selling to Western markets and recently joined the network of giant multinational enterprises — two characteristic features indicating favourable prospects.

4.2. Explaining current trade performance by factor endowments

Given the data on factor intensities in most of the manufacturing industries in the EC, it is possible to test how much the pattern of Hungary's trade with the EC can be explained by factor endowments. To do this, we have to make the assumption that the production function of Hungary is identical to that of the EC economies and factor intensities in production are reflecting factor endowments. On the ground of these assumptions, the basic method to test the factor endowments hypothesis is regressing the implied underlying factor endowments with trade coverage data (x/y) across industries.

Undoubtedly, many objections can be set against this exercise. From among the usual ones,[1] one has to be concerned here most with the implicit assumption of having a single world market. In this way we have to ignore the secular differences between the market of capitalist economies and CMEA economies in the past, for that matter. As explained in the Introduction, production and trade patterns have been formed in Hungary on the base of a dual world market (if 'market' is a good notion for the exchange of goods in the framework of the CMEA). Even if the effects of transition were spreading fast in the ex-communist world by 1992, one could not expect trade patterns to adjust to the single world market assumption instantaneously.

Another serious problem with this exercise is of course the heritage of centrally-planned economy. Production and trade patterns were determined by a complex system of peculiar institutions and incentives that could be interpreted as a multitude of trade distortions. The system was neither devised, nor does it permit, the realization of comparative advantages.

The above objections, notwithstanding the test of the factor endowments hypothesis, can only enrich our analysis. Table 13 shows the results of the six most meaningful regressional calculations. They differ from each other whether the independent and dependent variables were taken on their original values, or with their logarithmic values, and whether a constant was calculated or not. In each case one dummy had to be used for two sectors: 412, slaughtering, and 414, processing and preservation of fruit. In the case of these food industries, important additional factors must have influenced trade and shifted the trade coverage ratios upward.

[1] See, for instance, Deardorff (1984).

Table 13

Multiple OLS regressions on factor intensities (N=93)

	Coeff.	t stat.	Coeff.	t stat.	Coeff.	t stat.
Charact. of estim.	Ind: orig	Dep: orig	Ind: orig	Dep: LN	Ind: orig	Dep: LN
Constant			1,716	3,569	1,022	1,512
Capital intensity						
Energy intensity						
Labour intensity	0,106	6,818			0,042	1,453
R&D content						
Skill content			- 0,059	- 4,671	- 0,054	- 4,146
Dummy 412, 414	17,072	12,656	3,353	4,078	3,544	4,282
Adjusted R Square	0,707		0,283		0,292	
F	111,630		19,137		13,619	
Charact. of estim.	Ind: LN	Dep: LN	Ind: LN	Dep: LN	Ind: LN	Dep: LN
Constant	8,094	4,809	6,910	3,435		
Capital intensity						
Energy intensity					0,232	1,213
Labour intensity			0,300	1,073	0,785	3,193
R&D content					- 0,157	- 1,620
Skill content	- 2,392	- 5,095	- 2,263	- 4,675	- 0,721	- 4,151
Dummy 412, 414	3,432	4,249	3,546	4,356	3,520	4,124
Adjusted R Square	0,308		0,309		0,313	
F	21,507		14,745		9,178	

Source: Own calculations.

Each result is more or less acceptable both from the statistical and the economic points of view.[1]

According to the results, Hungary's export to the EC reflects Hungary's abundant endowment in simple labour (positive coefficients), and poor endowment in skilled labour (negative, significant coefficients). Although recent analyses on Eastern Europe's (and within it, Hungary's) endowments in skilled labour[2] did not bring unanimous results, nevertheless there is a general understanding that '..factor abundances suggest that among manufactures, it is hi-tech goods rather than labour-intensive goods that represent Eastern Europe's area of comparative advantage' (CEPR (1990) p. 12.). As the results of our regression estimates suggest, this comparative advantage, if it exists, has not broken through Hungary's trade with the EC, and is not going to do so in the near future.

The last calculation manages to involve other factors as well: according to this, exports also reflect the country's abundance in energy, and poor endowments in R&D. The high energy intensity is certainly an inheritance of the past, when cheap energy imports were used for producing exports to the West.

As a summary of Chapter 4, we may report about a complex and changing picture of the factor intensity of Hungarian exports. Labour-intensive industries have been determinant in Hungary's exports to the EC, and will go on to be in the future, if trade barriers that effectively inhibit further expansion will be reduced in due course. While some calculations (like the regressional analysis) suggest that R&D and skill intensity

1 Coefficients with 93 observations are significant, the adjusted R squares (where reasonable to observe, i.e. at calculations with constant), and F statistics show medium-strong relationships in these cross-section calculations.

2 See CEPR (1990), Graziani (1993), Helpman (1993).

were not significantly, or if significantly, even negatively influencing sectoral export performance in general, other analyses (like the comparison of contributions of the most resource-intensive industries, Table 11) indicate that some industries with high R&D and skill intensity are gradually gaining ground in Hungary's Western exports. The elimination of existing medium-strong trade barriers to export of these industries may support their further development.

5. Other factors in determining trade performance

In the preceding chapters, several factors influencing trade relations between Hungary and the EC were analysed including EC barriers to Hungary's trade, trade distortions in Hungary, and factor endowments in Hungary. While we cannot give a systematic analysis of all factors that seem to be important in this respect, we are justified mentioning some further components that have played and are expected to play essential roles in shaping Hungary's trade structure in the future.

The first additional factors are the level of economic activity in EC and in Hungary. These are obvious elements, but the impact of the former and the causes of the latter are not easy to grasp. We will show below what kind of radical changes in Hungary's trade occurred in 1993, at least partly due to the recession in Western Europe, and especially in Germany. The pattern of fast contraction of exports as a response to a modest recession in Western Europe deserves further analysis.

The rate of decline of economic activity in Hungary and in its specific sectors has also far-reaching consequences for future trade interpenetration. The steady decline of output leads to qualitative changes in industry, with much variation across industrial sectors. If new opportunities in trade with the EC (like gradually reduced tariff rates) are not proportional to the detrimental effects of other factors affecting output, trade may not benefit from concessions at all. It was not by chance that respondents of a survey carried out among managers of Hungarian manufacturing companies gave almost the same answers to a question asking about the benefits of the 1992 Europe Agreement. They easily skipped over the benefits of the agreements, and expressed their deep concern about shrinking domestic and ex-CMEA demand, sweeping competition by — allegedly dumped — East European imports, cheap imports from the Far East and, in some markets, black (untaxed) trade. According to the arguments of enterprise managers, these adverse effects can not be compensated by meagre changes in their most demanding markets, like the EC.[1]

The current and future competitiveness of Hungarian products are shaped by many factors, the real exchange rate and comparative wages being the most fluid ones. Many Hungarian analysts warned for several years that the exchange-rate policy of the Hungarian Government, pursuing anti-inflationary principles, led to such real appreciation of the Hungarian currency from 1990 to 1993 that, sooner or later, it had to have its impact on the export performance.[2] The real effective exchange rate of the forint stood at 82,6% in 1988 (1985=100), before the wave of transition, increased more or less gradually to 106,5% by 1992, and to 114,5% by the middle of 1993. As we will show below, the events of 1993 seem to prove the truth of the abovementioned predictions. Accordingly, Hungary's relation with the EC hinges also on its future exchange-rate policy.

As indicated in the preceding chapters, Hungary's exports to the EC are increasingly dominated by labour-intensive products. As a consequence, Hungary's competitivity is determined to a large extent by her wage competitiveness. Hungary's major competitors are, among others her neighbours, the other transition economies. As a consequence of a multitude of factors, some of them exogenous to Hungary, some of them not, comparative wages of Hungary 'managed' to achieve a leading position in recent years, which puts her exports to a disadvantageous position. As calculated by Richter (1993), monthly compensation per industrial employee stood at USD 402 in Hungary in 1992, while the respective compensations in other transition economies were as follows: CSFR — USD 249, Poland — USD 335, Bulgaria — USD 135, and Romania — USD 96. If Hungarian industry persists 'leading' the wage competition, it has to either increase its productivity substantially, or to restructure its export bundle by getting rid of much of the unskilled labour-intensive products.

5.1. Reorientation of trade from the ex-CMEA towards the EC

Trade reorientation from CMEA to market economies (including the EC) started earlier in Hungary than the political landslide in Eastern Europe or the collapse of the CMEA and the USSR. These dramatic events, however, accelerated strongly the fall of trade among ex-CMEA economies.

To understand the speed and nature of expansion of trade with the EC one must know more about the nature of contraction of trade with the ex-CMEA partners. One important, and frequently-posed question is that what role was played by trade

1 See Meisel *et al.* (1992).

2 See, for example, Oblath (1993) and Gács (1993a).

The EC's 49% share in Hungary's manufacturing imports in 1992 is substantially high if we take into account that the low share in the case of mineral resource-related industries is well justified. A further substantial reduction from the 14% share of ex-CMEA countries does not seem to be reasonable: proximity, transporting infrastructure and inertia of past use all seem to ensure imports of such order, unless supply from these countries are obstructed for some reason. A further penetration by the EC into Hungary would imply, on the one hand, crowding out of other Western suppliers, like EFTA (and mostly Austrian) exporters. On the other hand, there is room for further deepening of the relations between Hungary and the EC through the network of multinational enterprises, and the further growth of the share of intra-industry trade.

5.2. Break in the trend of Hungary's export performance in 1992-93

The striking export performance of the Hungarian economy in recent years up to the first half of 1992 induced a host of different explanations both during the upswing, and especially when after the middle of 1992 Hungary saw the reversal of this process. Manufacturing exports to the EC, for instance, increased by 13% annually in 1989-90, by 39% in 1991 and by 12% in 1992. The second half of 1992 already saw a deceleration of growth and 1993 brought a disappointing 31% drop (on the basis of data for the first six months of the year).

The first group of explanations for fast export expansion refers to institutional changes like easier access to Western markets, deregulation of exports, easier access to inputs for exports through liberalization of imports, etc. All observers accept the importance of these factors; few attribute, however, a decisive part of the export growth to these.

A general, and by most analysts, accepted explanation is connected with the abrupt and significant decline in other components of demand, i.e. the severe domestic recession and the loss of markets in ex-CMEA countries. Under the pressure to utilize their idle capacities, Hungarian enterprises were driven to sell as much of their products in Western markets as they could. This endeavour resulted in a high ratio of 'distress' exports that did not carry profits for their producers, or even produced losses. Halpern (1993) found that the average profitability of dollar exports (originating from a sample of exporting firms making up about 90% of Hungarian non-ruble

Table 14

Volume index of Hungarian exports of manufactured goods in 1988-92 and in 1993 (per cent, 1993 index is estimated on first six months data)

NACE code	Destination	Volume index 1992/98	Volume index 1993/92	Volume index 1993/88
	EC			
21,23	Extraction of minerals	74,0	231,6	171,5
22,31	Metallurgy	159,0	67,5	107,4
24	Manufacture of non-metallic mineral products	172,2	102,4	176,3
25,26	Chemical industry	156,6	87,3	136,6
32	Mechanical engineering	224,9	84,9	191,0
33,37	Instrument & office machinery engineering	211,2	72,0	152,2
34	Electrical engineering	281,7	87,2	245,7
35,36	Motor vehicle engineering	705,7	52,7	372,2
41/42	Food, drink and tobacco industry	126,6	70,9	89,7
43	Textile industry	243,0	47,3	114,9
44,45	Footwear, clothing & leather goods industries	227,9	44,5	101,5
46	Timber and wooden furniture industry	212,6	84,3	179,3
47	Manufacture of paper, printing, publishing	228,6	77,1	176,2
48	Processing of rubber and plastics	237,9	95,9	228,1
49	Other manufacturing industries	316,9	77,8	246,4
	Total manufacturing	199,3	69,2	137,9
	CMEA	31,1	109,6	34,1
	ROW	95,5	80,6	77,0
	Germany	228,9	69,7	159,5
	OECD	171,8	72,4	124,5
	Total	92,5	79,1	73,2

Source: Kopint-Datorg database and own calculations.

reorientation in the recent upswing of exports to the EC? In the following analysis we try give an answer.[1]

Unfortunately, the concept of reorientation is not defined exactly in recent studies dealing with the subject. According to less precise delineations, one may speak about reorientation if the aggregate redirection of trade is achieved mainly through the redirection of trade within the individual sectors. We do not speak about reorientation if the general pattern is that the decline in some sectors' exports to the East is compensated by the growth of other sectors' exports to the West.

The extent (or rather the ratio) of reorientation is important from the point of view of the foreseeable rate of long-term growth of exports. If the export expansion to the West were originated dominantly from the decline of exports to the East, the shift might turn out to be a once-and-for-all act, not showing much prospect for further export growth. Partly with these considerations, analysts tend to take exports emerging from scratch more prospective than those reoriented from Eastern markets.

Early analyses of trade reorientation (like Rodrik (1991) and Bruno (1993)) recorded negligible or no switch of exports from CMEA to the West as, according to them, these 'were largely goods that were not competitive at the new relative prices'.[2] The examination below tries to verify these statements too.

The calculation started with the 1988 value of gross output, and of Hungary's exports to CMEA and non-CMEA countries. The Hungarian classification of industries which covers 59 manufacturing industries, was used. Using the volume changes of output and exports from 1988 to 1992, the 1988 output equivalent of the export losses (gains) were calculated for each industry.

For calculating trade reorientation proper with these values only those sectors were taken into account where both decline in export volumes to the East and increase of exports to the West could be recorded. The number of these sectors is 27 (out of 59) for the period 1988 to 1992.

In these clear cases, we distinguish between reorientation proper and 'surpluses'. The switch of trade can be characterized by Δx^e_i and Δx^w_i, where Δx^e_i is the volume change of exports to the East, and Δx^w_i is the volume change of exports to the West. (According to our selection of sectors Δx^e_i is always negative and Δx^w_i is always positive). The result of $(\Delta x^e_i + \Delta x^w_i)$ we call surplus (either negative or positive). The part of Δx^e_i that is matched by Δx^w_i is then reorientation proper. In fact, the whole concept is analogous to the concept of inter-industry and intra-industry trade. The ratio of reorientation (in respect to the relevant sectors) is then given by the familiar formula modified for our purpose:

$$1 - \frac{2 \Sigma \mid (\Delta x^w_i + \Delta x^e_i) \mid}{\Sigma (\Delta x^w_i - \Delta x^e_i) + \Sigma \mid (\Delta x^w_i + \Delta x^e_i)}$$

The calculation on the base of the formula resulted in a coefficient of 0,1893, which means that in the group of the relevant sectors 19% of trade switching was reorientation proper. By looking at the two sides of trade flows separately, we may add that 28% of the losses in CMEA trade were reoriented, and 37% of the increase of exports to the West was attributable to reorientation from the East (all in the group of relevant sectors). Clearly these results are at variance with the numbers that other analysts presented for trade reorientation.

It is also worthwhile to look at the sectoral rate of reorientation. The sectors that were most prominent in trade reorientation in terms of sectoral output are the following (the percentage of 1988 sectoral output that was reoriented is in brackets): hosiery (23%), footwear production (18%), haberdashery (18%), clothing industry (13%), and leather and fur industry (9%). The sectors that were most outstanding in trade reorientation in terms of total output are the following (the percentage of 1988 total output that was reoriented is in brackets): motor vehicle manufacturing (0,1972%), meat and meat products industry (0,1066%), machinery and equipment production (0,0945%), footwear industry (0,0934%), and clothing industry (0,0874%).

In the years from 1988 to 1992, a substantial import reorientation also took place from the CMEA to the EC. While we did not make the same sophisticated exercise as with export reorientation, an analysis of data shows that the most important products that were switched in Hungary's import from CMEA to EC belonged to the following industries: motor vehicle manufacturing, electrical machinery manufacturing, production of telecommunication equipment, hosiery, clothing. The picture is clear: Hungarian buyers switched the sources of their purchase mostly in the case of engineering products and consumption goods.[3]

1 The analysis of the following paragraphs is based on the analysis of Gács (1993b).

2 See Bruno (1993) p. 37.

3 In fact, a part of the imports, especially in the textiles and clothing industry, could have been connected with subcontract processing for exports.

exports) declined from 9,8% in 1988 to 3,0% in 1991, while Antalóczy (1993) and Kopint-Datorg (1993. No 1.) arrived at the conclusions that in 1991 the whole of industry and all the major industrial sectors exported at losses.

Another explanation put the emphasis on the demand pull of the German economy.[1] The two Germanies combined traditionally accounted for 16-17% of total Hungarian export share, after a spectacular growth, reached 28% in 1992. Still, according to our analysis of the data, the German mini-boom of 1988 to 1991 could not account directly for more than half of Hungary's export expansion to the West.

Many analysts emphasized a specific feature of the 'new exports': a very high share of it was job-work for Western companies in labour-intensive industries like clothing and footwear production. In 1991, as much as 60% of the increment of Western exports originated from such subcontract processing, or job-work. The weak, defenseless position of Hungarian subcontractors could also contribute to the fact that in the course of deepening recession Western partners got rid of Hungarian supplies first, causing close to USD 500 million worth of loss in this single category of Hungarian exports within a year.[2]

Table 14 summarizes our calculations for changes in the export volume of Hungarian manufactured products from 1988 to 1992 and 1993.[3] One can see the drastic break in the trend of export expansion of Hungarian manufacturing industry in OECD markets, including the EC. Almost all the industries suffered a painful loss. The across-the-board pattern of being crowded out from Western markets lets us suppose that West European recession plays a major role here. Within the general picture of export decline, it is an interesting feature that those sectors seem to lose most, gained the most in the preceding four years (sectors 35, 36, 43, 44, 45). This pattern sheds new light on Hungary's recent strong specialization in labour-intensive industries: the special stance of these suppliers (subcontractor processing status) and probably their performance make their position very fragile; they could most probably not surpass the capacity of being the marginal suppliers of the EC markets only.

As Table 14 demonstrates, if the most recent developments are taken into account (i.e. annual growth rates for 1988 to 1993), Hungary's export performance in recent years was in fact not particularly strong in EC markets.

6. Future sectoral specialization

6.1. Changes in the volume of trade with the EC

Table 15 summarizes basic data for Hungary's development since 1970, and in more detail, for the period after 1985.[4] One can follow the gradual deceleration of the growth of output throughout the whole period, accompanied by the relative, and then absolute, decline in foreign trade. The growth of exports, as a rule, exceeded both the rate of growth of GDP and that of total imports by a substantial margin. The main reason for this has been the necessity to serve mounting external debts that accrued following the two oil price explosions. This structural constraint is still embedded in Hungary's balance of payments and capital accounts.

A forecast for the future volume of trade should start from the estimation of GDP growth up to 2000. Many early analysts of transition counted, whether explicitly or implicitly, on successful stabilization, a fast switch-over to market principles and private ownership of business, a rapid establishment of the infrastructure needed for resource reallocation, more or less smooth redirection of trade, appropriate accumulation of domestic savings, and sufficient inflow of foreign investments. On the social and political scene these assumptions implied a broad support for reformist government policies, social peace and consensus, decisive and strong governments and legislation in the new democracies of East Central Europe. Using these assumptions, many analysts expected swiftly recovering output.

Current events do not seem to verify the above listed assumptions. The fast recovery does not come either, as GDP persistently declines in most of the countries concerned.

The growth that we expect to come in the second half of the 1990s, should basically be an export-led growth, and the pull should mostly come from Western Europe. Hungary's ties with her traditional East European economies do not show much prospect given the simultaneous drop in economic activity in the region. At the same time broadening trade relations with the countries of the Pacific region goes slowly, so strong impulses for growth cannot came from that expanding part of the world.

If the drop of annual GDP growth rates of the EC from 2,2% in 1990-91 to 0,2% in 1992-93 was really mostly responsible for the drastic turn in Hungary's export performance in 1992-93,

1 See Inotai (1993).
2 See Kopint-Datorg 1993, No. 3.
3 The indices were calculated on HUF data with HUF price indices that incorporated the exchange rate variation of the Hungarian forint.
4 Trade data refer to total trade, not only trade in manufactured industrial products. Data for 1993 are estimates on the base of data for the first seven months.

Table 15

Growth rates of basic indicators, actual and forecast, volume indices, per cent (for annual indices: previous year = 100)

	GDP	Industrial production	Exports	Imports	Exports to EC**	Imports to CMEA (ex-CMEA)	Imports from EC **	Imports from CMEA (ex-CMEA)
1971-75	106,3	106,4	109,4	107,3	101,2	111,7	103,7	108,4
1976-80	103,3	103,2	106,6	103,5	107,5	105,9	105,9	102,5
1981-85	101,8	101,9	105,5	101,4	100,1	106,1	101,4	100,5
1986-88	101,8	101,9	102,6	101,6	111,4	100,0	100,9	102,6
1989-92	97,3	92,4	98,2	95,7	113,8	86,4	98,9	92,3
1989	100,7	98,9	100,3	101,1	109,0	93,9	110,8	93,3
1990	96,5	90,4	95,9	94,8	118,7	79,3	96,4	86,1
1991	88,1	85,9	95,1	105,5	130,5	56,5	130,2	58,8
1992	95,5	90,2	101,0	92,4	109,5	99,6	92,9	98,7
1993*	97,0	102,0	74,0	100,0	70,0	85,0	99,0	102,0
1992/85	86,3	73,3	99,7	97,9	240,7	41,9	122,6	49,1
1993/85	83,7	74,8	73,8	97,9	168,5	35,6	121,4	50,1
2001/1993 pessimistic scenario	101,4	102,0	103,8	102,8	104,7	103,0	103,3	102,8
2000/1993 optimistic scenario	103,6	104,5	107,0	103,9	108,8	104,0	104,4	103,6
Trade distribution 1993			100,0	100,0	49,0	19,1	48,9	14,1
Trade distribution 2000 pessimistic scenario			100,0	100,0	51,9	18,0	50,3	14,1
Trade distribution 2000 optimistic scenario			100,0	100,0	55,2	15,6	50,6	14,5

* Estimated data.
** For 1971-75 and 1976-80 trade with developed market economies.

Sources: Various Hungarian statistical publications and own calculations.

then the Hungarian recovery should strongly hinge on the expansion of economic activity in Western Europe. In the light of the most recent developments, one should not calculate with a higher than 2-3% annual rate of growth in Western Europe for the period 1994 to 2000.

Given the protracted slump in the Hungarian economy as a whole, the current slight recovery of industrial production, the extended crisis in agriculture, weak investment activity, and emerging imbalances (external debt and budget), the most one can hope for in 1994 is stagnation.

For the forecasts of the annual average rates of GDP, export, and import growth see also Table 15. The underlying assumptions of the two scenarios differ basically in the external conditions, especially in Hungary's two major markets, the EC and the ex-CMEA region. The optimistic scenario counts on an upper range of economic growth in the EC (3%), further concessions in market access to EC, in the application of rules concerning place of origin and cumulation (in addition to the Europe Agreement and the Copenhagen extensions), less protectionist practices in the case of potential safeguard, anti-dumping and anti-subsidy actions, and an unbroken flow of foreign direct investments to Hungary.

As far as Eastern markets are concerned, the optimistic scenario counts on recovery in Central and Eastern Europe by the second half of the 1990s, and the spreading of orderly economic activity and stabilization in the countries of the former Soviet Union (FSU). This supposition is also based on the increasing inter-connection of the economies of Western Europe and the former CMEA region. According to a further (optimistic) assumption, the adverse turn of Hungarian exports in 1993 was mostly related to Western recession and the collapse of import demand in the FSU. As a consequence, in this scenario it is expected that the recovery in Western Europe and normalization in the FSU will soon make up for the losses of export volume in 1993.

The pessimistic scenario counts with the lower end of West European growth (2%) and pessimistic external conditions, including that the current fall in Hungarian exports were mostly determined by structural causes (many of them internal for Hungary). In this case, to achieve the 1992 level of exports

again, will need several years. There is no special assumption made to Hungary's internal development other than in neither scenario were such catastrophes taken into account as default on external debt service, or a drastic shrinkage of sources of external financing for Hungary.

In view of Hungary's development before 1986, the forecast growth rate of exports to the EC in the optimistic scenario may seem to be excessively high, but in respect to export rates from 1986 to 1992, it seems modest. However, we have to take into account that some of the factors that accelerated the growth of exports from 1986 to 1992 will not be sustained in the future. Deregulation of external trade activities, liberalization of trade in Hungary and improving market access in the EC, reorientation of trade from East to West belong to these factors.

The progress of privatization of State enterprises may open new trade possibilities for the existing industries and firms, as well as it may contribute to the enforcement of competitive pressures. However, as recent empirical investigations substantiated,[1] we may not be sure of a strong direct relation between privatization and the expansion of trade.

The inflow of foreign direct investments reached a remarkable level of 4 to 6% of the GDP in Hungary from 1991 to 1993. Much of FDI is connected with the process of privatization, but the supply of prospective State enterprises offered for sale in the framework of privatization is not indefinite. Accordingly, the sustainability of the inflow of foreign capital increasingly depends on the recovery of economic activity, in general, and the improvement of prospects for investments, specifically.

In estimating the EC's share in Hungarian exports, we also took into account that the 55% share which is forecast by the year 2000 in the optimistic scenario is close to the intra-trade average share of 61% for Community members in 1990.

We assumed a slower geographical reorientation of imports than for exports in each scenario, since routes for raw material imports for resource-poor Hungary are more determined by the proximity of old suppliers and the infrastructure of transport than for exports.

6.2. The future sectoral composition of trade between Hungary and the EC

When forecasting future sectoral composition of trade under the high level of uncertainties, it is evident that a complex approach is needed that takes into account the impact of a multitude of factors. In this exercise we rely mostly on the results of our former analysis.

(A) Sectoral composition of exports

1. As was expounded in Chapter 3, the dominant part of reducing trade protection and eliminating market distortions has already taken place in EC-Hungary relations in the last five years. Their impact, however, has to come with some delay, especially when investments on the base of newly-opened opportunities are concerned. From the point of view of foresight needed for investments, the programmed schedule of the establishment of the free trade area between Hungary and the EC is, without doubt, a plus.

On the basis of the analysis of Section 3.3, from among the highly protected sectors of Table 10 we foresee a chance for expansion in the case of 247, glass and glassware, 414, processing and preservation of fruit, 423, other food products, 481, rubber products, and the sectors connected with textile and footwear (451, 453, 455, 43A). In the case of some of these sectors, the implementation of this expansion is, however, conditional on an effective attraction of foreign industrial investors with effective methods to ensure product quality, established brand names and access to distribution chains.

The analysis of Section 3.3 suggests that the elimination of current restrictions on Hungarian exports will be a function of eliminating EC and other external restrictions on Hungary's exports.

The impact of the two scenarios is straightforward: in the case of the pessimistic scenario, there will be a slower elimination of trade restrictions and that will result in a lower level of trade, mostly in the sensitive industries, like textiles and clothing, food and, to some extent, steel.

2. The results of the analysis of Hungary's factor endowments in Section 4.2 emphasized the importance of labour intensive industries in Hungary's exports. The progress of R&D- and skill-intensive industries show, however, that the current dominance of simple labour-intensive exports may be characterizing a transitory phase only. R&D- and skill-intensive industries appear in exports to the EC as a consequence of trade reorientation from the ex-CMEA region, but it is also the result of the activity of foreign investors, who try to revitalize Hungary's few engineering industries with long historical traditions (electrical engineering, vacuum technology), or start new industries from (almost) scratch by responding to sales opportunities (passenger car manufacturing).

[1] See Dabrowski (1992) and Török (1992).

3. The analysis of recent trade reorientation from the CMEA to EC (Section 5.1) showed that trade reorientation was not marginal. We also saw, however, that it was really strong (in terms of reorientation of sectoral output) in consumer goods production only. Many engineering industries lost their CMEA markets and did not manage to enter EC markets. For them there is not much time left for reorientation. If they cannot restructure in the next 1 to 3 years, a whole culture of production, organization, marketing, R&D, training, etc. will disappear.

Many experts, including the author, believe that the bulk of the geographical reorientation has already been accomplished. The share of ex-CMEA economies in Hungary's trade will not fall further significantly. In fact this is also reflected in the two scenarios in Table 15. However, a further restructuring of trade with ex-CMEA partners is foreseeable. The pattern of future trade hinges on the highly incalculable path of transition in the successor republics of the USSR, as well as on the utilization of the potential of the Central European Free Trade Area.

According to our assumption, the difference between the pessimistic and optimistic scenarios will have an impact on the trade with both the EC and the ex-CMEA region. In the pessimistic scenario Hungary will increase exports to both regions at a slower pace.

4. The signals that foreign direct investments give about future prospect of the individual industries would be the most telling ones, were the data on FDI and activities of new joint ventures detailed enough and reliable.

Without doubt, Hungary has been the major target of foreign investments in East Central Europe in the recent years. Not all FDI is, however, concerned with exports. Many investors concentrate on grabbing a significant share of the Hungarian domestic market, without any clear intention of extending their activities to foreign markets. This is the case with many sectors that do not produce primarily tradeable goods (like newspaper publishing), or industries that produce consumer products but have no traditions to export their output (like 421, cocoa and chocolate products, 427, brewing and malting, 429, tobacco products).

All these reservations notwithstanding, much of the foreign investments in manufacturing industry has not only put Western businessmen in the position of being owners, but also meant additional efforts (including fresh investments) to utilize the capacities, and produce for export. Out of the cumulated foreign direct investments effected in Hungarian manufacturing industries to the end of 1991, 35% were invested in machinery production, 28% in food industry, and about 10% to chemical industries, industrial consumer goods industries, and building material industries each. In the absence of detailed statistics we have to recall the common wisdom that substantial investments were carried out in the following industries (in the order of importance): 347 electric lamps and lighting, 351, 353 manufacture and assembly parts of motor vehicles, 247, glass and glassware, 257, pharmaceutical products, 471-472, paper and pulp industry, 420, sugar manufacture and refining, 427, brewing and malting, 421, cocoa and chocolate products, 429, tobacco products, 346, domestic type electronic appliances, 342, electrical machinery, 362, railway rolling stock.

In many industries the appearance of foreign owners means also a closer relation to Western suppliers, to the network of multinational companies. Foreign businessmen make efforts to fit their Hungarian enterprise into the pattern of trade they have been conducting in the West and do not follow the former autark, excessively vertically-integrated organization of the Hungarian enterprises. As a consequence, the ratio of intra-industry trade with the West will grow further.

In the forecast of export flows the obvious difference between the two scenarios is the difference between the rates of growth i.e. an annual 4,7% versus 8,8%. As for structural shifts, we foresee that the two sensitive industries that make up 35 to 40% of Hungary's exports to the EC (food products and textile) go on providing a decisive volume of exports, however their share is bound to decline. There are several reasons to make this assumption: the first is the deteriorating competitiveness of Hungary in simple labour-intensive products; the second, the inevitable decline of Hungarian agriculture; the third is concerned with the stubborn protection of these industries in the EC which seems likely to continue over the next few years.

Metalliferous and metal products continue their decay and will lose export shares.

The major structural difference between the two scenarios is the pace of progress of Hungary's engineering exports i.e. electrical goods, transport, office machinery, and agricultural and industrial machinery. Especially the future growth of electrical goods and transport equipment is supported by recent foreign direct investments and industrial traditions. This is also true for some parts of the chemical industry, which as a whole will maintain its role of producing the bulk of Hungary's exports.

(B) Sectoral composition of imports

As indicated already in Section 6.1, we consider the future geographical distribution of Hungary's imports more rigid, than that of the exports. Nevertheless the penetration of EC imports to Hungary will be further enhanced by the gradual

reduction of tariff rates in Hungary, as envisaged by the Europe Agreement. To counterbalance this, Hungarian producers now seem to be lobbying more strongly for temporary protection from imports than before. Another reason for a slower pace of penetration of EC imports into Hungary is connected with the learning process on the part of domestic entrepreneurs. Much of the recent surge in imports was connected with the euphoria of import liberalization. Sooner or later many new entrepreneurs will find the newly-imported products appropriate to imitate, produce themselves in the future, and in this way crowd out imports. As a consequence, some of the consumer-oriented industries will regain their earlier market share in Hungary (textile and food). At the same time, given the high share of subcontract processing in Hungarian textile exports, textile imports for this purpose should increase.

Imports of engineering products from the West should also grow, especially in the optimistic scenario. We also predict continuing growth in the share of intra-industry trade. Without this, in the face of the envisaged low rate of investments, it would not be justified to project an unbroken growth of engineering imports

The forecasts have also taken into account that ex-CMEA economies will continue to be important suppliers in certain industries. Growing shares of imports of metalliferous and metal products will be purchased from ex-CMEA economies due to their competitiveness in these branches. The same applies for certain chemical and timber products.

7. Main conclusions

After a slow, gradual shrinkage, Hungary's trade with her CMEA partners abruptly collapsed in 1990-91. The ties which were so powerful for many decades are being replaced by the reconstruction of historically-close relations to West European economies. Emerging major trade partners from this part of Europe are Germany, Austria, and Italy, and as the primary region of cooperation, the European Community. By 1992, half of Hungary's trade was carried out with the EC.

Hungarian foreign trade has long been characterized by a dual nature: highly-processed, advanced manufacturing products were exported almost exclusively to the CMEA, while less processed, or labour-intensive products to Western economies. Hungary's major surplus industries in her trade with the EC were mostly natural-resource-based or labour-intensive sectors.

The rapid rearrangements in Hungary's trade between 1988 and 1992 led to grave sectoral changes in imports, and modest, but noticeable shifts in the structure of exports. The least significant changes in trade structures was recorded in exports to the EC. Given that in the course of 1988 to 1992 this trade flow increased by a factor of two, we may note that a secular expansion was carried out that had basically an across-the-board character.

In the course of 1988 to 1992, mostly labour-intensive industries gained share in EC markets, while resource-based industries lost from their earlier export share. Within imports, the share of consumption goods has increased substantially and continuously, while the ratio of engineering products is still very high, even if investment activity in Hungary is historically at a very low level.

Intra-industry trade has monotonously increased in Hungarian-EC relations in the past and beween 1988 and 1992, its share jumped to more than half of manufacturing trade. Given the building up of closer, more organic relations with the EC, intra-industry relations may develop to become the engine of further trade expansion between Hungary and the EC.

One reason for the relatively low level of trade between Hungary and the economies of the EC in the past was the extent and intensity of trade distorting measures on both sides.

Protection of the EC economies was strongest in the so-called sensitive sectors. These were iron and steel industry, textile and clothing, leather, fur and footwear production, as well as food industries. Here, paradoxically, Hungarian exporters showed good performance and high specialization despite the notoriously applied protectionist barriers. In fact, the 30 most-protected sectors produced half of Hungary's exports to the EC, while the 30 least-protected ones less than 8%.

The recent trend of gradually phasing out trade barriers, especially on the base of the programmed schedule of the Europe Agreement between Hungary and the EC, gives hope for the fast elimination of these trade distortions. The first assessments of the effects of the Agreement, however, show that EC restrictions are still strongly biased against Hungary's leading export industries. The Agreement also has not eliminated the possibility that EC members would apply further discriminatory protection measures against exports in sensitive sectors.

By 1991-92, in Hungary almost no trade distortions were hindering trade with the EC. The remaining import quotas were applied for certain consumer and food products only, while stricter export controls, where applied, were reflections of Hungary's agreement with her Western partners to exert voluntary exports restrictions. As far as subsidies are concerned, the Hungarian Government effectively slashed product-, producer- and export-specific subsidies in recent years. The remaining subsidies that may have relation to foreign trade are subsidies to exports of food products, assistance packages provided recently to certain large State enterprises in deep crisis, and generous tax exemptions having been provided from 1988 to 1990 to major foreign investors.

The analysis of Hungarian trade performance and the possible effects of the elimination of trade barriers in the EC leads to the conclusion, that while some sectors will certainly benefit from the easier access to Western markets, others, in fact so far leading exporters, will most probably not be in the position to utilize it. Iron and steel industry and slaughtering fall in this category, but processing and preservation of fruit and vegetables, and manufacture of mass-produced footwear, as well as ready-made clothing may also follow suit, unless financial and business input of Western investors help them to establish further penetration to Western markets.

The analysis of the relation of factor intensity of Hungarian exports and trade protection in the EC confirmed the earlier finding that from among Hungarian export industries mostly labour-intensive sectors are constrained in their access to EC markets. Some significant and prospective R&D- and skill-intensive sectors are, however, also hindered by protection of medium strength. These are sectors of the engineering industry (insulated wires and cables, electrical machinery, domestic type electric appliances, electric lamps and lighting equipment). An easier access of these sectors to Western markets is even more necessary since the weight of these R&D- and skill-intensive sectors in Hungary's Western exports are on the rise.

Regression analysis of current Hungarian trade performance with sectoral factor endowments as explanatory variables leads to the conclusion that labour intensity was crucial for sectors to achieve good export performance in the West. According to the results, high skill intensity was contra-indicative in this respect; however current trade patterns may reflect more past policies of industrialization and geographical orientation than actual resource endowments.

When studying further factors that determine trade performance, the impact of Western and Hungarian recession has also to be taken into account. Many Hungarian firms fighting the detrimental effects of current domestic recession may have to be liquidated irrespective of their ability to compete in Western markets. Many otherwise viable firms, or even industries may go under because of the lack of sound domestic demand.

The analysis of trade reorientation found that about 19% of trade switching from CMEA to non-CMEA trade was due to reorientation proper. The rest was short- or long-term disappearance of exports on the CMEA side, and new exports from scratch, export augmentation or sales reorientation from the domestic market.

The evolution of the real exchange rate of the Hungarian currency, especially its strong real appreciation in recent years, seriously threatens the sustainability of Hungarian exports to the West. The real wages of Hungarian workers, which have become uncompetitive with the real wages of other East European countries in recent years, have the same effects. The fragility of the position of Hungarian exports in the EC became apparent in 1993, when these exports suffered a serious 25 to 30% fall.

The assessment of Hungary's future trade specialization starts with the perception that the future recovery of Hungarian output should be the result of an export-led growth, where the pulling force could not come from any other region than Western Europe. From the forecasted 2 to 3% annual GDP growth in Western Europe for the period 1993 to 2000, a Hungarian GDP growth between 1,4% and 3,6% per annum is envisaged.

Two scenarios were elaborated, one for the lower band of the forecasts (the pessimistic view), and one for the upper band (the optimistic view). The underlining assumptions of the two scenarios differ basically in the external conditions, especially in Hungary's two major markets, in the EC and the ex-CMEA region.

The pessimistic scenario takes 4,7% annual export growth to the EC from the low level of 1993, while the optimistic target is 8,8%. The respective numbers for imports are 3,3% and 4,4%.

One of the underlying ideas of the forecasts is that by 1991, the demolition of past CMEA trade has already gone far, perhaps unreasonably far. A decent recovery of trade among former CMEA partners can be foreseen, if economic conditions normalize in the successor Republics of the former Soviet Union, and if the potential of the Central European Free Trade Agreement is utilized.

Further abolition of trade barriers between Hungary and the EC is an important factor in forming the future rate and pattern of trade. However, many additional elements play a role. Labour-intensive sectors and manufacturing of food products would benefit from further reduction of trade barriers, and would still give a dominant, if not very expansive part of Hungarian exports. If industrial investors attach Hungarian labour-intensive industries to EC markets in a more organic way, there is hope that the loss of wage competitiveness can be compensated.

The exports of higher value-added manufacturing industries will gain momentum but most of them slowly, given the recent lack of investments in most of these sectors. Hope for some recovery is based partly on earlier industrial traditions (electrical engineering, transport equipment, domestic type equipment), and the expected continuation of speeding up intra-industry trade in most of the sectors. While the engineering sectors will achieve some expansion, the export share of metalliferous and metal products will continue to decrease.

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Chapter 2

The economic interpenetration between the EC and Eastern Europe: Bulgaria

The economic interpenetration between the EC and Eastern Europe: Bulgaria

Rumen Dobrinsky[1]

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Introductory remarks

This study has been performed within the general framework of the project on the economic interpenetration between the EC and Eastern Europe undertaken by the Commission of the EC. Its main focus is the analysis of current Bulgarian trade performance *vis-à-vis* the EC, an investigation of the underlying factors explaining the current trends as well as an attempt to look into the possible future developments.

In general, the methodology of this country study follows the common methodology adopted within the whole project; some deviations were indispensable due to the nature of available and/or accessible statistical data.

A major effort within the country study on Bulgaria was devoted to solving data problems. The study relies on data from two main sources: data on trade between Bulgaria and the EC supplied by the European Commission on NACE 3-digit level; compatible data on national economic and trade performance from various national sources, some of which were actually non-existent and had to be generated from source files especially for this study.[1]

1. Historical background

Bulgaria inherited from the communist period a heavily distorted industrial structure and huge macroeconomic imbalances. This was a common characteristic for all the Central and East European countries (CEECs) but Bulgaria is probably an extreme case.

In pre-war times the country was an underdeveloped, mainly agricultural country with a small industrial sector linked, to a large extent, to agriculture. The post-war period in Bulgaria is a mixture of rises and falls, successes and failures. In terms of economic growth there are three distinct subperiods (Table 1). Throughout the 1950s and 1960s the Bulgarian economy grew at very high rates, mainly the outcome of a Soviet-type of rapid industrialization (Tables 2 and 3). The service sector, similarly to the situation in most socialist economies, was underdeveloped and unsophisticated with some service activities incorporated into the industrial sector.

Table 1

Bulgaria: economic growth, 1950-92

(%)

	1951-55	1956-60	1961-65	1966-70	1971-75	1976-80	1981-85	1986-90	1991	1992
Gross material product										
Total	11,7	11,6	8,6	9,5	7,8	5,9	3,9	- 0,2	- 25,9	:
Mining and manufacturing	13,8	15,9	11,7	10,9	9,1	6,0	4,3	- 1,4	- 27,8	:
Construction	12,9	13,2	7,4	12,0	5,7	5,9	3,9	- 2,8	- 68,6	:
Agriculture	6,5	5,8	3,2	3,5	2,9	0,9	- 0,6	0,1	- 6,4	:
Net material product										
Total	12,2	9,7	6,7	8,8	7,8	6,1	3,7	- 1,4	- 30,7	:
Gross domestic product										
Total	:	:	:	:	:	:	3,3	0,2	- 11,7	- 7,7
Industry	:	:	:	:	:	:	6,7	- 0,7	- 18,6	- 11,0
Agriculture	:	:	:	:	:	:	- 3,9	- 1,2	7,7	- 7,7
Services	:	:	:	:	:	:	0,1	2,3	- 11,3	- 3,3

Sources: Statistical yearbook of Bulgaria, 1991. National Statistical Institute (1992); Statistical handbook, 1992. National Statistical Institute (1992); Annual report of the Bulgarian National Bank, 1992.

In the 1970s the momentum of structural change was exhausted and growth rates started to fall down. They were still high, however mainly due to substantial foreign borrowing in the second half of the 1970s when Bulgaria only just escaped a Polish-type debt crisis. In the second half of the 1980s Bulgaria entered a period of recession which after the disintegration of the CMEA turned into a deep depression. This was the outcome of short-sighted long-term strategies followed by the central authorities.

[1] There are very serious methodological problems in converting national data into NACE because the latter is still not adopted by the Bulgarian statistics and no such official data exist (see Annex I describing the approach applied for converting national data). One additional point of concern is the conversion of the national data for trade with the ex-CMEA before 1991 (which exists only in domestic currency, converted by the more or less arbitrary rate converting ruble-denominated flows into leva) into ECU as there are no generally recognized rules for this conversion. For the purpose for this study we have adopted an approach similar to that used by the Economic Commission for Europe to recalculate the historical East European trade data into US dollars (Bulletin, 1991). For these reasons the NACE-converted national statistical data can only be regarded as a tentative approximation deliberately constructed for the purposes of this study.

Table 2

Bulgaria: breakdown of employment by main sectors of economic activity

(%)

Sector	1948	1970	1980	1985	1988	1989	1990	1991	1992
Mining and manufacturing	7,9	30,3	35,2	37,3	38,0	37,7	36,6	36,7	37,8
Construction	2,0	8,4	8,2	8,4	8,3	8,3	8,2	6,5	6,3
Agriculture	81,9	35,2	23,8	20,4	18,7	18,1	17,9	17,2	14,5
Forestry	0,2	0,5	0,4	0,4	0,6	0,6	0,5	0,5	0,6
Transportation	1,2	5,2	5,9	5,7	5,8	5,7	5,9	6,2	6,6
Communications	0,3	0,7	0,9	0,9	1,0	1,0	1,1	1,4	1,6
Wholesale and retail trade	2,2	6,1	8,1	8,4	8,7	9,1	9,1	7,3	6,6
Other material services	0,0	0,3	0,6	0,7	0,5	0,6	0,7	0,7	1,2
Non-material services	4,4	13,1	17,0	17,8	18,5	19,1	19,9	23,4	24,7
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

Sources: Bulgarian economy, National Statistical Institute, 1992; Statistical handbook, 1992; National Statistical Institute, 1992; Annual report of the Bulgarian National Bank, 1992.

Table 3

Bulgaria: breakdown of material output by main sectors of economic activity

(%)

Sector	1948	1970	1980	1985	1988	1989	1990	1991	1992
Gross material product									
Mining and manufacturing	31,9	64,8	65,9	69,7	70,3	69,5	67,9	62,6	62,6
Construction	6,1	9,4	8,8	8,7	8,2	8,1	7,3	3,8	5,8
Agriculture	48,6	14,1	12,8	10,4	10,0	10,0	11,5	18,9	13,9
Forestry	0,3	0,3	0,1	0,1	0,1	0,1	0,1	0,1	:
Transportation	1,9	4,4	5,0	4,7	4,8	5,1	4,9	4,9	:
Communications	:	0,4	0,5	0,6	0,6	0,7	1,0	1,4	:
Wholesale and retail trade	6,7	4,5	4,6	3,7	4,1	4,5	4,7	4,2	:
Other material services	4,5	2,1	2,3	2,1	1,9	2,0	2,6	4,1	:
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Net material product									
Mining and manufacturing	23,3	55,3	51,3	59,9	60,4	58,9	56,8	47,0	51,5
Construction	4,1	9,2	9,1	9,9	9,8	9,8	9,1	4,9	5,3
Agriculture	57,8	16,5	18,9	12,9	11,7	11,2	13,9	28,5	20,1
Forestry	0,5	0,7	0,4	0,4	0,4	0,3	0,3	0,3	:
Transportation	1,8	6,3	6,6	6,5	7,0	7,5	7,2	5,5	:
Communications	:	0,8	0,9	1,1	1,3	1,4	2,2	3,0	:
Wholesale and retail trade	8,0	8,7	9,8	6,9	7,3	8,7	8,6	7,2	:
Other material services	4,5	2,5	3,0	2,4	2,1	2,2	1,9	3,6	:
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

Sources: Bulgarian economy. National Statistical Institute, 1992; Statistical handbook, 1992; National Statistical Institute, 1992; Statistical yearbook of Bulgaria. National Statistical Institute, 1993.

Table 4

Bulgaria: breakdown of total trade by main trading partners

(%)

Groups of countries	1980	1985	1988	1989	1990	1991	1992
Exports							
Ex-CMEA member countries	68,8	75,8	82,6	84,0	80,5	55,1	31,5
EC	11,5	6,3	4,6	5,5	5,0	15,7	30,8
EFTA	3,5	1,6	1,3	1,5	1,5	3,4	3,3
Arab countries	8,5	9,6	7,0	4,5	6,1	8,3	7,9
Others	7,7	6,7	4,5	4,2	6,9	17,5	26,5
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Imports							
Ex-CMEA member countries	77,1	75,5	75,3	73,7	76,4	46,8	35,3
EC	11,7	9,5	9,7	10,3	9,6	20,7	32,6
EFTA	4,0	3,6	3,6	3,9	3,2	7,8	6,7
Arab countries	1,8	4,6	4,5	4,8	4,3	4,5	7,7
Others	5,4	6,8	6,9	7,3	6,5	20,2	17,7
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0

Source: Foreign trade of Bulgaria, 1980-91. National Statistical Institute, 1992, 1993.

Among all the CEECs, Bulgaria had the highest level of dependence on CMEA markets — in the second half of the 1980s trade with the CMEA accounted for roughly three quarters of Bulgarian trade, and trade with the USSR alone — for more than half of the trade turnover (Table 4). There were obvious signs of overindustrialization — in this period, industry accounted for about 70% of the gross output and roughly 60% of the net material product (NMP) (Table 3) with manufacturing comprising 95% of total industry.

The problem was that this industrial structure was developed without adequate back-up of local natural resources and other factor endowments, and mainly relied on the country's specialization within the CMEA and on the Soviet market. This is especially true for the overgrowth of some highly capital- and/or energy-intensive sectors like ferrous metallurgy, manufacture of metal articles (partly), some branches of chemical industry; some branches like electronics and data-processing machinery were artificially boosted for prestigious reasons.

The heavy dependence on the CMEA meant not only a market strategy but also important long-term investment decisions affecting the structure of the whole economy. Many large-scale projects were launched in the 1970s and 1980s (especially in the ferrous metallurgy, heavy machinery and electronics sectors) which were especially designed for export to the USSR. In spite of the obvious signs of overheating, investment expansion was continued in the second half of the 1980s which contributed to the magnitude of the subsequent crisis.

Trade in the 1970s and 1980s was rather unevenly distributed (Table 4). Apart from the heavy dependence on the CMEA it was marked by imbalances by trading partners. One specific feature of Bulgarian foreign trade was the chronically negative trade balance with the developed market economies which the country tried to compensate by trade surpluses in convertible currencies with some developing countries. This risky strategy was only successful till the middle of the 1980s.

In the period of stagnation in the second half of the 1980s and as a result of incompetence and mismanagement of foreign borrowing, Bulgaria accumulated a large foreign debt of poor age structure. In the beginning of 1991, the country abruptly and unilaterally declared suspension on the servicing of her foreign debt. This decision undermined the international confidence in Bulgaria and limited the potential sources of external financing in the transition period.

The disintegration of the CMEA was a severe blow on the economy of the country: in current US dollar terms total Bulgarian exports in 1991 plunged to 45% of their 1988 level and total imports contracted to 33% of their 1988 level (Dobrinsky *et al.*, 1992a).

Under these circumstances, starting from 1990 the Bulgarian economy entered a prolonged depression of unprecedented scale: in 1990, GDP plummeted by 9,1% and in 1991-92 by a further 18,6% (Table 1). This was also a period of substantial industrial restructuring and reorientation of trade.

2. Recent evolution of industrial structure and trade with manufactured goods

2.1. Recent changes in industrial structure

Throughout the socialist period, the industrial development in Bulgaria was mainly driven by centrally-controlled reallocation of domestic resources. The principle tool of this process was the allocation of new investment to the manufacturing sectors which led after some lags to the redirection of human resources mainly from agricultural and away into industrial activities. Priorities were given to manufacturing sectors in which the country was 'specialized' according to the agreements within the CMEA. The majority of these 'specializations' were aimed at complementing and serving the Soviet industry following its patterns.

Most of the current industrial sites in Bulgaria were started as 'greenfield' investments in the 1950s and 1960s (the process continued in the 1970s and 1980s but at a slower rate) as the country had a very small industrial sector in the pre-war times. Unfortunately, as real market factors hardly dominated this process, it resulted in massive misallocation of resources which became obvious when after the disintegration of the CMEA, the Bulgarian industry was exposed directly to the international market.

Many of the sectors which were boosted during the period of central planning belong to heavy industry — ferrous and non-ferrous metallurgy, mechanical and electrical engineering, petro- and industrial chemicals. A very specific area of Bulgarian specialization was computer-related electronics which until the end of the 1980s manufactured mainly mainframes and mainframe components following top producers roughly with one generation lag.

With the exception of non-ferrous metallurgy and partly-industrial chemicals these were not backed by domestic natural resources and relied heavily on imported raw materials. These industries suffered from three main problems. Firstly, due to the low investment efficiency, return on capital was in general rather low, which in turn contributed to very low value-added content of the output. Secondly, the unrequiring Soviet market did not enforce the introduction of high quality standards which could make their products sellable on the Western market. And thirdly, the high degree of exposure to imports on the input side

made these industries rather volatile to changes in world market prices of raw materials. Capital goods and some intermediates in turn were imported from the West adding another degree of external exposure.

A single outlier in the 'specialized' sectors is food processing which was a traditional branch of Bulgarian manufacturing. However, as most of its exports were also aimed at the Soviet market, it suffered from many of the problems which were typical for the other manufacturing branches.

Tables 5a and 5b reflect the general structure of Bulgarian manufacturing industry in recent years. With respect to output on the NACE 2-digit level, the food-processing sector (NACE 41/42) is by far the largest sector in the national economy. Next in order of importance (in the pre-crisis period) were mechanical and electrical engineering and data-processing machinery (NACE 32,34,33).

However in the period after 1990, drastic changes took place in the structure of the manufacturing industry (Table 5b). Within the general context of decline across all industrial sectors (ranging from 20 to over 60% in the different sectors in the period from 1988 to 1991) the worst hit by recession were the sectors of mechanical engineering (NACE 32) and data processing machinery (NACE 33) losing 5,5 and 6,8 percentage points in output shares, respectively. Other important losers were 'other manufacturing' (NACE 49), textiles (NACE 43), footwear and clothing (NACE 45) and electrical engineering (NACE 34).

The main 'winners' in this process of restructuring (only in terms of relative position, as they also reported declines in absolute volumes) were metal processing (NACE 22) and the chemical industry (NACE 25) as well as food processing.

It can be seen from Table 5a that the level of dependence on CMEA markets differed considerably across sectors.[1] By far the most sensitive sector is NACE 33 where 78,6% of the output in 1989 was directed to the ex-CMEA and in 1991, the corresponding figure was 91,8 per cent. This is the outcome of the Bulgarian specialization within the CMEA in the manufacture of computers which was a prestigious ambition of the communist government. Other very sensitive sectors are

[1] Here as well as in Table 5b, the sensitivity of employment is measured by the direct employment involved in exports.

Table 5a

Structure of industrial employment in Bulgaria, 1989

Sector	Empoyment by sectors (%)	Employed in domestic output (%)	Employed involved in exports to: ex-CMEA (%)	EC (%)	ROW (%)
21	2,09	98,57	0,23	0,01	1,18
22	3,59	86,10	6,69	3,04	4,17
23	1,04	85,75	9,00	1,03	4,22
24	4,64	97,23	1,86	0,58	0,33
25	3,47	57,54	32,25	2,97	7,24
26	0,57	96,40	2,32	0,44	0,84
31	7,32	83,78	15,35	0,35	0,53
32	11,77	48,81	49,69	0,49	1,01
33	2,88	19,90	78,63	0,06	1,41
34	12,06	74,99	24,10	0,24	0,67
35	1,99	32,51	62,82	0,15	4,53
36	1,39	64,32	26,11	7,96	1,61
37	0,21	91,28	8,64	0,04	0,03
41/42	12,09	84,65	13,09	0,79	1,47
43	5,72	93,81	2,22	1,32	2,65
44	0,61	83,57	13,38	1,33	1,73
45	9,72	84,13	13,85	1,25	0,77
46	4,66	92,51	5,91	0,88	0,70
47	1,94	95,36	1,90	1,53	1,20
48	2,69	88,08	10,39	0,69	0,84
49	9,55	93,79	5,62	0,40	0,18
Total	100,00	74,14	23,13	0,98	1,75

Source: National Statistical Institute.

Table 5b

Structure of Bulgarian industrial output as a percentage share of gross output, current prices

Sector	1988	1989	1990	1991	Change (1991-88)
21	0,75	0,60	0,97	1,42	0,67
22	6,83	5,76	5,73	13,95	7,12
23	0,78	0,69	0,83	0,69	- 0,09
24	3,49	3,42	3,45	3,35	- 0,15
25	6,61	6,03	5,77	10,34	3,72
26	0,23	0,41	0,39	0,20	- 0,03
31	4,56	5,21	5,16	4,06	- 0,50
32	10,08	10,84	9,69	4,55	- 5,53
33	7,92	6,89	3,72	1,15	- 6,77
34	9,05	11,15	9,37	7,83	- 1,23
35	0,98	2,18	2,06	1,04	0,05
36	1,31	1,03	0,90	0,98	- 0,33
37	0,06	0,11	0,45	0,76	0,70
41/42	23,98	23,43	29,28	33,48	9,50
43	5,10	4,54	5,14	3,48	- 1,62
44	0,54	0,67	0,57	0,42	- 0,12
45	4,40	4,76	5,17	3,07	- 1,33
46	3,40	3,14	3,23	3,13	- 0,27
47	2,27	1,81	1,78	2,49	0,22
48	4,04	3,83	2,97	3,31	- 0,74
49	3,61	3,51	3,38	0,31	- 3,29
Total	100,00	100,00	100,00	100,00	0,00

Source: National Statistical Institute.

motor vehicles (NACE 35 — the CMEA Bulgarian specialization in the manufacture of fork-lift trucks); metal articles and mechanical engineering (NACE sectors 31 and 32 — specialization in ferrous metallurgy and heavy machinery); as well as the chemical industry (NACE 25), electrical engineering (NACE 34); other means of transportation (NACE 36 — mainly shipbuilding).

All in all, 66,0% of the total manufacturing workforce in 1989 was employed in very sensitive sectors (here as well as in Tables 5a and 5b, the sensitivity of employment is measured by the direct employment involved in exports) and 18,2% of this workforce was directly involved in such 'sensitive exports' to the ex-CMEA. In 1990, these figures were 40,0% and 13,2%, respectively. At the same time, total manufacturing exports to the EC accounted for less than 1% of the workforce.

2.2. Reorientation of trade

Traditionally, the geographical distribution of Bulgarian trade was largely distorted by the extreme orientation to the ex-CMEA market. Besides, trade within specific market segments was marked by serious structural imbalances. Especially in the late 1980s, large deficits in trade in convertible currencies appeared which actually supported exports to the non-convertible area and which in the final run turned out to be unsustainable for the country.

This situation is typical also for the trade with manufactured goods where Bulgaria recorded chronic deficits in trade with developed market economies (the same is valid for trade with EC) and large surpluses in trade with ex-CMEA countries, exclusively due to trade surpluses with the ex-USSR (Table 6).

The situation changed dramatically with the disintegration of the CMEA when the countries of the region turned to trade in convertible currencies at world market prices. Under these circumstances, Bulgarian manufacturing exports were no longer competitive on the ex-Soviet market especially in the light of the huge economic problems which the newly-established States faced themselves. On the other hand shrinking domestic demand and financial problems in Bulgaria caused serious reduction of imports, including imports of manufactured goods from the EC.

Thus in the period after 1989 and especially in 1991-92, drastic changes have taken place in the geographical distribution of Bulgarian manufacturing trade. The market share of the ex-

Table 6

Geographical distribution of Bulgarian trade with manufactured goods

(million ECU)

	1988		1989		1990		1991		1992	
	Exports to	Imports from	Exports to	Imports from	Exports to	Imports from	Exports to	Imports from	Exports to	Imports from
Ex-CMEA	5 056,16	3 125,19	5 044,40	3 083,42	2 152,04	1 507,69	1 483,49	177,89	867,18	462,54
Ex-USSR	3 829,76	1 861,06	3 779,45	1 893,07	1 742,69	989,57	1 363,10	109,92	437,98	218,41
Other ex-CMEA	1 226,39	1 264,13	1 264,95	1 190,34	409,35	518,12	120,39	67,97	429,20	244,13
OECD	572,16	1 964,57	628,13	2 010,84	638,87	1 262,23	760,51	1 050,70	1 011,11	1 248,76
EC	340,95	1 274,82	387,49	1 295,78	430,85	793,03	589,22	855,15	740,12	907,90
Japan	13,42	73,54	14,82	72,98	10,09	32,87	20,02	17,34	9,47	61,94
Rest of the world	1 082,12	567,54	639,61	498,01	583,30	408,57	495,35	162,89	362,06	114,33
Total	6 710,43	5 657,31	6 312,14	5 592,27	3 374,21	3 178,49	2 739,35	1 391,49	2 240,34	1 825,63
Percentage shares by regions										
Ex-CMEA	75,35	55,24	79,92	55,14	63,78	47,43	54,15	12,78	38,71	25,34
Ex-USSR	57,07	32,90	59,88	33,85	51,65	31,13	49,76	7,90	19,55	11,96
Other ex-CMEA	18,28	22,35	20,04	21,29	12,13	16,30	4,39	4,88	19,16	13,37
OECD	8,53	34,73	9,95	35,96	18,93	39,71	27,76	75,51	45,13	68,40
EC	5,08	22,53	6,14	23,17	12,77	24,95	21,51	61,46	33,04	49,73
Japan	0,20	1,30	0,23	1,31	0,30	1,03	0,73	1,25	0,42	3,39
Rest of the world	16,13	10,03	10,13	8,91	17,29	12,85	18,08	11,71	16,16	6,26
Total (%)	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00

Source: National Statistical Institute; Ministry of Trade; Eurostat — Comext.

CMEA in Bulgarian manufacturing exports plunged by some 40 percentage points in the period 1989 to 1992 (Table 6). Practically, as reflected in the 1992 data, this drop was exclusively due to the loss of the ex-USSR, as the share of the other ex-CMEA countries is gradually recovering after 1991.

On the other hand, the relative importance of the OECD countries, and especially of the EC as a market for Bulgarian manufacturing exports, increased considerably both in relative and in absolute terms. The share of the EC in Bulgarian manufacturing exports increased by 28 percentage points and the volume of these exports more than doubled in the period 1988 to 1992 (Table 6).

The changes on the import side were also very radical — in 1992 manufacturing imports from the ex-CMEA were contracted by more than 30 percentage points as compared to 1988 whereas those from OECD increased roughly by the same margin in relative terms. In 1992, imports from OECD accounted for about 68% of total Bulgarian manufacturing imports and those from the EC alone were 50% of the total. One can, however, observe that after the sharp drop of manufacturing imports from ex-CMEA countries which took place in 1991, these imports also started to recover in 1992.

There is a marked difference in the sectoral composition of the trade flows with the East and with the West and especially in the structure of exports (Tables 7a and 7b). Thus the Eastern market 'hits' — mechanical and electrical engineering and data-processing machinery (NACE 32, 33 and 34), responsible for about 60% of Bulgarian exports to the ex-CMEA in 1988 had a modest 13,6% share in the exports to the EC. By the end of the period under consideration, these differences started to diminish mainly due to the drop in exports to the East — the corresponding figures for 1992 were 22,0 and 11,5%.

At the other end of the scale, are sectors of metal processing and footwear and clothing (NACE 22 and 45): in 1988 their share in the CMEA market was a modest 4,8% whereas that in the EC market — 23,5%. In 1992, these figures were 12,9 and 39,0%, respectively. Only the sector of food processing (NACE 41/42) and to some extent chemical industry (NACE 25) can be regarded as outliers of this tendency.

It is important to note also that there was very little (if any) substitutability in Bulgarian manufacturing exports to the Eastern and to the Western market. One can say that, judging by technical and quality standards, the products going to the West and those going to the East, within one and the same sector, were different products. And this is now one of the main difficulties (together with the lack of managerial and marketing skills) in the attempts to reorient some of the trade flows to the West. Basically, this would require a complete restructuring of the whole production process starting from the technologies

Table 7a

Sectoral structure of manufacturing exports of Bulgaria, 1988 (percentage shares of sectors by markets)

(%)

Sector	Total	Ex-CMEA	Ex-USSR	Other CMEA	OECD	EC	ROW
21	0,07	0,02	0,01	0,04	0,41	0,01	0,12
22	4,40	2,11	0,93	5,78	18,66	15,05	7,55
23	0,25	0,29	0,15	0,69	0,22	0,28	0,09
24	0,44	0,28	0,13	0,77	1,64	2,05	0,52
25	9,95	7,67	8,00	6,64	17,93	23,09	16,39
26	0,08	0,05	0,06	0,03	0,42	0,70	0,05
31	2,64	3,11	3,00	3,46	1,02	0,79	1,28
32	23,45	26,09	24,49	31,12	6,07	8,65	20,30
33	19,11	22,33	24,56	15,38	1,00	0,96	13,61
34	9,33	10,95	11,48	9,30	3,69	4,03	4,72
35	6,43	5,58	4,97	7,49	0,27	0,31	13,66
36	1,34	1,49	1,45	1,59	1,12	0,17	0,75
37	0,07	0,06	0,07	0,02	0,27	0,46	0,02
41/42	13,87	13,23	13,82	11,40	19,30	14,24	13,98
43	1,29	0,41	0,31	0,72	7,40	3,95	2,17
44	0,46	0,34	0,40	0,16	2,29	1,07	0,03
45	2,83	2,71	3,30	0,86	7,36	8,45	0,98
46	0,94	0,73	0,92	0,13	3,09	4,01	0,80
47	0,37	0,14	0,12	0,19	1,81	2,91	0,72
48	1,70	1,64	1,52	2,04	1,41	1,79	2,13
49	1,00	0,78	0,32	2,20	4,61	7,05	0,14
Total (%)	100,00	100,00	100,00	100,00	100,00	100,00	100,00
Million ECU	6 710,43	5 056,16	3 829,76	1 226,39	572,16	340,95	1 082,12

Source: National Statistical Institute; Eurostat — Comext.

Table 7b

Sectoral structure of manufacturing exports of Bulgaria, 1992 (percentage shares of sectors by markets)

(%)

Sector	Total	Ex-CMEA	Ex-USSR	Other CMEA	OECD	EC	ROW
21	1,41	3,06	2,45	3,69	0,10	0,12	1,09
22	16,39	8,26	1,82	14,82	20,09	15,76	25,52
23	0,67	0,77	0,11	1,45	0,51	0,53	0,84
24	2,47	2,67	2,64	2,69	2,56	2,90	1,75
25	13,56	10,93	8,81	13,10	11,77	11,52	24,83
26	1,08	0,95	0,33	1,57	1,14	0,70	1,21
31	1,62	0,88	0,10	1,67	1,59	2,07	3,48
32	7,68	8,75	10,43	7,04	5,88	6,20	10,15
33	0,47	0,53	0,63	0,43	0,37	0,40	0,62
34	7,84	12,72	11,35	14,12	4,11	4,86	6,57
35	3,27	6,34	7,52	5,13	0,59	0,59	3,38
36	1,05	0,43	0,51	0,35	0,24	0,33	4,82
37	0,44	0,49	0,49	0,48	0,34	0,37	0,59
41/42	18,04	29,28	41,76	16,54	12,59	9,98	6,33
43	2,91	1,68	0,65	2,73	4,77	5,85	0,66
44	1,12	0,39	0,28	0,50	2,14	1,98	0,06
45	10,70	4,62	6,14	3,07	19,45	23,30	0,84
46	2,81	1,33	1,27	1,39	3,62	3,92	4,09
47	1,46	1,35	0,67	2,05	1,53	1,88	1,55
48	3,57	4,34	1,78	6,96	3,67	2,84	1,43
49	1,44	0,23	0,25	0,20	2,93	3,90	0,18
Total (%)	100,00	100,00	100,00	100,00	100,00	100,00	100,00
Million ECU	2 240,34	867,18	437,98	429,20	1 011,11	740,12	362,06

Source: Ministry of Trade; Eurostat — Comext.

Table 8a

Sectoral structure of manufacturing imports of Bulgaria, 1988 (percentage shares of sectors by markets)

(%)

Sector	Total	Ex-CMEA	Ex-USSR	Other CMEA	OECD	EC	ROW
21	0,80	0,59	0,91	0,11	1,18	0,28	0,63
22	9,29	8,94	10,68	6,38	8,98	8,87	12,28
23	0,67	0,66	0,60	0,74	0,16	0,15	2,53
24	1,19	0,64	0,22	1,25	2,20	2,10	0,75
25	9,76	4,27	2,60	6,72	18,48	20,87	9,77
26	0,66	0,04	0,01	0,08	1,17	1,08	2,28
31	3,36	3,74	2,74	5,21	3,18	2,80	1,86
32	22,59	23,18	23,41	22,85	27,33	28,73	2,95
33	1,05	0,90	0,16	2,00	1,39	0,88	0,63
34	10,87	11,51	9,93	13,83	11,28	8,94	5,91
35	18,76	31,59	38,21	21,85	3,04	4,19	2,54
36	1,21	1,69	1,24	2,35	0,55	0,30	0,90
37	0,77	0,61	0,55	0,69	1,23	1,80	0,08
41/42	6,85	3,13	0,36	7,22	6,38	7,50	28,97
43	3,29	2,23	2,99	1,11	1,87	1,48	14,09
44	0,35	0,02	0,00	0,04	0,12	0,10	2,98
45	0,83	0,43	0,02	1,04	0,90	0,86	2,75
46	0,63	0,82	0,84	0,79	0,44	0,56	0,23
47	2,36	1,61	2,29	0,61	4,18	2,56	0,14
48	2,84	1,90	1,65	2,28	3,20	2,96	6,72
49	1,87	1,50	0,59	2,84	2,73	3,01	0,99
Total (%)	100,00	100,00	100,00	100,00	100,00	100,00	100,00
Million ECU	5 657,31	3 125,19	1 861,06	1 264,13	1 964,57	1 274,82	567,54

Source: National Statistical Institute; Eurostat — Comext.

Table 8b

Sectoral structure of manufacturing imports of Bulgaria, 1992 (percentage shares of sectors by markets)

(%)

Sector	Total	Ex-CMEA	Ex-USSR	Other CMEA	OECD	EC	ROW
21	2,78	1,98	2,73	1,31	2,75	0,62	6,40
22	7,53	22,22	16,09	27,71	2,71	2,51	0,70
23	0,48	0,82	0,97	0,69	0,10	0,06	3,26
24	1,66	2,01	1,11	2,82	1,50	1,40	2,07
25	13,31	12,90	14,68	11,31	13,92	13,92	8,19
26	1,22	1,83	0,15	3,33	1,04	0,79	0,70
31	1,61	1,22	1,12	1,32	1,72	2,08	1,98
32	15,20	10,91	9,01	12,61	16,56	15,56	17,73
33	1,21	0,66	0,55	0,76	1,42	1,52	1,07
34	8,21	6,43	5,00	7,70	8,48	8,79	12,45
35	11,07	12,46	19,11	6,50	10,59	10,08	10,69
36	5,52	1,96	2,62	1,38	7,28	9,87	0,60
37	2,06	0,98	1,14	0,84	2,51	1,64	1,48
41/42	9,53	6,03	3,38	8,40	10,29	11,40	15,44
43	3,24	2,62	3,45	1,88	3,43	3,45	3,63
44	0,69	0,49	0,56	0,42	0,81	0,96	0,16
45	3,61	0,93	0,31	1,48	4,18	4,37	8,22
46	0,88	1,55	2,63	0,59	0,70	0,78	0,15
47	3,64	4,63	7,84	1,76	3,56	2,79	0,51
48	4,14	6,72	7,18	6,31	3,30	3,30	2,86
49	2,42	0,64	0,38	0,88	3,14	4,10	1,71
Total (%)	100,00	100,00	100,00	100,00	100,00	100,00	100,00
Million ECU	1 825,63	462,54	218,41	244,13	1 248,76	907,90	114,33

Source: Ministry of Trade; Eurostat — Comext.

and the fixed assets and ending with the retraining of the workforce. In view of the implied investment requirements this would hardly be possible on a large scale.

As regards imports (Tables 8a and 8b), traditionally technological equipment and specific chemicals (NACE sectors 25 and 32) occupied a substantial share of the Bulgarian manufacturing imports from the West (these two sectors alone accounted for almost half of the total Bulgarian manufacturing imports from the EC in 1988). From the ex-CMEA, Bulgaria imported mostly mechanical and electrical engineering and motor vehicles (NACE 32, 34 and 35). These three sectors made up for more than 66% of the Bulgarian manufacturing imports from the CMEA in 1988.

With the ongoing changes in Eastern Europe, Bulgaria started to substitute some of her essential ex-CMEA imports for Western ones. In recent years, this concerns especially motor vehicles (Bulgaria is not an automobile producer and most of them used to be imported from the USSR); aerospace equipment (Russian planes are being substituted for Western ones). Also, with the opening-up of the economy, Bulgaria increased the Western imports of food both in relative and in absolute terms which is more an indication of the diversification of supply in the new market environment.

2.3. Trade performance of Bulgaria *vis-à-vis* the EC

During the socialist period in Bulgaria, trade with EC was by and large determined by the general economic strategies followed by the central authorities. On the import side, the EC was one of the principle sources of high technologies, capital goods and sophisticated intermediate goods. On the other hand, exports to this region were not among the main priorities due to the strategy to earn convertible currency revenues in other, either markets less demanding or dominated by political factors. The combination of these factors contributed to the

Table 9

Sectors with largest export/import shares in Bulgarian trade with the EC

1985		1988		1991		1992	
Sector	Share (%)	Sector	Share (%)	Sector	Share (%)	Sector	Share (%)
Bulgarian exports to the EC							
221	20,63	252	15,37	453	10,82	453	15,06
252	13,95	221	7,83	221	9,02	224	9,03
453	9,85	453	6,73	253	7,89	253	6,03
436	4,63	224	6,05	224	6,97	451	5,95
414	4,18	495	5,74	414	5,28	436	5,62
495	3,57	325	5,26	436	4,54	221	5,38
325	3,26	253	3,92	252	4,00	414	3,62
412	3,20	412	3,70	361	3,75	412	2,85
224	3,17	414	3,67	325	3,63	252	2,73
467	3,11	422	3,46	412	3,00	325	2,59
253	2,64	436	2,97	451	2,63	455	2,13
413	2,64	413	2,88	422	2,21	491	2,06
260	2,54	471	2,56	342	2,12	481	1,78
256	2,04	467	2,42	322	1,93	471	1,68
422	2,00	256	2,16	413	1,76	467	1,67
Bulgarian imports from the EC							
328	8,56	252	9,13	364	11,16	364	9,68
322	6,94	328	8,09	351	4,95	351	8,49
252	6,82	322	6,25	325	4,77	328	5,55
256	6,46	256	5,89	324	4,59	252	4,04
324	5,22	324	5,21	328	4,48	324	3,78
221	5,01	221	3,56	252	4,06	256	3,55
344	4,22	344	3,01	412	3,80	451	2,62
323	3,38	413	2,87	323	3,62	424	2,52
325	3,00	325	2,70	256	3,49	495	2,44
224	2,69	323	2,64	413	3,40	344	2,43
222	2,51	495	2,63	342	2,91	429	2,34
223	2,30	351	2,29	344	2,33	257	2,31
248	2,19	343	2,17	495	2,21	343	2,21
343	2,15	224	2,05	330	2,01	436	2,20
253	2,04	342	1,99	322	2,01	483	2,12

Source: Author's calculations.

establishment of a trade structure which was substantially different in the sectoral composition of exports and imports and unbalanced in terms of volumes in the two directions.

Bulgarian exports to the EC were dominated by either unsophisticated manufactured commodities, with a relatively high resource content and a relatively low degree of processing (and, hence, of value-added content) or by highly labour intensive products where the country could have enjoyed comparative advantages. This is also true for the current situation in spite of the fact that the relative position of the leading sectors has changed over the years (Table 9).

The leaders on the import side are the manufacturing sectors producing sophisticated capital goods (mechanical and electrical engineering), specialized chemicals and in the previous years, specialized metal products demanded by the Bulgarian heavy industry (Table 9).

Bulgarian trade with the EC is rather concentrated in a limited number of sectors, and especially on the export side, although the general tendency in the last 10 years has been of a deconcentration (Graphs 1 and 2). The share of the 10 largest exporting sectors in total exports to the EC is continuously decreasing: in 1985 it was 69,6%, in 1988, it was 61,7% and in 1992, it was 58,8%. A similar process is taking place on the import side: the corresponding figures are: 1985 — 52,3%, 1988 — 49,3% and 1992 — 45,1%.

The tendency of deconcentration of trade is also confirmed by the Gini coefficients of inequality of the distribution of exports and imports. The values of these coefficients calculated by the author were as follows. On the export side: 1985 — 0,893, 1988 — 0,847 and 1992 — 0,813. On the import side: 1985 — 0,778, 1988 — 0,769 and 1992 — 0,714.

The process of economic transition which was started in Bulgaria in the last year had a profound effect on the structure of trade with the EC. In general total manufacturing exports to the EC in the last few years increased whereas imports therefrom decreased in value terms, however this was rather unevenly distributed across sectors (Table 10). Altogether, manufacturing imports from the EC started to recover in 1991 and especially in 1992 but still they are far below their pre-crisis level of 1988-89.

On the export side among the sectors which improved their position both in absolute and in relative terms are nonferrous metals (NACE 224), industrial chemicals (253), textiles (436), footwear (451), clothing (453), some of the food-processing sectors as well as shipbuilding (361) in 1991. None of these sectors (with the exception of the very specific shipbuilding sector) is a new comer to the top ranks of exports to the EC. At the same time some traditionally well-performing sectors such as steel (221) and petrochemicals (252) which used to be the export leaders in the 1980s have continuously lost ground in recent years (as a result of the cuts in cheap resource supplies from Russia).

The export figures do not reflect the substantial trade diversion effect of flows previously directed to the ex-CMEA. Thus one could conclude that the increase in export flows to the EC is mainly new trade driven by price arbitrage and by diversion of trade from the domestic market.

The changes on the import side are more profound. They reflect both the changes in the structure of Bulgarian intermediate and final demand brought about by the economic recession and by the process of industrial restructuring which is under way as well as the substitution effect due to the disintegration of the CMEA. There are more signs of new trade in Bulgarian import structure in the last years: thus the sectors occupying the first two places in the 1991 and 1992 rankings — aerospace equipment (364) and motor vehicles (351) — had never previously appeared in the top 10 import sectors (Table 9). On the other hand, traditionally large importing sectors such as the metal-processing ones, chemical industry and mechanical engineering lost considerable ground in 1991-92 (Table 8b).

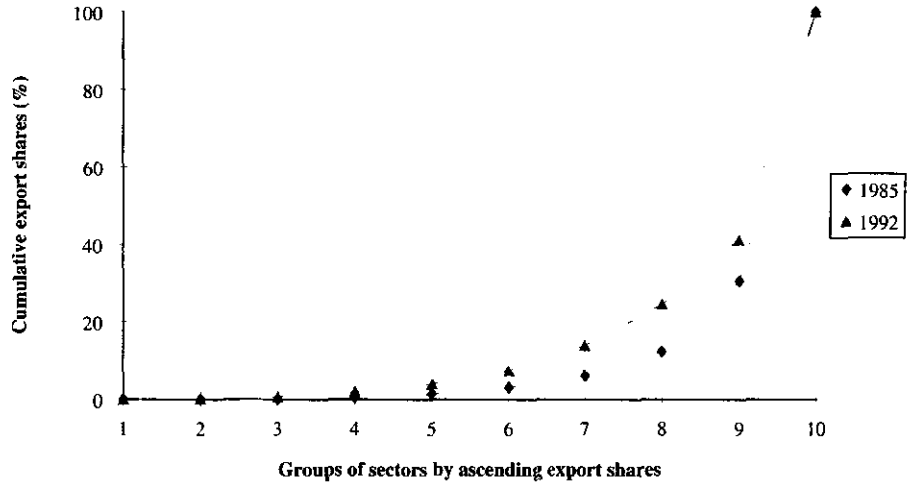
The evolution of commodity structure of Bulgarian trade *vis-à-vis* the EC can be traced also in the correlation matrix of trade structures (Table 11) and in the values of the coefficients of structural change (Table 12).

Throughout the 1980s and until 1990, the values of the correlation coefficients of export structures are of comparable magnitudes and relatively high levels suggesting that the undergoing of structural changes involved mainly one and the same subset of sectors. Only after 1991 and especially in 1992, there are some signs of more substantial shifts in the export structure.

At the same time, the value of the correlation coefficients of the import structures decreases systematically, and especially pronounced in the last two to three years. The imports correlations suggest that the current (1991-92) structure of Bulgarian manufacturing imports from the EC has very little in common with the structure prevailing in the 1980s.

We can analyse this tendency from another aspect, namely by the values of the coefficients of structural change and especially by the weighted and integrated coefficients (see Table 12 for definitions). As these coefficients take into account the relative size (and, hence, importance) of the sectors undergoing structural change, these figures give an insight into another interesting aspect of the changing trade structures. When the relative size of the sectors is accounted for, the structural changes on the export side (as of 1992) appear to be

GRAPH 1: **Concentration of exports to the EC: 1992 versus 1985**



GRAPH 2: **Concentration of imports from the EC: 1992 versus 1985**

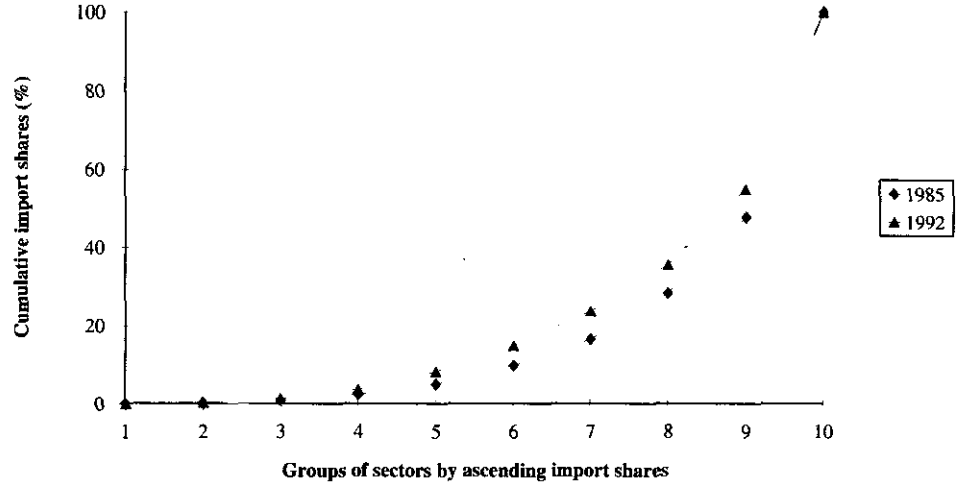


Table 10

Annual growth rates of Bulgarian trade with the EC, percentage changes in current prices

Sector	1980-92	1980-90	1991-92	1988-89	1989-90	1990-91	1991-92
				Exports			
21	6,96	18,69	- 36,43	12 450,00	- 11,55	2,25	- 60,48
22	5,55	3,13	18,49	29,69	24,82	20,91	16,13
23	16,39	13,11	34,23	64,95	35,00	1,85	76,91
24	22,35	13,64	77,03	- 8,57	7,19	50,73	107,93
25	8,43	7,31	14,19	- 13,35	- 4,12	31,67	- 0,96
26	5,56	- 7,75	107,01	- 39,08	- 16,55	9,09	292,80
31	18,98	15,20	39,85	116,73	34,13	43,99	35,83
32	6,00	5,57	8,14	26,41	5,31	9,07	7,21
33	16,19	17,07	11,85	- 17,74	- 11,90	56,12	- 19,86
34	11,17	5,88	41,84	48,00	- 12,19	81,09	11,09
35	34,07	20,08	132,62	57,69	- 50,61	107,41	160,89
36	34,30	36,57	23,53	124,56	23,44	1 322,78	- 89,27
37	18,71	15,03	38,91	56,05	- 42,04	27,46	51,38
41/42	6,50	6,41	6,96	19,07	11,64	16,33	- 1,65
43	12,27	7,18	41,57	0,00	60,55	31,42	52,50
44	22,91	14,39	76,04	- 0,27	30,03	98,31	56,27
45	15,07	5,11	80,94	32,63	37,84	69,47	93,19
46	9,41	6,82	23,34	- 0,81	40,66	37,88	10,33
47	28,47	29,28	24,46	57,32	- 42,27	23,78	25,14
48	25,41	22,63	40,28	37,87	27,11	20,02	63,95
49	10,12	6,15	32,31	- 22,69	- 11,20	9,52	59,83
Total	10,05	6,27	31,07	13,65	11,19	36,76	25,61
				Imports			
21	2,18	- 4,48	43,16	71,15	- 54,99	- 70,18	587,32
22	- 14,58	- 9,61	- 35,61	- 9,45	- 46,35	- 45,30	- 24,20
23	- 2,76	3,99	- 30,48	- 5,82	- 39,33	43,52	- 66,32
24	0,18	1,07	- 4,16	12,43	- 53,99	- 12,37	4,82
25	- 0,32	- 1,23	4,36	- 13,75	- 49,44	- 8,66	19,25
26	- 1,67	- 5,57	20,40	17,10	- 69,11	- 0,80	46,13
31	- 0,42	- 1,12	3,14	0,50	- 50,35	- 11,41	20,09
32	0,02	7,00	- 28,60	7,87	- 29,85	- 32,00	- 25,04
33	13,93	10,12	35,07	0,54	- 32,89	127,95	- 19,97
34	3,67	1,80	13,57	- 0,51	- 45,42	7,35	20,14
35	9,48	- 0,82	79,39	- 26,13	- 27,92	121,49	45,30
36	33,69	18,41	145,24	191,51	35,58	556,44	- 8,38
37	2,53	2,34	3,47	12,63	- 46,21	- 21,50	36,37
41/42	11,45	9,17	23,55	- 7,82	- 23,00	60,62	- 4,96
43	12,34	9,60	27,06	33,37	- 22,87	8,15	49,28
44	29,59	19,57	93,80	173,02	- 32,27	41,20	165,99
45	13,54	5,24	66,00	53,02	- 13,92	50,31	83,33
46	17,29	18,20	12,81	- 9,32	- 14,26	13,06	12,56
47	2,70	1,06	11,27	37,77	- 54,59	54,06	- 19,64
48	0,62	- 2,23	16,13	2,81	- 42,62	3,69	30,07
49	11,24	9,47	20,54	41,58	- 52,91	- 4,61	52,33
Total	2,55	1,68	7,00	1,64	- 38,80	7,83	6,17

Source: Eurostat — Comext.

at least as substantial as (if not more than) those on the imports side (compare the euclidian coefficients for 1992 versus 1980 to 1989 on the export and on the import side — Table 12).

Bulgarian trade performance Bulgaria *vis-à-vis* the EC has been also assessed on the basis of some other quantitative indicators:

(i) the specialization indices of Bulgaria in manufacturing industries relative to the EC defined here as the ratios between Bulgarian export shares (Bulgarian exports to the EC) and EC import shares (EC imports from the world, excluding intra-EC imports);

Table 11

Correlation matrix of Bulgarian trade structure *vis-à-vis* the EC

		1980	1985	1988	1989	1990	1991
				Bulgarian exports to EC			
1992	0,4542	0,3757	0,3858	0,4911	0,6005	0,8236	
1991	0,6891	0,5853	0,5408	0,7413	0,8371		
1990	0,9053	0,8528	0,6899	0,9480			
1989	0,8294	0,8432	0,8019				
1988	0,5276	0,7282					
1985	0,8814						
				Bulgarian imports from EC			
1992	0,1157	0,2125	0,2516	0,2915	0,3398	0,7349	
1991	0,1401	0,2514	0,3169	0,3512	0,4336		
1990	0,4759	0,7747	0,7818	0,8756			
1989	0,5854	0,9513	0,9153				
1988	0,6454	0,9035					
1985	0,7203						

Source: Author's calculations.

Table 12

Coefficients of structural change in Bulgarian trade *vis-à-vis* the EC: 1992 versus selected years

	1980	1985	1988	1989	1990	1991
			Bulgarian exports to EC			
Similarity index	0,9608	0,9512	0,9665	0,9761	0,9811	0,9924
Normalized euclidian coefficient	0,1401	0,1562	0,1293	0,1093	0,0971	0,0615
Weighted euclidian coefficient	0,4710	0,5065	0,4375	0,4257	0,3674	0,2230
Integrated euclidian coefficient	0,5450	0,5957	0,5589	0,4934	0,4288	0,2772
			Bulgarian imports from EC			
Similarity index	0,9638	0,9724	0,9748	0,9776	0,9803	0,9926
Normalized euclidian coefficient	0,1346	0,1175	0,1123	0,1057	0,0993	0,0594
Weighted euclidian coefficient	0,3994	0,3925	0,3847	0,3718	0,3518	0,1409
Integrated euclidian coefficient	0,7019	0,6282	0,6030	0,5758	0,5461	0,3218

Definitions:

Similarity index = $1 - \{s(92)-s(t)\}^2$

Normalized euclidian coefficient = $\sqrt{0,5\{\{s(92)-s(t)\}^2\}}$

Weighted euclidian coefficient = $\sqrt{\{s(92)-s(t)\}^2 s(92)}$

Integrated euclidian coefficient = $\sqrt{1-\frac{2\,s(92)s(t)}{\{s(92)^2+s(t)^2\}}}$

where s(t) is the export/import share in year t

Source: Author's calculations.

(ii) the trade coverage ratios in the manufacturing sectors *vis-à-vis* the EC (measured as the ratio between Bulgarian exports to and imports form the EC by sectors);

(iii) the Grubel-Lloyd intra-industry trade indices related to trade between Bulgaria and the EC.

A selection of these results containing the sectors with the highest values of these indicators in the years 1988 and 1992 is given in Tables 13a and 13b (coverage ratios) and 14a and 14b (specialization indices), respectively.

As a general observation one can say that the two subsets of sectors — those with highest coverage ratios and those with highest specialization indices — are overlapping to a large extent. Thus in 1992, within the 37 NACE 3-digit sectors with coverage ratio higher than 1,1, only nine have specialization indices lower than 1.0. At the same time, among 65 sectors with coverage ratios lower than 0,9, only eight are characterized by specialization indices higher than 1,0.

In the years after 1989, the subset of sectors with relatively high coverage ratios and specialization indices is expanding; the contribution of the top ranking (by these indices) sectors is well over 50% of total Bulgarian exports to the EC.

The sectors with high coverage ratios and specialization indices in 1990 to 1992 are mainly concentrated in the NACE 2-digit groups of food processing (NACE 41/42), footwear and clothing (NACE 45), timber industries (NACE 46) and sporadically in NACE groups 21, 22, 23, 24, 25, 31, 34 and 36.

Five sectors — processing of fruits and vegetables (NACE 414); animal and poultry foods (NACE 422); household textiles (NACE 455), and the two wood-processing sectors — NACE 464 and 467 are present among the 20 highest sectors by both indicators in the whole period from 1988 to 1992. They account

Table 13

The share in Bulgaria's manufacturing exports to the EU of sectors in which it has a revealed comparative advantage

	1988	1990	1992
Number of sectors with trade coverage ratio higher than 1,1	17,0	24,0	37,0
Number of sectors with specialization indices higher than 1,0	24,0	26,0	37,0
Share in total exports of 20 highest by coverage ratio sectors (%)	27,0	57,4	52,6
Share in total exports of 20 highest by specialization index sectors (%)	57,9	61,6	53,2

Table 14a

Sectors with highest trade coverage ratios, 1988

Rank	Sector	EC trade coverage ratio	Share of exports to EC (%)	Share of imports from EC (%)	Specialization index	Grubel-Lloyd index
1	461	29,000	0,43	0,00	0,217	0,067
2	465	15,200	0,22	0,00	1,632	0,123
3	455	13,444	1,06	0,02	2,952	0,138
4	442	10,867	0,96	0,02	1,832	0,169
5	415	9,000	0,24	0,01	0,330	0,200
6	467	7,366	2,42	0,09	4,189	0,239
7	453	5,235	6,73	0,34	1,862	0,321
8	462	3,710	0,75	0,05	1,139	0,425
9	414	3,255	3,67	0,30	3,713	0,470
10	241	2,385	0,09	0,01	21,081	0,591
11	482	2,333	0,02	0,00	2,388	0,600
12	464	2,300	0,07	0,01	9,025	0,606
13	494	1,836	0,75	0,11	0,739	0,705
14	436	1,822	2,97	0,44	1,560	0,709
15	231	1,344	0,24	0,05	1,070	0,853
16	422	1,264	3,46	0,73	17,152	0,884
17	427	1,211	0,13	0,03	7,940	0,905
18	245	0,963	0,23	0,06	2,454	0,981
19	471	0,917	2,56	0,75	0,551	0,957
20	242	0,875	0,02	0,01	0,458	0,933

Source: Author's calculations.

Table 14b

Sectors with highest trade coverage ratios, 1992

Rank	Sector	EC trade coverage ratio	Share of exports to EC (%)	Share of imports from EC (%)	Specialization index	Grubel-Lloyd index
1	461	286,750	0,93	0,00	0,603	0,007
2	464	46,167	0,11	0,00	7,321	0,042
3	231	44,462	0,47	0,01	1,891	0,044
4	455	27,528	2,13	0,06	4,676	0,070
5	465	17,569	0,24	0,01	1,210	0,108
6	462	17,246	0,79	0,04	1,419	0,110
7	241	17,200	0,05	0,00	4,497	0,110
8	414	10,405	3,62	0,28	3,698	0,175
9	224	10,158	9,03	0,72	1,583	0,179
10	463	9,058	0,13	0,01	0,486	0,199
11	453	8,061	15,06	1,52	3,373	0,221
12	253	7,809	6,03	0,63	3,920	0,227
13	221	7,478	5,38	0,59	4,131	0,236
14	242	6,667	0,27	0,03	2,693	0,261
15	442	6,225	1,53	0,20	2,560	0,277
16	412	5,342	2,85	0,43	2,613	0,315
17	245	4,303	0,28	0,05	2,492	0,377
18	467	3,396	1,67	0,40	2,241	0,455
19	422	3,380	1,38	0,33	7,091	0,457
20	311	2,860	0,64	0,18	3,812	0,518

Source: Author's calculations.

Table 15a

Sectors with highest specialization indices, 1988

Rank	Sector	Specialization index	Share of exports to EC (%)	Share of imports from EC (%)	EC trade coverage ratio	Grubel-Lloyd index
1	241	21,081	0,09	0,01	2,385	0,591
2	422	17,152	3,46	0,73	1,264	0,884
3	413	10,880	2,88	2,87	0,268	0,423
4	464	9,025	0,07	0,01	2,300	0,606
5	427	7,940	0,13	0,03	1,211	0,905
6	425	7,342	0,04	0,02	0,650	0,788
7	221	5,209	7,83	3,56	0,588	0,741
8	325	4,432	5,26	2,70	0,522	0,686
9	467	4,189	2,42	0,09	7,366	0,239
10	252	4,044	15,37	9,13	0,450	0,621
11	414	3,713	3,67	0,30	3,255	0,470
12	362	3,091	0,17	0,13	0,339	0,507
13	455	2,952	1,06	0,02	13,444	0,138
14	495	2,846	5,74	2,63	0,584	0,738
15	412	2,661	3,70	1,59	0,622	0,767
16	247	2,585	1,10	0,43	0,690	0,817
17	245	2,454	0,23	0,06	0,963	0,981
18	482	2,388	0,02	0,00	2,333	0,600
19	253	2,327	3,92	1,83	0,574	0,729
20	223	2,147	0,71	1,77	0,108	0,195

Source: Author's calculations.

Table 15b

Sectors with highest specialization indices, 1992

Rank	Sector	Specialization index	Share of exports to EC (%)	Share of imports from EC (%)	EC trade coverage ratio	Grubel-Lloyd index
1	464	7,321	0,11	0,00	46,167	0,042
2	422	7,091	1,38	0,33	3,380	0,457
3	413	6,629	1,35	0,42	2,622	0,552
4	451	4,955	5,95	2,62	1,852	0,701
5	455	4,676	2,13	0,06	27,528	0,070
6	241	4,497	0,05	0,00	17,200	0,110
7	221	4,131	5,38	0,59	7,478	0,236
8	253	3,920	6,03	0,63	7,809	0,227
9	311	3,812	0,64	0,18	2,860	0,518
10	414	3,698	3,62	0,28	10,405	0,175
11	453	3,373	15,06	1,52	8,061	0,221
12	248	3,358	1,17	0,61	1,572	0,778
13	242	2,693	0,27	0,03	6,667	0,261
14	223	2,688	0,88	0,53	1,356	0,849
15	412	2,613	2,85	0,43	5,342	0,315
16	442	2,560	1,53	0,20	6,225	0,277
17	245	2,492	0,28	0,05	4,303	0,377
18	467	2,241	1,67	0,40	3,396	0,455
19	247	2,223	1,05	0,41	2,079	0,650
20	481	2,136	1,78	1,17	1,241	0,893

Source: Author's calculations.

for 11,2% of Bulgarian exports to the EC in 1988, 10,7% in 1991 and 8,9% in 1992. Other sectors with stable high position are iron and steel (NACE 221), industrial chemicals (NACE 253), meat processing (NACE 412) and clothing (NACE 453).

Whereas most of these sectors were already assessed as important in Bulgarian exports to the EC, the appearance of the wood-processing sectors in the highest positions adds another dimension to the Bulgarian specialization and/or static comparative advantages. However, the commodities of this sector belong to the same categories of resource and/or labour intensive sectors.

In a medium-term retrospective — taking into account the period from 1980 onwards there are no dramatic changes in the relative standing of individual sectors in terms of their coverage ratios and specialization indices. In general, more sectors have improved their position than those that have deteriorated which can be attributed to the attempt to reorient some of the ex-CMEA exports to the EC market in the latest years, and to the tendency for a more balanced trade with the EC.

The substantial difference in export and import structures is an indication that intra-industry trade did not play significant role in Bulgarian manufacturing trade with the EC. Such a conclusion is confirmed by the evaluated Grubel-Lloyd index of Bulgarian intra-branch trade with the EC. However, it could be pointed out that the value of the Grubel-Lloyd index for Bulgaria (0,39 in 1992) is of the order of those for Portugal (0,37) and Greece (0,31) in 1987 (*Social Europe*, 1990).

3. Trade performance and market distortions in Bulgarian trade with the EC

3.1. EC barriers to Bulgarian exports

Currently the EC barriers to exports from Bulgaria cover a range of measures including tariffs (most-favoured nation tariff rates and GSP treatment), quantitative restrictions and other non-tariff trade barriers; government procurement restrictions and technical regulations.

The process of liberalization of the existing restrictions on the side of the EC towards Bulgaria started with the Trade and Cooperation Agreement, signed in January 1991 which granted a GSP treatment to a range of commodities of Bulgarian origin. A further step was the Association Agreement which was finalized in December 1992 after six rounds of negotiations and signed officially in Brussels on March 8, 1993. This agreement provides for a period of gradual abolishment of most of the existing EC barriers to Bulgarian exports to the EC till 1997-98.

Möbius and Schumacher (1992a, 1992b) evaluated the current EC trade barriers facing the CEECs including Bulgaria in 1990 and 1991 using a multicriterial approach. The quantitative assessments used in this paragraph are based on their findings with the exception of some additional evaluations mentioned later.

According to these assessments, the weighted average EC tariffs imposed on Bulgarian manufacturing imports were 6,7% in 1990 and 6,6% in 1991. The unweighted average duty rates for Bulgaria in 1990 were 5,3%. Both the weighted and unweighted tariff rates are not unusually high and cannot on average be regarded as serious impediments to imports from Bulgaria. However, one should also take into consideration the differentiation of tariffs across sectors. Thus if we take only the 10 sectors with the highest tariff rates in 1991 (see below) we shall see that they cover some of the important Bulgarian exporting sectors.

All in all these 10 sectors accounted for about 22,2% of total Bulgarian manufacturing exports to the EC in 1991.

A similar ranking can be made with respect to the quantitative restrictions (QR) imposed by the EC on Bulgarian exports.

Table 16

The share of Bulgarian manufacturing exports to the EU held by sectors facing the highest EU TBs

NACE	Sectors	Tariff rate (%)	Export share (%)
436	Knitting industry	13,8	4,5
453	Clothing	13,6	10,8
455	Household textiles	12,4	1,6
351	Motor vehicles	12,1	0,1
43B	Woven fabrics	10,6	1,5
483	Plastics processing	10,4	0,8
162	Semi-finished wood products	10,0	1,2
222	Steel tubes	9,4	0,5
248	Ceramics	9,3	0,5
247	Glass and glassware	9,2	0,7

Table 17

The share of Bulgarian manufacturing exports to the EU held by sectors facing the most EU QRs

NACE	Sectors	Exports subject to QR (%)	Export share (%)
438	Carpets	100,0	0,2
221	Iron and steel industry	99,9	9,0
436	Knitting industry	99,1	4,5
453	Clothing	98,1	10,8
43B	Woven fabrics	96,6	1,5
439	Other textile industries	91,4	0,1
455	Household textiles	89,6	1,6
260	Artificial fibres	48,4	0,2
43A	Yarns	32,3	0,4
224	Non-ferrous metals	4,3	7,0

The 10 sectors most affected by quantitative restrictions were responsible for 35,3% of Bulgarian manufacturing exports to the EC in 1991.

According to the findings of Möbius and Schumacher (1992a),[1] in 1990, 40,2% of Bulgarian manufacturing exports to the EC fall into the 'low protection' category; 23,6% into the 'medium' category and 34,7% into the 'high protection' category. The last one is the highest share relative to the other four CEECs (in 1990, both for ex-Czechoslovakia and Hungary, the 'high protection' export share is 18,9%; for Poland it is 16,3% and for Romania it is 22,4%).

The NACE 3-digit sectors which fall into the 'high protection' category in the Bulgarian exports to the EC in 1991 are: 221, 342, 412, 414, 421, 425, 436, 438, 451, 453, 455. Most of these sectors play a very important role in the Bulgarian exports to the EC: each of them holds a substantial export share; five of them (NACE 221, 414, 436, 451, 453, 455) are systematically characterized by high coverage ratios and specialization indices.

On the basis of these findings a supplementary assessment of the EC trade barriers facing Bulgarian exports was performed on the basis of interviews with local experts.[2]

3.2. Bulgarian market imperfections affecting exports to and imports from the EC

Market imperfections have played a substantial role in the trade orientation of CEECs in the socialist period. Distorted price structures, subsidies, lack of responsiveness to market signals, bureaucratic centralized control over foreign trade operations were predominant features of a socialist economy. On the other hand, CEECs used to be placed in the most unfavourable categories in terms of trade restrictions on the side of the EC. In spite of the major changes which have already taken place on both sides in the process of economic transformation of the CEECs some of these features have been carried forward due to inertia and institutional rigidities. The legacies of the past undoubtedly still play a substantial role for the current situation of Bulgarian trade with the EC, probably more important than in the case of the Central European countries, partly due to the differences in the starting point of the transition period.

Within this study, an attempt was made to assess quantitatively the level of market distortions affecting current Bulgarian trade with the EC. In this section we only present a summary of the main results of this assessment. A detailed description of the approach and of the complete set of quantitative evaluations is given in Annex II.

The most important exporting sectors (as measured by their export shares) which were affected by market distortions in 1991 and 1992 are given in Table 15.

All in all, in 1991 31 NACE 3-digit sectors with a total share of 40,3% of Bulgarian exports to EC markets were affected by 'discouraging' national market distortions whereas eight sectors with a total share of 12,2% were affected by 'encouraging' imperfections (see also Table 20a).

Oddly enough, the general trend in the 1992 regulations was not towards further liberalization of exports but *vice versa*. The share of Bulgarian manufacturing exports to the EC which was subject to 'discouraging' distortions increased to 55,8% in 1992. No manufacturing sector in this year was favoured by 'encouraging' distortions (Table 20b).

This change can be attributed to the process of 'wild' privatization which took place in the sector of trade, mainly through parallel private companies which were taking the cream of the trading activities from the State-owned ones, using their infrastructure and business connections at the same time. Under these circumstances the authorities saw no chance of getting a certain control over the process other than by setting more rigid export rules.

It can also be mentioned that the export regulations of 1992 were amended (in the direction of liberalization) in the beginning of 1993 mainly by narrowing the set of commodities which were subject to some restrictions.

It should also be added that in our simple model we have assumed equal weights of the different factors used to compose the total evaluation score (see Annex II). This might be an oversimplification of the actual controversial situation. Thus the quantitative estimations of the market imperfections should

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1 The overall assessment of trade barriers for individual sectors performed by Möbius and Schumacher is based on a 'total score' coefficient resulting from the application of five different indicators which take into account tariff and non-tariff barriers, quantitative restrictions, etc. According to the total score the individual sectors are ranked in three groups corresponding to the level of EC trade protection:
low protection — trade barrier score $0 \leq x \leq 3$;
medium protection — trade barrier score $3 < x \leq 6$;
high protection — trade barrier score $6 < x \leq 9$.

2 This analysis revealed the existence of additional restrictions facing Bulgarian exports to Greece, autonomously imposed by the Greek authorities (apart from the general EC policy). These restrictions fall into two main categories:
quantitative restrictions (up to the full ban of imports of certain commodities) - sectors 241, 242, 248, 260, 436, 438, 439, 453, 466, 471;
public procurement - sectors 330, 342, 344, 362.
Due to the importance of Greece (a neighbouring country) as a trading partner of Bulgaria these restrictions have been taken into account in the subsequent part of this study by adding an additional point to the final score recorded by Möbius and Schumacher for the sectors named above.

Table 18

Manufacturing sectors affected by market distortions in Bulgarian exports to the EC, 1991-92

Sector	NACE code	Export share (%) 1991	1992
Sectors affected by 'discouraging' distortions[1]			
Clothing and household textiles	(453/5)	12,4	17,2
Non-ferrous metallurgy	(224)	7,0	9,0
Iron and steel industry	(221/3)	10,1	6,7
Knitting and textile industry	(436/8)	4,7	5,7
Manufacture of rubber products	(482)	1,4	1,8
Manufacture of dairy products	(413)	1,8	1,4
Manufacture of pharmaceuticals	(257)	1,1	1,0
Soap, perfume and household chemicals	(258/9)	0,9	1,0
Sectors affected by 'encouraging' distortions[2]			
Industrial chemicals	(252/3)	11,9	[3]
Foundries	(311/2)	0,3	[3]
Minerals for the chemical industry	(232/9)	0,1	[3]

1 Sectors with total distortions score of 9 or more (see text);
2 Sectors with total distortions score of 6 or less (see text);
3 Sector does not fall into this category in this year.

Table 19

Manufacturing sectors affected by market distortions in Bulgarian imports from the EC, 1991-92

Sector	NACE code	Export share (%) 1991	1992
Sectors affected by 'discouraging' distortions[1]			
Other machinery and equipment	(328)	[3]	5,6
Petrochemicals	(252)	[3]	4,0
Food and chemical machinery	(324)	[3]	3,8
Footwear	(451)	1,1	2,6
Spirits	(424)	1,5	2,5
Telecommunications equipment	(344)	2,3	2,4
Tobacco products	(429)	0,4	2,3
Pharmaceuticals	(257)	[3]	2,3
Electrical appliances	(343)	[3]	2,2
Knitting industry	(436)	1,5	2,2
Plastics	(483)	[3]	2,1
Textile machinery	(323)	[3]	2,0
Electrical machinery	(342)	2,9	1,6
Varnish and paint	(255)	[3]	1,5
Clothing	(453)	1,1	1,5
Office machinery	(330)	[3]	1,5
Paper and board	(472)	[3]	1,4
Chocolate and sugar confectionery	(421)	[3]	1,3
Tools and finished metal products	(316)	1,1	1,2
Domestic electric appliances	(346)	[3]	1,2
Sectors affected by 'encouraging' distortions[2]			
Motor vehicles		[3]	8,5
Aerospace equipment	(364)	11,1	[3]
Articles of cork, straw and the like	(466)	0,4	[3]
Printing industry	(473)	0,3	[3]
Grindstones and abrasives		0,2	[3]

1 Sectors with total distortions score of 9 or more (see text);
2 Sectors with total distortions score of 6 or less (see text);
3 Sector does not fall into this category in this year.

the quantitative estimations of the market imperfections should only be regarded as tentative proxies.

The most important importing sectors (as measured by their import shares) which were affected by market distortions in 1991 and 1992 are given in Table 16.

One can observe that the rigidities in the Bulgarian market with respect to imports from the EC also increased in 1992 as compared to 1991. Thus in 1991, 39 NACE 3-digit sectors responsible for 24,6% of Bulgarian imports from the EC fell into the highly protected ('discouraging') category; at the same time, eight sectors with a share of 12,0% of Bulgarian imports were subject to 'encouraging' distortions (Table 22a). In 1992, 92 sectors covering 74,1% of total manufacturing imports from the EC were subject to 'discouraging' imperfections whereas only one sector (motor vehicles) with an import share of 8,5% enjoyed import incentives (Table 22b).

Again it should be emphasized that the quantitative estimations of the market imperfections affecting imports should be regarded as simplified and tentative.

3.3. Bulgarian trade performance versus trade distortions

3.3.1. Bulgarian export performance versus EC trade protection

This part of the analysis is based on a comparison between, on the one side, the results of Möbius and Schumacher (1992a, 1992b), as complemented in Section 3.1 above and, on the other, the quantitative evaluation of Bulgarian trade performance *vis-à-vis* the EC (more specifically, the trade coverage ratio), as reported in Section 2.3.[1] This comparison is performed at NACE 3-digit level and the results are presented in Tables 17 and 18.

One specific feature of Bulgarian trade performance *vis-à-vis* the EC is that in 1991 no sector falls into the 'medium' category as measured by the trade coverage ratio (this is a stable characteristic for the latest years). Thirty NACE 3-digit sectors, responsible for a total share of 67,2% of Bulgarian exports to EC markets in 1991, fall into the 'well performing' category, whereas 76 sectors, with a total export share 32,8%, fall into the 'badly performing' group (Table 18).

A comparison of the results in Table 18 with the same results for 1990 (not presented in the paper in full) reveals that there is some improvement in Bulgarian export performance: in 1990, 24 sectors with a total share of 60,4% were 'well performing' and 82 sectors with a total share of 39,6% were 'badly performing'. Again this can be attributed to the process of trade reorientation which started in 1991.

Also it is interesting to note that among the nine groups identified in Table 17 the most substantial share (33,9%) is held by group 3 — 'well performing' Bulgarian exports which face high EC trade protection. However, in comparison with the situation in 1990, there is a reduction in the scope of EC trade protection (in 1990 it affected a total of 42,8% of 'well performing' Bulgarian exports). To some extent this development can be attributed to the inclusion of Bulgaria into the system of general preferences, in effect since 1991.

On average, the well performing sectors are characterized by high specialization indices and relatively high 'quality indicators' (Landesmann (1992a)); at the same time in most cases, the intra-industry trade flows in the groups of the 'well performing' sectors is of lower intensity than that of the groups of 'badly performing' sectors (Table 18).

On the whole, the group of the most prospective sectors (in terms of future expansion to EC) — the upper right box of Table 17 — contains only seven rather specific manufacturing sectors. They are either highly resource-intensive as the iron and steel industry (NACE 221) and processed fruits and vegetables (NACE 414), or highly labour intensive as the textiles, footwear and clothing sectors (NACE 436, 451, 453 and 455). Only the wine sector (NACE 425) does not fall into these two categories among the seven prospective sectors. This assessment does not reveal a very big potential for future expansion of Bulgarian manufactured goods on the EC markets in case of eventual elimination of the existing barriers to exports.

Besides, similar studies on other CEECs (see, for example, Gács, 1992; Landesmann, 1992b; Rosati, 1992) indicate that in many cases the sets of prospective sectors for the different countries overlap (at least this can be said about Bulgaria, ex-Czechoslovakia, Hungary and Poland). This means that the opening of the EC to Central and Eastern Europe will imply also a severe competition among these countries for a larger share of the new market (which in turn also has a limited capacity regardless of the presence or abolition of trade barriers) and in order to assess the actual prospects of each individual country one should also compare the competitive positions of the CEECs among themselves.

[1] The Bulgarian performance in EC markets is evaluated according to the following classification:

Coverage ratio					Export performance
		r	>	1,1	good
1,1	≥	r	≥	0,9	medium
0,9	>	r	≥	0	bad

As to the assessment of the level of EC trade protection, it is based on the classification of Möbius and Schumacher complemented with the additional restrictions imposed by Greece (see footnote[1] on p. 248).

Table 20

Bulgarian export performance versus EC trade protection, 1991: classification of sectors

		EC trade protection											
		Low				Medium				High			
Bulgarian performance in EC markets	Good	212	231	242	245	224	247	253	341	221	414	425	436
		311	314	461	462	346	347	361	415	451	453	455	
		464	465	467		422	442	481	491				
	Medium												
	Bad	211	223	232	233	222	241	248	252	260	342	412	421
		239	243	244	246	256	257	315	321	438			
		255	258	259	312	322	323	325	326				
		313	316	324	328	327	330	344	351				
		343	345	352	353	362	372	373	413				
		363	364	365	371	417	419	420	423				
		374	411	416	418	427	428	439	441				
		424	426	429	463	456	466	483	492				
		471	472	473	482	493	494	495					

Source: Author's calculations.

Table 21

Bulgarian export performance versus EC trade protection, 1991: summary of results

Groups	Number of NACE 3-digit sectors	Export shares	Specialization index	Grubel-Lloyd index	'Quality index'
1	11	6,08	1,336	0,307	1,053
2	12	27,26	1,973	0,377	0,799
3	7	33,90	3,119	0,352	0,599
4	—				
5	—				
6	—				
7	36	8,04	0,257	0,268	0,735
8	35	19,21	0,547	0,449	0,618
9	5	5,52	1,282	0,625	0,762
Total	106	100,00		0,387	0,705

Note: Numbers of groups correspond to Table 20 starting from top left box to the right.
Source: Author's calculations; for 'quality index', see text.

3.3.2. Bulgarian export performance versus Bulgarian market imperfections

This part of the analysis is based on a comparison between, on the one side, the results of the assessment of Bulgarian market imperfections affecting exports (Annex II) and, on the other, the Bulgarian trade performance *vis-à-vis* the EC (the trade coverage ratio). This part of the analysis is performed on the NACE-adapted national classification, close to 3-digit level (see Annex I).

The Bulgarian performance in EC markets is evaluated according to the same grading as in the previous section (footnote 1 on p. 250) and the classification of the level of Bulgarian market imperfections affecting exports is in accordance with the results reported in Section 3.2 (see also Annex II). The results of this comparison are presented in Tables 22a, 22b, 23a and 23b (a and b for 1991 and 1992, respectively), in a format similar to that of Tables 20 and 21.

Table 22a

Bulgarian export performance versus Bulgarian market imperfections, 1991: classification of sectors

		Bulgarian measures affecting exports to EC										
		Discouraging				Neutral				Encouraging		
Bulgarian performance in EC markets	Good	221/3 481	224	436/8	453/5 451	212 361 461 491/4	231 414 462/6	242 415 467	247 442	252/3		
	Medium											
	Bad	255 351/3 420 439	257 411 424/6 473	258/9 413 427	321 416/8 429	211 256 322 327/8 362/5 421 471	241 260 323 330 371/4 428 472	243/6 313/5 324 341/3 412/2 441 483	248 316 325/6 344/5 419 456 495	232/9	311/2	482

Source: Author's calculations.

Table 22b

Bulgarian export performance versus Bulgarian market imperfections, 1992: classification of sectors

		Bulgarian measures affecting exports to EC								
		Discouraging				Neutral				Encouraging
Bulgarian performance in EC markets	Good	221/3 248 453/5	224 412/2 471	242 413 481	247 436/8	231 322 442 467	241 325/6 451 491/4	252/3 414 461	311/2 415 462/6	
	Medium					361	232/9			
	Bad	211 258/9 411 429	212 260 416/8 439	255 321 420 473	257 351/3 424/6 483	243/6 323 341/3 419 441 495	256 324 344/5 421 456	313/5 327/8 362/5 427 472	316 330 371/4 428 482	

Source: Author's calculations.

Table 23a

Bulgarian export performance versus Bulgarian market imperfections, 1991: summary of results

Groups	Number of NACE 3-digit Sectors	Export shares	Specialization index	Grubel-Lloyd index
1	9	35,57	2,178	0,463
2	20	20,97	1,676	0,403
3	2	11,89	2,237	0,724
4	—			
5	—			
6	—			
7	22	4,69	0,384	0,275
8	47	26,52	0,501	0,446
9	6	0,36	0,548	0,714
Total	106	100,00		0,443

Note: Numbers of groups correspond to Table 22a starting from the to left box and to the right.
Source: Author's calculations.

Table 23b

Bulgarian export performance versus Bulgarian market imperfections, 1992: summary of results

Groups	Number of NACE 3-digit Sectors	Export shares	Specialization index	Grubel-Lloyd index
1	16	50,23	2,194	0,433
2	24	32,37	1,691	0,672
3	—			
4	—			
5	4	0,08	0,089	0,981
6	—			
7	24	5,61	0,349	0,275
8	38	11,71	0,286	0,340
9	6	0,36	0,548	0,714
Total	106	100,00		0,428

Note: Numbers of groups correspond to Table 22b starting from the top left box and to the right.
Source: Author's calculations.

As already noted, the share of Bulgarian exports affected by discouraging national market imperfections increased considerably in 1992 as compared to 1991. Actually no sector has been assessed to have enjoyed encouraging measures in 1992 (Table 19b).

It is interesting to note that several among the 'well performing' sectors (221, 436, 453 and 455) in 1991 were negatively affected on both sides: by the EC trade protection and by the national market imperfections. As compared to 1990, their total export share in Bulgarian exports to the EC in 1991 decreased from 28,7% to 26,0% which was due mainly to sector 221, whereas 436 and 455 increased their export shares.

In interpreting this controversial outcome for sector 221, one should have in mind the comments in Annex II whereas the discouraging imperfections with respect to sectors 436, 453 and 455 result mainly from deficiencies in technical and quality standards.

It should also be kept in mind that, as already indicated, the transition period in Bulgaria is characterized by high instability of economic regulations and many of the acting regulatory norms have a provisional character.

3.3.3. EC export performance versus Bulgarian market imperfections

This part of the analysis is based on a comparison between, on the one side, the results of the assessment of Bulgarian market imperfections affecting imports (Annex II) and, on the other, the EC export performance *vis-à-vis* Bulgaria (the EC trade coverage ratio being equal to the inverse of the Bulgarian one). This part of the analysis is performed on NACE 3-digit level.

Bulgarian imports of manufactured goods from the EC suffered a considerable decline after 1989, however most of this undoubtedly can be attributed to the general decline in economic activity in the country. At the same, time some significant changes took place in the structure of imports. On the whole there are obvious signs that the Bulgarian economy in the transition period was more responsive to changes on the demand side rather than on the supply side. The year 1992 has already marked some signs of a general positive trend with respect to Bulgarian imports from the EC which is characterized also by further changes in the import structure.

With this in mind we could suggest that the main factors determining current imports of manufactured goods from the EC stem from the fundamentals of economic transition and restructuring in Bulgaria whereas current national market imperfections with respect to these imports play a secondary role.

The EC performance in the Bulgarian markets is evaluated by the trade coverage ratios according to the grading introduced in Section 3.3.1 (footnote [1] on p. 250), bearing in mind that it is applied to the inverse of the indicator used in that section. The classification of the level of Bulgarian market imperfections affecting imports from the EC is in accordance with the results reported in Annex II. The results of this comparison are presented in Tables 21a, 21b, 22a and 22b (a and b for 1991 and 1992, respectively).

Table 24a

EC export performance versus Bulgarian market imperfections, 1991: classification of sectors

		Bulgarian measures affecting imports from EC											
		Discouraging				Neutral				Encouraging			
EC performance in Bulgarian markets	Good	243	248	259	260	222	223	239	244	233	246	364	466
		315	316	322	326	252	255	256	257	473			
		342	344	345	363	258	312	313	321				
		374	416	423	424	323	324	325	327				
		426	427	428	429	328	330	343	351				
		438	439	463	492	352	353	362	365				
		493	494	495		371	372	373	411				
						412	413	417	418				
						419	420	421	441				
						456	471	472	482				
						483							
	Medium												
	Bad	224	242	314	425	212	221	231	241	211	232	461	
		436	442	451	453	245	247	253	311				
		455	465	467	491	341	346	347	361				
						414	415	422	462				
						464	481						

Source: Author's calculations.

Table 24b

EC export performance versus Bulgarian market imperfections, 1992: classification of sectors

		Bulgarian measures affecting imports from EC								
		Discouraging				Neutral				Encouraging
EC performance in Bulgarian markets	Good	222	243	246	252	212	233	244	256	351
		255	257	258	260	321	364	420	473	
		312	314	315	316					
		323	324	326	327					
		328	330	342	343					
		344	345	346	352					
		353	363	371	372					
		373	374	411	416					
		417	418	419	421					
		423	424	425	426					
		427	428	429	438					
		439	441	456	466					
		472	482	483	493					
		494	494		—					
	Medium	259	347	362		361				
	Bad	221	223	224	231	211	232	325	461	
		239	241	242	245					
		247	248	253	311					
		313	322	341	365					
		412	413	414	415					
		422	436	442	451					
		453	455	462	463					
		464	465	467	471					
		481	491	492						

Source: Author's calculations.

Table 25a

EC trade performance versus Bulgarian market imperfections, 1991: summary of results

Groups	Number of NACE 3-digit sectors	Import shares	Specialization index	Grubel-Lloyd index	'Quality index'
1	27	18,93	0,455	0,550	0,519
2	41	58,92	0,534	0,412	0,743
3	5	12,03	0,025	0,015	0,699
4	—	—	—	—	—
5	—	—	—	—	—
6	—	—	—	—	—
7	12	5,66	1,773	0,411	0,609
8	18	4,45	3,538	0,316	0,853
9	3	0,00	0,393	0,007	0,624
Total	106	100,00		0,387	0,705

Note: Numbers of groups correspond to Table 24a starting from the top left box and to the right.

Source: Author's calculations; for 'quality index' — see text.

Table 25b

EC trade performance versus Bulgarian market imperfections, 1992: summary of results

Groups	Number of NACE 3-digit Sectors	Import shares index	Specialization index	Grubel-Lloyd index
1	54	56,05	0,373	0,417
2	8	16,20	0,172	0,114
3	1	8,49	0,019	0,020
4	3	1,10	0,928	0,985
5	1	0,02	0,043	0,990
6	—	—	—	—
7	35	16,91	2,270	0,430
8	4	1,22	0,969	0,597
9	—	—	—	—
Total	106	100,00	—	0,386

Note: Numbers of groups correspond to Table 24b starting from the top left box and to the right.

Source: Author's calculations.

The general conclusion outlined above is confirmed by the fact that manufacturing imports from the EC increased in many sectors regardless of the more protective national trade policy introduced in 1992. Actually, among the 92 sectors which were subject to discouraging market imperfections in 1992 (Table 24b), 55 sectors experienced positive growth in exports to Bulgaria in 1992 and only 37 experienced negative growth. If we compare only the subgroup of the well performing sectors which were subject to discouraging market imperfections in the two years (box 1 in Tables 24a and 24b), we can observe that among 31 'newcomers' to that subgroup in 1992, 19 sectors at the same time experienced positive growth in exports to Bulgaria (NACE 252, 255, 257, 258, 312, 314, 328, 346, 353, 371, 372, 411, 417, 418, 419, 421, 425, 441 and 483) and only 12 sectors experienced negative growth (NACE 222, 246, 323, 324, 327, 330, 352, 373, 456, 466, 472 and 482).

4. Factor endowments and market imperfections

4.1. Bulgarian trade with the EC in the light of factor endowments

The impact of factor endowments on international trade is widely recognized both in theoretical and in applied analysis (*Social Europe*, 1990). However, in analysing the current impact of factor endowments on trade in a country like Bulgaria, one has to bear in mind the fact that its industrial structure in the last 45 years was determined by its exclusive orientation to the ex-CMEA market where such factors did not necessarily play their natural role.

The inherited domestic concentration of capital and labour (including skilled labour) is, to a considerable extent, the result of centrally-planned decisions which by and large reflected the artificially created conditions of this specific market. Moreover, some important factors such as natural resource endowments were often neglected in this process. Thus Bulgaria has limited domestic energy resources but it developed many energy-intensive industries; the country has practically no domestic production of oil and natural gas but it created a large oil-processing industry based on ex-Soviet deliveries; the domestic sources of ferrous ores do not match the scale of the ferrous metallurgy in the country. Of course it would not be a burden on the national economy if these industries produced output with a substantial value-added content which could be marketable on the world market. However, as it turned out after the disintegration of the CMEA, this was not the case, and very little trade reorientation actually took place in sectors in which Bulgaria was specialized within the ex-CMEA.

It is true that under socialism Bulgaria has invested considerably in education and training and in general it has a comparatively skilled labour force. The problem, however, is that this skilled labour force is concentrated mainly in the sectors which turned out to be uncompetitive in a normal international market environment (for example electronics, data-processing equipment, manufacture of fork-lift trucks, etc.). So the role of a skilled labour force as a factor of successful trade reorientation should not be exaggerated.

On the other hand, some sectors in which the country does have natural endowments, such as the agriculture and the food-processing industries, were not among the priorities under the socialist rule and are now facing the problems of undercapitalization and technological lags.

One should bear in mind this background when also analysing historic imports of manufactured goods from the EC which to a large extent were only complementing trade with the ex-CMEA mainly in technological equipment and some high-tech products which were not accessible from the East. In recent years, and especially after 1990, this situation also changed dramatically and, as already mentioned, the import structure changed substantially.

So, in general, one could say that factor endowments have played a different role as determinants of Bulgarian trade *vis-à-vis* the EC in the period before and after 1990.

The impact of factor endowments on trade with the EC can be assessed if we compare the level of endowment by industrial sectors with actual trade performance. Five indicators of factor endowments are used in the study and two sets of data for their quantitative evaluation: (i) the average for four large EC countries (Germany, UK, France and Italy); (ii) national factor endowment data for Bulgaria.[1]

We start with a general evaluation of the concentration of exports to and imports from the EC according to the sectoral intensity of factor endowment. To do this we have sorted sectors by each of the factors and have divided them in 10 groups (containing equal numbers of sectors), at the same time calculating the export/import shares of each group.

Some results of this assessment are presented in Table 23 (cumulative figures for the three highest and lowest groups by each factor) and on Graphs 3 to 6 (the general distributions for 1985 and 1992). Both evaluations are based on national data (see footnote [1]). These results present a rather equivocal picture of Bulgarian trade performance related to factor endowments.

[1] The definitions used are as follows:

	Definitions	
Factor	EC average	Bulgarian
Capital intensity	Total investment/number of employees	Fixed assets/number of employees
Labour intensity	Number employees/output	Number employees/gross output
R&D content	R&D expenditure/output	—
Skill content	Non-manual labour/total employment	Skilled employees/total employment
Energy intensity	Energy costs/output	Energy costs/gross output

The EC average is available at the NACE 3-digit level (Eurostat-VISA and OECD data) whereas the national factor endowments were calculated from national data (National Statistical Institute) on the NACE-adapted national sectoral classification which is close to NACE 3-digit classification (see Annex I). The available data are not fully compatible both by scope and coverage and by the definitions used so in our study we mainly use the two sets in a complementary manner (as trade determinants on either of the two sides).
There is also a coverage gap between the two sets of data which may cause certain biases in some of the quantitative evaluations: the EC factor endowment data do not cover the whole Bulgarian manufacturing exports to the EC (87,3% in 1991) leaving out some sectors important to the country such as petrochemicals (NACE 252), other industrial chemicals (NACE 253), many of the food-processing sectors (NACE 416, 419, 420, 421, 424, 425, 429) and others. Due to this, in some instances, the national data have been given a preference in the analysis in spite of the lack of full compatibility on the NACE 3-digit level and other problems related to the quality and coverage of the data.

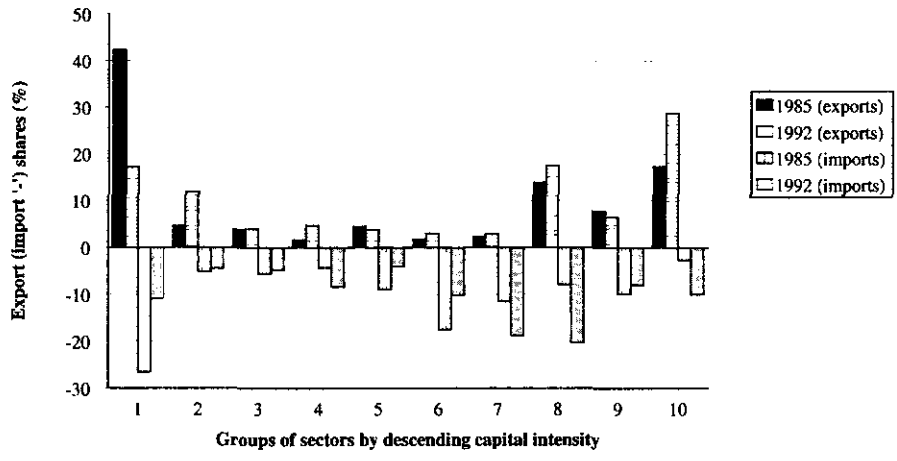
Table 26

Cumulative shares in Bulgaria exports to imports from the EC by groups of sectors ranked by factor intensity

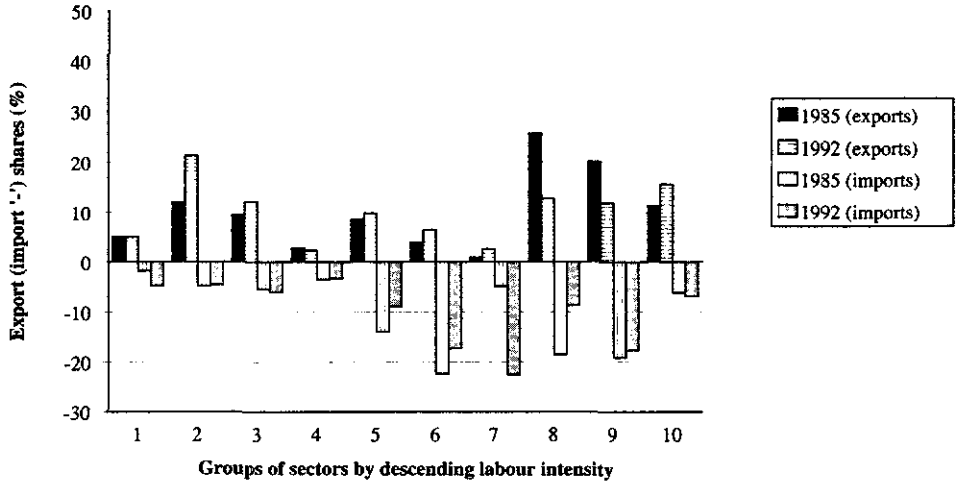
	1980	1985	1988	1989	1990	1991	1992	1980	1985	1988	1989	1990	1991	1992
Groups of sectors	Exports to EC							Imports from EC						
	Capital intensity							Capital intensity						
Highest														
Group 1	36,36	42,35	31,22	29,06	28,96	23,28	17,14	34,94	26,52	24,86	21,32	17,25	11,35	10,88
Group 1-2	40,92	46,95	40,96	38,35	36,59	33,13	29,02	44,02	31,67	29,59	27,15	21,32	15,81	15,37
Group 1-3	45,62	50,76	47,07	45,27	42,66	37,58	32,99	49,86	37,25	34,61	31,42	30,41	23,28	20,21
Lowest														
Group 8-10	41,82	39,00	40,26	40,27	43,11	45,31	52,70	18,45	20,59	22,19	25,65	23,85	37,41	38,35
Group 9-10	27,30	25,13	24,17	23,11	24,88	28,07	35,22	9,57	12,61	12,69	14,21	13,52	14,02	17,97
Group 10	18,03	17,31	16,45	15,39	17,04	19,64	28,73	3,02	2,69	4,12	5,73	5,61	6,25	9,96
	Labour intensity							Labour intensity						
Highest														
Group 1	4,08	5,01	7,57	6,10	5,00	4,45	5,00	2,23	1,79	3,31	4,68	3,58	2,96	4,72
Group 1-2	16,45	17,03	18,47	17,81	18,45	23,53	26,34	6,02	6,52	7,24	9,03	7,83	6,66	9,19
Group 1-3	26,57	26,47	25,63	25,68	27,52	34,10	38,52	9,22	11,87	12,39	16,47	15,55	12,61	15,10
Lowest														
Group 8-10	53,98	57,14	56,81	54,46	52,77	46,01	40,21	54,72	43,67	44,87	39,08	39,32	37,72	33,07
Group 9-10	27,00	31,56	40,38	32,99	30,05	29,67	27,50	28,05	25,12	29,79	25,32	23,61	25,92	24,41
Group 10	13,02	11,40	16,36	14,70	14,29	14,43	15,61	8,70	6,03	8,82	7,48	7,15	11,65	6,77
	Skill intensity							Skill intensity						
Highest														
Group 1	5,03	4,67	7,21	8,43	6,81	9,03	4,60	8,20	8,80	8,88	8,81	12,21	21,25	17,12
Group 1-2	10,75	7,85	11,33	12,89	11,63	13,16	8,40	24,07	33,41	31,67	32,16	36,82	36,33	30,50
Group 1-3	12,61	9,15	13,37	16,09	14,78	16,83	11,59	32,08	45,93	42,89	44,77	50,12	46,94	40,57
Lowest														
Group 8-10	30,92	31,66	30,96	30,50	33,33	35,64	43,39	6,64	6,92	9,50	12,98	11,86	13,90	17,50
Group 9-10	22,57	24,21	24,24	23,85	26,29	28,11	37,16	5,55	5,16	7,93	10,68	10,04	11,93	14,84
Group 10	19,31	18,25	14,32	14,56	18,81	22,08	31,78	3,91	3,19	3,58	4,11	5,46	6,80	9,18
	Energy intensity							Energy intensity						
Highest														
Group 1	23,81	23,96	13,79	19,77	18,84	13,26	9,47	24,86	17,22	13,85	13,65	11,38	7,65	7,05
Group 1-2	25,50	26,91	15,88	21,34	20,31	14,47	12,01	27,53	19,00	15,63	15,66	12,65	8,80	8,55
Group 1-3	42,09	47,86	43,40	40,66	38,87	35,08	32,69	46,51	34,65	31,65	29,34	22,98	17,17	16,82
Lowest														
Group 8-10	31,85	29,88	32,45	32,36	33,60	33,91	38,62	17,04	22,48	26,37	29,04	28,30	31,00	30,28
Group 9-10	23,88	21,44	21,99	23,52	24,78	25,77	33,00	9,89	9,71	13,62	13,21	12,96	19,47	18,46
Group 10	7,81	7,91	9,68	10,29	10,77	10,08	12,60	3,58	4,26	4,73	5,94	5,66	9,59	10,76

Source: Author's calculations.

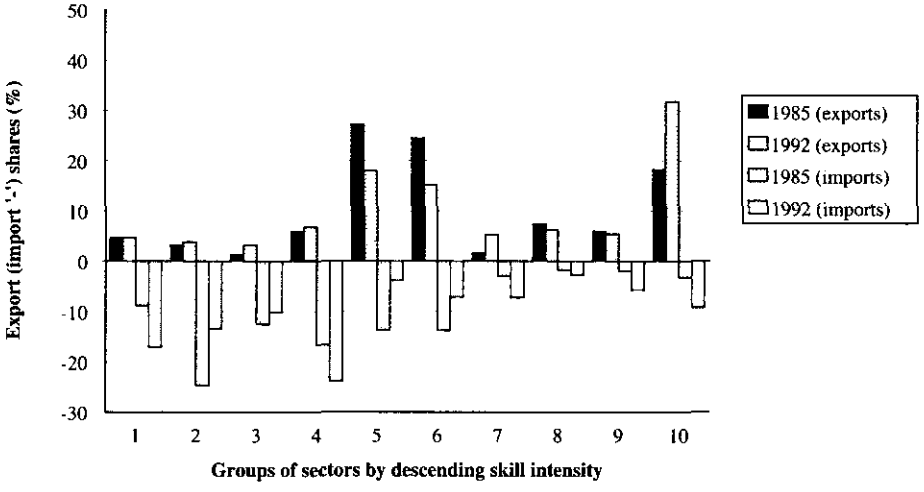
GRAPH 3: **Breakdown of trade with the EC by capital intensity: 1992 versus 1985**



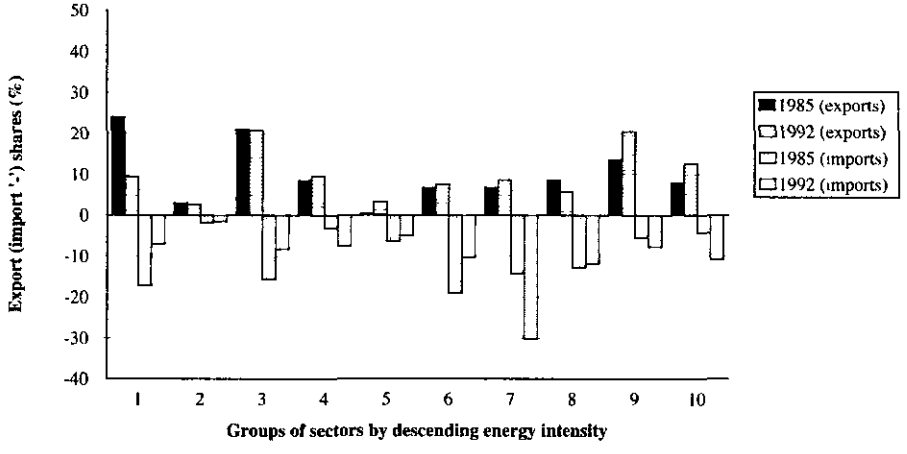
GRAPH 4: **Breakdown of trade with the EC by labour intensity: 1992 versus 1985**



GRAPH 5: **Breakdown of trade with the EC by skill intensity: 1992 versus 1985**



GRAPH 6: **Breakdown of trade with the EC by energy intensity: 1992 versus 1985**



Capital intensity used to be a very important determinant in historic Bulgarian trade with the EC (both on the export and on the import side) in selected specific industries, with serious changes in latest years. There used to be a high concentration of exports in the most capital intensive group of sectors (over 42% of total manufacturing exports in 1985) mainly due to petrochemicals and other industrial chemicals (NACE 252 and 253) and iron and steel industry (NACE 221). In 1992, the share of the most capital-intensive group of sectors has dropped by half but still remains rather high (20,2%). Apart from these outlined sectors exports are mainly concentrated in less capital-intensive sectors. On the import side the same sectors plus NACE 256 (other industrial chemicals) were responsible for the high concentration of imports in the most capital-intensive group of sectors. There is an obvious shift to imports of less capital-intensive goods in the latest years (Graph 3).

The distribution of both exports (with some exceptions) and imports is shifted towards sectors with lower labour intensity (Graph 4). There are important exceptions on the export side (textiles, clothing, footwear) whose weight in the recent years increases.

As regards skill intensity, the distributions of exports and imports are distinctly different (Graph 5). Whereas the breakdown of imports from the EC is obviously shifted towards commodities of high skill content (mechanical engineering, transport equipment, instrument engineering, data-processing equipment, some chemicals) exports to the EC are concentrated in the groups of medium and low skill content. There is some increase of high-skill exports in the recent years related to ship-building (NACE 361), pharmaceuticals (NACE 257) and mechanical engineering (NACE 325).

Commodities with high energy content used to occupy high shares in Bulgarian exports to the EC (Graph 6). This is mainly due to the exports of iron and steel (NACE 221), petrochemicals and other industrial chemicals (NACE 252 and 253) and pulp, paper and board (NACE 471). However, the same high-energy intensive sectors plus other chemicals (NACE 256) were responsible for a significant part of Bulgarian imports from the EC. In recent years, there has been a substantial shift (especially manifested on the import side) to trade with less energy-intensive commodities.

In general, one could observe that the recent evolution of the breakdown of Bulgarian trade with the EC by factor intensities is towards a more even distribution, eliminating and smoothing some of the extremes which were present during the pre-transition period.

4.2. EC trade protection versus factor endowments

In this section, we confront the level of EC trade protection measures facing Bulgarian exports to the EC with the factor endowment content of Bulgarian exports. The analysis is based on the EC average factor endowments under the assumption that if there is some causal relation between the EC trade protection measures and the factor endowments contents of exports it is likely to be based on the EC's own standing in terms of factor endowments.[1] The results of this comparison are presented in Tables 24a to 24e (one table for each of the five factor endowments) and 25 (a summary).[2]

It is rather difficult to make general conclusions on the basis of these results as the protection measures are spread across sectors with different factor intensities. One very superficial observation is that (at least judging by the number of sectors affected) the low and medium capital-intensity sectors and the high and medium labour-intensity sectors enjoy lower trade protection on the side of the EC (Tables 24a and 24b).

However, a deeper insight would indicate that even the few highly-protected sectors with high labour intensity (Table 24b) strongly affect Bulgarian exports to the EC — 21,7% of the exports fall into this category (Table 25). We could add just as an empirical observation the fact that in the case of Bulgaria for all the five factor endowments the subgroups of highly-protected sectors of low factor intensity are quite significant in terms of export shares (Table 25).

In general, one could say that (at least as regards Bulgaria) one does not observe a significant systematic bias of EC trade protection measures related to the factor-endowment content of exports.

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1 The assessment of the level of EC trade protection again is based on the classification of Möbius and Schumacher complemented with the identified additional restrictions (see footnote 1 on p. 248). The factor intensity content is classified in three groups for each factor endowment as follows:

Factor intensity by sector				Factor-intensity level
avg + .5 std	<	i		high
avg – .5 std	≤	i	< avg + .5 std	medium
		i	≤ avg – .5 std	low

where 'avg' is the weighted average of the factor intensity across all the sectors;
'std' is the standard deviation of the factor intensity across all the sectors.

2 It has to be noted that the export shares in Table 25 do not total 100% because the available EC factor-endowment data do not include all the sectors.

Table 27a

EC trade protection versus factor endowments, 1991: classification of sectors according to capital intensity

		Capital intensity											
		High				Medium				Low			
EC trade protection	High	221	260	411	413	412	414	415	438	342	436	451	453
		417	418	422	423					455			
		427	428										
	Medium	224	241	256	257	247	322	323	326	222	248	315	321
		330	351			327	341	344	346	325	347	361	362
						373	481	483	493	372	439	441	442
									456	466	491	492	
									494	495			
	Low	242	245	259	462	223	243	244	255	246	314	324	328
		471				258	311	312	313	352	363	365	371
						316	343	345	353	374	463	464	465
						461	472	473	482	467			

Source: Author's calculations.

Table 27b

EC trade protection versus factor endowments, 1991: classification of sectors according to labour intensity

		Labour intensity											
		High				Medium				Low			
EC trade protection	High	342	436	451	453	415	438			221	260	411	412
		455								413	414	417	418
										422	423	427	428
	Medium	241	248	322	326	222	247	315	321	224	256	257	330
		344	347	361	362	323	325	327	341	351	441		
		372	373	439	442	346	483	491					
		456	466	481	492								
		493	494	495									
	Low	244	246	311	313	243	245	312	314	223	242	255	258
		316	343	365	371	324	328	345	352	259	471		
		374	464	465	467	353	363	461	462				
		482				463	472	473					

Source: Author's calculations.

Table 27c

EC trade protection versus factor endowments, 1991: classification of sectors according to R&D intensity

		R&D intensity											
		High				Medium				Low			
EC trade protection	High	342								221	260	411	412
										413	414	415	417
										418	422	423	427
										428	436	438	451
										451	453		
	Medium	256	257	330	341	321	322	323	325	222	224	241	247
		344	346	347	372	326	327	351	362	248	315	361	439
		373				481	483			441	442	456	466
										491	492	493	494
										495			
	Low	255	258	259	343	324	328	352	353	223	242	243	244
		345	371	374		363	365	482		245	246	311	312
										313	314	316	461
										462	463	464	465
										467	471	472	473

Source: Author's calculations.

Table 27d

EC trade protection versus factor endowments, 1991: classification of sectors according to skill intensity

		Skill intensity											
		High				Medium				Low			
EC trade protection	High	342				221	260	411	412	436	438	451	453
						413	414	415	417	455			
						418	422	423	427				
						428							
	Medium	256	257	330	341	222	224	321	322	241	247	248	315
		344	346	347	372	323	325	326	327	351	439	441	442
		373				361	362	481	483	456	466		
						491	492	493	494				
						495							
	Low	255	258	259	343	223	324	328	363	242	243	244	245
		345	371	374	471	365	482			246	311	312	313
		472	473							314	316	352	353
										461	462	463	464
										465	467		

Source: Author's calculations.

Table 27e

EC trade protection versus factor endowments, 1991: classification of sectors according to energy intensity

		Energy intensity											
		High				Medium				Low			
EC trade protection	High	221	260	418		342 414 423 438	411 415 427 455	412 417 428	413 422 436	451	453		
	Medium	222 248	224 256	241	247	257 323 341 362 456 491 495	315 325 346 372 466 492	321 326 347 439 481 493	322 327 361 441 483 494	330 442	344	351	373
	Low	242 471	245 482	311	312	223 255 314 345 365 463 472	243 258 316 352 374 464 473	244 259 328 353 461 465	246 313 343 363 462 467	324	371		

Source: Author's calculations.

Table 28

Bulgarian exports to the EC: EC trade protection versus factor endowments, 1991

			Capital intensity				Labour intensity				R&D intensity				Skill intensity				Energy intensity			
			Total	High	Medium	Low	Total	High	Medium	Low	Total	High	Medium	Low	Total	High	Medium	Low	Total	High	Medium	Low
EC trade protection	High	Factor Intensity	1,06	1,72	0,88	0,36	0,92	1,56	0,96	0,53	0,63	6,39-	—	0,12	0,90	1,28	0,96	0,67	1,16	4,07	0,73	0,35
		Export Share (%)	*43,84*	*13,52*	*8,61*	*21,71*	*43,84*	*21,71*	*0,33*	*21,80*	*43,84*	*2,12*	—	*41,71*	*43,84*	*2,12*	*21,96*	*19,75*	*43,84*	*9,24*	*21,14*	*13,45*
	Medium	Factor Intensity	1,04	1,50	0,93	0,58	1,00	1,35	1,01	0,63	1,41	3,06	0,90	0,27	1,06	1,42	0,98	0,78	0,89	2,79	0,75	0,38
		Export Share (%)	30,23	9,50	6,73	13,99	30,23	12,10	8,47	9,66	30,23	4,48	8,28	17,47	30,23	4,48	22,48	3,27	30,23	9,37	18,40	2,46
	Low	Factor Intensity	0,93	2,24	0,94	0,60	1,04	1,26	1,02	0,63	0,70	2,46	0,84	0,18	0,98	1,31	1,06	0,74	1,05	3,35	0,76	0,37
		Export Share (%)	13,26	4,18	4,89	4,18	13,26	4,54	5,26	3,46	13,26	2,54	1,52	9,20	13,26	4,43	1,88	6,95	13,26	2,49	10,16	0,60
	Total	Factor Intensity	1,00	1,65	0,93	0,54	1,00	1,37	1,01	0,59	1,00	3,16	0,88	0,18	1,00	1,37	0,99	0,74	1,00	2,47	0,77	0,50
		Export Share (%)	87,32	27,21	20,23	39,88	87,32	38,34	14,05	34,92	87,32	9,15	9,80	68,38	87,32	11,04	46,31	29,97	87,32	21,10	49,71	16,51

Note: The figures for the factor intensities are the relative figures for the corresponding groups of sectors with respect to the weighted average for all sectors.

Source: Author's calculations.

4.3. Bulgarian trade distortions versus factor endowments

In this section we continue by confronting the level of Bulgarian trade distortions affecting exports to the EC with the factor-endowment content of Bulgarian exports. This analysis in turn is based on the national factor-endowments data under the symmetric assumption that if there is some causal relation between the Bulgarian market imperfections and the factor-endowments contents of exports, it is likely to be based on the county's own standing in terms of factor endowments.

The assessment of the market imperfections facing exports is based on the classification of the level of their impact reported in Annex II and the factor-intensity content is classified in the same way as described in the previous section, however using the national factor endowments data and the NACE-adapted national sectoral classification.

The results of this comparison are presented in Tables 26a to 26d (one table for each of the four factor endowments — no national data were available for the R&D content) and Table 27 (a summary).

The results of this assessment suggest that Bulgarian market imperfections are rather dispersed. One cannot draw the conclusion of any serious bias of domestic market distortions related to factor endowments, moreover the concentration of sectors by their number (Tables 26a to 26d) is sometimes not

Table 29a

Bulgarian trade distortions versus factor endowments, 1991: classification of sectors according to capital intensity

		Energy intensity											
		High				Medium				Low			
Bulgarian export distortions	Encouraging	232,9	252,3	311,2	482								
	Neutral	211	212	242	256	231	241	243,6	247	341,4	344,5	362,5	414
		260	471			248	313,5	316	322	419	421	442	451
						323	324	325,6	327,8	456	467	472	491,4
						330	361	371,4	412,2	495			
						415	428	441	461				
						462,6	483						
	Discouraging	221,3	224	321		255	257	258,9	411	351,3	436,8	439	453,5
						413	416,8	420	424,6				
						427	429	473	481				

Source: Author's calculations.

Table 29b

Bulgarian trade distortions versus factor endowments, 1991: classification of sectors according to capital intensity

		Energy intensity											
		High				Medium				Low			
Bulgarian export distortions	Encouraging	311,2				482				232,9	252,3		
	Neutral	211	212	231	241	243,6	313,5	322	324	242	256	325,6	330
		247	248	260	316	327,8	341,3	344,5	414	412,2	421	428	441
		323	361	362,3	371,4	415	419	456	461				
		442	451	467	491,4	462,6	471	482	483				
		495											
	Discouraging	453,5				255	351,3	436,8	439	221,3	224	257	258,9
						473	481			321	411	413	416,8
										420	424,6	427	429

Source: Author's calculations.

Table 29c

Bulgarian trade distortions versus factor endowments, 1991: classification of sectors according to skill intensity

		Energy intensity											
		High				Medium				Low			
Bulgarian export distortions	Encouraging					232,9	252,3	311,2		482			
	Neutral	256	316	322	323	211	242	243,6	248	212	231	241	247
		324	325,6	327,8	330	260	313,5	412,2	483	414	415	419	421
		341,3	327,8	361	362,5					428	441	442	451
		371,4	361							456	461	462,6	467
										471	472	491,4	495
	Discouraging	255	257	258,9	321	224	413	424,6	427	221,3	411	420	429
		351,3	416,8			473	781			436,8	439	453,5	

Source: Author's calculations.

Table 29d

Bulgarian trade distortions versus factor endowments, 1991: classification of sectors according to energy intensity

		Energy intensity											
		High				Medium				Low			
Bulgarian export distortions	Encouraging	232,9	311,2	482		252,3							
	Neutral	211	212	241	242	231	243,6	248	313,5	324	325,6	327,8	330
		247	256	260	471	316	322	323	361	341,3	344,5	362,5	371,4
		483				415	419	461	462,6	412,2	414	421	428
						491,4				441	442	451	456
										467	472	495	
	Discouraging	221,3	224			257	321	420	427	255	258,9	351,3	411
						436,8	481			413	416,8	424,6	429
										439	453,5	473	

Source: Author's calculations.

Table 30

Bulgarian exports to the EC: trade distortions versus, factor endowments, 1991

			Capital intensity				Labour intensity				R&D intensity				Skill intensity				Energy intensity			
			Total	High	Medium	Low	Total	High	Medium	Low	Total	High	Medium	Low	Total	High	Medium	Low	Total	High	Medium	Low
Bulgarian export distortions	Encouraging	Factor Intensity	2,14	2,14	—	—	1,00	1,33	0,91	0,39	—	—	—	—	0,94	—	1,03	0,66	2,00	2,12	1,49	—
		Export Share (%)	12,25	12,25	—	—	12,25	0,29	0,00	11,96	—	—	—	—	12,25	—	12,25	0,00	12,25	0,36	11,89	—
	Neutral	Factor Intensity	0,87	2,15	0,86	0,41	1,13	1,74	1,05	0,51	—	—	—	—	1,05	1,34	1,00	0,73	1,04	3,72	0,74	0,26
		Export Share (%)	47,49	3,34	24,29	19,87	47,49	16,08	20,60	10,81	—	—	—	—	47,49	19,10	7,91	20,49	47,49	4,81	12,97	29,71
	Discouraging	Factor Intensity	1,12	2,39	0,99	0,40	0,76	1,79	1,00	0,39	—	—	—	—	0,91	1,27	1,04	0,66	0,83	2,96	0,59	0,22
		Export Share (%)	40,26	17,20	5,53	17,52	40,26	12,42	6,57	21,27	—	—	—	—	40,26	2,63	10,21	27,42	40,26	17,05	7,36	15,85
	Total	Factor Intensity	1,0	2,25	0,89	0,41	1,00	1,72	1,04	0,44		—	—	—	1,00	1,32	1,02	0,70	1,00	3,28	0,70	0,25
		Export Share (%)	100,0	32,79	29,82	37,39	100,00	28,79	27,17	44,04	—	—	—		100,00	21,73	30,36	47,91	100,00	22,22	32,21	45,56

Note: The figures for the factor intensities are the relative figures for the corresponding groups of sectors with respect to the weighted average for all sectors.

Source: Author's calculations.

correlated at all to the concentration of export shares in the corresponding groups (Table 27).

In principle the 'export-discouraging' national distortions cover a much larger share of the exports than the 'encouraging' ones (40,3% versus 12,2% in 1991, respectively) which seems somehow illogical against the normal practice of stimulating export performance, and especially taking into account the balance-of-payments problems of Bulgaria. This situation can be explained mainly by inherited inertia from the period of central planning and superfluous cautiousness in the initial period of opening-up of the economy.

And finally, again as an empirical observation, we can notice the fact that just as in the case of EC trade protection measures, for all the four factor endowments the subgroups of highly 'discouraged' sectors of low factor intensity are quite significant in terms of export shares (Table 27).

5. Expected development in the future specialization of Bulgarian trade with the EC

The future changes in the volume and structure of Bulgarian trade with the EC will be determined by the combined effect of a number of factors among which we could point out the following:

(i) the speed of economic reform and transition to market economy which will determine the future growth perspectives of the country;

(ii) the level of success in reorienting some of the trade flows from ex-CMEA markets towards the EC;

(iii) the speed of association of Bulgaria into the EC and the level of trade protection measures which the Bulgarian exports will be facing there in the future;

(iv) the developments in the national economic policy and regulations with respect to exports to the EC;

(v) the degree of success in utilizing national factor endowments and comparative advantages of Bulgaria in trade *vis-à-vis* the EC.

As it stands at the moment, the medium-term perspectives for Bulgaria in terms of economic growth are not very bright. Negative growth is likely to be the predominant feature until at least the middle of the decade mostly driven by the continuing shrinking of final demand and the consecutive decline mainly in industrial output (Dobrinsky and Minassian, 1993). The balance-of-payments problems will also be of medium- and even long-term character bringing into the country macroeconomic instability and adding to the existing inflationary pressures (Dobrinsky and Grosser (1993)).

Besides, until this moment there has existed no comprehensive national long- or medium-term programme for the structural reform in the manufacturing industries neither has any type of consistent industrial policy been implemented.

The Association Agreement with the EC, which was signed in March 1993, is expected to have a significant impact on Bulgarian trade with the EC. It is expected that after the trade part of this agreement enters into force, about 70% of Bulgarian manufacturing exports to the EC will be exempt from tariffs. This will include rubber and plastics, some chemicals and mineral products, mechanical and electrical engineering, transport equipment, instruments, furniture, musical instruments and toys.

EC imports of a second group of commodities will be liberalized gradually. They will continue to be regulated by import quotas but the tariffs levied on Bulgarian exports above those quotas will be reduced by 15 percentage points yearly within five years. The quotas will also grow by 20% each year. This group covers about 5% of Bulgarian exports to the EC such as: some industrial chemicals, fertilizers, pharmaceuticals, essential oils, ceramic goods, leather and leather products (including footwear).

The third group includes commodities which are considered 'sensitive' in the EC, such as textiles and clothing, ferrous and non-ferrous metals and coal. As already discussed, these are among the most important Bulgarian export items.

The export of textiles and clothing will be liberalized within 6 years. During this period EC tariff rates will be decreased by one seventh each year and at the end of the period Bulgaria will be granted a tariff-free access to the EC markets. The tariff treatment of Bulgarian metals will be liberalized in a similar fashion for a period of five years.

The other existing quantitative restrictions on Bulgarian manufacturing exports to the EC will also be reduced gradually every year.

The Bulgarian imports from the EC will be liberalized within a period of six to 10 years with a differentiation in three commodity groups.

The first group ('accelerated' liberalization) covers goods which are not produced in Bulgaria as well as raw materials and intermediate inputs for the production of export-oriented goods in the country. They will be exempted from tariffs immediately after the entering of the agreement into force.

The second ('normal') group assumes a gradual reduction of tariff restrictions by 20 percentage points starting a year after the entering of the agreement into force.

For the third group, a 'decelerated' liberalization scheme will be applied for a period of 10 years starting after the third year. Within the seven following years acting tariffs will be gradually reduced to zero. The third group covers about 60% of current EC manufacturing exports to Bulgaria.

There is a separate agreement on the trade with wines including the control of origin.

From the brief review of the trade part of the agreement, one can see that it is quite favourable for Bulgaria assuming an asymmetric treatment of the process of liberalization. However, for the immediate and medium-term future restrictions will remain on 'sensitive' sectors important for Bulgaria (the same is valid for Bulgarian agricultural exports, not covered by this study). On the other hand the seemingly very restrictive Bulgarian import regulations do not seem to be serious impediments to EC exports of manufactured goods to the country.

On the basis of the analysis of Bulgarian trade performance *vis-à-vis* the EC which has been carried out within this study and on the basis of the expected changes in trade regulations implied by the Europe Agreement, one can make the following conclusions about the likely future changes in the volume and structure of trade between Bulgaria and the EC.

The results of our study indicate that many of Bulgarian manufacturing sectors which manifest export growth potential to the EC in terms of exports shares, specialization indices and trade coverage ratios (such as the iron and steel industry — NACE 221; textiles, clothing and footwear — NACE 436, 451, 453, 455; processed fruits and vegetables — NACE 414) fall into the 'highly protected' or 'sensitive' sectors. Taking into account the Association Agreement, one can expect that Bulgarian exports to the EC in these sectors will grow at an accelerating rate in the following years.

As to the national market imperfections affecting exports, some of them are not likely to hold for long: factors such as 'cheap resources (including energy)' are not in effect any longer; others such as technical and quality standards will also depend on technological innovation and future investment; economic policy measures also change dynamically.

The study reveals also that there are other important and well performing (in terms of export shares and trade coverage ratios *vis-à-vis* the EC) branches which are not subject to high protection measures on the part of the EC, such as non-ferrous metals — NACE 224, industrial chemicals — NACE 253, foundries - NACE 311, shipbuilding — NACE 361, processed meat — NACE 412 and 422, leather products — NACE 442, the timber industries (the whole group NACE 46). The majority of these industries were assessed to be low to medium in terms of capital intensity (Tables 24a and 26a); besides, most of them are backed up by national natural resources. In general they can be considered to have fairly good chances for future export growth to the EC and in particular in reorienting some of the ex-CMEA flows towards the EC.

A massive reorientation of the trade flows of other sectors from ex-CMEA markets towards the EC will be a very difficult task for Bulgaria, and especially where this concerns the former largest exporting sectors such as mechanical engineering, data-processing machinery and partly electrical engineering. We can illustrate the magnitude of the impact with the fact that in 1990 exports of these three sectors alone (NACE 2-digit 32, 33 and 34) were responsible for about 61% of Bulgarian exports to the ex-CMEA or roughly ECU 1 300 million in current prices, which is equivalent to three times the total manufacturing exports to the EC in that year.

Taking into account the quality of the Bulgarian products as well as the recent values of the specialization indices and trade coverage ratios in these branches there are little chances of placing Bulgarian export flows of this magnitude and sectoral composition in the EC's markets in the foreseeable future unless substantial technological changes take place. In view of the large foreign debt and depleted national financial resources the latter, in its turn, will depend mostly on the eventual inflow of foreign investment and the implementation of deliberate industrial policies. Obviously these industries themselves will be subject to a major restructuring in Bulgaria and, unless supported by major foreign investment inflow, most probably only a tiny part of them will survive in one way or another. Of course, some selected branches within these groups (for example, NACE 322, 324, 325, 342, 345, 346) might have better chances than the rest.

Petrochemicals (NACE 252) which used to be major Bulgarian exporting items to the EC prior to 1989 are likely to lose their importance due to the stoppage of cheap Russian oil deliveries.

[1] A recent survey (Dobrinsky *et al.*, (1992b)) indicates that the process of trade reorientation was relatively successful in industries such as the iron and steel industry (NACE 221); non-ferrous metallurgy (224); some branches of chemical industry (253); milk industry (413); wine industry (425); textiles (436); manufacture of footwear (451); clothing (453, 455). This sectoral composition fits quite nicely with the set of sectors identified as well performing in Section 2.3. The study goes on to indicate that with the exception of the iron and steel industry, these sectors are backed up by certain comparative advantages such as availability of natural resources or cheap labour, or a combination of the two. Another finding is that the process of trade reorientation to the West is accompanied by a certain shift towards exports of commodities with a lower content of domestic value-added.

Table 31a

Foreign investment in Bulgarian manufacturing industries: distribution of capital

	Sectoral distribution of capital in joint-ventures/foreign subsidiaries				Distribution of capital by origin in joint-ventures/foreign subsidiaries			
Sector	EC	Other	OECD	Total	EC	Other	OECD	Total
Metalliferous products	0,0	0,1	0,0	0,0	0,0	0,0	100,	100
Non-metallic mineral products	3,5	0,4	1,3	1,8	78,9	8,8	12,3	100
Chemical products	8,9	2,0	5,6	5,1	68,0	12,9	19,1	100
Metal products	37,8	5,0	5,9	18,0	82,5	3,9	13,6	100
Agricultural & industrial machinery	11,23	9,9	0,9	12,9	34,3	28,4	37,3	100
Office machinery	2,6	5,7	2,8	4,1	25,1	8,0	66,9	100
Electrical goods	8,5	21,9	36,8	18,4	18,2	23,8	58,0	100
Transport	0,3	30,2	0,0	14,8	0,7	0,0	99,3	100
Food products	10,0	14,0	7,3	11,6	34,0	7,5	58,6	100
Textiles	6,6	9,4	2,0	7,4	35,3	3,2	61,6	100
Paper & printing	3,4	0,4	1,6	1,8	76,6	11,1	12,4	100
Timber & other nes	7,1	1,0	0,0	3,3	85,1	0,0	14,9	100
Rubber & plastic	0,0	0,0	5,9	0,7	0,0	100	0,0	100
Total	100,0	100,0	100,0	100,0	39,4	11,9	48,7	100

Note: Capital in this table is measured by the value of the statutory fund of the enterprises.

Source: Establishments with foreign participation in Bulgaria, Bulgarian Chamber of Industry and Trade, 1993; author's calculations.

Table 31b

Foreign investment in Bulgarian manufacturing industries: distribution of enterprises

	Sectoral distribution of number of joint-ventures/foreign subsidiaries				Distribution of number of joint-ventures/ foreign subsidiaries by origin of capital (%)			
Sector	EC	Others	OECD	Total	EC	Others	OECD	Total
Metalliferous products	0,0	1,5	0,0	0,5	0,0	100	0,0	100
Non-metallic mineral products	8,0	3,0	3,3	5,7	75,0	16,7	8,3	100
Chemical products	9,8	4,5	6,7	7,7	68,8	18,8	12,5	100
Metal products	9,8	10,4	10,0	10,0	52,4	33,3	14,3	100
Agricultural & industrial machinery	14,3	17,9	30,0	17,7	43,2	32,4	24,3	100
Office machinery	5,4	7,5	10,0	6,7	42,9	35,7	21,4	100
Electrical goods	8,0	22,4	10,0	12,9	33,3	55,6	11,1	100
Transport	4,5	9,0	0,0	5,3	45,5	54,5	0,0	100
Food products	17,0	9,0	13,3	13,9	65,5	20,7	13,8	100
Textiles	14,3	7,5	6,7	11,0	69,6	21,7	8,7	100
Paper & printing	5,4	3,0	6,7	4,8	60,0	20,0	20,0	100
Timber & other nes	3,6	4,5	0,0	3,3	57,1	42,9	0,0	100
Rubber & plastic	0,0	0,0	3,3	0,5	0,0	0,0	100	100
Total	100,0	100,0	100,0	100,0	53,6	32,1	14,4	100

Source: Establishments with foreign participation in Bulgaria, Bulgarian Chamber of Industry and Trade, 1993; author's calculations.

These conclusions are to a large extent supported by other recent studies of the process of industrial restructuring and trade reorientation in Bulgaria.[1]

Certain selected branches such as the manufacture of glass and ceramics (247, 248); pharmaceuticals (257); electrical machinery (342); shipbuilding (361); some of the food and tobacco branches (412, 414, 422, 429); rubber products (481) were also assessed to have the potential to expand exports to the EC, especially if foreign investments enter them. Until now the inflow of foreign investment to Bulgaria has been rather weak and has not affected seriously the process of industrial restructuring in the country (Tables 28a and 28b).

However, one can notice from these tables some concentration of EC capital in the sectors of chemicals, metal products, agricultural and industrial machinery, food processing and textiles which could be another factor of future export expansion to the EC in these sectors.

As regards Bulgarian imports from the EC, on the basis of the analysis of Bulgarian trade performance *vis-à-vis* the EC which has been carried out within this study, among the sectors which can be expected to expand most substantially we could point out:

(i) the sectors of the mechanical industry (NACE 2-digit group 32) which will be the technological source for the industrial restructuring of the country; these sectors have traditionally occupied substantial shares in Bulgarian imports from the EC, and, in terms of trade coverage ratios, EC producers enjoy good performance on Bulgarian markets in spite of local impediments in some sectors (Tables 24a and 24b);

(ii) office and data-processing machinery (NACE 330); the demand for such modern equipment will be growing with the growth of the service sector in Bulgaria which is under way; with liberalization of trade, Bulgarian producers will hardly be able to compete in this branch and the recent data confirms this trend;

(iii) the sectors of the chemical industry (NACE 2-digit group 25), which are traditional suppliers for Bulgaria, especially after the start of the economic recovery; most of the sectors in this group do not face particular local market imperfections (Tables 24a and 24b);

(iv) motor vehicles (351), which are not domestically produced; in the face of open competition Russian and other East European producers, which used to dominate the Bulgarian market, are clearly losing ground in favour of EC producers;

(v) aerospace equipment (364) — it is most probable that the expected modernization of Bulgarian commercial air transport will not be based on Russian aircraft as it used to be in the past; recent data also confirms this trend;

(vi) the sectors of the paper and printing industries (NACE 2-digit group 47); there is growing domestic demand of these products which will hardly be met by imports from the East;

(vii) as to the food related sectors (group 41/42), most probably in general they will remain under the influence of discouraging local market imperfections in an attempt to protect local producers; in this regard it should be noted that the 1991 data are a bit biased by some humanitarian aid deliveries which took place in that year. In 1992 these imports dropped both in relative and in absolute terms.

6. Some conclusions

The study indicates that the process of economic reintegration of Bulgaria into Europe is likely to be long and painful. The Bulgarian industrial structure created under central planning is not adequate for this process.

Most of the existing large industrial capacities, especially in the mechanical and electrical engineering and data-processing machinery, which were the backbone of Bulgarian exports to the ex-CMEA have little chances in the Western markets in their present condition. Some chances for survival and only for selected enterprises in these sectors can be envisaged if foreign investment in these sectors will be available. Anyway, unless massive and deliberate policy actions backed by strong financial support are implemented, exports of these sectors can hardly be expected to play a significant role in future trade with the EC.

The economic policy actions which might be considered as possible steps with a view to the eventual reversing of this unfavourable trend could be classified into two groups.

In the first place, there exists a growing necessity for the implementation of a clearly stated national strategy, and the implied industrial policies for restructuring of the manufacturing sectors which are worst hit by the loss of the CMEA markets and are aimed at the eventual reorientation to other markets. However, there is no doubt that such an action would require the backing-up of substantial financial support, which probably would be beyond the existing local capacities. Such an activity might be partly supported by negotiated actions with the World Bank through a medium-term restructuring programme.

In the second place, this might be supported by a similar negotiated action with the EC, in turn linked to the problem of repaying the Bulgarian foreign debt (mostly due to European creditors). The reorientation of a larger share of the existing capacities to export to the EC would increase the capability of Bulgaria to repay its pending obligations to the EC.

The study shows that there are only few sectors of Bulgarian industry which have the potential for future expansion in the trade with the EC. However currently most of them (iron and steel industry, food, textiles, clothing, footwear) fall into the highest trade restrictions on the side of the EC.

The Association Agreement between Bulgaria and the EC is expected to reduce gradually and eliminate most of the existing restrictions on these Bulgarian exports to the EC within several years. This is expected to give serious impetus for future expansion of Bulgarian exports in these sectors.

Paradoxically enough, some of these sectors are (or, rather, were) subject to export-discouraging measures on the side of Bulgaria as well. Thus the future export performance in these most important, and at the same time most sensitive, sectors will depend on economic policy measures on both sides.

The export performance in other sectors with more moderate export potential such as the manufacture of glass and ceramics; industrial chemicals; pharmaceuticals; electrical machinery; shipbuilding; rubber products and others will depend to a large degree on the general economic conditions in Bulgaria and more specifically to the eventual inflow of foreign investment.

The liberalization of the Bulgarian access to the EC markets in these sectors, envisaged in the Association Agreement, is also expected to stimulate exports in these sectors.

Another important finding of the study is that technical and quality standards in Bulgaria constitube a significant market imperfection impeding Bulgarian exports to the EC. Thus another negotiated bilateral policy action might be aimed at reducing this gap (for example, in the form of technical assistance). Such an action might also contribute to increasing the export potential of Bulgaria.

On the import side most of the sectors with the highest growth potential such as mechanical engineering, office and data-processing machinery, transport equipment, chemical industry, paper and printing industry are currently not subject (with small exceptions) to discouraging national measures. Thus with respect to these sectors the future development will mainly depend (unless new trade protection measures are introduced) on the general economic developments in Bulgaria — and mainly on economic growth and balance-of-payments conditions.

Of course there are still a number of sectors in which Bulgaria has introduced measures discouraging imports from the EC which have been identified in this study. The lifting of these barriers will also contribute to the raising of EC exports to Bulgaria.

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Annex I — Bulgarian national industrial classification and bridge to NACE

Table A.1.

Sectoral classification of Bulgarian manufacturing industry based on 99-sector input-output tables

I-O No.	Sector
5.	Extraction and preparation of iron ores
6.	Iron and steel industry and coke production
7.	Extraction and preparation of non-ferrous ores
8.	Non-ferrous metallurgy
9.	Manufacture of power machinery and equipments
10.	Manufacture of metal-cutting and forging machinery and equipment
11.	Manufacture of mining machinery and equipment
12.	Manufacture of metal-processing machinery and equipment
13.	Manufacture of machinery and equipment for the petroleum, chemical, wood-processing and pulp and paper industries
14.	Manufacture of machinery and equipment for the light industry (without food industry)
15.	Manufacture of machinery and equipment for the food industry
16.	Manufacture of machinery and equipment for building and civil engineering
17.	Manufacture of agricultural machinery and tractors
18.	Manufacture of rolling-stock
19.	Shipbuilding
20.	Automobile industry
21.	Manufacture of equipment for lifting and motive power
22.	Manufacture of other machinery and equipment
23.	Manufacture of precision instruments
24.	Foundries
25.	Manufacture of instruments and tools
26.	Manufacture of bearings, metal articles and metal products used as secondary inputs
27.	Manufacture of metal articles for final consumption
28.	Electrical engineering
29.	Manufacture of equipment for automation
30.	Manufacture of radio and TV, telecommunications equipment and other electronic equipment (except computers and office automation)
31.	Manufacture of computers and office automation
32.	Extraction of minerals used as raw materials in the chemical industry
33.	Manufacture of basic industrial chemicals (organic and non-organic)
34.	Manufacture of fertilizers
35.	Manufacture of chemical (artificial and synthetic) fibres
36.	Manufacture of varnish
37.	Manufacture of soap and synthetic detergents
38.	Manufacture of perfume and cosmetics
39.	Manufacture of pharmaceutical products
40.	Manufacture of plastics
41.	Manufacture of paint and other chemical products
42.	Manufacture of rubber tyres
43.	Manufacture of synthetic rubber and rubber products (except tyres), asbestos and others
44.	Extraction of building materials
45.	Manufacture of cement and other binding materials
46.	Manufacture of building ceramics
47.	Manufacture of fire-proof and acid-proof materials
48.	Manufacture of concrete products and other building materials
49.	Sawing of wood
50.	Wood processing (except wooden furniture)
51.	Manufacture of wooden furniture
52.	Manufacture of pulp, paper and board
53.	Processing of paper and board
54.	Manufacture of glass and glassware
55.	Manufacture of ceramic goods
56.	Primary processing of natural raw materials for the textile industry
57.	Cotton industry
58.	Wool industry
59.	Hemp and flax industry
60.	Silk industry
61.	Manufacture of knitted garments
62.	Manufacture of textile haberdashery
63.	Manufacture of ready-made clothes
64.	Processing of leather
65.	Manufacture of furs and of fur goods
66.	Manufacture of footwear
67.	Manufacture of other leather products
68.	Printing industry
69.	Slaughtering and processing of meat
70.	Fish industry
71.	Milk industry
72.	Manufacture of vegetable oil
73.	Grain milling, manufacture of starch and starch products, macaroni, etc.
74.	Bread industry
75.	Sugar manufacturing and refining
76.	Manufacture of sugar confectionery
77.	Processing and preserving of fruits and vegetables
78.	Wine industry
79.	Brewing
80.	Manufacture of soft drinks
81.	Tobacco industry
82.	Fodder industry
83.	Manufacture of musical instruments, articles of art and jewellery
84.	Other manufacturing

Table A.2

Bridge table between NACE and the Bulgarian sectoral classification (NACE 2-digit and approximation to NACE 3-digit)

Sector codes used in the country study	NACE	Sector numbers — Bulgarian classification
21	21	
211	211	5
212	212	7
22	22	
221'3	221 + 222 + 223	6
224	224	8
23	23	
231	231	44
232'9	232 + 233 + 239	32
24	24	
241	241	46
242	242	45
243'6	243 + 244 + 245 + 246	47 + 48
247	247	54
248	248	55
25	25	
252'3	252 + 253	33
255	255	36 + 41
256	256	34
257	257	39
258'9	258 + 259	37 + 38
26	26	
260	260	35
31	31	
311'2	311 + 312	24
313'5	313 + 314 + 315	26 + ai.9
316	316	25 + 27
32	32	
321	321	17
322	322	10
323	323	14
324	324	13 + 15
325'6	325 + 326	11 + 12 + 16 + 21 + ai.9
327'8	327 + 328	22
33	33	
330	330	31
34	34	
341'3	341 + 342 + 343 + + 346 + 347	28 + 29 + ai.9
344'5	344 + 345	30
35	35	
351'3	351 + 352 + 353	20
36	36	
361	361	19
362'5	362 + 363 + 364 + 365	18
37	37	
371'4	371 + 372 + 373 + + 374	23
41/42	41/42	
411	411	72
412'2	412 + 422	69
413	413	71
414	414	77
415	415	70
416'8	416 + 417 + 418 + 423	73 + 82
419	419	74
420	420	75
421	421	76
424'6	424 + 425 + 426	78
427	427	79
428	428	80
429	429	81
43	43	
436'8	436 + 438	56 + 57 + 58 + + 59 + 60
439	439	62
44	44	
441	441	64
442	442	67
45	45	
451	451	66
453'5	453 + 455	63 + 61
456	456	65
46	46	
461	461	49
462'6	462 + 463 + 464 + + 465 + 466	50
467	467	51
47	47	
471	471	52
472	472	53
473	473	68
48	48	
481	481	43
482	482	42
483	483	40
49	49	
491'4	491 + 492 + 493 + 494	83
495	495	84

Key: + = plus; – = minus

Notes:

When the corresponding NACE 3-digit sectors had a direct counterpart in the national classification, the NACE 3-digit notation has been used in the country study.

Notation XXX'X has been used to denote that the corresponding sector in the country study has been composed by summation of several NACE 3-digit sectors. The XXX'X counterparts of national sector 9 belong to three different NACE 2-digit groups. In this case, for the sake of preserving a reasonable level of disaggregation, the national sector has been split based on expert judgments ($0 < ai < 1$ are coefficients).

In several cases there is no direct correspondence of sectors on the NACE 2-digit level. This happens when a national sector (or a group of national sectors) has more than one NACE 3-digit counterparts, belonging to different NACE 2-digit sectors and there was not sufficient information to break down the national sector(s). This is the case for NACE 2-digit 32, 35, 36 and 37. The reverse is valid for sector 49. Thus the national counterparts of those sectors are approximations to the corresponding NACE 2-digit sectors.

Annex II — Quantitative assessment of national market imperfections affecting Bulgarian trade with the EC

A. Market imperfections affecting exports

In this section we try to identify some of factors which, directly or indirectly act as market distortions with respect to Bulgarian exports to the EC. It is not always easy to identify market imperfections affecting exports because in many cases this is only an indirect impact stemming from existing (possibly distorted) price structures or other domestic regulations not necessarily aimed at export promotion (but rather producing it as a side effect). With this in mind, the findings of this assessment should be viewed only as a first attempt to address this issue.

This part of the analysis is exclusively based on Bulgarian data some of which were closely tied to the existing Bulgarian sectoral classification. Due to this, it is performed on the NACE-adapted national sectoral classification which is close to NACE 3-digit classification (see Annex I).

Due to the long-lived system of central planning, Bulgarian trade with the EC has been (and still is being) affected by the distorting influence of a number of non-market factors mainly due to the existence of distorted prices and due to government regulations.

We have identified four main groups of market imperfections affecting the exports of Bulgaria to the EC:

(i) *technical and quality standards;*

(ii) energy;

(iii) other 'cheap' resources;

(iv) trade protection measures.

We shall present a brief justification of the importance of these factors.

Interviews with Bulgarian experts indicated that the difference in technical and quality standards between Bulgarian manufactured goods and EC ones are regarded as one of the main obstacles to the expanding of the export flows. Bulgaria traditionally has been able to place on these markets goods of lower value-added content, of inferior quality and, respectively, of lower price. As indicated by Landesmann (1992a), unless this tendency is reversed, in the medium and long run it is likely to lead to shrinking export shares of the country in total EC trade.

The quantitative evaluation of the impact of technical and quality standards on Bulgarian exports to the EC has been performed through questionnaires by leading Bulgarian experts in this field.

Energy consumption based on artificially low energy prices has been recognized as an important distorting factor throughout the whole of Eastern Europe. This distorting influence was especially strong in Bulgaria because before the disintegration of the CMEA, Bulgaria satisfied practically all her external energy needs by imports from the USSR and other CMEA countries (with the exception of small oil imports from the world market).

The 'cheap energy' content undoubtedly enhanced artificially the competitiveness of some manufactured goods, especially the energy intensive ones. Since energy prices in Bulgaria are still centrally controlled and subsidized (in spite of their multiple increase) the 'cheap energy' factor is still likely to exert a distorting, though fading, influence on the trade flows.

The Bulgarian authorities have adopted a step-by-step approach with respect to matching domestic energy prices to world prices. In the stabilization programme of 1991, energy prices were selected as one of the centrally-controlled nominal anchors of the programme and were supposed to act as signals for the restructuring of all relative prices. However, due to the fact that actual total inflation largely exceeded the expectations, in relative terms the centrally-controlled energy prices by the end of 1991 remained roughly at half of their market level. This lead to the necessity of three further corrections which were implemented at later stages from 1991 to 1993; however they did not have the expected effect on the relative prices of energy either. This was due mostly to preliminary upward adjustments of output prices by most producers in expectation of energy price increases. For this reason energy prices in Bulgaria are still below market level and subsidized and still exert a distorting impact on export performance, though not so strong as they used to in the past.

Likewise, the imports of other artificially 'cheap' resources like oil for industrial use and roundwood (based on a long-term agreement between Bulgaria and the ex-USSR which is still in effect; roundwood under this agreement is sawn in Russia by Bulgarian workers and imported free of tariffs in Bulgaria) had a similar distorting influence on the competitive position of manufacturing sectors which used these resources as inputs.

Economic policy measures have also created market distortions with respect to Bulgarian exports to the EC. It is very important to notice that after the start of foreign trade liberalization in Bulgaria in 1990, these regulations have been rather unstable. For this reason we shall make a distinction between the regulations which were in effect in 1991 and those in 1992.

Among the exports regulations in 1991 (introduced in a set of subsequent Ordinances of the Council of Ministers of Bulgaria in the period from February to September) the following can be considered to have a distorting effect:

(i) price controls (lower limits of export prices) for certain commodities; in 1991 these included mainly meat and meat products, dairy products, sawlogs and some wood products;

(ii) export bans for certain commodities; with different duration these included crude oil, raw skins, wool and vegetable textile fibres, some cereals, vegetable oils, scrap, some milk products, sugar, some chemicals, roundwood.

(iii) export taxes; was applied to a wide range of commodities.

(iv) others (for example, export licensing or registration requirements for exports of some commodities).

A major change in export regulations was introduced in June 1992 by Ordinance 114 of the Council of Ministers of Bulgaria on the export and import regime in Bulgaria. In principle it abolished the previous system of regulations completely and introduced a new, though similar, system. With regards to exports its most important elements are:

(i) a subset of commodities is subject to mandatory registration (in principle it cannot be an obstacle to exporting but the procedure is bureaucratic and time consuming); these include live animals, dairy products, vegetable oils, wine and alcoholic beverages, fuels and electricity; ferrous and non-ferrous metals;

(ii) a subset of commodities is subject to export licensing, such as: tobacco and tobacco products, precious metals, roundwood, scrap of ferrous and non-ferrous metals, historic articles of art, pharmaceuticals, radioactive materials, explosives, etc.;

(iii) a further subset of (mainly agricultural) commodities is subject to domestically set export quotas: live animals for breeding; wine grapes; wheat and wheat flour; sunflower; raw hides and skins;

(iv) a number of commodities is subject to export price controls by setting lower limits on export prices: live animals, meat, cheese, sunflower seeds, wool, fuelwood;

(v) in a further move later in the year, the export quotas were replaced by export taxes on the same commodities.

In our analysis, we did not take into account the direct effect of the fiscal system as we consider that it did not play a significant effect on Bulgarian exports. Profit taxes are in general uniform and neutral (with some exceptions but not related to export performance); subsidies have been abolished (again with some exceptions but not directly related to export performance); no export promotion measures have been introduced yet; export goods are exempt from sales taxes.

Another specific Bulgarian feature is that currently economic regulations are changing rather dynamically and we can only assess their immediate or short-term effect; in recent years, the average duration of these regulations has been so limited that it has hardly been sufficient for the manifestation of a long- or medium-term effect. This is another factor which dominated our choice of the abovementioned measures.

Most of the export regulations in effect in 1991 and in 1992 had a restrictive rather than stimulating character. They were meant mainly as measures to keep sufficient quantities of domestically-produced goods in the domestic market in the face of an opening market and liberalizing trade. Another crucial factor was the liberalization of the exchange rate (in effect since the beginning of 1991) and the adoption of a floating regime which, at least at the start created an overshooting effect. In turn, the overdepreciated exchange rate created large price differentials between foreign and domestic markets and the authorities were threatened by the possible trade diversion effects which was their rationale for imposing certain restrictions on exports.

Some of the existing market imperfections refer to different forms of administrative control over exports, mainly registration requirements of the transaction at a government body or, for a limited number of commodities, a requirement for obtaining an export licence. In spite of the limited scope of these measures, due to inefficient administration and in some cases corruption, they have a discouraging effect on free trade with those commodities.

Since most of the regulative measures have had a selective action on a limited number of commodities, we have composed an aggregate of all the different types of measures which we call 'trade protection measures' and have assessed its overall impact across sectors. The composite of the trade protection measures was different in 1991 and in 1992.

The quantitative evaluation of the impact of the four groups of market imperfections is presented in Tables A.3a and A.3b (for 1991 and 1992, respectively). For each group of market imperfections we have used the following grades to assess the type of the impact: score 1 = impact encouraging; score 2 = impact neutral; score 3 = impact discouraging.

The score for each group was evaluated in the following way. The assessment of the impact of technical and quality standards was based on questionnaires which were composed according to the above grading. The evaluation of the impact of energy

was based on statistical data about the level of energy consumption in each sector. If the latter turned out to be higher than the double average for the country this was assumed to be an 'encouraging' type of distortion; otherwise the effect was assumed to be neutral. The impact of other cheap resources was performed by expert judgment. Finally the impact of trade protection measures was calculated as the weighted composition of the four types of policy regulations (see above).

The total score for market imperfections affecting exports was calculated by summing up the individual sectoral scores for the four groups. We have used the following grades to assess the type of the impact of total market imperfections: total score 5,6 = impact encouraging; score 7,8 = impact neutral; score 9,10 = score discouraging.

Some words of caution should be added here in interpreting the final results of Bulgarian market imperfections affecting exports and especially the total score which is a mixture of heterogeneous factors. The impact of cheap energy and other resources has been a long-term imperfection and (as will be shown later) there are indications that it has created certain comparative advantages for Bulgarian producers. On the other hand trade protection policy in the last years has been rather dynamic. Unfortunately this cannot be reflected in a simple model such as the one used for this study and, as mentioned, the trade protection measures reflected in Tables A.3a and A.3b differ for the two years — 1991 and 1992.

In 1991, price liberalization began but some prices (and especially the energy prices) remained fixed and subsidized. Accordingly, some of the trade policy measures which were introduced were deliberately aimed at discouraging the export of energy-intensive goods in order to reduce the implied subsidies. So in this year some of the manufacturing sectors were exposed to the simultaneous impact of two opposing market imperfections and this can be traced from the results presented in Table A.3a.

Table A.3a

Assessment of market imperfections with regard to exports from Bulgaria to the EC, 1991

Sector	Impact of standard & quality	Impact of energy prices	Impact of other cheap resources	Impact of trade protection	Total score	Sector	Impact of tariff restriction	Tariff relief in 1992	Import tax burden	Additional non-tariff measures	Total score
	3 = discouraging			3 = discouraging	9, 10 = discouraging		3 = discouraging			3 = discouraging	9, 10 = discouraging
	2 = neutral	2 = neutral	2 = neutral	2 = neutral	7,8 = neutral		2 = neutral	2 = neutral	2 = neutral	2 = neutral	7,8 = neutral
	1 = encouraging	1 = encouraging	1 = encouraging		5,6 = encouraging		1 = encouraging	1 = encouraging	1 = encouraging		5,6 = encouraging
211	3	1	2	2	8	371,4	1	2	2	2	7
212	3	1	2	2	8	411	3	2	2	2	9
221,3	3	1	2	3	9	412,2	2	2	2	2	8
224	3	1	2	3	9	413	2	2	2	3	9
231	1	2	2	2	7	414	2	2	2	2	8
232,9	1	1	2	2	6	415	1	2	2	2	7
241	2	1	2	2	7	416,8	3	2	2	2	9
242	3	1	2	2	8	419	2	2	2	2	8
243,6	2	2	2	2	8	420	3	2	2	2	9
247	3	1	2	2	8	421	2	2	2	2	8
248	3	1	2	2	8	424,6	2	2	2	3	9
252,3	2	1	1	2	6	427	2	2	2	3	9
255	3	2	2	2	9	428	2	2	2	2	8
256	2	1	2	2	7	429	3	2	2	3	10
257	3	2	2	3	10	436,8	3	2	2	2	9
258,9	3	2	2	2	9	439	3	2	2	2	9
260	3	1	2	2	8	441	2	2	2	2	8
311,2	1	1	2	2	6	442	2	2	2	2	8
313,5	1	2	2	2	7	451	2	2	2	2	8
316	2	2	2	2	8	453,5	3	2	2	2	9
321	3	2	2	2	9	456	2	2	2	2	8
322	2	2	2	2	8	461	2	2	1	3	8
323	1	2	2	2	7	462,6	2	2	1	2	7
324	1	2	2	2	7	467	2	2	1	2	7
325,6	2	2	2	2	8	471	3	1	2	2	8
327,8	1	2	2	2	7	472	2	2	2	2	8
330	2	2	2	2	8	473	3	2	2	2	9
341,3	2	2	2	2	8	481	3	2	2	2	9
344,5	2	2	2	2	8	482	1	1	2	2	6
351,3	3	2	2	2	9	483	3	1	2	2	8
361	1	2	2	2	7	491,4	2	2	2	2	8
362,5	2	2	2	2	8	495	2	2	2	2	8

TableA.3b

Assessment of market imperfections with regard to Bulgarian exports to the EC, 1992

Sector	Impact of standard & quality	Impact of energy prices	Impact of other cheap resources	Impact of trade protection	Total score	Sector	Impact of tariff restriction	Tariff relief in 1992	Import tax burden	Additional non-tariff measures	Total score
	3 = discouraging			3 = discouraging	9, 10 = discouraging		3 = discouraging			3 = discouraging	9, 10 = discouraging
	2 = neutral	2 = neutral	2 = neutral	2 = neutral	7,8 = neutral		2 = neutral	2 = neutral	2 = neutral	2 = neutral	7,8 = neutral
	1 = encouraging	1 = encouraging	1 = encouraging		5,6 = encouraging		1 = encouraging	1 = encouraging	1 = encouraging		5,6 = encouraging
211	3	2	2	2	9	371,4	1	2	2	2	7
212	3	2	2	2	9	411	3	2	2	3	10
221,3	3	2	2	3	10	412,2	2	2	2	3	9
224	3	2	2	3	10	413	2	2	2	3	9
231	1	2	2	2	7	414	2	2	2	2	8
232,9	1	2	2	2	7	415	1	2	2	2	7
241	2	2	2	2	8	416,8	3	2	2	2	9
242	3	2	2	2	9	419	2	2	2	2	8
243,6	2	2	2	2	8	420	3	2	2	2	9
247	3	2	2	2	9	421	2	2	2	2	8
248	3	2	2	2	9	424,6	2	2	2	3	9
252,3	2	2	1	2	7	427	2	2	2	2	8
255	3	2	2	2	9	428	2	2	2	2	8
256	2	2	2	2	8	429	3	2	2	3	10
257	3	2	2	3	10	436,8	3	2	2	3	10
258,9	3	2	2	3	10	439	3	2	2	2	9
260	3	2	2	2	9	441	2	2	2	2	8
311,2	1	2	2	2	7	442	2	2	2	2	8
313,5	1	2	2	2	7	451	2	2	22	8	8
316	2	2	2	2	8	453,5	3	2	22	9	9
321	3	2	2	2	9	456	2	2	22	8	8
322	2	2	2	2	8	461	2	2	13	8	8
323	1	2	2	2	7	462,6	2	2	12	7	7
324	1	2	2	2	7	467	2	2	12	7	7
325,6	2	2	2	2	8	471	3	2	22	9	9
327,8	1	2	2	2	7	472	2	2	22	8	8
330	2	2	2	2	8	473	3	2	22	9	9
341,3	2	2	2	2	8	481	3	2	22	9	9
344,5	2	2	2	2	8	482	1	2	22	7	7
351,3	3	2	2	2	9	483	3	2	22	9	9
361	1	2	2	2	7	491,4	2	2	22	8	8
362,5	2	2	2	2	8	495	2	2	22	8	8

B. Market imperfections affecting imports

Unlike distortions affecting exports market imperfections affecting imports usually result from deliberate economic policy actions. In the case of Bulgaria, which entered the transition period with regulations which were very far from anything which is common in the developed market economies, the recent years are characteristic also with turbulent changes in the import regulations.

With respect to the treatment of imports from the EC we can identify three main phases of tuning these regulations in the period after 1989:

(i) partial liberalization of foreign trade and devaluation of the national currency; no substantial change in import tariffs (1990);

(ii) full liberalization of foreign trade (in the sense of the rights to perform foreign trade operations); introduction of a floating exchange rate; introduction of the harmonized system of duty tariffs together with some provisional, transitory regulations affecting imports, such as import taxes (1991);

(iii) abolishing most of the provisional regulations affecting imports coupled with changes in the levels of the import tariffs (1992).

Most of the currently-existing market imperfections affecting imports from the EC are rather unsophisticated, falling mainly in the categories of tariffs and related restrictions. It can also be pointed out that economic policy with respect to these restrictions towards the EC was undoubtedly biased by some policy goals.

Thus the general trend with respect to the level of tariffs in the first two phases of the reforms pointed out above were towards lowering the tariff burden. However, the last change imposed in 1992 (*Ordinance 35 of the Council of Ministers of February* 1992) in general pushed back up many of the tariffs. This was claimed to be a compensation for the addition of import taxes but the overall effect exceeded considerably the simple compensation because imports taxes used to be selective whereas the tariff increase was universal.

The current Bulgarian customs tariff has some 6 000 commodity positions 5 184 of which apply to manufactured goods (*Tariff*, 1991;*Tariff*, 1992). The 1991 tariff system divides the countries of origin into four categories:

(i) least-developed countries which were granted a preferential import status (zero tariff rate);

(ii) other developing countries which were granted tariff preferences;

(iii) countries applying MFN status to imports from Bulgaria (*the EC falls into this category*);

(iv) countries which do not apply a MFN status to imports from Bulgaria.

This tariff system was composed of numerous and non-uniform *tariff rates, with a very high dispersion of rates.*

The 1992 system is simplified considerably. The categories of the countries of origin is reduced to three:

(i) least-developed countries which were granted a preferential import status (zero tariff rate);

(ii) developing countries (column 1 - reduced rate);

(iii) developed countries, EC included (column 2 of the tariff rates).

The system was made much more uniform — actually only five rates are used in it (*Tariff*, 1992): 5% (9% of the items), 10% (25% of the items), 15% (28% of the items), 25% (31% of the items) and 40% (8% of the items).

Currently the unweighted tariff rate levied on manufacturing imports from the EC is 17,3% and the import weighted tariff rate in 1992 was 18,3% (Table A.II.2). In general, the Bulgarian tariff rates are much higher than the MFN rates levied on Bulgarian exports to the EC (Möbius and Schumacher, 1992a, 1992b), *so the current situation of trade* with the EC is highly asymmetric with regard to tariffs. Many of the Bulgarian tariff rates have an obviously protective character, as those in the food-processing industries (NACE 41/42), footwear and clothing industry (NACE 45), metal articles (NACE 31), etc.

Apart from aiming at a protective and fiscal effect, one goal of this tariff increase was to provide a better bargaining position for Bulgaria in the negotiations with the EC and to legalize this tariff asymmetry in the Association Agreement.

The quantitative evaluation of the market imperfections affecting Bulgarian imports from the EC has been performed in a way similar to the evaluation of imperfections affecting exports. Again it must be stressed that due to the instability of measures we have performed two different sets of evaluations — for 1991 and for 1992. This part of the analysis is performed on the NACE 3-digit level.

We have identified four main groups of market imperfections affecting Bulgarian imports from the EC:

(i) tariff restrictions;

(ii) tariff relief measures;

(iii) import tax;

(iv) additional non-tariff restrictions.

The quantitative estimations of their impact, however, are different in *1991* and in *1992.*

In 1991, Bulgaria introduced for the first time harmonized duty tariffs based on the harmonized commodity description and coding system, with four groups of countries of origin (*Tariff*, 1991). Imports from the EC fell into the third group of the most favoured nations' duty rate. To classify the intensity of the tax burden we have used the same grading as the one used by Möbius and Schumacher (1992a):

Score	MFN duty rate	Impact
1	$0 \leq r < 4$	encouraging
2	$4 \leq r \leq 7$	neutral
3	$7 < r$	discouraging

A number of commodities were granted duty relief during different timespans in 1991 mainly in response to shortages on the domestic market. The corresponding sectors were assumed to be encouraged to import.

As a general policy measure, import taxes were introduced on imports to Bulgaria in 1991; however a number of commodities were granted import tax relief. The corresponding sectors were assumed to be encouraged to import.

A number of non-tariff restrictions (for example, registration requirements) were also in action throughout the year. As in the

Table A.4

Bulgarian tariff rates applied to imports from the EC, 1992

Sectors (NACE 2-digit)	Number of tariff positions	Unweighted tariff rate (%)	Import weighted tariff rate[1] imports from EC (%)
21	34	7,5	7,5
22	518	12,2	12,5
23	59	12,5	12,5
24	227	21,9	24,1
25	961	13,1	13,8
26	181	20,4	20,5
31	119	23,0	25,7
32	528	12,7	12,7
33	32	18,0	18,0
34	300	17,2	17,4
35	105	13,9	13,9
36	67	9,2	6,2
37	229	15,3	13,2
41/42	265	29,1	32,7
43	375	20,9	19,2
44	66	19,0	17,5
45	391	24,8	24,6
46	128	18,8	10,8
47	148	19,3	20,6
48	228	17,1	17,3
49	223	22,3	21,2
Total/average	5 184	17,3	18,3

[1] Weighting is performed on the level of tariff groups (84 for manufactured goods) in the cases when more than one tariff group falls into one NACE 2-digit sector.
Source: Ministry of Trade; Import tariffs, 1992; author's calculations.

case of similar measures on exports (discussed in the previous section), they had in general a discouraging effect on imports of such commodities.

Import regulations in 1992 were changed by the already quoted Ordinance 114 of the Council of Ministers of June 1992. They include the following measures:

(i) a number of commodities is subject to import registration; these include alcoholic beverages, fuels and electricity, pulp and paper, fabrics, footwear and clothing, ferrous and non-ferrous metals, some chemicals for agricultural use;

(ii) a set of commodities is subject to import licensing: pharmaceuticals, tobacco products, radioactive and other environmentally-hazardous material, explosives, precious metals and some others;

(iii) import quotas were introduced for a limited number of commodities: tobacco, citrus fruits, bananas, icecream and, seasonally, for tomatoes and cucumbers;

(iv) import tax was imposed on certain commodities such as meat and preparations of meat, some dairy products, grapes, apples, processed fruits, perfume and toilet preparations, luxury automobiles;

(v) at the same time, some commodities were granted tariff relief for 1992 by either eliminating the acting tariffs (medicinal children's foods, pharmaceutical inputs, agricultural machinery, pesticides and fertilizers) or by applying a reduced rate — 3% and 5% for columns 1 and 2 of the tariff schedule, respectively (sugar and sugar substitutes, rice, salt, pharmaceuticals).

The import of automobiles was a special case. According to a special regulation (in force from the beginning of 1991 till the end of 1992) the import of automobiles was exempt both from tariffs and from excise tax. At the same time, according to another regulation introduced in 1992, private companies could deduct their capital expenditures (including expenditures on automobiles) from their before-tax income. All these preferential treatments boosted the imports of automobiles in 1991 and especially in 1992. Starting from 1993 the tariff and excise relief was abolished; the tax holidays for automobiles will be eliminated as well.

The rating of the impact of market imperfections on manufacturing imports from the EC in 1992 was performed in a similar way as for 1991. The same brackets were used also in the grading of the tariff rates.

The total score for market imperfections affecting imports was calculated by summing up the individual sectoral scores for the four groups. The following grades were used to assess the type of the impact of total market imperfections: total score 5, 6 = impact encouraging; total score 7, 8 = impact neutral; total score > 9 = impact discouraging.

The quantitative evaluation of the impact of the four groups of market imperfections for 1991 and 1992 is given in Tables A.5a and A.5b, respectively.

Table A.5a

Assessment of market imperfections with regard to Bulgarian imports from the EC, 1991

Sector	Impact of tariff restrictions	Tariff relief in 1992	Import tax burden	Additional non- tariff measures	Total score	Sector	Impact of tariff restrictions	Tariff relief in 1992	Import tax burden	Additional non- tariff measures	Total score
	3 = high			3 = discouraging	9, 10 = discouraging		3 = high			3 = discouraging	9, 10 = discouraging
	2 = average	2 = neutral	2 = neutral	2 = neutral	7,8 = neutral		2 = average	2 = neutral	2 = neutral	2 = neutral	7,8 = neutral
	1 = low	1 = encouraging	1 = encouraging		5,6 = encouraging		1 = low	1 = encouraging	1 = encouraging		5,6 = encouraging
211	1	2	1	2	6	363	3	2	2	2	9
212	1	2	2	2	7	364	1	2	1	2	6
221	2	2	2	2	8	365	2	2	2	2	8
222	2	2	2	2	8	371	2	2	1	2	7
223	2	2	2	2	8	372	3	2	1	2	8
224	3	2	1	3	9	373	3	2	1	2	8
231	2	2	2	2	8	374	3	2	2	2	9
232	1	2	1	2	6	411	3	1	1	2	7
233	1	2	1	2	6	412	3	2	1	2	8
239	2	2	2	2	8	413	3	1	1	2	7
241	2	2	1	2	7	414	3	2	1	2	8
242	3	2	2	2	9	415	1	2	2	2	7
243	3	2	2	2	9	416	3	2	2	2	9
244	2	2	2	2	8	417	3	1	2	2	8
245	1	2	2	2	7	418	3	2	1	2	8
246	1	2	1	2	6	419	3	2	1	2	8
247	3	2	1	2	8	420	2	2	1	2	7
248	3	2	2	2	9	421	3	1	1	2	7
252	2	2	2	2	8	422	3	2	1	2	8
253	2	2	1	2	7	423	3	2	2	2	9
255	2	2	1	2	7	424	3	2	2	3	10
256	3	2	1	2	8	425	3	2	2	3	10
257	3	1	1	3	8	426	3	2	2	3	10
258	3	1	2	2	8	427	3	2	2	3	10
259	3	2	2	2	9	428	3	2	2	2	9
260	3	2	2	2	9	429	3	2	2	3	10
311	2	2	2	2	8	436	3	2	2	2	9
312	2	2	2	2	8	438	3	2	2	2	9
313	2	2	2	2	8	439	3	2	2	2	9
314	3	2	2	2	9	441	2	2	1	2	7
315	3	2	2	2	9	442	3	2	2	2	9
316	3	2	2	2	9	451	3	2	2	2	9
321	3	1	1	2	7	453	3	2	2	2	9
322	3	2	2	2	9	455	3	2	2	2	9
323	3	2	1	2	8	456	2	2	2	2	8
324	2	2	1	2	7	461	1	2	1	2	6
325	2	2	1	2	7	462	3	2	1	2	8
326	3	2	2	2	9	463	3	2	2	2	9
327	2	2	2	2	8	464	2	2	2	2	8
328	2	2	2	2	8	465	3	2	2	2	9
330	2	2	2	2	8	466	1	2	1	2	6
341	3	2	1	2	8	467	3	2	2	2	9
342	3	2	2	2	9	471	2	2	1	2	7
343	2	2	1	2	7	472	3	1	2	2	8
344	3	2	2	2	9	473	1	2	1	2	6
345	3	2	2	2	9	481	2	2	1	2	7
346	3	2	1	2	8	482	3	2	1	2	8
347	3	2	1	2	8	483	2	2	1	2	7
351	3	1	1	2	7	491	3	2	2	3	10
352	3	2	1	2	8	492	3	2	2	2	9
353	3	2	1	2	8	493	3	2	2	2	9
361	1	2	2	2	7	494	3	2	2	2	9
362	3	2	1	2	8	495	3	2	2	2	9

Table A.5b

Assessment of market imperfections with regard to Bulgarian imports from the EC, 1992

Sector	Impact of tariff restrictions	Tariff relief in 1992	Import tax burden	Additional non- tariff measures	Total score	Sector	Impact of tariff restrictions	Tariff relief in 1992	Import tax burden	Additional non-tariff measures	Total score
	3 = high			3 = discouraging	>9 = discouraging		3 = high			3 = discouraging	>9 = discouraging
	2 = average	2 = neutral	3 = discouraging	2 = neutral	8 = neutral		2 = average	2 = neutral	3 = discouraging	2=neutral	8 = neutral
	1 = low	1 = encouraging	2 = neutral	1 = encouraging	<7 = encouraging		1 = low	1 = encouraging	2 = neutral	1 = encouraging	<7 = encouraging
211	2	2	2	2	8	363	3	2	2	2	9
212	2	2	2	2	8	364	2	2	2	2	8
221	2	2	2	3	9	365	3	2	2	2	9
222	3	2	2	2	9	371	3	2	2	2	9
223	3	2	2	2	9	372	3	2	2	2	9
224	3	2	2	3	10	373	3	2	2	2	9
231	3	2	2	2	9	374	3	2	2	2	9
232	2	2	2	2	8	411	3	2	2	2	9
233	3	1	2	2	8	412	3	2	3	2	10
239	3	2	2	2	9	413	3	2	3	3	11
241	3	2	2	2	9	414	3	2	3	2	10
242	3	2	2	2	9	415	3	2	2	2	9
243	3	2	2	2	9	416	3	2	2	2	9
244	2	2	2	2	8	417	3	2	2	2	9
245	3	2	2	2	9	418	3	2	2	2	9
246	3	2	2	2	9	419	3	2	2	2	9
247	3	2	2	2	9	420	3	1	2	2	8
248	3	2	2	2	9	421	3	2	2	2	9
252	3	2	2	2	9	422	3	2	2	2	9
253	3	2	2	2	9	423	3	2	2	2	9
255	3	2	2	2	9	424	3	2	2	3	10
256	3	1	2	2	8	425	3	2	2	2	9
257	3	1	2	3	9	426	3	2	2	2	9
258	3	2	3	2	10	427	3	2	2	2	9
259	3	2	2	2	9	428	3	2	2	2	9
260	3	2	2	2	9	429	3	2	2	3	10
311	3	2	2	2	9	436	3	2	2	3	10
312	3	2	2	2	9	438	3	2	2	3	10
313	3	2	2	2	9	439	3	2	2	3	10
314	3	2	2	2	9	441	3	2	2	2	9
315	3	2	2	2	9	442	3	2	2	2	9
316	3	2	2	2	9	451	3	2	2	3	10
321	3	1	2	2	8	453	3	2	2	3	10
322	3	2	2	2	9	455	3	2	2	2	9
323	3	2	2	2	9	456	3	2	2	2	9
324	3	2	2	2	9	461	2	2	2	2	8
325	2	2	2	2	8	462	3	2	2	2	9
326	3	2	2	2	9	463	3	2	2	2	9
327	3	2	2	2	9	464	3	2	2	2	9
328	3	2	2	2	9	465	3	2	2	2	9
330	3	2	2	2	9	466	3	2	2	2	9
341	3	2	2	2	9	467	3	2	2	2	9
342	3	2	2	2	9	471	2	2	2	3	9
343	3	2	2	2	9	472	3	2	2	2	9
344	3	2	2	2	9	473	2	2	2	2	8
345	3	2	2	2	9	481	3	2	2	2	9
346	3	2	2	2	9	482	3	2	2	2	9
347	3	2	2	2	9	483	3	2	2	2	9
351	3	1	2	1	7	491	3	2	2	2	9
352	3	2	2	2	9	492	3	2	2	2	9
353	3	2	2	2	9	493	3	2	2	2	9
361	2	2	2	2	8	494	3	2	2	2	9
362	3	2	2	2	9	495	3	2	2	2	9

Chapter 3

The economic interpenetration between the EC and Eastern Europe: Romania

The economic penetration between the EC and Eastern Europe: The Romanian case

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1. Recent evolution and current situation of Romania's industrial structure and foreign trade

1.1. Definition of industrial structure

It has not been easy to describe the structure of Romanian industry because of changes in the industrial classification systems used for output and employment. The data do not correspond to NACE definitions and are available only at aggregate levels so that reconstruction to estimate NACE categories is difficult.

Table 1 presents the available branch structure of employment for 1988, 1989, and 1990, with a few figures for 1991. Later employment figures conforming to this branch structure have not been found, although figures for 1991 according to the new statistical structure of branches appeared in the recent GATT *Trade Policy Review*.[1]

[1] Volume I, p. 98.

The employment structure did not significantly change during these years. In 1989 and 1990, the employment structure was more stable than the production structure and was probably the consequence of the policy of keeping persons employed on a part-time basis. The Romanian unemployment rate did not rise to significant levels until 1991, unfortunately just when employment figures do not appear to exist, so the effects of rising employment on employment structure can not be examined.

The branch structure of production for 1988, 1989, and 1990 in Table 2a corresponds to the branch structure of employment in Table 1. It must be kept in mind that production shares are in current prices. Hence, the changes reflect both real output and price changes. In fact, it is possible that a decline in one dimension can be offset by a rise in the other.

The most significant decline is the share of production in engineering and metal working. This reflects the collapse of domestic investment spending and Romania's loss of export outlets in the former CMEA area. There is also a sharp decline in the share of the clothing industry due to the loss of CMEA export markets and the fall in domestic incomes. The rising share of production in electric and thermal energy mainly reflects the sharp increases in energy prices.

Table 1

Employment structures as shown in the annual statistics (percentage of total)

(%)

Branch of industry	1988	1989	1990	1991
Electric & thermic power	1,5	1,5	1,9	2,9
Fuel	4,6	4,7	4,8	
Ferrous metallurgy & mining	3,9	3,8	3,9	
Non-ferrous metallurgy & mining	2,4	2,3	2,3	
Engineering & metal working	36,6	36,5	35,8	33,1
Chemicals	6,8	6,9	7,1	6,8
Non-metal ores & abrasives	0,5	0,5	0,5	
Building materials	2,9	2,9	2,9	
Forestry & wood working	8,9	9,0	8,8	
Pulp & paper (including reeds)	1,1	1,1	1,1	1,1
Textiles	11,0	10,8	10,7	11,0
Ready-made clothing	6,4	6,5	6,2	
Leather goods, furs, footwear	3,8	3,7	3,6	
Glass, china, porcelain	1,6	1,6	1,6	
Food	5,9	6,0	6,7	7,1
Printing	0,5	0,4	0,5	0,5
Soaps & cosmetics	0,1	0,1	0,1	
Other industry	0,8	0,8	0,8	
Total	100,0	100,0	100,0	

For 1991 only partial data are available for 'republican industry'. See *Anuarul statistic al Romaniei 1992*, p. 393. So far no figures for employment structure have been found for 1992.

Table 2a

Realized and forecast production structures, 1988-96 (share of output in current prices)

(%)

	1988	1989	1990	1991	1992
Thermal and electrical energy	3,9	3,9	4,6		9,5
Fuels	11,2	11,5	14,4		18,1
Steel	6,9	6,9	6,1		9,3
Non-ferrous metallurgy	3,1	2,9	2,3		2,9
Machine building & metal products	28,9	27,7	25,8		18,3
Chemistry	9,9	9,8	9,6		10,7
Construction materials	3,6	3,7	3,2		2,4
Wood-exploitation and processing	3,7	3,8	3,7		3,9
Pulp and paper	1,2	1,2	1,3		1,3
Glass and ceramics	0,8	0,8	0,9		1,0
Textiles	6,5	6,6	6,6		5,0
Ready-made clothes	3,7	4,0	3,4		1,0
Leather, fur, footwear	2,1	2,3	2,0		1,8
Food	11,2	11,6	12,0		11,1
Other	2,8	2,8	3,6		3,0
Thermal and electrical energy	9,5	10,2	10,0	10,0	10,5
Fuels	18,1	19,0	17,0	15,0	13,0
Steel	9,3	9,0	7,5	7,0	6,2
Non-ferrous metallurgy	2,9	2,2	2,5	2,0	1,8
Machine building & metal products	18,3	19,0	20,0	20,8	21,0
Chemistry	10,7	8,5	8,5	8,3	8,0
Construction materials	2,4	2,0	2,0	2,5	2,0
Wood-exploitation and processing	3,9	4,0	4,2	4,2	4,5
Pulp and paper	1,3	1,0	1,2	1,0	1,0
Glass and ceramics	1,0	1,1	1,0	1,0	1,0
Textiles	5,0	4,7	5,5	6,2	6,8
Ready-made clothes	1,0	2,0	2,5	3,2	4,3
Leather, fur, footwear	1,8	2,0	2,2	2,4	2,6
Food	11,1	11,5	11,8	12,5	13,5
Other	3,0	3,8	4,1	3,9	3,8
Total	100,0	100,0	100,0	100,0	100,0

Source: Government of Romania, *The governing programme: strategy for economic and social reform*, Bucharest, March 1993.

A new classification of industrial statistics is now being applied and is presented Table 2b. Even though branches are somewhat differently defined, we can observe the same trends in 1991 as seen in Table 2a. Comparable structural data in current prices for 1992 have not yet been found.

The structure of Romanian trade has only recently been reported in anything other than the former CMEA broad commodity groups (see Table 5a). Recently exports and imports have been reported in the harmonized system (Table 3a) which is more helpful.

Romania has been a heavy importer of petroleum (as attested by 'mineral products') for both energy and petrochemicals and has exported both. The large share of imports has been reduced. Still, export shares combining both mineral and chemical products have remained constant.

Machinery, electrical, and transportation equipment also take large shares, although a decline of CMEA markets has accounted for the reduced export shares. Export shares in textiles and clothing have been maintained, but with an increasing import dependence.

Table 2b

Production by branch structures for 1990-91 (% shares in current prices)

(%)

Branch	1990	1991
Total industry	100,0	100,0
1 Coal extraction & preparation	0,9	1,1
2 Extraction of petroleum and gas	6,6	6,7
3 Extraction of metallic minerals	0,2	0,4
4 Other extractive industries	0,4	0,5
5 Food & beverages	14,4	14,8
6 Tobacco	0,5	0,5
7 Textiles	6,9	6,7
8 Clothing	3,3	2,7
9 Leather & footwear	2,1	1,9
10 Wood processing	1,2	1,8
11 Paper	1,3	1,5
12 Processing petroleum, coal, etc.	7,7	6,5
13 Chemicals & man-made fibres	6,7	7,8
14 Rubber & plastic processing	2,2	2,6
15 Mineral products	3,7	3,6
16 Metallurgy	9,4	9,6
17 Metal products	3,4	3,3
18 Machinery & equipment	9,5	7,8
19 Office & calculation devices	0,4	0,1
20 Machinery & electrical devices	2,2	2,4
21 Radio, TV, communication devices	0,8	0,7
22 Medical, optical, clock devices	1,1	0,9
23 Auto transportation means	3,5	3,5
24 Other transportation means	2,3	2,1
25 Furniture & other activities	2,4	2,3
26 Production/distribution energy	4,9	7,3
Total of listed items	98,4	99,1

Note: Totals may not be exact because of rounding.
Source: Comisia nationala pentru statistica, *Anuarul statistic al Romaniei, 1991, 1992.*

Export shares in agricultural, food and tobacco products are unusually low, reflecting the country's difficulties inherited from the Ceausescu years. Finding supplies that could not be produced in transition agriculture has also accounted for higher import shares in this area.

The sensitivity of production to exports (in Table 3b) is measured according to the 1989 and 1990 input-output tables (data for 1991 are not yet published).

Some branches (salt preparation, fur skin articles) have very high export ratios without making much contribution to overall exports. The significant export branches in terms of share of output exported in 1989 and 1990 can be seen in Table 3b.1.

Table 3c presents the export deliveries of selected products as a share of total deliveries from monthly tables published for 1992 (January to June, inclusive). The table also shows the ratio of stocks at the end of June to accumulated production for the first six months.

Table 3a

The commodity structure of Romanian exports and imports in terms of 2-digit harmonized system classification, 1990-92

Exports	1990	1991	1992
Total	100,0	100,0	100,0
I. Live animals & animal products	0,4	3,7	4,3
II. Vegetable products	0,7	1,6	1,2
III. Animal & vegetable fats, oils	0,0	0,1	0,2
IV. Food products, beverages, tobacco	0,4	0,9	1,1
V. Mineral products	19,4	14,3	13,3
VI. Chemical products	5,1	6,9	9,7
VII. Plastic & rubber materials	1,8	1,3	2,0
VIII. Hides, furs, etc.	0,6	0,5	0,6
IX. Wood, charcoal, fibre products	3,1	2,8	3,6
X. Pulp, wood fibres, paper wastes	0,6	0,5	0,4
XI. Textiles and products	9,8	9,0	10,6
XII. Footwear, umbrellas, ties, etc.	2,2	1,9	1,7
XIII. Items of stone, cement, plaster	1,3	1,8	2,0
XV. Metals and metal products	16,2	15,4	17,1
XVI. Machinery, electrical, electronics	16,1	13,3	10,8
XVII. Transportation equipment	13,1	9,8	10,4
XX. Miscellaneous goods and materials	7,0	9,5	8,5
Imports	**1990**	**1991**	**1992**
Total	100,0	100,0	100,0
I. Live animals & animal products	3,5	0,8	1,5
II. Vegetable products	4,0	6,8	7,3
III. Animal & vegetable fats, oils	0,5	0,3	0,7
IV. Food products, beverages, tobacco	4,3	6,6	7,4
V. Mineral products	42,4	48,2	32,0
VI. Chemical products	7,2	7,5	7,0
VII. Plastic & rubber materials	1,0	1,4	3,0
VIII. Hides, furs, etc.	1,0	0,3	1,3
IX. Wood, charcoal, fibre products	0,8	0,6	0,6
X. Pulp, wood fibres, paper wastes	0,5	0,7	1,5
XI. Textiles and products	2,9	4,5	9,5
XII. Footwear, umbrellas, ties, etc.	0,2	0,8	0,7
XIII. Items of stone, cement, plaster	1,2	1,3	0,9
XV. Metals and metal products	5,7	4,3	4,6
XVI. Machinery, electrical, electronics	14,5	10,0	15,3
XVII. Transportation equipment	7,0	2,3	2,9
XX. Miscellaneous goods and materials	0,8	0,5	0,9

Source: Comisia nationala pentru statistica, *Anuarul statistic al Romaniei, 1991, 1992; Romanian Economic Newsletter*, April-June 1993; Comisia nationala pentru statistica, *Romania in cifre*, 1993.

Table 3b

Production structures and export dependencies from the input-output tables of 1989 and 1990 (percentage)

(%)

	1989 Share I	1990 Share I	1989 Exports/domestic output	1990 Exports/domestic output
Total industry	100,0	100,0	12,5	10,6
Coal mining & preparation	1,3	0,9	0,2	0,2
Extraction of oil	0,9	1,8	0,0	0,0
Natural gas extraction	0,5	0,9	0,0	0,0
Ferrous metallurgy	0,6	0,5	0,0	0,0
Non-ferrous metallurgy	1,2	0,4	0,0	0,4
Mining of minerals	0,5	0,6	0,0	0,0
Sand & clay	0,1	0,1	0,0	0,0
Minerals for chemicals	0,1	0,0	0,0	0,0
Salt preparation	0,0	0,0	45,2	60,7
Other non-metallic ores	0,1	0,1	1,0	0,0
Tinned meat	5,7	6,9	5,4	0,2
Tinned fish	0,2	0,2	2,3	0,4
Tinned fruits & vegetables	0,9	1,0	9,2	2,8
Edible oils	0,4	0,6	0,0	0,0
Milk & cheese products	1,3	1,4	6,1	0,0
Starch	0,2	0,2	0,0	0,0
Animal food	1,8	1,9	0,0	0,0
Other foods	3,3	2,9	2,8	0,1
Beverages	2,6	3,4	3,1	0,8
Tobacco industry	1,0	1,2	0,2	0,2
Textiles	6,4	7,0	7,8	8,7
Clothing	3,3	3,2	24,0	25,3
Fur skin articles	0,2	0,3	58,5	20,9
Footwear & leather goods	1,7	1,8	10,7	16,9
Wood working	1,6	1,5	14,2	11,0
Pulp & paper	1,1	1,2	7,3	4,3
Printing	0,5	0,6	1,4	0,8
Coke industry	0,8	0,8	0,0	0,0
Refinery processing	6,5	6,3	41,5	29,7
Dyes, other inorganic chemicals	1,8	1,9	45,7	33,2
Fertilizers & pesticides	0,9	0,7	0,8	0,1
Paints & varnishes	0,5	0,6	10,1	7,1
Pharmaceuticals	0,5	0,5	7,0	10,6
Soap & detergents	0,4	0,5	1,	5,2
Other chemical products	1,4	1,3	2,1	2,5
Synthetic fibres	0,8	0,9	19,5	12,1
Synthetic rubber products	0,9	0,9	18,7	5,6
Packing materials	2,2	2,3	3,3	0,6
Glass & glass products	0,5	0,6	15,8	17,9
Ceramics	0,2	0,2	38,9	14,9
Clay tiles	0,0	0,0	13,4	45,1
Bricks	0,1	0,1	16,9	21,9
Cement, lime	0,6	0,6	6,6	10,0
Fabrication of concrete	2,5	2,3	1,4	10,4
Quarry products	0,2	0,2	0,0	0,2
Other non-metallic minerals	0,3	0,3	2,3	8,3
Ferrous metal products	2,0	1,7	1,4	0,0
Pipes	2,6	2,5	5,8	5,3
Other metallurgical products	0,8	0,6	143,4	120,7
Non-ferrous metals products	1,9	1,9	13,6	25,2
Ferrous casting & foundries	1,8	1,6	0,0	0,0
Steel structures	5,5	4,5	1,8	5,2
Motors, turbines, pumps,	1,0	1,1	2,0	2,5
General equipment	2,3	2,5	0,8	0,6
Farm implements	1,9	1,9	9,2	7,3
Machine-tools	1,1	1,0	6,9	12,8
Other machines	4,6	4,6	16,4	13,2
Electrical machines & instruments	0,5	0,5	16,9	22,6
Computing equipment	0,5	0,4	0,9	1,3
Electric materials	2,1	2,3	5,5	12,9
Radio, TV, recording	1,8	1,6	0,6	0,7
Medical instruments, clocks	2,3	2,1	4,8	8,2
Motor vehicles	2,7	2,3	24,5	30,0
Ship building, repair	0,8	0,9	15,0	8,0
Hauling equipment	1,5	1,1	34,0	30,9
Aircraft	0,5	0,3	12,7	15,6
Motorcycles, bicycles	0,4	0,4	12,4	0,8
Furniture	2,2	1,8	50,1	44,9
Other industry	0,6	0,8	6,9	11,7

Source: National Commission for Statistics, *National Accounts Years 1989 and 1990.*

Table 3b.1

The most sensitive Romanian sectors in terms of the share of domestic output exported

(%)

	1989	1990
Furniture	50	45
Petroluem refining	42	30
Inorganic chemicals	36	33
Hauling equipment	34	31
Motor vehicles	25	30
Clothing	24	25
Electrical machines	17	23

In order to check stability, we present the export ratios of products similar to the branches in Table 3b.

The export shares of clothing and footwear are roughly the same in 1989 and the first half of 1992. Other items are difficult to compare because of the lack of similar data. Unfortunately, the dataseries for 1992 was discontinued (but has recently been continued leaving some months unreported) so Table 3c could not be updated.

Table 3c

Export deliveries of selected products as a share of total deliveries, first half 1992

(%)

	Product[1]	Exports/production	Stocks/production
1	Coal, net prepared	0,0	5,7
1	Metallurgical coke	4,2	4,7
2	Gasoline	35,3	13,0
2	Diesel	17,6	10,0
2	Extracted petrol	0,0	3,6
3	Extracted natural gas	0,0	0,0
7	Crude steel	0,0	1,7
7	Cold finished rolled steel	33,1	19,2
7	Pipes	19,6	21,2
7	Plate, cold rolled	11,6	3,4
8	Lumber	12,7	32,3
9	Electric energy	0,0	0,0
9	Thermal energy	0,0	0,0
13	Refrigerators	18,9	3,5
13	Tractors	44,9	50,5
13	Electric motors -,25hp	30,9	7,3
13	Electric motors +,25hp	9,5	33,6
13	Televisions	5,8	11,6
13	Autos, passenger	34,7	21,3
13	Buses	0,0	28,8
14	Chemical fertilizers	67,7	3,6
14	Pesticides	3,6	11,5
14	Synthetic rubber	5,5	5,5
14	Paints & varnishes	4,0	11,0
14	Medicines	13,0	28,0
14	Soap	0,6	26,5
14	Detergents	0,0	7,5
15	Tires (passenger autos)	12,2	23,1
16	Cement	37,8	18,8
17	Furniture	52,5	27,4
18	Paper	7,3	10,2
19	Cloth, cotton	5,0	31,7
19	Cloth, wool	13,0	41,4
20	Knitwear	14,8	33,7
20	Stockings	9,4	10,5
20	Clothing	25,6	28,1
21	Footwear,leather	19,8	22,8
22	Glass, flat	43,0	18,3
23	Flour, wheat & rye	0,0	2,0
23	Alcohol (including synthetic)	0,0	9,1
23	Wine for consumption	5,6	58,2
23	Slaughter meat (including organs)	8,7	7,0
23	Prepared meat	0,0	1,5
23	Milk for consumption	0,0	0,2
23	Butter	0,0	6,3
24	Newsprint	0,0	4,7

[1] Approximate category in Table 3a.

Source: Calculated from Comisia nationala pentru statistica, *Informatii statistice operative, Seria I: Industrie*, various issues.

Table 3c.1

The export deliveries of selected products as a share of total deliveries (January-June 1992)

(%)

Furniture	53
Clothing	26
Chemicals and refining	:
Footwear, leather	20
Flat glass	43
Ferrous metallurgy	:

1.2. Definition of trade structure

As in the cases of employment and industrial production, the definition of trade structure is confused by the available statistical record. Manufacturing trade has not been made available for the groups of countries requested, although we have reconstructed total trade for such groups of countries. In any case, Romanian totals have been aggregated across payment regions and are highly distorted because of price differences and over-valued exchange rates for the CMEA countries. We advise great caution in the interpretation of such cases.

Published statistics on foreign trade are denominated in both dollars and clearing roubles. According to the Ministry of Trade and Tourism, in 1991 the statistics assume that USD 1 = R 0,754. This rate, of course, far overvalues the rouble. Otherwise, the leu was valued at 35 per US dollar for January-April 1991, 60 per dollar for May-October 1991 and 185 per dollar for November-December 1991. The approximate December 1992 rate was 460 per US dollar with street rates up to 600 per US dollar and in December 1993, fell to over 1 000 per US dollar officially and over 1 800 on the black market.

1.2.1. Geographical distribution

Table 4a, is based on total trade because only manufacturing trade is not available to us. The former GDR is included in EC trade for 1988 so comparability of the changes are not affected by German unification. Dollar and rouble trade have been converted to a common base according to commercial rates that overvalued the trade with the former CMEA countries.

Table 4a

Geographical distribution of Romanian exports and imports, 1988-92

(%)

Exports	1988	1990	1991	1992
EC	28,5	31,4	34,5	32,5
EFTA	3,2	3,6	5,0	5,6
Japan	1,3	1,6	2,1	1,3
USA		5,8	3,0	2,0
Total OECD	41,4	45,8	44,1	
Total Central and Eastern Europe		32,6	23,9	
ex-USSR	21,7	25,2	27,0	
ex-CMEA	11,4	9,1	8,6	
Developing countries			17,7	27,1
Other	25,5	19,9	20,3	
Total	100,0	100,0	100,0	100,0
Imports	**1988**	**1990**	**1991**	**1992**
EC	13,8	19,7	27,5	37,5
EFTA	1,3	3,9	6,0	6,5
Japan	0,7	0,8	1,2	1,2
USA		2,8	3,2	3,8
Total OECD	20,8	31,3	38,2	51,1
Total Central & Eastern Europe		28,3	24,3	
ex-USSR	31,6	23,6	19,3	
ex-CMEA	15,7	12,1	8,8	
Developing countries			30,3	22,8
Other	31,8	33,0	33,7	
Total	100,0	100,0	100,0	100,0

The dollar and rouble trade have been converted to a common base using official exchange rates.
Source: Comisia nationala pentru statistica, *Informatii statistice operative, Seria C: Comert,* various issues.

The share of Romanian exports going to the EC increased slowly from about 28% in 1988 to 35% in 1991, then dropped slightly to 33% in 1992 and rose again to 36% in the first half of 1993. The share of Romanian exports going to the former USSR increased slowly from 1988 to 1991. These increases were largely offset by decreases in export shares of other CMEA countries and the rest of the world.

At the same time, the share of Romanian imports from the EC increased significantly in every period in the table from about 14% in 1988 to about 38% in 1992. It rose again to over 46% in the first half of 1993. The share of Romanian imports from both the former USSR (in contrast to exports) and other CMEA countries dropped significantly.

Table 4b reflects the official Romanian totals by currency group. The initial effects of the transformation have been generally 'favourable' for Romania's trading partners in convertible currencies in the sense that their increasing exports to Romania have not been achieved at the 'cost' of providing for similar increases in imports from Romania. Trade denominated in roubles is virtually disappearing and, in contrast to convertible currency trade, reflects Romanian export surpluses.

Table 4b

Changes in rouble and dollar foreign trade, 1989-92

	Exports		Imports	
	A. In million currency units			
	R	USD	R	USD
1989	4 641	5 990	5 126	3 471
1990	2 699	3 502	4 437	5 223
1991	830	3 537	574	5 298
1992	89	4 286	143	5 433
	B. Index			
1989	100	100	100	100
1990	58	59	87	151
1991	18	60	11	138
1992	1,9	72	2,8	157

Source: Comisia nationala pentru statistica, *Informatii statistice operative, Seria C: Comert,* various issues.

1.2.2. Sectoral trade by geographic groups

It has been difficult to obtain sectoral trade by geographic groups for Romania. We present several alternative views, each of which provides limited information.

Table 5a shows exports and imports for 1989 and 1990 according to the CMEA broad commodity groups. The same data could not be found for 1991. Even though the CMEA commodity groups are highly aggregated, some of the potential for shifting trade from the former CMEA to the EC can be identified in commodity terms.

Romanian exports decreased from 1989 to 1990 in each category to both currency areas. Exports in roubles decreased both as trade has been shifted to dollars and as export outlets in Eastern Europe declined. It remains to be seen why exports in dollars have also declined (there is some suggestion that Romanian companies have lacked access to raw materials and export financing). It is a more difficult question to evaluate the extent to which export capacity for the former CMEA region can be used to export to the EC.

The largest potentials for shifts are in two categories: machinery/equipment and consumer manufactures. It is interesting to note that the percentage decline in exports in these two groups is about the same for the rouble trade and the dollar trade. This, of course, overlooks a substantial bias because of rouble depreciation not reflected in the Romanian statistics. The high ratios of rouble to dollar trade for the two groups in 1990 suggest there were still substantial possibilities for diversion of trade from roubles to other areas.

Tables 5b.1 and 5b.2 show exports and imports for 1990 to 1992 according to the harmonized system. The data reflect several phenomena: the conversion of trade with the former CMEA countries from roubles to convertible currencies, the relative decline of that trade, and changes in the composition of trade with countries which previously traded in convertible currencies.

Table 5a

Exports and imports by two main currency areas according to the CMEA broad commodity groups, 1989 and 1990 (million lei, roubles, and US dollars)

Commodity group	Exports		Imports	
	1989	1990	1989	1990
		Machinery and equipment		
Total in lei	49 067,2	41 715,0	34 360,8	59 737,9
- in R	2 632,7	1 656,2	2 067,9	2 320,2
- in USD	516,3	358,7	144,2	558,9
		Fuels, minerals, metals		
Total in lei	53 921,7	45 504,7	75 633,1	89 936,3
- in R	508,1	310,3	2 106,8	1 366,2
- in USD	2 877,9	1 703,8	2 686,1	2 706,9
		Chemicals, fertilizers, rubber		
Total in lei	15 933,1	8 822,8	7 470,6	13 319,5
- in R	220,5	86,7	242,4	148,7
- in USD	782,2	307,0	232,1	447,9
		Construction materials		
Total in lei	3 399,9	3 501,1	1 260,6	1 841,9
- in R	92,6	49,7	47,5	28,3
- in USD	122,7	108,4	32,8	55,2
		Non-food materials		
Total in lei	6 928,8	5 448,6	7 329,0	13 557,6
- in R	81,0	48,4	230,3	157,6
- in USD	354,6	194,1	235,0	450,5
		Live animals		
Total in lei	25,3	36,9	13,0	10,0
- in R	—	—	0,3	—
- in USD	1,6	1,6	0,5	0,4
		Food materials		
Total in lei	939,5	448,2	2 322,1	10 653,6
- in R	14,9	2,8	123,5	77,5
- in USD	44,3	17,0	25,5	394,6
		Food products		
Total in lei	7 162,6	1 023,0	1 980,5	10 598,5
- in R	227,4	15,9	49,1	69,9
- in USD	227,4	30,5	76,2	398,8
		Consumer manufactures		
Total in lei	30 401,4	28 691,1	4 612,6	10 256,6
- in R	863,9	529,2	258,3	268,5
- in USD	1 063,1	781,6	38,1	209,9

Source: Comisia nationala pentru statistica, *Informatii statistice operative, Seria C: Comert*, February 1991.

Table 5b.1

Structure of exports by main groups of commodities, 1990, 1991, 1992

(%)

	1990	1991	1992
I. Live animals and animal products	1,16	4,34	4,45
- Live animals	0,47	1,88	1,84
- Meat and edible offals	0,12	1,88	2,03
II. Vegetable products	0,58	1,88	1,16
- Edible fruits	0,12	0,70	0,48
IV. Foodstuffs, beverages, tobaccco	0,47	0,94	1,16
- Alcoholic beverages & vinegars	0,23	0,35	0,39
V. Minerals	31,51	18,05	13,84
- Salt sulphur, plaster, lime & cement	1,74	2,34	1,94
- Fuel, wax and mineral oils	29,77	15,59	11,91
VI. Chemicals and connected products	6,63	7,97	10,16
- Inorganic chemicals	1,40	1,64	2,13
- Organic chemicals	1,28	1,41	2,03
- Fertilizers	3,26	4,22	5,13
VII. Plastic materials, rubber & plastic articles	2,56	1,52	2,03
- Plastic materials & plastic articles	2,21	1,29	1,65
- Rubber & rubber articles	0,35	0,23	0,39
IX. Wood products, cork & wattles	4,53	3,28	3,78
- Wood, wood charcoal & wood articles	4,19	2,81	3,39
- Vegetal fibre knitting products and wattles	0,35	0,47	0,39
XI. Textiles and textile articles	10,12	9,50	11,04
- Synthetic or artificial fibres	0,58	0,47	0,68
- Discontinuous synthetic/artificial fibres	0,81	0,94	1,55
- Clothes and accessories			
- Knitwear	1,74	1,76	2,03
- Other than of knitwear	5,00	4,57	5,03
XII. Footwear, umbrellas, ties, etc,	1,63	1,88	1,65
XIII. Articles of stone, cement, ceramics, glass, etc.	1,98	2,11	2,13
- Ceramics	0,47	0,59	0,48
- Glass and glassware	1,40	1,52	1,45
XV. Basic metals and articles	20,58	17,82	17,81
- Pig-iron, iron, steel	11,51	9,96	10,55
- Pig-iron, iron & steel products	2,33	3,75	3,29
- Aluminium and aluminium articles	6,63	3,75	3,29
XVII. Electricals machinery & electronics	5,93	11,25	11,23
- Nuclear reactors, boilers	4,19	9,61	9,49
- Recorders of sound & image	1,74	1,64	1,74
XVIII. Transport means	4,07	8,79	10,75
- Vehicles & equipment for railways	0,12	3,28	2,90
- Motor vehicles, tractors	3,84	3,05	5,13
- Maritime & fluvial navigation	0,00	2,11	2,52
XX. Miscellaneous goods & products	8,26	10,67	8,81
- Furniture, lighting	7,67	10,55	8,71
Total	100,00	100,00	100,00

Source: National Commission for Statistics, *Social situation and economy of Romania in 1992*, September 1993; and PlanEcon Report, *Romanian economic monitor*, Vol. IX, no 37-39, 10 November 1993.

Table 5b.2

Structure of imports by main groups of commodities and by hard currency relation, 1990, 1991, 1992

(%)

	1990	1991	1992
I. Live animals and animal products	6,0	0,9	1,5
- Meat and edible offals	3,8	0,2	0,6
- Milk, eggs, honey	0,9	0,5	0,6
II. Vegetable products	6,3	7,2	7,7
- Vegetables	0,2	0,2	1,2
- Edible fruits	0,5	0,6	0,7
- Coffee, tea, condiments	0,8	0,6	0,4
- Cereals	2,4	4,0	4,3
- Oilseeds, industrial crops	2,4	1,7	0,8
III. Edible fats and oils	0,9	0,3	0,7
IV. Foodstuffs, beverages, tobacco	5,7	6,8	7,9
- Sugar and products	1,2	1,8	2,4
- Chocolate and products	0,5	0,6	0,6
- Alcoholic beverages & wines	0,3	1,1	1,4
- Residual and waste	2,6	0,9	1,0
- Tobacco and substitutes	0,4	1,3	1,0
V. Minerals	52,7	50,7	34,1
- Salt sulphur, lime & cement	1,5	1,4	1,2
- Minerals and ashes	2,7	4,9	1,7
- Fuel, wax and mineral oils	48,5	44,4	31,2
VI. Chemicals and connected products	9,1	7,9	7,4
- Anorganic chemicals	0,9	1,3	0,9
- Organic chemicals	1,4	2,0	2,5
- Pharmaceuticals	1,3	0,7	0,6
- Dyes, pigments, paints	1,0	0,6	0,9
- Miscellaneous chemical products	3,8	2,2	1,5
VII. Plastic & rubber materials	1,4	1,5	3,2
- Plastic materials & plastic articles	0,5	0,7	1,4
VIII. Hides, furs, etc	1,6	0,3	1,4
- Raw and tanned hides	1,6	0,2	1,2
XI. Textiles and textile articles	3,1	4,7	10,1
- Wool and fibres	0,2	0,3	1,0
- Cotton	2,0	2,4	2,5
- Synthetic or artificial fibres	0,1	0,2	1,4
- Discontinuous synthetic/artificial fibres	0,2	0,2	2,4
Clothes and accessories of			
- Knitwear	0,2	0,6	0,8
- Other than of knitwear	0,1	0,3	0,6
XII. Footwear, umbrellas, ties, etc,	0,2	0,8	0,7
XIII. Articles of stone, cement, plaster	1,6	1,3	1,0
- Ceramics	0,9	0,9	0,5
XV. Basic metals and articles	6,0	4,3	4,8
- Pig-iron, iron, steel	2,2	1,5	1,9
- Pig-iron, iron & steel products	0,5	1,5	1,2
XVII. Electrical machinery & electronics	4,2	11,3	16,3
- Nuclear reactors, boilers	2,4	6,7	10,7
- Recorders of sound & image	1,7	4,6	5,6
XVIII. Transport means	1,3	2,0	3,1
- Motor vehicles, tractors	0,8	2,0	2,7
Total	100,0	100,0	100,0

Source: National Commission for Statistics, *Social situation and economy of Romania in 1992*, September 1993; and PlanEcon Report, *Romanian economic monitor*, Vol. IX, Nos 37-39, 10 November 1993.

On the export side, the most noteworthy changes are the decreased share of refined petroleum products (under category V) and the increased shares of categories XVII and XVIII, which cover various categories of machinery. The latter probably reflect exports to the former CMEA and Third World countries and China.

On the import side, the decrease in imports of category V is the complement to the same decrease on the export side. Romania, at least temporarily, reduced its refining operations because of a shortage of domestic fuels and convertible currencies and a cost-price squeeze. Compensating increased import shares show up in textiles, electrical machinery and electronics.

1.2.2.1. Trade with the EC in Romanian statistics

As can be seen in Table 5c, Romania's large export surplus in 1989 all but disappeared in 1990 and 1991 (if one accepts the dollar-rouble exchange rate as meaningful) and 1991. The rouble-denominated trade reflects Romania's trade with the former GDR. The import balance increased in 1990 because Romania's deliveries fell. In 1992, rouble-denominated trade with the EC should disappear. That year saw imports shoot up by nearly 40% while exports to the EC further stagnated, generating a deficit in total trade with the EC of over 1 000 million USD.

Table 5c

From Romanian data: Romanian exports to the EC and imports from the EC, 1989-92

Year	Exports FOB Million USD	Million R	Total Million lei	Imports CIF Million USD	Million R	Total Million lei
1989	2 658,1	568,6	51 341,7	476,9	640,9	17 563,9
1990	1 659,1	202,3	42 545,7	1 209,3	662,1	41 345,6
1991	1 433,7	4,6	110 739,8	1 363,0	86,2	118 635,1
1992	1 243,3			2 213,3		

Sources: Anuarul statistic al Romaniei 1992; Informatii statistice operative: seria Comert, May 1993.

The EC is Romania's market for 50 to 60% of its exports of edible oils, food products, furs and hides, textiles and clothing, footwear, cement, and miscellaneous goods (the most important item being furniture). Table 5d also shows that the EC now provides 50% or more of imports of agricultural and food products, chemicals, hides and furs, textiles and clothing, footwear, and transportation equipment.

Looking at the structure of exports and imports, given in Part B of Table 5d, it is clear that a big part of the decline in Romania's exports to the EC, in fact nearly two thirds of it, was a decline in exports of mineral and oil products. As can be seen in Table 5d the share of exports fell from about 35% to 13%. Rising chemical and rubber product exports offset a small part of the decline. Most of it was picked up by textiles and metal products. The share of furniture exports (under 'miscellaneous' in the table) also rose.

In terms of Romanian imports from the EC, chemicals and electrical machinery lost large shares. Their losses were gained by textiles. So both textile exports and textile imports gained shares from 1990 to 1992, reflecting, we believe, growing outward processing trade (OPT).

1.2.2.2. Romania's trade in manufactures with the EC in EC statistics

The annual balances of Romania's trade in manufactured goods with the EC, in Table 5e, show a similar shift from surplus in 1988 and 1989 (more than a ECU 1 000 million in each year) to a deficit of over ECU 200 million in 1992. However, the overall deficit in manufactured goods is much smaller than the total trade deficit with the EC that is shown in Table 5c from Romanian data. It is also difficult, of course, to resolve differences in partner country statistics.

Table 5d

From Romanian data: Romanian exports to the EC and imports share and structure from the EC according to 2-digit harmonized system classification, 1990-92

(%)

EC shares of Romanian exports	Part A - EC shares of exports and imports 1989	1990	1991	1992
Total	30,6	31,5	34,5	32,5
I. Live & animal products		32,5	32,7	25,8
II. Vegetable products		30,8	42,4	50,6
III. Animal & vegetable fats, oils		,0	96,3	89,0
IV. Food products, beverages, tobacco		63,6	58,1	54,3
V. Mineral products		56,8	55,3	29,2
VI. Chemical products		15,9	22,3	17,2
VII. Plastic & rubber materials		23,1	35,2	43,0
VIII. Hides, furs, etc		20,4	37,4	57,8
IX. Wood, charcoal, fibre products		30,3	31,2	30,6
X. Pulp, wood fibres, paper wastes		42,1	62,1	31,6
XI. Textiles and products		40,6	52,4	58,3
XII. Footwear, umbrellas, ties, etc		25,2	54,5	60,3
XIII. Items of stone, cement, plaster		49,0	56,9	60,2
XV. Metals and metal products		20,9	25,0	25,6
XVI. Machinery, electrical, electronics		18,4	18,0	22,0
XVII. Transportation materials		10,0	8,2	8,9
XX. Miscellaneous goods and materials		59,6	67,6	66,9
EC share of Romanian imports	**1989**	**1990**	**1991**	**1992**
Total	13,0	19,7	27,4	37,6
I. Live & animal products		44,0	81,5	50,2
II. Vegetable products		20,9	41,8	50,6
III. Animal & vegetable fats, oils		56,1	77,5	74,1
IV. Food prods, beverages, tobacco		41,3	38,5	53,2
V. Mineral products		2,4	7,8	10,8
VI. Chemical products		51,5	45,7	64,6
VII. Plastic & rubber materials		39,2	47,4	40,8
VIII. Hides, furs, etc		18,1	29,6	64,1
IX. Wood, charcoal, fibre products		29,7	43,6	40,6
X. Pulp, wood fibres, paper wastes		17,3	46,0	39,2
XI. Textiles and products		24,3	19,1	68,0
XII. Footwear, umbrellas, ties, etc		55,4	42,6	64,9
XIII. Items of stone, cement, plaster		36,4	48,6	44,0
XV. Metals and metal products		26,3	38,0	45,8
XVI. Machinery, electrical, electronics		34,0	58,2	29,9
XVII. Transportation materials		12,1	38,8	61,0
XX. Miscellaneous goods and materials		34,3	46,5	58,6

Source: Comisia nationala pentru statistica, *Anuarul statistic al Romaniei, 1991, 1992; Romanian Economic Newsletter*, April-June 1993; *Romania in cifre*, 1993.

Part B - Structure of exports and imports with the EC

Exports	1989	1990	1991	1992
Total		100,0	100,0	100,0
I. Live & animal products		0,4	3,5	3,8
II. Vegetable products		0,6	2,0	2,0
III. Animal & vegetable fats, oils		0,0	0,4	0,6
IV. Food products, beverages, tobacco		0,7	1,5	2,1
V. Mineral products		34,9	23,2	13,4
VI. Chemical products		2,6	4,5	5,8
VII. Plastic & rubber materials		1,3	1,4	3,0
VIII. Hides, furs, etc		0,4	0,6	1,2
IX. Wood, charcoal, fibre products		2,9	2,6	3,8
X. Pulp, wood fibres, paper wastes		0,8	1,0	0,5
XI. Textiles and products		12,6	13,8	21,3
XII. Footwear, umbrellas, ties, etc		1,8	3,0	3,5
XIII. Items of stone, cement, plaster		2,1	3,0	4,2
XV. Metals and metal products		10,7	11,2	15,1
XVI. Electrical machinery, electronics		9,4	7,0	8,2
XVII. Transportation equipment		4,2	2,3	3,2
XX. Miscellaneous goods and materials		13,3	18,8	19,7
Imports		**1990**	**1991**	**1992**
Total		100,0	100,0	100,0
I. Live & animal products		7,9	2,3	1,9
II. Vegetable products		4,2	10,4	9,8
III. Animal & vegetable fats, oils		1,4	0,7	1,3
IV. Food products, beverages, tobacco		8,9	9,2	10,4
V. Mineral products		5,3	13,6	9,2
VI. Chemical products		18,8	12,5	12,0
VII. Plastic & rubber materials		2,0	2,4	3,3
VIII. Hides, furs, etc		0,9	0,3	2,2
IX. Wood, charcoal, fibre products		1,2	1,0	0,6
X. Pulp, wood fibres, paper wastes		0,4	1,2	1,6
XI. Textiles and products		3,6	3,1	17,2
XII. Footwear, umbrellas, ties, etc		0,5	1,3	1,2
XIII. Items of stone, cement, plaster		2,3	2,4	1,1
XV. Metals and metal products		7,7	5,9	5,6
XVI. Electrical machinery, electronics		25,0	21,2	12,2
XVII. Transportation equipment		4,3	3,2	4,7
XX. Miscellaneous goods and materials		1,4	0,9	1,4

Source: Comisia nationala pentru statistica, *Anuarul statistic al Romaniei, 1991, 1992; Romanian Economic Newsletter,* April-June 1993; *Romania in cifre,* 1993.

Table 5e

From EC data: Romanian trade in manufactured goods with the EC, 1988-92

(million ECU)

	Exports to the EC	Imports from the EC	Balance
1988	1 536,1	451,3	1 084,8
1989	1 638,5	516,9	1 121,6
1990	1 165,0	900,7	264,3
1991	1 202,4	962,2	240,2
1992	1 333,9	1 557,0	- 223,1

Source: Data provided by the EC.

1.2.2.3. The commodity composition of Romania's trade with the EC (the view from EC data)

The EC data provide a more consistent and detailed view of Romania's trade in manufactured goods. Tables 5f.1 and 5f.2 give, respectively, the export shares and the import shares for 1988 to 1992, plus the change in percentage shares from 1988 to 1992.

Table 5f.1

Sectoral shares of Romanian exports to the EC, 1988-92 (EC trade data)

(%)

NACE	1988	1990	1991	1992	88-92
21 Extraction & preparation metal ores	0,00	0,00	0,49	0,00	0,00
22 Production of metals	16,45	12,25	8,93	9,04	- 7,40
23 Non-metallic minerals extraction	0,00	0,01	0,02	0,04	0,04
24 Non-metallic mineral production	4,15	5,73	7,23	5,31	1,16
25 Chemical	7,69	4,75	6,12	5,85	- 1,84
26 Man-made fibres	1,46	0,92	0,89	0,94	- 0,52
31 Metal articles	3,10	3,68	3,32	2,90	- 0,20
32 Mechanical engineering	3,04	4,40	4,47	3,62	0,58
33 Office machinery	0,03	0,04	0,08	0,02	- 0,01
34 Electrical engineering	3,39	3,57	4,37	3,07	- 0,32
35 Motor vehicles & parts	3,06	1,11	1,01	0,96	- 2,09
36 Other transport	0,18	0,56	1,04	1,38	1,20
37 Instrument engineering	0,19	0,14	0,16	0,19	0,00
41 Food, beverages, tobacco	4,26	1,25	3,16	2,76	- 1,50
42 Food, beverages, tobacco	0,05	0,05	0,09	0,09	0,04
43 Textile	5,94	7,31	7,87	8,35	2,41
44 Leather	0,48	0,45	0,39	0,47	- 0,01
45 Footwear & clothing	21,10	27,26	26,92	33,49	12,39
46 Timber & wood	22,25	23,67	21,33	18,85	- 3,40
47 Paper, printing	1,33	0,96	0,45	0,29	- 1,04
48 Rubber & plastics	1,27	1,25	0,91	1,35	0,08
49 Other	*0,61*	*0,68*	*0,81*	*1,02*	*0,40*
Total	100,00	100,00	100,00	100,00	

Source: Calculated from data provided by the EC.

Table 5f.2

Sectoral shares of Romanian imports from the EC, 1988-92 (EC trade data)

(%)

NACE	1988	1990	1991	1992	92-88
21 Extraction & preparation metal ores	2,42	1,92	1,07	,66	- 1,76
22 Production of metals	9,08	5,99	5,20	2,19	- 6,88
23 Non-metallic minerals extraction	0,44	0,63	0,22	0,13	- 0,31
24 Non-metallic mineral production	3,86	2,82	1,76	1,32	- 2,53
25 Chemical	25,49	23,32	13,27	7,90	- 17,59
26 Man-made fibres	0,19	0,32	0,32	0,25	0,06
31 Metal articles	3,09	1,88	3,20	3,29	0,20
32 Mechanical engineering	5,62	7,84	19,69	16,98	11,37
33 Office machinery	,54	0,60	2,06	1,22	0,68
34 Electrical engineering	5,34	4,53	8,32	7,64	2,30
35 Motor vehicles & parts	1,95	2,30	3,46	4,91	2,96
36 Other transport	3,34	1,27	1,10	9,18	5,84
37 Instrument engineering	0,81	1,26	1,82	1,04	0,24
41 Food, beverages, tobacco	5,58	16,57	7,42	3,90	- 1,68
42 Food, beverages, tobacco	0,99	5,95	8,36	7,61	6,62
43 Textile	10,10	7,27	6,24	17,96	7,86
44 Leather	3,31	1,48	1,99	1,97	- 1,34
45 Footwear & clothing	3,67	3,14	4,62	4,39	,73
46 Timber & wood	1,03	1,48	,61	,47	- 0,56
47 Paper, printing	1,78	1,43	1,82	1,67	- 0,11
48 Rubber & plastics	5,80	3,40	3,59	2,89	- 2,92
49 Other	5,59	4,62	3,88	2,41	- 3,18
Total	100,00	100,00	100,00	100,00	

Source: Calculated from data provided by the EC.

Romania's trade overall has shifted to reflect more of its assumed comparative advantages. There are, nevertheless, special situations, such as the temporary shift towards net imports of food products and some shifts away from energy-intensive exports such as chemicals and metallurgy.

The composition of Romanian imports from the EC has changed more than the composition of Romanian exports to the EC. This is the expected result of two different forces. Supply constraints limit changes on the export side. On the import side, the change in political and economic regime has seen a significant change in the relative priorities given to imports, while a much wider choice of sources are available.

The structure of manufactured exports to the EC. The export shares of NACE 45, footwear and clothing, increased from 21% to about 33% while NACE 43, textiles, increased from about 6% to over 8%. Worth noting in this regard is that textile imports jumped in 1992 so that this branch also increased its share of imports compared to 1988.

After holding a roughly constant 21-22% share through 1991, NACE 46, wood products including especially furniture, lost some share. The greatest decline in percentage points is NACE 22, metal products, whose share fell from 16% to 9%.

Romanian exports to the EC have been affected by energy and raw materials shortages. These might account for the reduction in export shares of chemicals and processed metals. A reduction in food exports is accounted for by the combination of regime change, pent-up consumer demand, and transition problems in the farm sector.

A contradiction between Romanian and EC statistics shows up in Table 5d, Part B, and Tables 5f.1 and 5f.2. Mineral products (category V) show a very large decline in share in the Romania data that is not reflected in NACE 24, non-metallic mineral products. We assume both categories refer mostly to refined petroleum products. The discrepancy probably arises because Romania counts as exports to the EC of petroleum products sold in the EC (Rotterdam) with a destination outside of the EC.

The structure of manufactured imports from the EC. Romania's critical need to re-equip its industry must account for the big increases in the import shares of mechanical engineering (NACE 32), from about 5% to nearly 17-20% and electrical engineering (NACE 34) from 5% to 8%. Also, food, beverages and tobacco (NACE 41 and 42) increased shares, especially in 1990, in order to make up for both the Ceausescu years and the impact of transition on farming.

By comparison, import shares of chemicals decreased from 25% to 8%, of metals from 9% to 2%, and processed rubber and plastics from 6% to 3%. These declines probably reflect decreased industrial materials.

The big gainer in import shares, although not until 1992, is textiles (NACE 43). This surely reflects the increased activity in outward processing trade (OPT). It is worth noting that the textile industry is likely to be among the first privatized and already foreign investors are taking shares.

On the import side, priority changes would explain the increased shares of food, beverages, and tobacco (NACE 41 and 42). In spite of investments being down, the most impressive increases in import shares are in the engineering areas. Here, Romania is also shifting sources of supply to the higher-quality imports available from the EC (compared to sources in the former CMEA countries).

The large reduction in the import shares of chemicals requires closer consideration. It may be an effect of the cut back in production in the industry as the result of shifting natural gas and other raw materials into the energy production areas. There

Table 5g

Changes in the composition of Romanian trade in manufactures with the EC (absolute change in percentage points from 1988-91 and from 1988-92)

Export composition	1988-91	1988-92
45. Footwear & clothing	+ 5,8	+ 12,4
24. Non-metallic mineral products	+ 3,1	+ 1,2
43. Textiles	+ 1,9	+ 2,4
36. Other transport	+ 0,9	+ 1,2
41. Food, beverage, tobacco	– 1,1	– 1,5
25. Chemicals	– 1,6	– 1,3
35. Motor vehicles & parts	– 2,0	– 2,9
22. Processed metals	– 7,5	– 7,4
46. Timber & wood	– 0,9	– 3,4
Import composition		
32. Mechanical engineering	+ 13,9	+ 11,4
42. Food, beverages, tobacco	+ 9,2	+ 6,6
34. Electrical engineering	+ 4,0	+ 2,3
24. Non-metallic mineral products	+ 3,3	– 2,5
31. Metal manufactures	+ 2,8	+ 0,2
37. Instrument engineering	+ 2,7	+ 0,2
41. Food, beverages, tobacco	+ 1,6	– 1,7
36. Other means of transport	– 1,1	+ 5,3
21. Metal ores	– 1,3	– 1,8
35. Motor vehicles & parts	– 1,6	+ 3,0
49. Other manufactures	– 2,0	– 3,2
45. Footwear & clothing	– 2,9	+ 0,7
48. Rubber and plastics	– 3,4	– 2,9
22. Metal processing	– 3,9	– 6,9
43. Textiles	– 6,5	+ 7,9
25. Chemicals	– 17,1	– 17,6

Source: Calculated from data provided by the EC.

is no evidence yet of possible Romanian import barriers, although the general policies are identified below.

1.3. Trade performance *vis-à-vis* the EC

Table 6 presents the sectors having the highest and the lowest ratios of exports to imports. In terms of their weights in total exports, the most important commodities with high coverage ratios are NACE 453, ready-made clothing, and 467, wood furniture, because together they make up about 43% of Romania's exports to the EC. Another sector with a high coverage ratio and an important export share is NACE 221, iron and steel, with more than 6% of Romania's 1992 exports to the EC.

Commodities with the highest specialization indices are listed in Table 7. Romania is rather specialized compared to the EC

Table 6

The 10 sectors with highest and lowest coverage ratios for 1992

NACE	Commodity	Coverage ratio	Export share	Specialization index	G-L index
Total manufacturing		0,86	100,00	0,92	
242	Cement lime & plaster	1 541,76	1,96	20,11	0,00
464	Wooden containers	172,27	0,14	9,42	0,01
467	Wooden furniture	58,58	15,98	21,78	0,03
463	Joinery components	15,85	0,30	1,15	0,12
465	Other wood products	13,94	0,41	2,08	0,13
461	Processing of wood	13,67	0,57	0,38	0,14
466	Cork & straw articles	12,16	0,85	6,49	0,15
361	Shipbuilding	11,31	0,34	0,58	0,16
453	Clothing	9,91	27,54	6,27	0,18
492	Musical instruments	8,80	0,11	0,67	0,20
247	Glass & glassware	6,33	2,16	4,65	0,27
221	Iron & steel	6,10	6,19	4,84	0,28
462	Wood products	5,54	0,61	1,12	0,31
313	Secondary metals	5,48	0,25	0,88	0,31
255	Paint & varnish	0,01	0,01	0,03	0,01
482	Retread tyres	0,00	0,00	0,03	0,00
411	Edible oils	0,00	0,00	0,01	0,00
427	Brewing and malting	0,00	0,00	0,01	0,00
420	Sugar	0,00	0,00	0,00	0,00
429	Tobacco products	0,00	0,00	0,00	0,00
211	Extraction of iron ore	0,00	0,00	0,00	0,00
212	Extraction of non-ferrous metal	0,00	0,00	0,00	0,00
233	Salt extraction	0,00	0,00	0,00	0,00
241	Clay products	0,00	0,00	0,00	0,00
416	Grain milling	0,00	0,00	0,00	0,00
417	Spaghetti, macaroni	0,00	0,00	0,00	0,00
418	Starch products	0,00	0,00	0,00	0,00
419	Bread & bakery products	0,00	0,00	0,00	0,00
426	Cider	0,00	0,00	0,00	0,00
428	Soft drinks	0,00	0,00	0,00	0,00

Source: Calculated from data provided by the EC.

in the exports noted above in the discussion of coverage ratios. This includes wooden furniture, clothing, and iron & steel. Romania is also specialized, compared to the EC, in NACE 436, knitting, with 7% of Romania's export shares, and NACE 451, footwear, with 5% export share. Thus, the areas of textiles, clothing, and footwear, together with a number of wood products define Romania's revealed comparative advantage.

Romania's present position reflects a special position in trade with the EC even before 1990. One can see this, for example, in the case of clothing in 1988, which did not have a high coverage ratio but did have high values of specialization ratios and export shares. In 1988, high specialization was also achieved in the cases of NACE 224, processing of non-ferrous metals, and NACE 436, knitting.

Table 7

The 10 sectors with highest and lowest specialization indices (Romania versus the EC)

NACE	Commodity	Coverage ratio	Export share	Specialization index	G-L index
Total manufacturing		100,00	0,86	0,92	
467	Wooden furniture	21,78	15,98	58,58	0,03
242	Cement, lime & plaster	20,11	1,96	1 541,76	0,00
464	Wooden containers	9,42	0,14	172,27	0,01
362	Rolling-stock	6,70	0,64	0,70	0,82
466	Cork & straw articles	6,49	0,85	12,16	0,15
453	Clothing	6,27	27,54	9,91	0,18
221	Iron & steel	4,84	6,19	6,10	0,28
247	Glass & glassware	4,65	2,16	6,33	0,27
451	Footwear	4,33	5,12	2,78	0,53
222	Steel tubes	4,32	1,60	3,92	0,41
248	Ceramic goods	3,21	1,10	1,14	0,93
326	Transmission equipment	2,98	1,47	2,07	0,65
436	Knitting industry	2,69	7,08	2,27	0,61
260	Man-made fibres	2,39	0,94	3,19	0,48
456	Furs, fur goods	2,15	0,15	,46	0,63
465	Other wood products	2,08	0,41	13,94	0,13
211	Extraction of iron ore	0	0,00	0,00	0,00
212	Extraction of non-ferrous metal	0	0,00	0,00	0,00
232	Mining of salt	0	0,00	undefined	undefined
233	Salt extraction	0	0,00	0,00	0,00
241	Clay products	0	0,00	0,00	0,00
330	Office machinery	0	0,02	0,01	0,02
374	Clocks & watches	0	0,00	0,08	0,15
411	Edible oils	0	0,00	0,00	0,00
416	Grain milling	0	0,00	0,00	0,00
417	Spaghetti, macaroni	0	0,00	0,00	0,00
418	Starch products	0	0,00	0,00	0,00
419	Bread & bakery products	0	0,00	0,00	0,00
420	Sugar	0	0,00	0,00	0,00
426	Cider	0	0,00	0,00	0,00
428	Soft drinks	0	0,00	0,00	0,00
429	Tobacco products	0	0,00	0,00	0,00

Source: Calculated from data provided by the EC.

2. Current trade performance and market distortions

2.1. EC barriers to Romanian exports

Möbius and Schumacher remark that Romania and Poland have faced some increasing protection from the EC since 1988. In 1991, Romania had the largest share of its exports to the EC subject to quota restrictions and the highest average MFN duty rate. In both cases, average EC protection was up from 1990 and earlier years.

Romania fared well in the case of other non-tariff barriers (along with Poland). It scored '3' on the overall classification for duty, quotas, and other non-tariff barriers (as Hungary also did).

Romania's exports to the EC could have faced relatively higher protection for several reasons. One reason might be that it tended to export commodity groups facing high average protection. Another reason could be that within a given commodity group it tended to export the more protected varieties of the commodity.

Some inconclusive evidence is presented in Table 8a below. The commodities shown in the table accounted for about 75% of Romania's exports to the EC in 1991.

In the case of clothing that is strongly protected by the EC, Romania had larger shares of total exports even before 1990 than did the other four countries. On the other hand, it did not have larger shares of exports in some of the other highly-protected commodity groups, such as knitting, footwear, and iron and steel. Also, it had large shares in less-protected

Table 8a

Comparisons of EC protectionism for selected commodities: Romania versus four other countries, 1991

	Export shares	Classification				Total
		Duties/tariffs	Quantitative restrictions	Other non-tariff barriers	Public procurement and technical standards	
Clothing (453)						
Bulgaria	11,8	13,6	98,1	1,2	2	9
Czechoslovakia	5,5	13,2	95,0	1,6	2	9
Hungary	13,2	13,1	93,4	3,4	2	9
Poland	13,4	13,7	96,4	1,0	2	9
Romania	18,8	13,5	97,4	0,7	2	9
Furniture (467)						
Bulgaria	1,8	5,6	0,0	1,2	0	3
Czechoslovakia	2,1	5,6	0,0	1,3	0	3
Hungary	2,6	5,6	0,0	1,8	0	3
Poland	5,2	5,6	0,0	1,9	0	3
Romania	16,1	5,6	0,0	0,5	0	3
Oil refining (140)						
Bulgaria	3,1	5,1	0,0	0,0	0	2
Czechoslovakia	0,8	4,6	0,0	0,0	0	2
Hungary	2,0	5,1	0,0	0,0	0	2
Poland	2,0	4,9	0,0	0,0	0	2
Romania	14,9	5,3	0,0	0,0	0	2
Knitting (436)						
Bulgaria	4,9	13,8	99,1	0,0	0	6
Czechoslovakia	2,2	13,2	98,2	0,0	0	6
Hungary	4,3	13,3	99,4	0,0	0	6
Poland	2,3	13,4	98,9	0,0	0	6
Romania	6,2	13,3	99,8	0,0	0	6
Footwear (451)						
Bulgaria	2,9	8,2	0,0	100,0	2	8
Czechoslovakia	1,9	8,0	0,0	100,0	2	8
Hungary	5,1	6,7	0,0	100,0	2	7
Poland	2,2	6,9	0,0	100,0	2	7
Romania	3,9	6,9	0,0	100,0	2	7
Iron and steel (221)						
Bulgaria	9,8	4,5	99,9	99,9	0	8
Czechoslovakia	7,3	4,6	90,1	98,5	0	8
Hungary	2,8	4,5	99,4	99,9	0	8
Poland	3,5	4,2	99,1	99,2	0	8
Romania	3,9	4,7	99,4	99,4	0	8
Cement and lime (242)						
Bulgaria	0,3	3,2	0,0	0,0	0	1
Czechoslovakia	1,7	3,2	0,0	0,0	0	1
Hungary	0,0	3,0	0,0	0,0	0	1
Poland	1,2	3,2	0,0	0,0	0	1
Romania	3,5	3,2	0,0	0,0	0	1
Petrochemicals (252)						
Bulgaria	4,4	8,0	0,0	1,1	0	4
Czechoslovakia	8,6	8,8	0,0	0,2	0	4
Hungary	9,7	8,3	0,0	0,0	0	3
Poland	5,4	9,0	0,0	0,1	0	4
Romania	3,2	10,0	0,0	0,4	0	4
Non-ferrous metals (224)						
Bulgaria	7,6	1,2	4,3	4,3	0	4
Czechoslovakia	2,7	3,5	26,0	26,0	0	7
Hungary	3,7	5,3	1,7	1,9	0	4
Poland	11,2	1,1	1,3	1,3	0	3
Romania	2,6	5,2	0,0	0,0	0	2
Tools and metal products (316)						
Bulgaria	1,1	5,6	0,0	0,7	0	3
Czechoslovakia	2,5	5,5	0,0	2,8	0	3
Hungary	3,1	5,5	0,0	0,1	0	3
Poland	2,3	5,4	0,0	0,0	0	2
Romania	2,2	5,3	0,0	0,4	0	3

commodities such as furniture and oil refining, which would offset the effect of clothing.

In the case of the composition of each commodity group, there is no evidence that Romania's exports have faced higher protectionism. In the case of clothing, for example, its MFN duty rate is slightly lower than for Poland and Bulgaria and the share of its exports subject to quotas is less than in the case of Poland.

The trade barriers of the Community have been changed by the European Agreements of which that with Romania was initialled on 17 November 1992 and in force from 1 May 1993. As is known, the agreements follow a similar pattern. Important features of the Romanian agreement can be seen in Table 8b, which has also been compiled from the reports of Möbius and Schumacher.

Romania has the dubious distinction of having the largest share of its 1992 exports to the Community fall into categories of industrial commodities for which market access will continue to be restricted after the agreement comes into force (May 1993). In addition, Romania has the largest share of exports in textiles, which will continue to face both duties and quotas.

Table 8b

EC import shares of critical commodity groups under the European Agreements

(%)

Commodity group	*Romania*	*Bulgaria*	*Poland*	*Czech Republic and Slovakia*	*Hungary*
Basic products A	0,0	0,3	0,3	0,8	0,2
Basic products B	0,0	0,0	0,7	0,0	0,2
Sensitive products	24,4	5,3	23,2	26,2	19,9
Textiles	37,8	28,1	18,8	12,9	21,3
ECSC coal	0,0	0,2	7,2	2,4	,0
ECSC steel	6,3	6,5	4,9	8,2	3,7
Other ind. product	31,3	59,5	44,8	49,5	54,6
Total	100,0	100,0	100,0	100,0	100,0

Source: Schumacher and Möbius, *Community trade barriers facing Central and East European countries (CEECs). Supplementary calculations on the Europe Agreements.* DIW, Berlin, July 1993.

Duties on textiles are reduced two sevenths in 1993 and one seventh each year thereafter and eliminated by 1 January 1999. Romania and the Community agreed to negotiate a new agreement concerning quotas in which quantitative restrictions would be eliminated in a period 'equal to half the integration period to be decided in the Uruguay Round negotiations starting from 1 January 1994 and ... shall not be shorter than five years starting from 1 January 1993 or from the entry into force of the Agreement, if later.'

The effects of quotas on Romania textile exports needs to be considered in light of the behaviour described by Möbius and Schumacher, in which other CEEC countries did not use up their previous quotas. One assumes that Romania has been more aggressive in this respect; hence, its high dependence on exports of textiles and clothing to the Community even before 1990. By reducing the tariff within a quota, encouragement is given to exporters to look for higher quality products for the market niche. A more detailed evaluation of the Romania case would be useful in this regard.

Restrictions in the cases of 'sensitive' products are in the form of tariff quotas. There is the possibility that even when the quotas have been reached and exceeded, the Community would not impose the tariff.[1] Finally, Romania faces along with the other European Agreement countries the possibility that the escape clause could be used to introduce import quotas or anti-dumping actions, as already happened in the case of steel imports from the former Czechoslovakia.

[1] Dieter Schumacher and Uta Möbius, *Community trade barriers facing Central and East European countries (CEECs): Impact of the Europe Agreements* (Preliminary draft), DIW, Berlin, November 1992.

Just how sensitive Community markets are for additional competition in these areas goes beyond the scope of this study. One might well imagine that Romanian exports could be a problem in markets like wooden furniture where its presence is known, although in this case it is associated with a major Western European company. Steel products are already a problem and in this case Romania has considerable excess capacity that could come back into operation.

Table 8c

Romanian exports to the Community of 'sensitive' commodities with a larger than 1% share in exports for 1992

NACE	Commodity	Export share (%)	Coverage ratio
222	Steel tubes	1,6	3,92
224	Non-ferrous metals	1,1	1,54
242	Cement, lime	2,0	1 541,76
247	Glassware	2,2	2,16
248	Ceramics	1,1	1,14
252	Petrochemicals	3,7	1,83
253	Basic industrial chemicals	1,7	1,73
316	Tools, metal products	2,0	0,82
326	Transmission equipment	1,5	2,07
342	Electric motors	1,4	1,35
451	Footwear	5,2	2,78
467	Wooden furniture	16,4	58,58

Source: Schumacher and Möbius, *Community trade barriers facing Central and East European countries (CEECs). Supplementary calculations on the Europe Agreements.* DIW, Berlin, July 1993.

2.2. Market imperfections in Romania

Tight central controls over Romanian industry were weakening in 1989 and were abandoned in 1990. Successive governments, nevertheless, have continued to try to direct the economy with both formal and informal measures. At the same time, the increasingly autonomous forces in the economy are rather far from competitive market forces in both product and factor markets. The economy is surely highly distorted. The greatest sources of price distortions are the lack of competition in domestic markets and continuing extensive control of prices at the producer and wholesale levels by the government. This is both a structural problem (see Section 2.2.6 below) and a behavioural problem. Also, the use of informal means to shift capital funds among units in the sector of State-owned enterprises obliterates the effects of market transactions on the financial accounts of enterprises.

2.2.1. Price policy

According to a recent World Bank report, 'Continued high rates of inflation combined with *ad hoc* government price intervention, distort relative prices so that they no longer reflect domestic scarcity costs or relative prices in the international market'.[1] We would add that prices are further distorted by the lack of financial control and domestic competition.

Decontrol of wholesale and retail prices began in November 1990 and has been modified several times since, as shown in Table 9.

[1] World Bank, *Romania Economic Report*, 29. 3. 1993.

Table 9

Price liberalization measures (% of all goods transacted in each category)

(%)

	November 1990	April 1991	July 1991	November 1991
A. Wholesale prices				
- control of the ministry	47,7	0,0	30,8	29,2
- 'free' prices	52,3	30,0	69,2	70,8
B. Retail prices				
- fixed prices	12,6	12,8	13,1	12,4
- controlled seller's margin	25,0	25,0	50,0	30,0

Source: Information of the Ministry of Economy and Finance in GATT, *Romania Trade Policy Review*, Vol. II.

The measure of November 1991, Decision 776, was issued at the same time exchange rates were devalued and unified (see below). The action provided considerable government influence in price setting. The major provisions are as follows:

(i) Price maximums are set for 24 industrial goods according to the relevant international price at the exchange rate prevailing at the time. No provision is made for adjustment in case of changes in the exchange rate;

(ii) The Ministry of Agriculture is given authority to establish State procurement prices for cereals and livestock;

(iii) Price changes for more than 100 goods produced by fewer than three producers are subject to approval by the Ministry of Economy and Finance or by another designated authority;

(iv) Prices of all goods must be registered with the Ministry and a 90-day notification of price changes required (subsequently reduced to 30 days);

(v) A 30% limit is put on margins above wholesale costs.

The effects of price controls must be seen in combination with other market distorting measures, especially import restrictions and tariff measures.

Available information on relative wholesale prices in industry are presented in Table 10. It shows some large relative price changes. Such relative shifts at lower levels of disaggregation would be even greater. A major issue is the extent to which relative price shifts have reduced or have increased price distortion in the Romanian economy.

There has been an important correction of the underpricing of energy and industrial raw materials, which was characteristic of the former regime. Energy prices have risen by at least three times more than the prices of foods and consumer goods. Also, the prices of most other industrial goods have risen faster than those for machinery. Thus, while machinery, foods, and consumer goods have faced more cost pressure, they would also be more attracted to export markets. The large devaluation of the leu also stimulated exports of these goods.

2.2.2. Wage controls and incomes policies

The old system of detailed wage fixing was applied until February 1991. At that time, Law 14/1991 introduced annual contract bargaining between workers and management. Free negotiations applied only to privately-owned (majority) companies. State-owned companies, i.e., most of those in industry, were still subjected to a complicated constraint of incomes policy. Allowable wage increases were referenced to base occupational groups and wage increases greater than those benchmarks were heavily taxed.

Since January 1992, the system was simplified to encourage elimination of excess labour (at that time, the unemployment rate rose rapidly). Overall wage bills of enterprises in excess of stated limits are taxed between 20% and 500%. The allowable increases are linked to changes in the prices of subsidized goods, plus a formula linked to the consumer price index. Indexation was 50% from November 1991 to November 1992 and 65,5% thereafter.

Table 10

Wholesale prices indices in industry, 1989-92 (1989=100)

Branch of industry	1990	1991	1992
Total industry	128,8	431,6	1 251,3
Food and beverages	115,2	343,0	1 234,3
Textiles	124,5	355,9	936,9
Clothing	115,3	272,8	742,2
Leather and footwear	145,1	415,9	1 276,9
Wood products	137,9	523,5	1 469,6
Pulp and paper	143,5	670,3	1 813,2
Crude oil processing	143,6	592,6	2 254,4
Chemical industry	128,8	471,3	1 277,7
Metallurgy	125,7	490,0	1 642,7
Machinery and equipment	120,7	372,0	1 290,4
Power and heat	130,1	599,2	1 701,8

Source: Buletin Statistic Trimestrial, 1992/3.

2.2.3. Taxes

In July 1990, the former system of mandatory profit remittances to the budget and highly variable turnover taxes was changed to more market-oriented systems. The main direct taxes are a variable profits tax (rates of 30 and 45,5 %) and incomes tax. Profits tax reductions are granted for new companies, reinvested income, and foreign investments. The direct tax system does not appear to distort markets in any unusual way.

The main indirect taxes are a turnover tax of up to 30% and a wholesale-level excise tax of up to 70%. The 1992 rates of the excise tax varied from 25% to 60%. A value-added tax was introduced in the summer of 1993.

The excise tax is paid on both domestic and imported goods, the latter on the basis of import value plus duties. It is market distorting in a few cases where items are not provided domestically, such as automobiles having an engine over 1 500 cc or colour TV sets with remote controls.

2.2.4. Subsidies

Three categories of commodity subsidies are applied to: (i) a number of extractive industries for strategic purposes, (ii) a number of consumer goods for social purposes, and (iii) other products as a consequence of price regulation.

Table 11

Budget subsidies on economic account, 1991-92

Category	1991	September 1992
Scientific research	4,1	
Geological work	8,1	
Industry	106,3	187,8
Agriculture and water	65,4	81,1
Transport and communications	32,8	40,6
Other	6,2	
Total	229,7	340,6

Source: National Commission for Statistics, *Social and economical standing of Romania in the year 1991*, p. 130 and *Buletin statistic de informare publica*, 9/1992.

Table 12

Relationship between change in output and change in prices indices among branches of industry, 1989-92

Branch	Output (1989 = 100)	Prices	Compared to overall industry Output (Total = 100)	Prices
Industry total	46	1 786,0	100,0	100,0
Coal mining & preparation	57	2 141,0	123,7	119,9
Chemicals & chemical fibres	50	2 282,0	108,6	127,8
Electric machines & appliances	47	1 876,0	101,6	105,0
Electric & thermal energy	58	2 173,0	126,9	121,7
Petroleum & gas extraction	72	1 511,0	156,4	84,6
Metallic ores mining & preparation	48	1 045,0	104,2	58,5
Food & beverages	54	1 435,0	117,6	80,3
Tobacco products	75	743,0	162,2	41,6
Clothing of textiles, fur & leather	47	785,0	101,2	44,0
Leather goods & footwear	48	1 293,0	104,6	72,4
Furniture & other	68	1 021,0	146,7	57,2
Textiles & textile products	45	1 139,0	97,3	63,8
Machines & equipment	43	1 484,0	93,8	83,1
Computers & office machines	33	135,0	72,4	7,6
Radios, TV & communication equip.	36	927,0	77,6	51,9
Medical, optical, watches, instruments	38	1 063,0	82,1	59,5
Wood industry (excluding furniture)	46	1 895,0	99,6	106,1
Pulp, paper & cardboard	36	2 026,0	77,8	113,4
Metallurgy	36	2 340,0	78,0	131,0
Rubber & plastics processing	37	2 395,0	80,3	134,1
Oil, coke, and nuclear fuel processing	44	2 760,0	94,7	154,5
Metal structures & products	36	1 830,0	79,2	102,5
Means of road transport	40	1 926,0	86,6	107,8
Other transport means	42	1 852,0	90,2	103,7
Other non-metallic minerals	:	2 249,0	:	125,9
Other extraction activities	:	2 105,0	:	117,9

Source: Calculated from data in *Buletin statistic trimestrial*, 1992/4.

Table 13

Comparison of employment concentration between Romania and Central Europe (% share of total employment)

(%)

	Employment size (persons)				
	< 500	500-1 000	1 001-2 500	2 501-5 000	> 5 000
Romania — manufacturing industry SOEs					
May 1992	19,6	23,1	37,2	14,2	5,9
Czechoslovakia — total industry SOEs					
1989	9,2	19,4	41,3	18,5	11,6
1990	43,4	21,1	24,5	8,2	2,9
1991	49,1	19,7	20,3	7,5	3,4
Czech Republic — total industry SOEs					
1991 (a)	45,4	21,3	22,3	7,6	3,4
Slovakia — total industry SOEs					
1991 (a)	56,9	16,4	16,1	7,1	3,4
Poland — total industry (a) all companies (b) SOEs					
1990 (a)	72,4	13,4	8,2	4,5	1,5
1990 (b)	53,6	21,2	14,4	8,1	2,7
Hungary — total industry all companies					
December 1990	90,6	9,4			
December 1991	95,3	4,7			
October 1992	97,0	3,0			

Source: Calculated from country statistical reports and Table 15.

Most subsidies on consumer goods have been phased out. They were reduced 25% in May 1992 and differentiated reductions were made in September 1992. Remaining cuts were made in May 1993.

Subsidies in the extractive industry are not scheduled for reductions. According to principles announced by the government, such subsidies were to be applied strictly by products. They should not vary with the economic performance of the producer. Such a principle would reduce market distortions if applied. Otherwise, the subsidy system would appear to distort markets only in some cases, such as chemical fertilizers.

The budgeted sums available to industry (see Table 11) were only 3,7% of the reported value of industrial output in 1991. Nevertheless, larger off-budget subsidies have also been available through the foreign exchange system and the system of finance.

2.2.5. Foreign trading and the exchange system[1]

In February 1990, the former foreign trade monopoly was abolished and the dual exchange rate both unified and devalued (from 16 to 21 lei per US dollar). Trade licences were issued automatically and most quantitative controls were removed and on the import side replaced with a low tariff (see below). By the end of 1992, the number of licensed traders increased to about 30 000, including many large producing companies that trade on their own account. Still, most trade in machinery and industrial materials remained in the hands of State-owned companies (see Table 14 below).

[1] The custom tariff and quota system is described below.

Table 14

Share of exports through the private sector in 1992

(%)

Commodity	Private share	Commodity	Private share
Live animals	78,9	Paper	12,0
Meat	76,7		
		Wool	20,2
Vegetables	50,6	Cotton	27,0
Fruit	76,3	Synthetic filaments	39,1
Coffee, etc	85,2	Synthetic fibres	34,8
Cereals	8,1	Carpets	75,4
Oil seeds, industrial plants	19,5	Knitwear	55,6
		Clothing	49,1
Edible oils	24,5		
		Footwear	64,2
Sugar products	52,4		
Chocolate products	99,8	Ceramics	49,0
Alcoholic beverages	12,5	Glassware	74,1
Food by-products	100,0		
Tobacco	71,5	Iron & steel	16,7
		Iron & steel products	29,5
Salt, cement, etc	33,5	Copper & products	22,3
Minerals	40,0	Nickel & products	0,0
Hydrocarbons	2,7	Aluminium & products	17,7
		Lead & products	0,0
Inorganic chemicals	59,3	Zinc & products	21,5
Organic chemicals	51,2		
Fertilizers	8,4	Reactors & generators	7,8
Dyes	30,0	Electrical, electronics	30,7
Plastics	36,9	Railroad equipment	14,4
Rubber products	71,8	Road vehicles	8,8
Leather	96,2	Furniture & miscellaneous	46,8
Wood products	36,0		
		Totals	28,2

Source: Calculated from *Informatii statistice operative, Seria comert,* May 1993.

Since then the main impediment to reducing market distortions through the foreign trading system has been the shortage of foreign exchange brought on by an awkward, often changed foreign-exchange regime. This became evident under the new system when the combination of fixed rates and domestic price controls led to excess demand and a rapid depletion of foreign-exchange reserves.

In November 1990, a dual exchange rate was introduced in which an official rate of 35 lei per US dollar was applied alongside a commercial interbank rate that was supposed to float. Exporters were required to surrender 50% of their proceeds at the official rate to the State currency fund which financed imports of basic food and energy at that rate. The official rate fell to 60 lei per US dollar in April 1991, while the commercial rate fluctuated from 180 to 225 lei per US dollar. The hoped-for stimulus to exports is said to have been diminished by the expectation that all foreign-exchange receipts would have to be surrendered before the end of the year. Exporters were encouraged to understate export receipts in order to hold unrecorded foreign currency accounts.

A year later in November 1991, the dual-rate system was dropped. In January the unified exchange rate was devalued to 180 lei per US dollar and all foreign-exchange accounts and receipts required to be surrendered. A new rate would be set by daily interbank auctions managed by the national bank. An effort to divert more foreign exchange by exporters is suggested by the 66% increase in exports in December 1991.

In 1992, the unified exchange rate should have eliminated the off-budget subsidies to food and other raw material imports since the exchange rate would henceforth be passed on into import prices. In practice, however, price adjustments were delayed by Decision 776 (see above) while liquidity pressures increased on many enterprises. In any case there was reported a greater rationing of foreign exchange, while exporters increased efforts to divert proceeds abroad.

In May 1992, exporters were once again allowed to retain 100% of their foreign-exchange earnings in the banks. Daily auction and exchange institution rates were restricted to adjustments of 5% and 2% respectively. Even then, however, rates were sometimes kept unchanged in the face of excess demand. Later in the autumn, the minimum required to enter the auction market was lowered and the 5% adjustment restriction lifted.

In spite of some immediately favourable effects on reserves, later in 1992, reserves again fell. Large spreads also developed between the auction rate and the open rate, reaching 30%, even though the rate fell to about 450 lei per US dollar. By October 1993, official rates fell to over 1 000 lei per US dollar, while street rates went over 1 800 lei.

2.2.6. The financial system

The former national bank was broken into central bank and commercial bank components in December 1990. Among the commercial banks are new private banks, of which two were organized in 1991. Also, off-shore banks have been allowed to engage in domestic currency transactions since early in 1991.

Financial transfers are probably the source of the greatest distortions in the Romanian economy. Although interest rates were liberalized in April 1991 there was little response, partly because commercial banks had access to cheap money from the State savings bank. They practiced selective credit rationing to favoured clients. According to a report by the consultants, McKinsey & Co., the economy suffers from 'massive cross-subsidization between different companies and sectors, a lack of financial discipline and an inadequate circulation of foreign exchange.'[1]

Early in 1992, deposit rates started to rise, reaching 70%, but the State savings bank continued to provide funds at 50%. Still, most enterprises have been hard pressed and many have simply stopped paying suppliers and the banks. At the same time, neither suppliers nor the banks have found it in their interest to use the credit laws to foreclose on assets, because to do so would face them with collecting mostly worthless debt. By the end of 1991, gross credit arrears reached 40% of enterprise turnover (and enterprises listed credit and financing as their major problem).[2]

At the end of 1991, the government and the national bank arranged what was supposed to be a one time 'global compensation' which allowed commercial banks to extend credit in order to liquidate company arrears, with such credits secured by the State or by the assets of the debtors. The immediate effect of the compensation programme was to reduce arrears to 25% of their former level. Also, there was an attempt to increase credit discipline. Nonetheless, the basic problems of falling production and unrestructured companies remains so arrears rose by mid-1992 to 25% of turnover. By September, however, inflation appeared to have reduced debt-stock values relative to turnover so that the ratio fell to about 15%.[3]

2.2.7. Capital funds

As part of its privatization programme, the Romanian government established a State ownership fund that will hold 70% of the shares of former State-owned companies (SOEs). Its task is to be to privatize most of them over the coming years. The SOF will be autonomous from the government in the same way as the national bank and largely self-financing. This means that it will be able to use funds from the sale of companies and from profits paid to undertake restructuring and

[1] As reported in *Finance East Europe*, 5.8.1993.

[2] According to a Romanian survey of enterprises in 1991, the chief reasons for the decline in output, according to enterprises themselves, were as follows:
financial difficulties 40%; raw materials shortages — domestic stocks 15%; imports 16%; energy shortage 10%; shortage of demand 7%; shortage of production capacity 1%; other reasons 11%.
At the end of 1991, stocks of industrial products rose to lei 227,4 billion, 107,9% of 1990 levels. This compared to a GDP in industry of lei 973,1 billion, or 23%. That is a large 'product overhang' that could be dumped on foreign markets. Also, there was lei 162,5 billion in unhonoured contracts, including lei 36,3 billion for exports by foreign customers, probably mostly in the former Soviet Union.
We assume that the major reason for financial difficulties, given that 'shortage of demand' is less of a problem, is that Romanian companies are not being paid for goods delivered or orders supplied. This suggests that customers either have no cash funds or can not obtain credits. Also, the inability to find sound buyers may indicate that Romanian companies have customers only because they do not ask for payment.
Shortages of raw materials and energy may also indicate that companies simply do not have the means of payment necessary.

[3] Tom Hoopengardner, 'Enterprise arrears in Romania: how to cope with unpaid debts?', *Transitions*, (November 1992).

subsidization of existing companies. What standards the SOF will use in this regard is still unclear, but it would appear to have substantial powers to distort markets (as well as play favourites in the way companies are being set up for privatization).

There are also unconfirmed reports of 'non-profit foundations' having been set up in order to permit financial transfers among enterprises at a local level. It is believed that these could be used to enable forms of 'nomenclatura privatization'. How large are the potential market distortions resulting from them is unknown.

2.2.8. Observed price-quantity relations

A simple regression of price increases and output declines registered by 1992 shows no correlation between the two (tests using all period price and quantity observations have not been done). The pattern of price increases suggests more than one factor at work. Energy-using sectors and sectors depending on imported raw materials show the greatest inflation. This could reflect both exchange depreciation and the decontrol of energy prices (they were grossly understated in 1989).

Sectors with greater labour input have experienced less inflation, as suggested by machinery and equipment. Consumer non-durables have experienced the least inflation of prices. In these cases, another factor may have been at work. Because there are generally more enterprises, there is possibly more competition in these branches.

Table 12 provides another view of the relative changes in output and prices. The branches of industry are arranged essentially in order of their relative output declines (column 3 *in the table) from the relatively worst performers to the* relatively best performers. For example, the worst-hit branch, 'computers and robotics', had an output index (1989=100) of only 55% of that for overall industry (23,5 compared to 42,6%). We may say that its relative output fell.

Branches are divided into four groups: (i) branches whose relative output and prices both fell, (ii) branches whose relative output fell and relative prices rose, (iii) branches whose relative output and prices both rose, and (iv) branches whose relative output rose and relative prices fell.

We have no good idea, of course, what the patterns of price distortions were in 1989 in Romania. It was the least integrated into the former CMEA pricing schemes, in any case. Thus, the relative price changes since 1989 might merely indicate adjustments to get rid of these distortions, as the devalued leu and other changes brought pressures to adjust prices towards international relative prices.

Consider two groups whose relative prices fell: one group is made up of product groups that clearly have lost markets, both domestic and export, including machinery, computation devices, communications equipment, and instruments; another group is made up of consumer goods: food and drinks, furniture, textiles, fabrics, radios and TVs. More than likely, these items were over-priced in Ceausescu's Romania so their relative declines could reflect needed corrections of distorted prices. On the other hand, their relative (to other commodities) output has held up.

The large group with relative output falling and relative prices rising could be reflecting monopoly price distortions. They are among the more concentrated branches, as shown in Table 12.

2.2.9. Industrial concentration and potential market competition

The Transformation Law of 1990 expressed goals of breaking up existing monopolies and of creating competing companies within existing branches of industry. There has not, however, been set up any body to enforce competition or oversee mergers, etc. A law of January 1991 (Law 11/1991) does define a series of unfair practices, but a proper competition law is still lacking.

As Table 13 shows, since 1989 significant deconcentration in the three central European countries has taken place. A general comparison of the size structure of Romanian SOEs with those of Czechoslovakia, Poland, and Hungary suggests that the several Romanian governments since 1989 have not done enough to deconcentrate (which is probably seen as undesirable neoliberal policy by the Romanian president). In any case, the employment concentration in May 1992 resembled that of Czechoslovakia back in 1989.

Romanian employment concentration by branches of industry is shown in Table 15. Besides food processing, the number and size structure of companies in textiles, and leather goods would suggest ample potential for competition. There is too little disaggregation in the other branches to be able to say very much. Very large firms with more than 5 000 employees have more than 50% of total branch employment in wood processing (3 firms with 68%), metallurgy (9 firms with 56%), and transport equipment (13 firms with 52%). Also, there is high concentration in oil refining, chemicals, and plastic-rubber. These branches have low potential for domestic market competition.

Table 15

The size distribution of Romanian companies by industrial branches in May 1992

Companies with									
<500 employees		500-1 000 employees		1 001-2 500 employees		2 501-5 000 employees		>5 000 employees	
number	(%)	number	(%)	number	(%)	number	(%)	number	(%)
Manufacturing									
229	2,8	271	8,9	436	31,3	166	25,2	69	31,9
Textiles									
35	3,9	67	16,6	87	44,2	25	27,1	4	8,1
Leather/footwear									
13	2,0	22	9,6	49	45,8	20	37,4	1	5,2
Wood processing									
7	1,4	2	0,8	12	13,1	8	16,5	3	68,1
Pulp, paper									
		5	11,7	10	44,9	4	43,4		
Crude oil									
3	2,9	1	2,1	3	13,4	2	23,4	3	58,3
Chemicals									
15	2,8	11	5,3	35	37,0	7	14,0	10	40,9
Plastics, rubber									
12	6,9	10	13,7	14	38,9	6	40,6		
Metallurgy									
7	1,0	7	3,0	24	20,8	11	19,5	9	55,7
Machinery									
20	1,9	38	8,7	55	26,6	23	24,9	14	37,8
Metal products									
9	2,3	19	14,2	24	43,7	10	32,2	1	7,7
Electronics, optics									
10	1,0	7	2,3	31	21,1	16	23,9	9	51,7
Transport equipment									
14	2,1	10	3,2	20	15,3	18	27,2	13	52,1
Glass, construction materials									
12	2,5	32	16,1	43	49,5	8	21,5	2	10,5
Other									
72	11,7	40	23,4	29	41,0	8	23,9		

Source: Romanian Economic Newsletter, July-September 1992.

In none of the cases do we know anything about formal or informal coordinating structures within branches or sub-branches. Nor do we know anything about the development of competitive management. We assume, judging from Romania's past, that the potential for coordinating structures is rather high, while the chances of immediately having competitive behaviour on the part of the former nomenclatura, who dominate present management, is equally low. Competition, when it comes, is likely to be a process depending on privatization and the role of foreign investors.

2.2.10. Privatization, foreign investment and entrepreneurship

It is officially recognized that restructuring is unlikely to be done without significant changes in property rights in the direction of private ownership. Also, significant help must come from abroad in the form of direct foreign investments, joint ventures, and various forms of cooperation between Romanian and foreign enterprises.

The legal framework for privatization includes the following actions:[1]

(i) general enabling of private enterprise in 1990;

[1] National Agency for Privatization, *Privatization in the sequence of the Romanian reform*, Bucharest, April 1993.

Table 16

Indicators of the private sector in Romania

	1989	1990	1991	1992
Share of GNP	12,0	15,5	21,5	28,0
Active population	26,7	27,1	34,1	36,6
Share of investment	1,9	4,3	8,4	10,5
Share of sales		0,8	21,9	44,9
Share of retail services		2,6	6,8	26,0
Share of exports		0,3	18,5	26,1
Share of imports		0,7	14,7	32,3
Number of enterprises	8 252	109 887	240 716	406 386
- private		99 460	227 455	396 208
- State	3 960	4 560	6 105	6 560
- cooperative	4 292	5 867	7 156	3 618
Average rate of profit			5,0	4,9
- State			4,1	3,3
- private			16,0	11,5
- joint			8,7	12,2
Number of joint ventures		1 551	8 095	12 156
- with over USD 1 million capital		14	34	61

Source: Government of Romania, *The governing programme: strategy for economic and social reform*, Bucharest, March 1993.

(ii) Law 15/1990 which required the conversion of former SOEs into over 6 300 'commercial companies', most of which are joint stock companies with 100% State share ownership and about 800 *regies autonomes* in defence, energy, mining, railways, etc;

(iii) the Privatization Law (Law 58/1991);

(iv) the Foreign Investment Law (Law 35/1991).

The rapid increase in small private companies, typical of other transition countries, is seen in Table 16. Of the 362 000 reported in October 1992, 188 000 were family associations (individual proprietorships) and 174 000 were commercial companies. Less than 25% had more than 20 employees. Some 70% were concentrated in trade and services and only 18% were in manufacturing.

The Privatization Law provides an important adjunct to the formation of new private companies through the provision to sell off (normally at auction) 'individual assets' of State properties. They are defined as excess parts of a commercial company that can be separated without affecting the company's main activity. As of January 1993, some 6 105 such 'assets' had been identified of which only 1 436 had been sold (by July 1993 some 2 500). They involved 7 800 employees and a sale price of about lei 15,1 billion.

The main thrust of the privatization programme focuses on the former SOEs whose structure is indicated in Table 17.

The organizational framework for privatization includes the National Agency for Privatization (NAP), the State ownership fund (SOF), and five private ownership funds (POFs). The NAP is the main organizer of privatization, including organizing the sale of 'assets' and whole companies and some oversight functions with respect to the SOF and POFs.

The SOF has become the ownership agent for 70% of the shares of State-owned commercial companies, concentrating on very large companies. Under the law, it is required to liquidate its holdings in seven years. The POFs were assigned to manage, as 'mutual funds', the remaining 30% which has been distributed to citizens under the mass privatization programme. They are located in five different cities in Romania and are semi-specialized by branch of industry (some branch holdings are assigned to all five). Also, their focus is more on medium-sized companies.

Table 17

Company structures by industrial departments in Romania

Department	Total companies	Autonomous State companies	Commercial companies total	State capital	Joint venture	Average number of employees (persons)
Total	1 533	18	1 515	1 189	91	2 004
Energy	22	1	21	16	0	11 812
Mining	11	7	4	4	0	21 363
Gas and petrol	31	2	29	29	0	4 516
Metallurgy	97	0	97	82	0	2 495
Engineering	303	0	303	247	13	2 129
Electrical	171	0	171	68	37	1 654
Chemical	232	4	228	139	13	1 291
Textiles, leather	369	0	369	343	6	1 588
Building, materials	72	0	72	54	11	1 379
Wood, glass	209	5	204	190	11	1 962

Source: Institutul de economiei industriale, *Analiza: modificarii structurii productiei industriale si a principalelor restrictii in procesul de modernizare a fabricatie, 1992.*

The latter manage the 'mass privatization' programme in which 'certificates of ownership' have been distributed to more than 15 million Romanians. Each certificate has five coupons or claims on each of the five POFs. The coupons can be sold for cash or invested in a POF or one of its constituent companies. The certificates can be offered, for example, for up to 30% of a company in a MEBO (management-employee buy-out), which has been the most common form of privatization so far.

As might be expected, the privatization programme has not been easy because of problems both in the lack of Romanian expertise for such activity and in the combination of difficult economic conditions and company structures. Beginning in the summer of 1992 a PHARE-assisted programme supported the help of Western consultants for the evaluation of the first companies. Furthermore, setting up the five POFs is now assisted on a bilateral basis by five different Western countries (Germany, Holland, US, UK and France).

By the end of January 1993, some 16 companies had been privatized from a list of 30 candidates. Of these, 11 were MEBOs and five were outside investors, including at least three foreign companies.[1] By April 1993, some 19 companies were privatized. By August, only three more had been sold, including one more foreign investor.[2] By branch, they included: seven construction; one design-construction; four agricultural, meat, or vegetable processing; one brewery; one printing; two furniture; three clothing; one ceramics; and one foreign trade. They employed some 19 000 persons.[3]

Privatizing existing State assets is clearly going very slowly. Also, the participation of foreign investors is rather low (only three companies up to the summer of 1993). By contrast, the number of joint ventures set up in Romania is very high. By April 1993, there were reported 23 706 companies and social capital of USD 642 million (not actual foreign asset contributions). The top investors in terms of funds were the Italians and the top in terms of numbers of companies were Germans.

We believe it is still too early to identify the foreign role in the country. In the case of the low interest in privatizing existing assets, we must ask whether foreign capital is not attracted or is it being pushed away by the Romanian government as part of a policy of reserving some companies for domestic control?[4]

[1] *Romania Economic Newsletter*, January-March 1993, and *Privatization in the sequence of the Romanian reform* provide lists of the companies.

[2] *Finance Eastern Europe*, 19. 8. 1993.

[3] The numbers reported by the Western business publications are always confusing, perhaps because confusing information is given to them. *PlanEcon Business Report* reported 1 September 1993 that the SOF had sold its first company and then on 29 September reported that it had sold 97 companies so far in 1993.

[4] It should be remembered that in the 1920s Romania was the originator, even before Mexico, of 'nationalization' policies requiring minimum participation norms for Romanian capital, management, and technical manpower under the former National Liberal Party, a party more nationalist than liberal. The middle and upper level cadres of the former communist regime, who are now in power, might push to become the new capitalists.

2.2.11. Summary of distorting factors

There is insufficient hard information at the NACE 3-digit level to place categories into 'highly encouraged', 'not much affected', and 'highly discouraged', as requested. Instead, in Table 18 we attempt to provide a very qualitative judgment at the NACE 2-digit level of several factors which ought to affect exports and imports.

2.3. Trade performance and trade distortions

2.3.1. EC barriers to Romanian imports

Table 19 summarizes the relationships between the Romanian coverage ratios and the levels of EC trade protection as calculated by Möbius and Schumacher. From 1991 to 1992, the share of Romania's exports in the 'good performance' category fell from 90% to 87%. Also, there was a shift within this category from 'low protection' to 'high protection' commodities. Wooden furniture (NACE 467), in the low protection group, lost some of its share of exports, while the biggest gainer was clothing (NACE 453), in the high protection category, with an increase of 6% in export share.

Romania's export success in wooden furniture has been assisted by a past of having been one of the world's leading exporters. Certainly it reflects some diversion of exports from former CMEA countries, but also reflects long-term relationships from some Western European companies (like IKEA, for example). Romania's large clothing exports also benefit from older cooperation agreements with Western Europe manufacturers in which Romania essentially worked according to the Western partner's specifications.

2.3.2. Romanian export promotion measures and Romanian coverage ratios

Export promotion and Romania coverage ratios

According to the GATT, a total of lei 12,80 billion export subsidies were provided to Romanian exports in 1991. In 1992, some lei 2,0 billion of subsidies were used to provide incentives to offset Romania's debts in transferable roubles to former CMEA partners. Other direct export subsidies were not granted in 1992.

Other programmes to benefit exporters include: draw-back of import tariffs, preferential interest rates, export insurance and guarantees, export promotion and marketing assistance. The systems of allocation of these benefits is not known. Nevertheless, under transition conditions, it is likely that exporters with political influence will have even more access to favourable treatment than in a more mature democratic, market system.

Indirect subsidies are probably the more important in Romania's case. Several possible cases can be noted.

Table 18

Potential influence of 'distortions' on Romanian exports and imports (*medium distortion **highly distorted)

NACE group	Structures	Monopoly	Ownership	Finance	Prices	Import duties
21 Metal ores	*	**	**		**	
22 Metals	**	**	**	**	**	
23 Building materials			*			
24 Mineral products			*			
25 Chemicals	**	*	**	**	**	
31 Metal products	**	**	**	**	**	
32 Mechanical engineering	**	*	**	**	**	*
33 Electrical devices	*		**	**	**	*
34 Electrical engineering	*	**	**	**	**	*
35 Motor vehicles	**	*	**	**	**	*
36 Other transport means		**	**		**	*
37 Instruments			*			*
41-2 Food/beverages/tobacco						**
43 Textiles						*
44 Leather goods						**
45 Footwear/clothing						**
46 Furniture						*
47 Paper products		*	*		**	
48 Rubber/plastics		*	*			
49 Other manufacturing						

Table 19

Romanian export performance on EC markets in 1992 and levels of EC protection (based on trade barriers in 1991)

NACE	Commodity	Good performance (according to coverage ratios) Coverage ratio	Export share	1991 EC trade protection Low	Medium	High
242	Cement, lime	1 541,76	1,96	1		
461	Processing of wood	13,67	,57	1		
245	Non-metallic mineral products	2,39	,07	1		
463	Joinery components	15,85	,30	2		
465	Other wood products	13,94	,41	2		
313	Secondary metals	5,48	,25	2		
224	Processing non-ferrous metals	1,54	1,03	2		
464	Wooden containers	172,27	,14	3		
467	Wooden furniture	58,58	15,98	3		
466	Cork & straw articles	12,16	,85	3		
462	Wood products	5,54	,61	3		
346	Domestic electrical appliances	1,21	,59	3		
			22,77			
361	Shipbuilding	11,31	,34		4	
347	Lamps & lighting	4,96	,47		4	
252	Petrochemicals	1,83	3,63		4	
492	Musical instruments	8,80	,11		5	
326	Transmission equipment	2,07	1,47		5	
442	Leather products	2,03	,37		5	
248	Ceramic goods	1,14	1,10		5	
247	Glass & glassware	6,33	2,16		6	
222	Steel tubes	3,92	1,60		6	
436	Knitting industry	2,27	7,08		6	
253	Industrial chemicals	1,73	1,69		6	
			20,03			
451	Footwear	2,78	5,12			7
412	Meat	2,59	2,10			7
221	Iron & steel	6,10	6,19			8
455	Textiles	3,83	,68			8
342	Electrical machinery	1,35	1,41			8
453	Clothing	9,91	27,54			9
260	Man-made fibres	3,19	,94			9
			43,98			

NACE	Commodity	Medium performance (according to coverage ratio) Coverage ratio	Export share	1991 EC trade protection Low	Medium	High
353	Vehicle parts	,92	,33	2		
415	Fish	1,08	,02	3		
			,35			
322	Working tools	1,04	,74		4	

NACE	Commodity	Weak performance (according to coverage ratio) Coverage ratio	Export share	1991 EC trade protection Low	Medium	High
231	Building materials & clay	,33	,04	0		
244	Articles of asbestos	,16	,00	0		
239	Other minerals	,09	,00	0		
211	Extraction of iron ore	,00	,00	0		
212	Extraction of non-ferrous metal	,00	,00	0		
232	Mining of salt	error	,00	0		
473	Printing	,07	,04	1		
243	Cement/plaster products	,06	,00	1		
246	Grindstones	,03	,00	1		
314	Structural metal	,87	,28	2		
311	Foundries	,79	,21	2		
312	Forging	,35	,06	2		
365	Transport equipment	,25	,00	2		
371	Measuring instruments	,24	,09	2		
259	Other chemicals	,15	,05	2		
328	Other machinery	,13	,59	2		
352	Vehicle bodies	,11	,16	2		
343	Electrical appliances	,09	,14	2		
374	Clocks & watches	,08	,00	2		
258	Soap, detergents	,05	,04	2		
255	Paint & varnish	,01	,01	2		
482	Retread tyres	,00	,00	2		
316	Tools & metal goods	,82	1,98	3		
363	Cycles, motor cycles	,57	,01	3		
341	Wires & cables	,39	,20	3		
471	Pulp, paper, board	,38	,24	3		
495	Miscellaneous manufacturing	,27	,57	3		

NACE	Commodity	Weak performance (according to coverage ratio) Coverage ratio	Export share	1991 EC trade protection Low	Medium	High
364	Aerospace equipment	,04	,39	3		
472	Process paper, board	,02	,02	3		
424	Distilling	,01	,01	3		
411	Edible oils	,00	,00	3		
420	Sugar	,00	,00	3		
429	Tobacco products	,00	,00	3		
233	Salt extraction	,00	,00	3		
241	Clay products	,00	,00	3		
416	Grain milling	,00	,00	3		
418	Starch products	,00	,00	3		
426	Cider	,00	,00	3		
			5,13			
491	Jewellery	,34	,11		4	
493	Photo laboratories	,31	,00		4	
325	Mines machinery	,22	,32		4	
256	Industrial and agricultural chemicals	,09	,28		4	
441	Tanning leather	,05	,10		4	
327	Specific machinery	,02	,07		4	
323	Textile machinery	,02	,06		4	
324	Food/chemical machines	,01	,03		4	
362	Rolling-stock	,70	,64		5	
481	Rubber products	,63	,55		5	
223	Cold steel	,49	,23		5	
456	Furs, fur goods	,46	,15		5	
483	Processing plastics	,33	,80		5	
321	Agricultural machines & tractors	,29	,33		5	
373	Optical instruments	,27	,09		5	
345	Radio/TV-sets	,21	,23		5	
315	Tanks and containers	,19	,12		5	
257	Pharmaceuticals	,15	,16		5	
351	Motor vehicles	,12	,47		5	
439	Miscellaneous textile industry	,02	,03		5	
372	Medical equipment	,01	,01		5	
330	Office machinery	,01	,02		5	
344	Telecommunications equipment	,01	,04		5	
494	Toys/sports goods	,62	,23		6	
413	Dairy products	,09	,10		6	
423	Other food products	,05	,07		6	
422	Animal feed	,01	,01		6	
427	Brewing and malting	,00	,00		6	
417	Spaghetti, macaroni	,00	,00		6	
419	Bread & flour confectionery	,00	,00		6	
428	Soft drinks	,00	,00		6	
			5,22			
414	Processing fruit/vegetables	,79	,54			7
438	Floor coverings	,72	,51			8
43B	Woven fabrics	,02	,32			8
425	Wine	,02	,00			9
421	Confectionery	,01	,01			9
43A	Yarns	,31	,41			10
			1,78			

A number of commodities have benefited from energy and raw materials that were priced in terms of over-valued lei exchange rates or whose prices lagged behind the current inflation. Such inputs would then be underpriced, compared to the market, while the outputs could be exported for current prices and exchange rates. This would exaggerate the rate of profitability of exports. The best examples would be petrochemicals, iron and steel products, and possibly wood and textile products.

There are also possibilities that the system of export licences and quotas can be manipulated. The system is not yet fully liberalized and in 1992 involved enforcement of some temporary export bans.

Exporting is not fully 'marketized'. In 1992, some 18% of exports were in clearing, barter and countertrade, involving both private and State companies. In addition, the share of exporting undertaken by non-private agents varied significantly across product groups. This added considerable possibilities beyond the State ownership of production and production subsidies, discussed under 'market distortions', to the use of informal export subsidies by supporting loss-making export operations. According to this hypothesis, the possibilities of export subsidies through foreign trade mark-ups would be quite high in the cases of metals, machinery, alcoholic beverages, petroleum products, fertilizers, and paper.

2.3.3. EC coverage ratios versus Romanian import barriers

With the transition from the former system of State trading monopolies and centrally determined import-export quotas, a relatively liberal import customs tariff, based on the CCCN, came into effect in early 1990. Because of the combined effects of the many other distortions in the Romanian economy it is

Table 20a

EC coverage ratios in 1990, 1991, and 1992 compared to the average statutory and applied tariff rate

	Statutory rates	Effective rates	Coverage ratios 1990	1991	1992
Total			,97	1,07	1,78
I. Live & animal products	21,5	5,8	18,89	,71	,90
II. Vegetable products	24,5	3,9	6,44	5,49	8,59
III. Animal & vegetable fats, oils	25,0	3,7	,00	1,97	4,27
IV. Foods, beverages, tobacco	30,3	15,0	12,16	6,81	8,91
V. Mineral products	2,8	0,0	,15	,63	1,22
VI. Chemical products	15,4	4,1	7,05	2,97	3,70
VII. Plastic & rubber materials	18,5	7,6	1,46	1,92	1,99
VIII. Hides, furs, etc	8,7	8,7	2,26	,65	3,42
IX. Wood, fibre products	7,3	2,9	,41	,43	,28
X. Pulp, wood fibres, paper	9,1	6,0	,54	1,28	5,99
XI. Textiles and products	15,6	14,0	,28	,24	1,44
XII. Footwear, umbrellas, ties,	25,6	25,5	,26	,45	,62
XIII. Stone, cement, plaster	11,3	2,6	1,08	,83	,46
XV. Metals and metal products	14,2	4,0	,69	,57	,66
XVI. Machinery, electrical, electronics	19,3	13,5	2,58	3,23	2,64
XVII. Transportation equipment	28,3	13,7	1,00	1,49	2,66
XX. Miscellaneous goods and materials	15,6	6,0	,10	,05	,12

Sources: Duty rates from GATT, *Romania Trade Policy Review*, Vol, I, March 1993.

doubtful if the duty rates were ever a determining factor in whether goods were imported or not.

A new and current tariff was introduced on 1 January 1992. It is based on the harmonized commodity description (HS) and comprises 5 018 positions at the 6-digit level. Duties, which are only *ad valorem*, are provided in one column that are applicable on an MFN basic, with columns for the EC, EFTA, and GPS situations. When weighted according to 1991 imports, the average duties in former schedules were about 7% compared with a higher 11,7% under the new schedules.

The duty levels are also escalated according to degree of processing. The highest duty rates are applied to tobacco, textiles, clothing, musical instruments, photographic supplies and footwear.

The difficulty we face in calculating rates arises partly because we lack details of 1992 trade necessary to weight the available duty rates.[1] Problems also arise because we are unable to take into account the various exemptions or reductions of the rates. These are quite large, as shown in Table 20a.

Tariff exemptions Notable exemptions are provided in the case of foreign capital contributions in kind, as well as raw materials and subassemblies necessary for commercial companies with foreign investment. Also, in 1992, temporary duty reductions were introduced on an MFN basis for 2 271 commodities (at the 6-digit level). According to the GATT, about 45% of imports in value terms benefited from these reductions in 1992. In addition, some 45 commodities received duty exemptions on the basis of a tariff quota. The GATT estimates of the combined effects of exemptions and other variations from the average statutory rates as the column 'average applied rates' are shown in Tables 19a and 19b. Differences between statutory rates and average applied rates are usually small for finished products and increase for raw materials. They are also large for machinery items, suggesting the patterns of exemptions favouring investors.

Other import restrictions There were no other import quotas and no application of minimum import prices. There were two cases of surcharges to the normal rates. Beginning August 1992, a fee of 0,5% of both exports and imports was levied in order to provide funds to modernize the customs system. A temporary safeguard surcharge was applied on 23 lines, which were to be discontinued at the end of 1992.

Romania carries on some trade with the former Soviet Union on the basis of bilateral (barter) trade. In 1991, this amounted to just over USD 147 million. Some trade on this basis was also carried on with the former Yugoslavia, but has been embargoed.

[1] Based on 'Ministerul comertului, Departamentul comertului exterior', *Ghid de utilizare a tarifului vamal de import al Romaniei*, April 1993, Bucharest.

Table 20b

Some indicative tariff rates for NACE categories

NACE commodity	Applied rate	Statutory rate
211 Extraction of iron ore	0,6	4,1
212 Extraction of non-ferrous metal	0,6	4,1
Production & processing of metals		
221 Iron & steel	3,3	17,7
222 Steel tubes		15,0
223 Cold steel		20,0
224 Non-ferrous metals	1,1	7,6
Extraction of other minerals		
231 Building materials & clay	8,9	9,2
232 Potassium extract		
233 Salt extraction		
239 Other minerals		
Manufacturing non-metallic mineral products		
241 Clay products		
242 Cement, lime		15,0
243 Cement/plaster products		
244 Asbestos products		10,0
245 Stone working		
246 Abrasive products		
247 Glass & glassware	14,1	15,5
248 Ceramic goods		10,0-25,0
Chemicals	5,8	16,7
252 Petrochemicals		6,0-20,0
253 Industrial chemicals		3,0-20,0
255 Paint & varnish	5,7	9,4
256 Industrial and agricultural chemicals, fertilizers	3,3	6,7
257 Pharmaceuticals	0,0	14,6
258 Soap, detergents		8,0
259 Home chemicals		14,0-25,0
260 Man-made fibres	14,1	15,0
Manufacturing of metal articles		
311 Foundries		
312 Forging		
313 Metal treatment		
314 Structural metal		
315 Tanks and containers		
316 Tools & metal goods		
Mechanical engineering		
321 Agricultural machines & tractors	11,2	14,5
- agricultural machines		15,0
- tractors		30,0
322 Machine tools	10,4	16,6
323 Textile machinery	7,0	16,8
324 Food/chemical machines		15,0
325 Mines machinery	10,8	15,8
326 Transmission equipment	6,3	12,5
27 Other specific machinery		
328 Other machinery		
Manufacturing of office/data-processing machines		
330 Office machinery	11,1	16,9
- battery calculators		40,0
- other calculation equipment		15,0
- data-processing, equipment		15,0
Electrical engineering		
341 Wires & cables		15,0
342 Electrical machinery	9,8	12,3
343 Electrical appliances		
344 Telecommunications equipment	11,9	15,5
345 Radio/TV-sets		
- radios		8,0
- TV sets		42,0
346 Domestic electrical appliances		20,0
347 Lamps & lighting		10,0
345 Radio/TV-sets		
- radios		8,0
- TV sets		42,0
346 Domestic electrical appliances		20,0
347 Lamps & lighting		10,0

Manufacturing of motor vehicles, parts		
351 Motor vehicles	18,1	30,0
352 Vehicle bodies		
353 Vehicle parts		
Manufacturing of other transport		
361 Shipbuilding	20,0	20,0
362 Rolling-stock		20,0
363 Cycles, motor cycles		0,0-40,0
364 Aerospace equipment	6,7	10,0
365 Transport equipment		
Instrument engineering		
371 Measuring instruments	4,8	10,0
372 Medical equipment		
373 Optical instruments	10,5	12,6
374 Clocks & watches	13,5	19,0
Food, drink		
411 Edible oils	9,9	24,6
412 Meat		
- meat, fresh or frozen	13,3	21,5
- meat, prepared	19,7	25,0
413 Dairy products	11,9	23,3
414 Processing fruit/vegetables		
415 Fish	19,5	22,2
416 Grain milling	13,5	25,0
417 Spaghetti, macaroni	21,4	23,6
418 Starch products	25,0	25,0
419 Bread & flour confectionery	25,0	25,0
Food, drink, tobacco		
420 Sugar	8,8	24,2
421 Confectionery	25,0	25,0
422 Animal feed	11,1	25,0
423 Other food products		
424 Distilling		25,0
425 Wine	23,3	23,3
426 Cider		25,0
427 Brewing and malting		20,0
428 Soft drinks		25,0
429 Tobacco products	43,3	48,3
Textile industry		
43A Yarns	11,6	12,6
- textile fibres	6,9	7,9
43B Woven fabrics	23,9	24,1
436 Knitting industry		25,0
438 Floor coverings		40,0
439 Miscellaneous textile industry		
Leather & goods		
441 Tanning leather	9,1	9,1
442 Leather products	23,2	23,2
Footwear & clothing		
451 Footwear	25,0	25,8
453 Clothing	29,4	29,7
455 Textiles	23,9	24,1
456 Furs, fur goods	15,0-30	12,0-26
Timber & wooden furniture		
461 Processing of wood	1,4	5,8
462 Wood products	6,7	10,4
463 Joinery components		
464 Wooden containers		
465 Other wood products	16,0	18,5
466 Cork & straw articles		
467 Wooden furniture	17,8	20,0
Manufacturing, paper, paper products, printing		
471 Pulp, paper, board	7,3	12,4
472 Process paper, board		
473 Printing	4,3	4,9
Processing of rubber and plastic		
481 Rubber products	7,5	15,5
482 Retread tyres		
483 Processing plastics	9,4	20,0
Other manufacturing		
491 Jewellery	19,2	22,6
492 Musical instruments	20,0	20,0
493 Photo laboratories	10,3	27,2
494 Toys/sport goods	20,2	20,2
495 Miscellaneous manufacturing	14,2	15,6

Sources: Romanian Customs Tariff Guide; GATT, *Romania Trade Policy Review.*

In the case of government procurement, the only official preference granted to domestic suppliers is in the case of tenders based on World Bank credits, in which case a 10% preference is allowed.

Quotas, anti-dumping, countervailing duties, and restrictions for balance-of-payments reasons are permitted, but not presently practised by Romania.

The tariff and EC coverage ratios We have been able to assemble some general views of EC coverage ratios in Romania and Romanian import barriers. The first is in terms of the harmonized system in Table 20a.

The coverage ratios themselves are rather variable, which reflects both the shortages faced by Romania in 1990 and the severe decline of output in 1991 and 1992. There would seem to be few grounds for suggesting that the demand for imports from the EC were determined by market forces.

Table 20b gives a second view of the structure of Romanian tariffs. Two different sources of information are used. Whenever possible estimates from the GATT *Trade Policy Review* were used to show both a representative average applied rate and an average statutory rate. In those cases where only one rate is given, it is the corresponding rate or range of rates from the Romanian custom tariff book. In this case, we did not posses enough information to estimate the applied rates.

Table 21

Relationship between Romanian trade coverage (TC) ratios and EC factor intensity of commodity groups

Regressions with 1992 coverage ratios LogTC = a + b log(skill)			
Constant		92,31	
Std Err of Y Est		18,81	
R Squared(Adj, Raw)	,089	,100	
No. of Observations		85	
Degrees of Freedom		83	
Coefficient(s)	– 56,29		
Std Err of Coef.	18,51		
LogTC = a + b log(L/Q) + c log(RD)			
Constant		– 16,08	
Std Err of Y Est		19,23	
R Squared(Adj, Raw)	,049	,072	
No. of Observations		85	
Degrees of Freedom		82	
Coefficient(s)	19,01	– 7,40	
Std Err of Coef.	11,32	3,62	
logTC = a + b log(K/L) + c logRD			
Constant	13,79		
Std Err of Y Est	19,21		
R Squared(Adj,Raw)	,050	,073	
No. of Observations	85		
Degrees of Freedom	82		
Coefficient(s)	– 16,87	– 6,59	
Std Err of Coef.	9,85	3,60	
logTC = a + b log(K/L) + c logRD + d log(skill)			
Constant	83,94		
Std Err of Y Est	18,95		
R Squared(Adj,Raw)	,076	,109	
No. of Observations	85		
Degrees of Freedom	81		
Coefficient(s)	– 9,47	– 0,94	– 47,43
Std Err of Coef.	10,53	4,72	26,15

logTC = a + b log(K/L) + c logRD + d log(skill) + e logENc				
Constant	88,51			
Std Err of Y Est	19,05			
R Squared(Adj,Raw)	,066	,110		
No. of Observations	85			
Degrees of Freedom	80			
Coefficient(s)	- 7,03	- 0,89	- 50,67	- 3,03
Std Err of Coef.	12,92	4,75	28,08	9,21

LogTC = a + b log(L/Q) + c log(RD) + d log(skill)				
Constant		68,70		
Std Err of Y Est		18,97		
R Squared(Adj, Raw)	,074	,107		
No. of Observations		85		
Degrees of Freedom		81		
Coefficient(s)	9,62	- 1,33	- 47,69	
Std Err of Coef.	12,34	4,93	26,68	

LogTC = a + b log(L/Q) + c log(RD) + d log(skill) + e log(ENc)				
Constant		76,50		
Std Err of Y Est		19,04		
R Squared(Adj, Raw)	,067	,112		
No. of Observations		85		
Degrees of Freedom		80		
Coefficient(s)	8,00	- 1,44	- 50,65	- 4,93
Std Err of Coef.	12,65	4,95	27,17	7,70

LogTC = a + c log(RD) + d log(skill) + e log(ENc)				
Constant		97,20		
Std Err of Y Est		18,97		
R Squared(Adj, Raw)	,074	,107		
No. of Observations		85		
Degrees of Freedom		81		
Coefficient(s)	- 0,35	- 58,29	- 5,90	
Std Err of Coef.	4,62	24,24	7,52	

LogTC = a + d log(skill) + e log(ENc)				
Constant		98,96		
Std Err of Y Est		18,86		
R Squared(Adj, Raw)	,085	,107		
No. of Observations		85		
Degrees of Freedom		82		
Coefficient(s)	- 59,41	- 5,84		
Std Err of Coef.	18,97	7,42		

LogTC = a + e log(ENc)				
Constant		4,90		
Std Err of Y Est		19,83		
R Squared(Adj, Raw)	- 0,012	,0002		
No. of Observations		85		
Degrees of Freedom		83		
Coefficient(s)	- 0,99			
Std Err of Coef.	7,63			

LogTC = a + c log(RD)				
Constant		3,90		
Std Err of Y Est		19,43		
R Squared(Adj,Raw)	,028	,040		
No. of Observations		85		
Degrees of Freedom		83		
Coefficient(s)	- 6,75			
Std Err of Coef.	3,64			

		LogTC = a + b log(L/Q)		
Constant		- 12,69		
Std Err of Y Est		19,59		
R Squared(Adj,Raw)	,013	,024		
No. of Observations		85		
Degrees of Freedom		83		
Coefficient(s)	16,51			
Std Err of Coef.	11,47			
		LogTC = a + f log(K/L)		
Constant		14,74		
Std Err of Y Est		19,48		
R Squared(Adj,Raw)	,023	,035		
No. of Observations		85		
Degrees of Freedom		83		
Coefficient(s)	- 17,32			
Std Err of Coef.	9,98			
		Regressions with 1991 coverage ratios logTC = a + b log(K/L) + c logRD		
Constant	13,18			
Std Err of Y Est	15,73			
R Squared(Adj,Raw)	,076	,098		
No. of Observations	85			
Degrees of Freedom	82			
Coefficient(s)	- 15,88	- 6,48		
Std Err of Coef.	8,06	2,94		
		logTC = a + b log(K/L) + c logRD + d logLQ		
Constant	86,53			
Std Err of Y Est	15,31			
R Squared(Adj,Raw)	,1255	,156		
No. of Observations	85			
Degrees of Freedom	81			
Coefficient(s)	- 8,14	- 0,57	- 49,59	
Std Err of Coef.	8,51	3,82	21,13	
		logTC = a+ b log(K/L) + c logRD + d logLQ + e logENc		
Constant	94,22			
Std Err of Y Est	15,36			
R Squared(Adj,Raw)	,119	,161		
No. of Observations	85			
Degrees of Freedom	80			
Coefficient(s)	- 4,04	- 0,49	- 55,05	- 5,10
Std Err of Coef.	10,41	3,83	22,64	7,42

Note: TC: trade coverage ratio, skill: skilled labour intensity, L/Q: labour intensity, K/L: capital intensity, RD: R&D intensity, ENc: energy intensity.

3. Factor endowments and market imperfections

3.1. EC tariff and non-tariff barriers and factor endowments

The relationship between Romanian trade coverage (TC) ratios and the factor intensity of commodity groups in the EC has been investigated as a series of regressions that follow the suggestions contained in various issues of *European Economy*. The chief conclusions that can be drawn from the results in Table 21 below are:

(i) model with S (skill intensity) alone — Romanian trade coverage ratios are strongly negatively correlated with EC skill intensive commodity groups;

(ii) model with L (labour intensity) and R (R&D intensity) together — Romanian trade coverage ratios are positively correlated with EC labour intensity and negatively correlated with EC R&D intensity;

(iii) model with K (capital intensity) and R (R&D intensity) together — Romanian trade coverage ratios are also negatively correlated with EC capital intensity.

Romanian trade coverage seems to have little relationship with commodities that are energy intensive in the EC. Otherwise, the results are more or less intuitive. Romania does well in commodities that are labour intensive in the EC and not well in commodities that are skill intensive, R&D intensive or capital intensive.

Table 22 presents the view of Romanian exports in terms of levels of EC protection and the factor endowments of the commodity group, that are estimated from EC factor proportions. The main observations are:

(i) Labour intensive commodities

some 65% of Romania's exports to the EC are in commodities that are labour intensive by EC standards;

Table 22

EC protectionism and Romanian exports by EC factor intensities

	Sectors facing high TB	K sector	L sector	R sector	S sector	T sector	X sector	1991 TB
421	Confectionery	,01						9
414	Processing fruit/veg	,54						7
453	Clothing		27,54					9
455	Textiles		,68					8
451	Footwear		5,12					7
342	Electrical machinery			1,41				8
412	Meat				2,10			7
260	Man-made fibres					,94		9
221	Iron & steel					6,19		8
438	Floor coverings					,51		8
43A	Yarns						,41	10
425	Wine						,00	9
43B	Woven fabrics						,32	8
	Export share	,55	33,34	1,41	2,10	7,64	,72	
		Factor intensity with 92 export shares						
	Sectors facing medium TB	K sector	L sector	R sector	S sector	T sector	X sector	1991 TB
413	Dairy products	,10						6
422	Animal feed	,01						6
423	Other food products	,07						6
483	Processing plastics	,80						5
436	Knitting industry		7,08					6
494	Toys/sports goods		,23					6
315	Tanks and containers		,12					5
326	Transmission equipment		1,47					5
362	Rolling-stock		,64					5
442	Leather products		,37					5
492	Musical instruments		,11					5
322	Working tools		,74					4
361	Shipbuilding		,34					4
493	Photo laboratories		,00					4
257	Pharmaceuticals			,16				5
330	Office machinery			,02				5
344	Telecommunications equipment			,04				5
345	Radio/TV-sets			,23				5
351	Motor vehicles			,47				5
372	Medical equipment			,01				5
373	Optical instruments			,09				5
256	Industrial and agricultural chemicals			,28				4
347	Lamps & lighting			,47				4
321	Agricultural machines & tractors				,33			5
323	Textile machinery				,06			4
324	Food/chemical machines				,03			4
325	Mines machinery				,32			4
327	Specific machinery				,07			4
491	Jewellery				,11			4
222	Steel tubes					1,60		6
247	Glass & glassware					2,16		6
223	Cold steel					,23		5
248	Ceramic goods					1,10		5
439	Miscellaneous textile industry					,03		5

481	Rubber products					,55		5
253	Industrial chemicals					1,69		6
417	Spaghetti, macaroni					,00		6
419	Bread & flour confectionery					,00		6
427	Brewing and malting						,00	6
428	Soft drinks						,00	6
456	Furs, fur goods						,15	5
252	Petrochemicals						3,63	4
441	Tanning leather						,10	4
	Export share	,97	11,10	1,75	,92	5,67	5,57	

	Sectors facing low TB	Factor intensity with 92 export shares K sector	L sector	R sector	S sector	T sector	X sector	1991 TB
411	Edible oils	,00						3
416	Grain milling	,00						3
418	Starch products	,00						3
424	Distilling	,01						3
462	Wood products	,61						3
461	Processing of wood	,57						1
316	Tools & metal goods		1,98					3
464	Wooden containers		,14					3
466	Cork & straw articles		,85					3
467	Wooden furniture		15,98					3
495	Miscellaneous manufacturing		,57					3
314	Structural metal		,28					2
365	Transport equipment		,00					2
463	Joinery components		,30					2
465	Other wood products		,41					2
341	Wires & cables			,20				3
346	Domestic electrical appliances			,59				3
364	Aerospace equipment			,39				3
255	Paint & varnish			,01				2
258	Soap, detergents			,04				2
259	Other chemicals			,05				2
343	Electrical appliances			,14				2
352	Vehicle bodies			,16				2
353	Vehicle parts			,33				2
371	Measuring instruments			,09				2
374	Clocks & watches			,00				2
363	Cycles, motor cycles				,01			3
415	Fish				,02			3
472	Processing paper, board				,02			3
328	Other machinery				,59			2
473	Printing				,04			1
241	Clay products					,00		3
471	Pulp, paper, board					,24		3
224	Processing non-ferrous metals					1,03		2
311	Foundries					,21		2
312	Forging					,06		2
313	Secondary metals					,25		2
482	Retread tyres					,00		2
243	Cement/plaster products					,00		1
245	Non-metallic mineral products					,07		1
233	Salt extraction						,00	3
420	Sugar						,00	3
426	Cider						,00	3
429	Tobacco products						,00	3
242	Cement, lime & plaster						1,96	1
246	Grindstones						,00	1
211	Extraction of iron ore						,00	0
212	Extraction of non-ferrous metal						,00	0
231	Building materials & clay						,04	0
232	Mining of salt						,00	0
239	Other minerals						,00	0
244	Articles of asbestos						,00	0
	Export share	1,19	20,51	2,00	,67	1,86	2,01	
	Share of total export	2,71	64,95	5,16	3,69	15,18	8,31	

Note: TB=trade barrier; K=Capital intensive; L=Labour intensive; R=R&D intensive; S=Skilled labour intensive; T=Energy cost intensive; X=No factor intensity available.

high protection of labour intensive industries such as footwear, knitting and clothing affect some 33% of Romania's exports to the EC;

medium protection affects some 11% of the exports of the commodities in this group;

low protection affects some 21% of the exports of the commodities in this group.

(ii) Energy intensive commodities

some 15% of Romania's exports to the EC are in commodities that are energy intensive by EC standards;

high protection affects some 8% of the exports of the commodities in this group;

medium protection affects some 6% of the exports of the commodities in this group;

low protection affects some 2% of the exports of the commodities in this group.

(iii) Other commodities

most Romanian exports of commodities that by EC standards are skill intensive, R&D intensive, and capital intensive are subject to only medium or low levels of protection.

3.2. Market distortions in Romania and factor endowments

All sectors in Romania are distorted by the continuing high levels of inflation and the heavily devalued exchange rate. All sectors are also distorted by the financial situation and the lack of resolution of the ownership question.

The highly distorted sectors are clearly those that are energy intensive in their own production processes and those that receive inputs, for example, metals and chemical materials, at distorted prices. With reference to Table 21 above, we believe that market distortions of material inputs could affect such items as electrical equipment, transmission equipment, shipbuilding and other machinery items. Similar distortions can also feed into man-made fibres and carpets.

Nevertheless, a word of caution is necessary. The categories of commodities by factor endowments are those of the EC, not direct measurements of Romanian factor endowments. It is likely that Romanian commodities are all more labour intensive than is the case in the EC. This is more likely to be the case also in export commodities.

3.3. Explaining current trade performance by factor endowment

It is obvious that Romania's relative successes in exporting are in labour-intensive industries. Because of past decisions to build large capacities of energy-intensive industries and the present government's apparent willingness to hold back on closing these facilities, energy-intensive exports remain marginally important and could increase if financing of needed replacement equipment and raw materials could be obtained.

At the same time, Romania will have to scale down the latter group even if it wishes to use them to supply the domestic market. Also, it will have to be careful to not burden its more efficient labour-intensive industries with high-cost material inputs.

In the long run, a rehabilitation of the agricultural sector will bring into play Romania's other natural advantage in order to generate a source of exports. It remains to be seen if the food industry can also be modernized in order to complement the agricultural advantages in order to find niches in the highly-protected markets of the expanding European Community.

4. The outlook and projections of Romanian-EC industrial interpenetration

We have set up a simple spreadsheet model for projecting the development of Romanian-EC trade in manufactures in which the main parameters of the projection can be changed as better information is obtained, as better proxies for the unobserved variables can be found, or simply in order to explore some alternative assumptions about these parameters.

4.1. Romanian exports to the EC

Two elements will determine the growth of Romanian exports to the EC from 1992 until 2000: (i) the expected growth of EC imports of each commodity and (ii) the competitiveness and elasticity of supply of Romanian exports of those commodities.

The expected growth of EC imports

The expected growth of EC imports for NACE two-digit commodities is either taken from Europe in 1997 or estimated by us. It is assumed that there is some constant elasticity of the commodity import growth rates with respect to the overall growth rate of industrial output in the EC. This permits the growth rates to be adjusted over time.

Where it is necessary and possible, we have assumed or estimated import growth rates for critical NACE 3-digit commodities.

We assume these EC import growth rates are independent of the supply of CEE exports.

The elasticity of supply of Romanian exports to the EC

We begin with the assumption that where there is already evidence of Romanian exports to the EC of the commodity, Romanian exports will share the increase of projected EC imports. This assumption of constant market shares is better for a short period of time than over a longer interval. Behind it is the evidence, based on our analysis of declines in output and capacity utilization, that Romania has available capacity to produce in the given areas and will respond to the assumed increase in demand.

(i) How much excess capacity is there at 'constant cost'?

One of the first evidences of excess capacity can be derived from declines of output compared to 1989. As a first assumption, the supply of exports could increase by a factor equal to the inverse of the percentage of 1992 output compared to 1989 output without reaching a capacity limitation.

(ii) The first assumption is not good in the following cases: (a) production facilities are differentiated by domestic and export markets or according to export market regions, (b) costs are heavily dependent on material and energy inputs with rising supply costs, (c) production was discontinued first in the order of the higher cost capacity, (d) plant capacity existent in 1989 has deteriorated, been scrapped or has been diverted, (e) labour capacity existent in 1989 has deteriorated or been diverted.

Since it is likely that any and all of these occurred in some measure, some mild increase in the Romanian export supply price might be assumed, in the absence of any compensating factors. This is accommodated by assuming an elasticity of Romanian export supply of 0,98 rather than 1,00 with respect to increases in EC imports.

(iii) Of course, these problems also face Romania's CEE neighbours who could and would be attempting to put their own excess capacities back into operation as export demand increases. To the extent that countries in the region more or less share these problems, the region might be assumed to be losing part of a given export market to exporters who could more efficiently expand capacity to sell to the EC.

Proportional sharing of a growing market could be assumed until each CEE ran into its own capacity constraint. Here our projection encounters a difficulty in being able to measure Romania's relative situation compared to the other CEEs.

Romania is assumed to have one of the larger declines in capacity use of the Central European countries. It can also be assumed that it gains some advantage relative to them, but we have no ready way to measure this.

The competitiveness of Romanian exports Measures of Romania's existing or static comparative advantage or competitiveness might be any or all of the following items.

(i) Market shares in the EC.

This common measure has not been prepared for the project, but could be done easily.

(ii) Degree of export orientation to competitive world markets as measured by the ratio of these exports to output.

In Romania's case we have not obtained such information except at a highly-aggregated level (EC shares in total exports at the broad level of the HS).

Also, we only have (total) export to output ratios for some commodities from the Romanian input-output tables (the latest available is 1990).

(iii) Coverage and specialization indices.

Romanian coverage and specialization indices indicate its comparative advantages with respect to the EC.

However, as mentioned below in the case of factor intensities, these measures do not suggest Romania's competitive advantages compared to other exports to the EC.

(iv) Factor intensities.

As measured in this study, Romania's comparative advantage is in those commodities which are labour intensive in the EC (no direct measure of Romanian factor intensity could be done with the available data). This, of course, suggests Romania's advantages compared to the EC, but not compared to other exporters to the EC, such as other CEECs which seem to share with it having advantages where the EC protection is labour intensive.

It would be possible to consider Romania's advantages compared to other exporters or other CEECs in terms of a comparison of dollar wage rates. The Romanian advantage in the case of labour-intensive commodities might be the inverse

of the ratio of its dollar wage compared to the average dollar wage for the CEE area.

Similar comparative measures could be used in the cases of commodities with different factor intensities.

(v) Foreign partner mutual interest.

Romania's export competitiveness would be enhanced by the active interest in foreign partners in two-way trade or in investments in Romanian export capacity.

One measure of this would be the Grubel-Lloyd indices calculated in this study.

Another measure would be the share of FDI in total capital of the branch. Unfortunately, we do not have accurate information in this case.

(vi) Degree of privatization.

It is assumed that an increase in the degree of privatization of both producing and export trading should enhance export competitiveness.

Table 23

Projection of Romanian exports to EC

NACE	Actual 1992	Projection 2000	Growth rate	Annual growth rate
21 Metalliferous ores	0	0	,00	
22 Production of metals	120 625	166 796	38,28	4,13
23 Extraction of non-metals	528	780	47,75	5,00
24 Non-metallic mineral products	70 829	112 943	59,46	6,01
25 Chemical products	78 056	109 969	40,88	4,37
26 Man-made fibres	12 578	18 583	47,75	5,00
31 Metal products	38 662	57 482	48,68	5,08
32 Mechanical engineering	48 269	73 475	52,22	5,37
33 Office machinery	208	285	36,86	4,00
34 Electrical engineering	40 987	60 276	47,06	4,93
35 Motor vehicles	12 847	18 181	41,52	4,43
36 Other transport	18 386	28 176	53,24	5,46
37 Instruments engineering	2 515	3 648	45,05	4,76
41 Food products	36 838	60 427	64,03	6,38
42 Food & drink & tobacco	1 231	1 962	59,38	6,00
43 Textile	111 368	181 315	62,81	6,27
44 Leather	6 253	10 500	67,92	6,68
45 Clothing	446 778	743 490	66,41	6,57
46 Timber & furniture	251 497	432 344	71,91	7,01
47 Paper & printing	3 852	5 440	41,22	4,41
48 Rubber & plastics	18 011	26 203	45,48	4,80
49 Other	13 585	22 322	64,32	6,40
Total manufacturing	1 333 903	2 134 595	60,03	6,02
21 Metalliferous ores	,00	,00	,00	
22 Production of metals	9,04	7,81	– 1,23	
23 Extraction of non-metals	,04	,04	,00	
24 Non-metallic mineral products	5,31	5,29	–,02	
25 Chemical products	5,85	5,15	–,70	
26 Man-made fibres	,94	,87	–,07	
31 Metal products	2,90	2,69	–,21	
32 Mechanical engineering	3,62	3,44	–,18	
33 Office machinery	,02	,01	,00	
34 Electrical engineering	3,07	2,82	–,25	
35 Motor vehicles	,96	,85	–,11	
36 Other transport	1,38	1,32	–,06	
37 Instruments engineering	,19	,17	–,02	
41 Food products	2,76	2,83	,07	
42 Food & drink & tobacco	,09	,09	,00	
43 Textile	8,35	8,49	,15	
44 Leather	,47	,49	,02	
45 Clothing	33,49	34,83	1,34	
46 Timber & furniture	18,85	20,25	1,40	
47 Paper & printing	,29	,25	–,03	
48 Rubber & plastics	1,35	1,23	–,12	
49 Other	1,02	1,05	,03	
Total manufacturing	100,00	100,00		

We shall use the shares of exports privatized in Romania as a proxy for the degree of privatization in both producing and trading.

(vii) Detrimental or beneficial distortions.

Self explained.

(viii) Indicators of changing export capacities and competitiveness.

Forecasts of expected investments to enlarge or improve export branches, of FDI, of comparative dollar wage rates and of comparative rates of privatization might be useful.

Table 24

Competitiveness score of Romanian commodity groups

NACE	Commodity	Trade coverage ratio	Factor intensity score	Distortions productions Romania	EC-AA forecast Romania	Sensitivity	Global score
211	Extraction of iron ore	−1	0	−1	:	1	−1
212	Extraction of non-ferrous metal	−1	0	−1	:	1	−1
221	Iron & steel	1	0	−1	−1	−1	−2
222	Steel tubes	1	0	−1	−1	0	−1
223	Cold steel	−1	0	−1	−1	0	−3
224	Processing non-ferrous metals	1	0	−1	−1	0	−1
231	Building materials & clay	−1	0	1	−1	1	0
232	Mining of salt	−1	0	1	−1	1	0
233	Salt extraction	−1	0	1	−1	1	0
239	Other minerals	−1	0	1	−1	1	0
241	Clay products	−1	0	1	0	0	0
242	Cement, lime & paper	1	0	1	0	0	2
243	Cement/plaster products	−1	0	1	0	1	1
244	Artcles of astbestos	−1	0	1	0	1	1
245	Non-metallic mineral products	1	0	1	0	1	3
246	Grindstones	−1	0	1	0	1	1
247	Glass & glassware	1	0	1	0	0	2
248	Ceramic goods	1	0	1	0	0	2
252	Petrochemicals	1	0	−1	−1	0	−1
253	Industrial chemicals	1	0	−1	−1	0	−1
255	Paint & varnish	−1	−1	−1	−1	1	−3
256	Industrial and agricultural chemicals	−1	−1	−1	−1	0	−4
257	Pharmaceuticals	−1	−1	−1	−1	0	−4
258	Soap, detergents	−1	−1	−1	−1	1	−3
259	Other chemicals	−1	−1	−1	−1	1	−3
260	Man-made fibres	1	0	:		−1	0
311	Foundries	−1	0	−1	1	1	0
312	Forging	−1	0	−1	1	0	−1
313	Secondary metals	1	0	−1	1	0	1
314	Structural metal	−1	1	−1	1	1	1
315	Tanks and containers	−1	1	−1	1	0	0
316	Tools & metal goods	−1	1	−1	1	0	0
321	Agricultural machines & tractors	−1	−1	−1	1	0	−2
322	Working tools	0	1	−1	1	1	2
323	Textile machinery	−1	−1	−1	1	1	−1
324	Food/chemical machines	−1	−1	−1	1	1	−1
325	Mines machinery	−1	−1	−1	1	1	−1
326	Transmission equipment	1	1	−1	1	0	2
327	Specific machinery	−1	−1	−1	1	1	−1
328	Other machinery	−1	−1	−1	1	1	−1
330	Office machinery	−1	−1	−1	:	1	−2
341	Wires & cables	−1	−1	0	:	1	−1
342	Electrical machinery	1	−1	0	:	0	0
343	Electrical appliances	−1	−1	0	:	0	−2
344	Telecom equipment	−1	−1	0	:	0	−2

345	Radio/TV-sets	-1	-1	0	:	0	-2
346	Domestic electrical appliances	1	-1	0	:	1	1
347	Lamps & lighting	1	-1	0	:	0	0
351	Motor vehicles	-1	-1	0	:	0	-2
352	Vehicle bodies	-1	-1	0	:	1	-1
353	Vehicle parts	0	-1	0	:	1	0
361	Shipbuilding	1	1	0	:	1	3
362	Rooling-stock	-1	1	0	:	1	1
363	Cycles, motor cycles	-1	-1	0	:	1	-1
364	Aerospace equipment	-1	-1	0	:	1	-1
365	Transport equipment	-1	1	0	:	1	1
371	Measuring instsruments	-1	-1	1	:	1	0
372	Medical equipment	-1	-1	1	:	1	0
373	Optical instruments	-1	-1	1	:	0	-1
374	Clocks & watches	-1	-1	1	:	0	-1
411	Edible oils	-1	0	1	1	1	2
412	Meat	1	-1	1	1	1	3
413	Dairy products	-1	0	1	1	1	2
414	Processing fruit/vegetables	-1	0	1	1	1	2
415	Fish	0	-1	1	1	1	2
416	Grain milling	-1	0	1	1	1	2
417	Spaghetti, macaroni	-1	0	1	1	1	2
418	Starch products	-1	0	1	1	1	2
419	Bread & flour confect	-1	0	1	1	1	2
420	Sugar	-1	0	1	1	1	2
421	Confectionery	-1	0	1	1	1	2
422	Animal feed	-1	0	1	1	1	2
423	Other food products	-1	0	1	1	1	2
424	Distilling	-1	0	1	1	1	2
425	Wine	-1	0	1	1	1	2
426	Cider	-1	0	1	1	1	2
427	Brewing and malting	-1	0	1	1	1	2
428	Soft drinks	-1	0	1	1	1	2
429	Tobacco products	-1	0	1	1	1	2
43A	Yarns	-1	0	1	1	-1	0
43B	Woven fabrics	-1	0	1	1	-1	0
436	Knitting industry	1	1	1	1	-1	3
438	Floor coverings	-1	0	1	1	-1	0
439	Miscellaneous textile industry	-1	0	1	1	-1	0
441	Tanning leather	-1	0	1	1	0	1
442	Leather products	1	1	1	1	0	4
451	Footwear	1	1	1	1	0	4
453	Clothing	1	1	1	1	-1	3
455	Textiles	1	1	1	1	-1	3
456	Furs, fur goods	-1	0	1	1	0	1
461	Processing of wood	1	0	1	1	1	4
462	Wood products	1	0	1	1	0	3
463	Joinery components	1	1	1	1	1	5
464	Wooden containers	1	1	1	1	1	5
465	Other wood products	1	1	1	1	1	5
466	Cork & straw articles	1	1	1	1	0	4
467	Wooden furniture	1	1	1	1	0	4
471	Pulp, paper, board	-1	0	0	-1	1	-1
472	Processing paper, board	-1	-1	0	-1	1	-2
473	Printing	-1	-1	0	-1	1	-2
481	Rubber products	-1	0	1	:	-1	-1
482	Retread tyres	-1	0	1	:	0	0
483	Processing plastics	-1	0	1	:	0	0
491	Jewellery	-1	-1	1	1	1	1
492	Musical instruments	1	1	1	1	1	5
493	Photo laboratories	-1	1	1	1	1	3
494	Toys/sports goods	-1	1	1	1	0	2
495	Miscellaneous manufacturing	-1	1	1	1	1	3

4.2 The actual spreadsheet model

As developed at this point, the spreadsheet contains for each 3-digit NACE commodity the following information:

(i) The value of EC imports from Romania in ecu in 1992.

(ii) The projected annual growth rate of extra-EC imports from all sources. This rate was set at 5%.[1]

(iii) A series of indicators of relative Romanian competitiveness, (see Table 24) which have been converted into simple scales of 'advantages' (+1), 'neutral' (0), and 'disadvantageous' (-1). An average of these indicators is calculated (cf. last column in Table 24 labelled 'Global score') and used to increase or decrease the assumed elasticity of Romanian export growth with respect to the projected growth rate of EC imports from all sources.

The resulting growth rate is applied to the 1992 values of EC imports from Romania in order to project the ecu values in 2000 (in 1992 ecus) (see Table 23).

The indicators presently available are (see Table 24):

(a) the trade coverage ratio: high +1, medium 0, low -1;

(b) the factor intensity of EC production: labour intensive +1, capital and energy intensive (and other) 0, skilled labour and R&D -1;

(c) the average level of distortions for the 2-digit commodity NACE codes in Table 18;

(d) whether the share in industrial output is expected in 1996 to increase (+1), remain about the same (0), or decrease (-1) in Table 25;

(e) whether in imports under the Association Agreement, the commodity is restricted as in the case of textiles (-1), a 'sensitive product' (0), or a free product (+1). (this column is labelled: EC-AA sensitivity).

[1] No forecast was provided by the European Commission. The only guideline was found in *Europe in 1997*, containing a forecast of the annual growth rate of extra-EC imports for 1991-97 for a few product categories. This figure was between 1,8% for cars and 11,5% for clothing.

Table 25

Present official forecast of industrial production structures, 1992-96 (share of output in current prices)

(%)

	1992	1993	1994	1995	1996
Thermal and electrical energy	9,5	10,2	10,0	10,0	10,5
Fuels	18,1	19,0	17,0	15,0	13,0
Steel	9,3	9,0	7,5	7,0	6,2
Non-ferrous metallurgy	2,9	2,2	2,5	2,0	1,8
Machine building and metal processing	18,3	19,0	20,0	20,8	21,0
Chemistry	10,7	8,5	8,5	8,3	8,0
Construction materials	2,4	2,0	2,0	2,5	2,0
Wood — exploitation and processing	3,9	4,0	4,2	4,2	4,5
Pulp and paper	1,3	1,0	1,2	1,0	1,0
Glass and ceramics	1,0	1,1	1,0	1,0	1,0
Textile	5,0	4,7	5,5	6,2	6,8
Ready-made clothes	1,0	2,0	2,5	3,2	4,3
Leather, fur, footwear	1,8	2,0	2,2	2,4	2,6
Food	11,1	11,5	11,8	12,5	13,5
Other	3,0	3,8	4,1	3,9	3,8
Total	100,0	100,0	100,0	100,0	100,0

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Chapter 4

The economic interpenetration between the EC and Eastern Europe: Czechoslovakia

Czechoslovakia: an examination of trade structure and EC trade protection

Michael Landesmann[1]

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Introduction

The Czech Republic is, together with Hungary, generally considered the country which, amongst the newly emerging market (NEM) economies of Eastern Europe, might be the most successful to catch up with the countries of Western Europe as it transforms itself from one of the most centrally-planned economies of Eastern Europe into a market-oriented economy. A number of factors are usually put forward to account for this relative optimism: Czechoslovakia (particularly the Czech lands) were amongst the industrially most advanced regions in Central and Eastern Europe until after the Second World War; the industrial structure was — together with that of the GDR — considered, in purely technological terms, the most sophisticated in Eastern Europe; it was generally recognized that engineering skills were high; the pre-war political traditions indicated that the economic transformation might be accompanied by a successful transition towards a liberal-democratic political system which could guarantee a certain degree of political stability. Some of these conjectures have, indeed, so far passed the test of time: Czechoslovakia has not only managed a 'velvet revolution' but also — in comparison with the separatist tendencies in other parts of Eastern Europe — a 'velvet divorce' settlement between the two successor States, the Czech Republic and Slovakia. The process of macroeconomic stabilization was, at least in the Czech Republic, more successful and has not caused the same degree of political fickleness as, say, in the neighbouring States of Poland and Hungary. There has been a switch towards greater pragmatism in the execution of economic policy which accompanied a rhetorically-persistent strategy of economic transformation. As a result, the social costs of economic transition do not appear as great as in the other countries of Central and Eastern Europe (CEE) and this, in turn, provides a socially and politically more stable environment in which a relatively concerted effort towards further economic transformation and development can be made. This 'virtuous loop' factor should not be underestimated as examples of historically-successful catching-up economies show.

In this paper, which is based mostly on information about developments up to the end of 1992 in which the statistical entity of 'Czechoslovakia' was still intact and to which I will continue to refer throughout the paper,[1] I am going to examine the current state and the prospects for Czechoslovak-EC trade integration over the medium and long run. The paper is structured as follows: Part I discusses some distinguishing features of Czechoslovak industrial and trade structures and discusses in detail the features of Czechoslovakia's evolving trade relationships with the European Communities (EC). Part II analyses the incidence of EC protectionist measures upon Czechoslovakia's trade structure and performance as well as evidence for the impact which historically-inherited supply-side features of the C&SRs' economies might have upon current and future trade patterns. Part III gives a summary of the findings and discusses the potential for Czechoslovakia's trade specialization and performance.

I. Czechoslovakia's industrial and trade structures

I.1. The historical heritage

I.1.1. The broad sectoral pattern of the Czechoslovak economy

Table I.1.1

Sectoral composition of the Czechoslovak economy in 1989 (percentage shares)

(%)

	GDP	Employment	Investment
Agriculture	8,8	11,6	13,5
Industry	49,6	37,7	42,2
Construction	8,4	10,2	4,3
Services	33,2	40,5	40,1

Source: Statistical yearbook of the CSFR, 1991

To get an understanding of the specific features of Czechoslovakia's industrial structures as they were in 1989, we start with an overview of the broad sectoral composition of the Czechoslovak economy in Table I.1.1.

In comparison with other OECD economies, [2] Czechoslovakia has a very large industrial sector and a low representation of (statistically-recorded) service activities. The share of employment in agriculture is above that of the EC, but in line with that of OECD Europe. The low figures for employment in services could partly be due to the fact that industrial activities were (and still are) highly concentrated and integrated in big enterprises and hence tertiary types of activities were carried

[1] At times we will also refer to the abbreviation C&SRs for Czech and Slovak Republics.

[2] For comparative purposes we present employment shares in OECD and EC economies in 1979 and 1989:

	Agriculture		Industry (including construction)		Services	
	1989	1979	1989	1979	1989	1979
OECD Europe	11,3	14,1	31,2	36,2	57,6	49,7
EC	6,9	10,1	32,9	38,2	60,7	51,7
OECD Total	7,6	9,9	29,9	39,1	62,5	55,9

Source: OECD labour force statistics 1969-89, Paris, 1991.

out within these enterprises. As Czechoslovak industry becomes deconcentrated and vertically disintegrated, such activities will increasingly be taking place 'out-of-house' and thus recorded as services; this will lead to a shift of tertiary types of activities, which formerly were carried out within the industrial sector, to the service sector proper. In addition, of course, it is a well-known fact that socialist economies neglected service activities; recent information on structural change patterns does show strong growth of employment in certain service areas (distribution, producer services, etc.). The large share of employment in manufacturing does indicate that we are likely to witness a process of dramatic 'deindustrialization' in the Czech and Slovak Republics over the coming years. The OECD as a whole[1] (see footnote 2 on p. 343) experienced roughly a 10% loss of employment share in industry over the period 1979 to 1989 and one may conjecture that the shifts in employment structures in Eastern Europe over the coming years will be much more dramatic.

I.1.2. The structure of the industrial sector

An evaluation of the detailed characteristics of the Czechoslovak industrial structure requires comparisons with other economies. Graphs I.1. show comparisons of branch employment shares with two Eastern (Hungary and Poland) and three Western economies (Austria, Switzerland and Sweden).[1] The comparison of employment structures in 1988 in Table I.1.2. shows the following branches to be over- or under-represented in CSFR compared to the East and West European economies:

The comparison in Graph I.1 reveals particularly strong representation of industry 32 (mechanical engineering). On the other hand, we can observe an under-representation of other engineering industries such as 33+34, 37 and 31 (only in relation to Western economies). This does indicate that Czechoslovakia could diversify its engineering sector in the future in the direction of electric and electronic engineering, instrument engineering and certain metal products. There is also an underrepresentation of food processing, of plastics and of paper and paper products (compared to Western economies). The extraction and processing of metals and also transport equipment is strongly represented in Czechoslovak employment structures.

Next we want to mention the amazing stability of branch structures within Czechoslovak manufacturing over the 1980s as revealed by Tables I.1.3. derived from UNIDO statistics. We can see that there were hardly any movements in the shares of the different branches in total industrial employment and output. An earlier study (Landesmann, 1991) also recorded the extreme stability of branch structures in Czechoslovakia in comparison not only with Western but also with Eastern European economies. Table I.1.3 gives an extract of average shifts in manufacturing branch shares calculated over the period 1966 to 1988.

[1] The latter group of countries are highly-developed West European economies of roughly similar size as Czechoslovakia and well endowed with forests as is Czechoslovakia. In terms of income per head there is a wide gap (see next footnote below) which — as is an optimistic view — will be bridged over the next two decades or so.

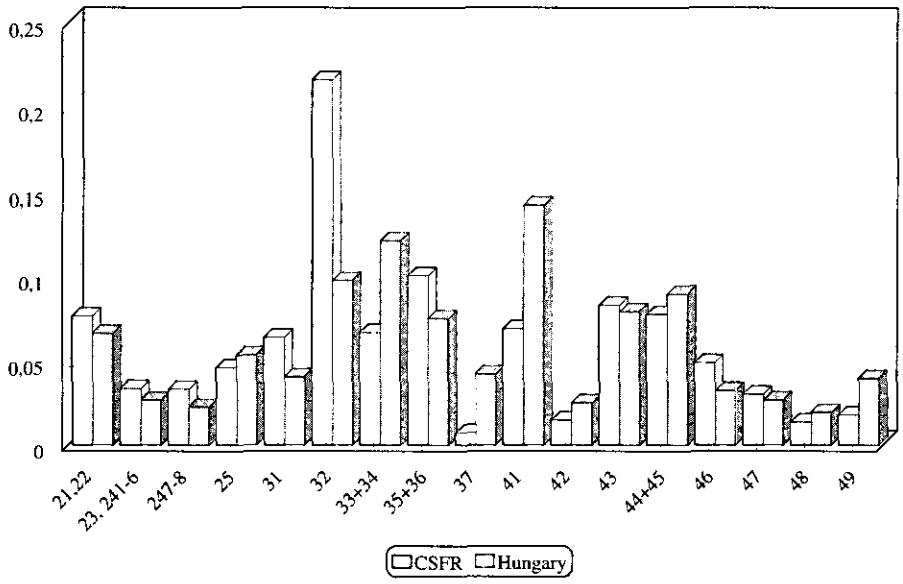
Table I.1.2.

Comparisons of Czechoslovak branch structures with West and East European economies (derived from Graph I.1.)

Branches which are more or less represented in the CSFR	Compared to both sets of countries	Only compared to Western economies	Only compared to Eastern economies
More	21, 22 247 – 8 32 35 + 36	43 44 + 45	49
Less	25 33 + 34 37 41 48	31 47	

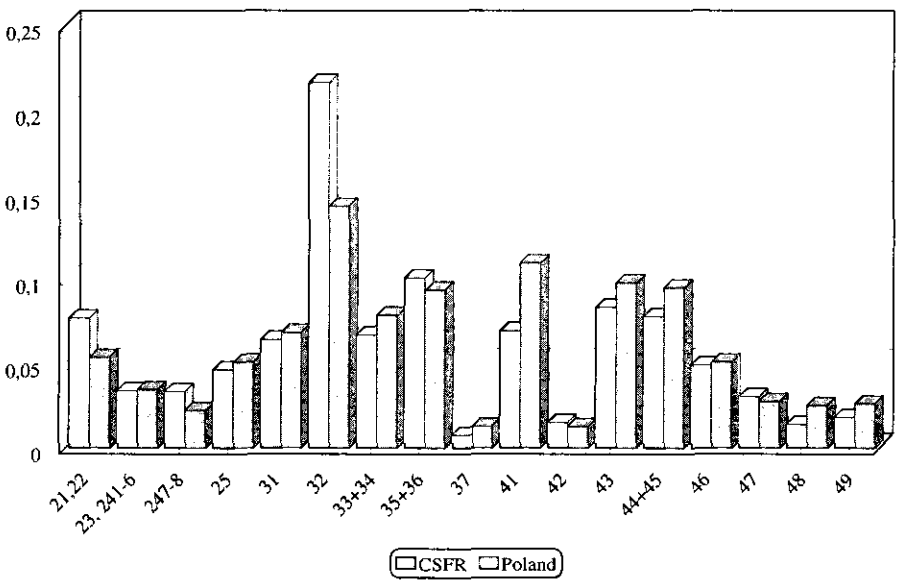
Note: The numbers refer to NACE 2-digit industries; Western economies refers to Austria, Switzerland and Sweden; Eastern economies to Hungary and Poland.

GRAPH I.1.a: **Comparison of employment structures, Czechoslovakia-Hungary in 1988 (shares of employees in total manufacturing industry)**



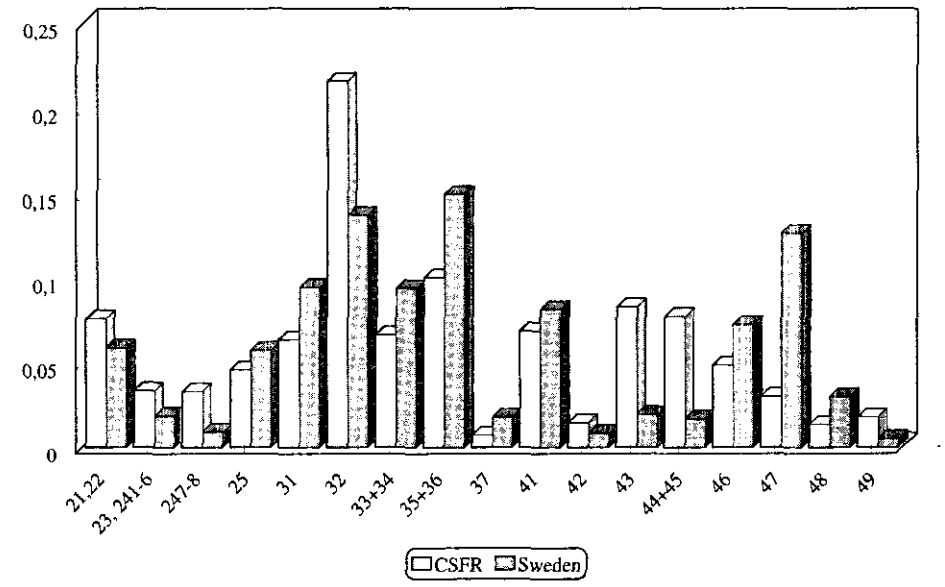
Source: UNIDO, Industrial statistics.

GRAPH I.1.b: **Comparison of employment structures, Czechoslovakia-Poland in 1988**



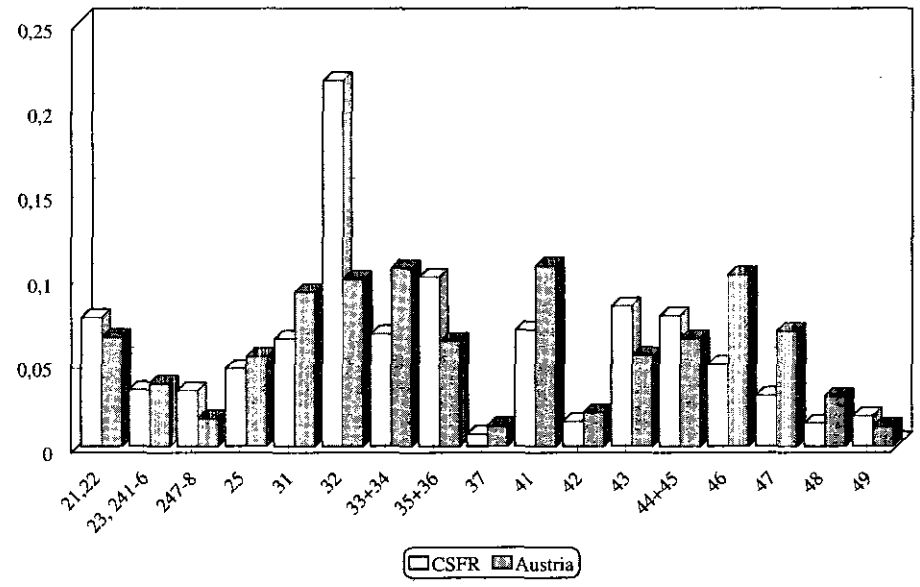
Source: UNIDO, Industrial statistics.

GRAPH I.1.c: **Comparison of employment structures, Czechoslovakia-Sweden in 1988**



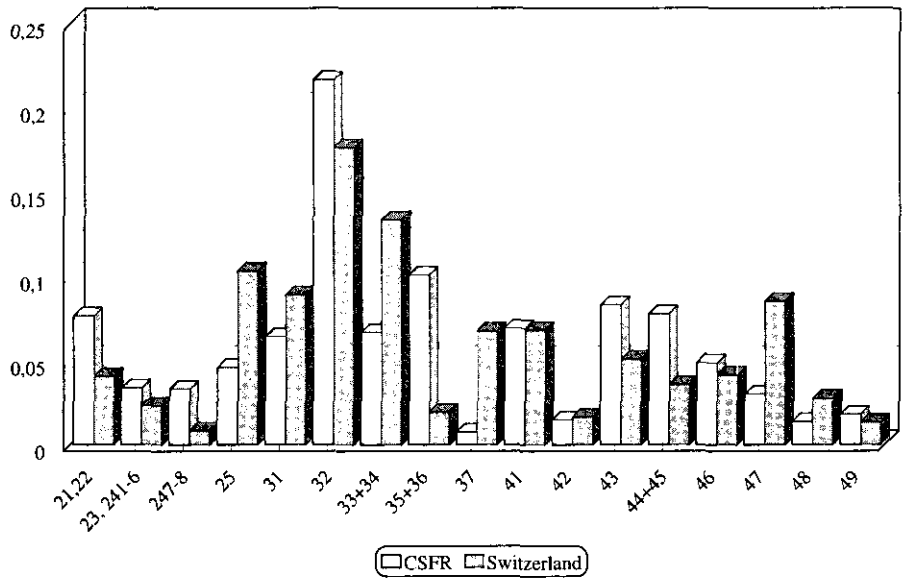
Source: UNIDO, Industrial statistics.

GRAPH I.1.d: **Comparison of employment structures, Czechoslovakia-Austria in 1988**



Source: UNIDO, Industrial statistics.

GRAPH I.1.e: **Comparison of employment structures, Czechoslovakia-Switzerland in 1988**



Source: UNIDO, Industrial statistics.

Table I.1.3

Measures of structural change in manufacturing industries: shifts in employment and output (value-added) structure, 1966-88

	CSFR	Hungary	Poland	Austria	Germany	Southern Europe	Northern Europe
EMP	1,18	2,85	2,03	2,12	2,65	2,71	2,42
VA	1,48	2,89	3,03	2,44	3,24	3,20	2,46

Table I.1.4

Distance measure of employment structures in Czechoslovakia and a number of West and South European countries in 1988

	Austria	Switzerland	Sweden	Denmark	Finland	Spain	Greece
CSFR	2,91	2,98	2,88	3,09	3,14	3,11	4,58

Notes: The measures used to calculate the shifts in structure and the distance between structures is the following:

$\Sigma_j(sjA - sjB)^2 . s^{jB}/100$

where sjA and sjB refer to the shares (in %) of industry j in Year A and Year B (Table 3) or in Country A and Country B (Table 4) in total manufacturing employment or value-added. EMP refers to shifts in employment, VA to shifts in value-added structure.

The measure was calculated from UNIDO industrial statistics which provide time series for 28 3-digit (ISIC) industries in manufacturing. Southern Europe refers to Greece, Ireland, Portugal, Spain and Turkey; Northern Europe to Austria, Belgium, Denmark, Finland, the Netherlands, Norway and Sweden.

It is interesting to see (Table I.1.4) that although Czechoslovakia is closer to Southern European economies in income per head,[1] its industrial structure is closer to the more advanced countries of Western and Northern Europe. A number of commentators (CEPR, 1990, Hamilton and Winters, 1992) have similarly pointed out this discrepancy. They have argued that, given the industrial development strategy but also the educational and training policies adopted by the East European economies in the past, they have a human infrastructure which makes them more similar to Central and Northern European countries than Southern Europe. These studies conjectured that this feature has important implications (at least for the more advanced countries of Eastern Europe such as Czechoslovakia, Hungary and Poland) regarding their future industrial and trade specialization. We concur with this view in our report to the European Communities (see Landesmann and Shields, 1992) which explicitly discusses this topic and forecasts the likely trade specialization patterns of East European economies.

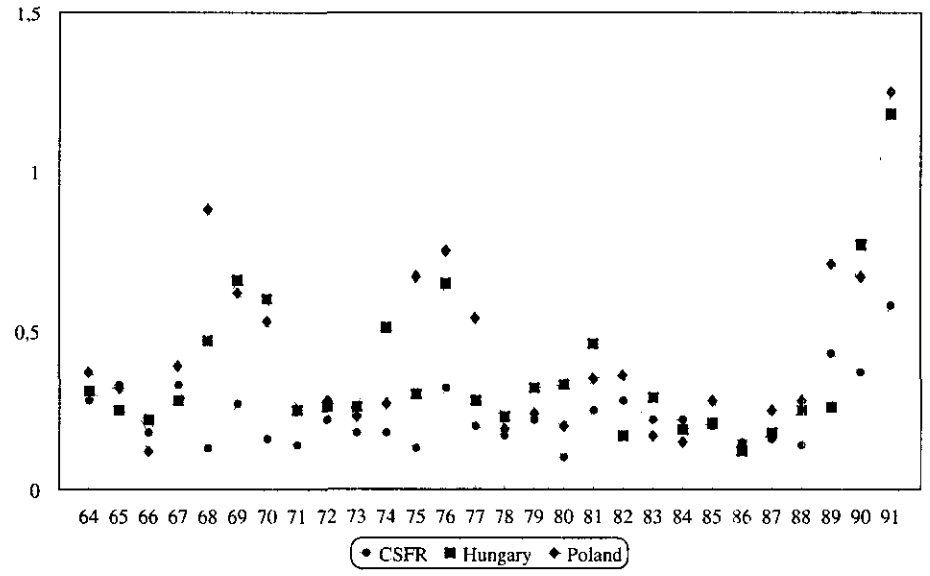
[1] A study carried out by Eva Ehrlich from the Hungarian Academy of Sciences reports the following ranking in terms of income per head in 1986 (US income per head = 100):

	Income per head (US = 100) in 1986
USA	100
Sweden	77,9
Switzerland	67,8
Austria	60,5
Italy	49,1
Czechoslovakia	39,7
Spain	34,7
Hungary	28,9
Greece	25,8
Poland	22,9

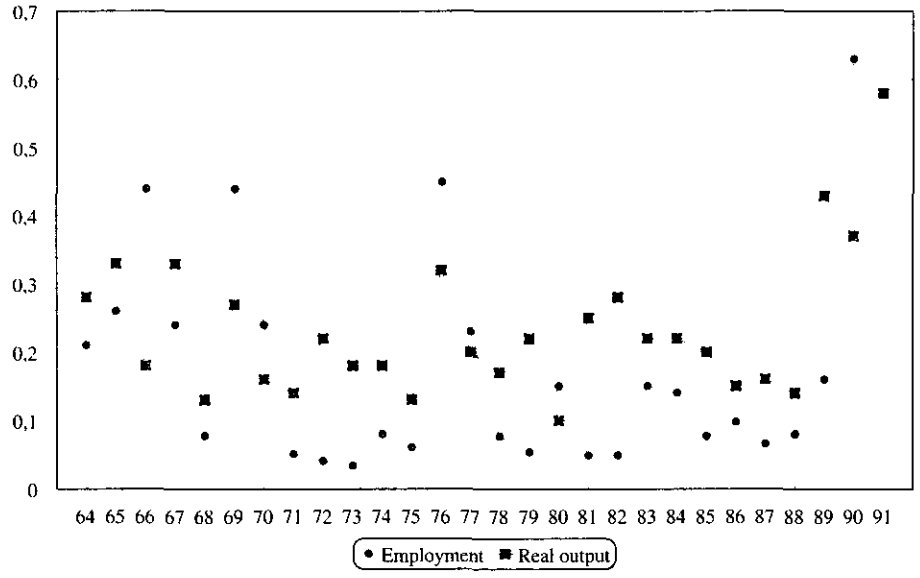
Source: Eva Ehrlich: Competition between countries 1937 to 1986; presented at the IVth World Congress for Soviet and East European Studies, Harrogate, England, July 1990.

Recent shifts in employment and output structures have been taking place in all CEE economies as the year-by-year plots of the structural change indicators for employment and output in Graphs I.2.(i) and (ii) indicate. They transcend in all the CEE-3 (Czechoslovakia, Hungary and Poland) the peaks achieved in previous periods of exceptional structural change, such as the reform periods in the late 1960s and the period following the 1973 oil crisis. The conclusion that can be drawn from this sub section is that Czechoslovakia has emerged from a period of exceptional structural stability (rigidity) and is undergoing structural change which is greater than that experienced in previous peak periods.

GRAPH I.2 (i): **Year-to-year structural change coefficients for real gross output**



GRAPH I.2 (ii): **Czechoslovakia: year-to-year structural change coefficients**



I.1.3. Strong dependence of manufacturing employment upon the engineering sector

We now come to discuss the link between employment and output structures, on the one hand, and sales to the domestic and export markets on the other. For this purpose we use the Czechoslovak input-output table for 1987 (the last one available at the moment) and show first shares of different branches in employment and output (columns 1 and 2 of Table I.1.5) and then the labour force directly and indirectly linked to sales of different commodities in export and domestic markets. Direct and indirect employment requirements of a sector are calculated using the traditional input-output formula:

$$\underline{L} = \underline{l}\,(I-A)^{-1}\,\underline{f}$$

where $\underline{L}$ refers to the vector of total labour requirements; $\underline{l}$ is the vector of labour input coefficients; A the matrix of (intermediate) input coefficients, and $(I-A)^{-1}$ the Leontief inverse; $\underline{f}$, the vector of the levels of total sales of the different commodities, can be decomposed into sales to the domestic market $\underline{d}$ and sales to export markets $\underline{e}$, i.e. $\underline{f} = \underline{d} + \underline{e}$. This allows us to link employment structures directly or indirectly to exports or sales to the domestic market.

As we can see (Table I.1.5, columns 3 and 4) employment structures differ in a number of components dramatically in whether exports or sales to the domestic market are considered. Employment linked to exports had a particularly high representation of industries such as metallurgy, chemicals, other material products and particularly of machinery (!), while in sales to the domestic market industries such as food, drink and tobacco, and construction featured much more prominently.

Focusing on a smaller subset of industries for which we have a breakdown of exports to other ex-CMEA countries (including the Soviet Union) and to the West, the extremely prominent role of machinery in exports emerges even more strikingly (see Table I.1.6). It is clear, given the very different composition of commodities which were sold to the West as compared to that sold to Eastern Europe, that the very prominent position of machinery in exports to Eastern Europe accounted for the heavy dependence of the employed labour force (directly or indirectly) upon machinery production.

Table I.1.5

Direct and indirect dependence of employment on sales to the domestic market and on exports (using the 1987 Czechoslovak input-output table)

Sectors	% of total employed	% of output	% of workforce employed in domestic output	% of workforce employed in exports
1. Agriculture	11,57	8,23	5,06	0,65
2. Forestry	1,50	0,43	0,008	0,50
3. Water	0,57	0,42	0,14	0,00
4. Fuel industry	2,05	2,92	1,60	1,74
5. Power industry	1,42	3,81	1,70	0,28
6. Metallurgy	2,43	12,01	0,24	5,43
7. Chemicals	1,70	8,20	2,19	7,01
8. Machinery	13,63	14,33	15,14	33,24
9. Wood industry	1,98	1,73	1,54	2,97
10. Paper industry	0,52	1,22	0,17	1,25
11. Textile and clothing industry	4,16	3,39	4,00	7,61
12. Leather industry	1,32	1,07	1,43	3,33
13. Printing industry	0,70	0,58	0,99	0,33
14. Food, beverages, tobacco products	2,61	7,10	20,19	3,12
15. Construction	12,12	8,48	21,07	0,77
16. Non-metal mineral product	2,76	2,86	0,68	3,18
17. Other material products	10,62	7,86	5,56	11,46
18. Transportation	9,06	5,66	4,04	5,85
19. Telecommunication	1,56	0,72	1,03	0,16
20. Trading and boarding	10,93	4,98	7,09	9,05
21. Banking and insurance services	0,53	0,31	0,13	0,68
22. Housing	2,30	1,36	3,52	0,000
23. Other services	3,96	2,36	2,41	1,38
Total	100	100	100	100

Table I.1.6

Industrial composition of exports to the East (CMEA) and the West

(%)

Industry	1987 export to		1989 export to	
	East	West	East	West
Agricultural plant products	0,16	0,98	0,44	1,06
Agricultural animal products	0,02	0,48	0,02	0,46
Forestry	0,00	1,23	0,01	0,75
Fuel industry	1,69	8,73	2,23	8,30
Energy industry	0,37	0,52	0,44	0,67
Iron and steel: metal	6,48	9,53	6,31	12,65
Non-ferrous metal	0,25	0,45	0,32	0,55
Chemical industry	6,73	12,30	7,73	13,66
Engineering industry	49,81	15,78	56,82	17,82
Building materials industry	1,66	1,38	1,48	1,32
Wood processing industry	1,50	5,59	1,37	5,13
Paper and pulp industry	0,41	3,83	0,43	4,20
Glass, china ceramics	1,26	5,16	1,52	5,02
Textiles industry	3,32	7,57	3,21	6,25
Garment industry	2,09	1,99	1,84	1,69
Leather industry	3,11	2,75	3,18	2,25
Printing and publishing	0,90	1,96	0,90	1,74
Food industry	1,30	6,56	1,33	9,46
Freezing and tobacco	0,01	0,00	0,02	0,00
Other industrial products	0,24	0,55	0,23	0,72
Building industry	0,80	0,35	3,08	0,29
Investment units	17,88	12,31	7,08	6,01
Total	100	100	100	100

Source: Czechoslovak international trade statistics.

I.2. Reorientation of trade, 1989 to 1992

I.2.1. Difficulty in evaluating the extent of trade reorientation

Table I.2.1 reveals the dramatic reorientation of trade which took place over the period 1989 to 1992. In current USD terms, the share of ex-CMEA countries declined from 77% in exports (76% in imports) in 1988 to 22% (28%) in 1992. At the same time the shares of Western industrial countries increased from 15% (17%) in exports (imports) in 1988 to 64% (65%) in 1992; the share of the EC increased from 9% (10%) to 50% (44%) in total exports and imports respectively. To disentangle volume and relative price (including exchange-rate) changes in these overall dollar trade figures is very difficult as the disintegration of the CMEA meant a move away from transferable rouble to convertible currency trade and a change of negotiated price arrangements to world market prices. At the same time dramatic realignments of the official exchange rates (dramatic devaluations of the rouble and, to a lesser extent, of the KCS) took place. For a detailed discussion of the terms-of-trade movements and volume estimates

of the changes in trade flows for a variety of CEE economies see Gacs (1993b), Rosati (1993b) and Landesmann (1993b).

The overall fall in the volume of exports is estimated to be about 5% in 1991 while GDP at constant prices fell by 16% in that year; in 1992 the overall volume of exports rose by 4,1% while GDP fell by 8,4%. This indicates a rather successful process of trade reorientation over the period 1989 to 1992 with increased exports to Western markets compensating for a major proportion of the dramatic fall in exports to the ex-CMEA countries. This success is the more remarkable as export structures to the former CMEA markets (the Soviet Union in particular) were — as discussed in Section I.1.3. — distinctly different from those which characterized trade with the West. We will report some regression results in Section I.3.1. which show that the growth pattern of exports to the West, particularly in 1991, reflected this historical legacy of a 'dual' export structure. The initial strong increase in exports to the West was biased in the direction of industries which were strongly oriented towards CMEA markets in the past and suffered most from the collapse of these markets in 1990 and 1991.

Table I.2.1.

CSFRs' exports by region (shares in % derived from USD trade figures)

(%)

		Countries in transition			Western industrial		
	World	Total	F. CMEA[1]	F. USSR	Total	EEC	Developing count.
1988	100,0	80,6	76,7	43,9	15,1	9,2	4,3
1989	100,0	78,8	71,1	39,6	16,9	9,9	4,3
1990	100,0	74,7	66,2	38,3	21,1	13,3	4,3
1991	100,0	55,0	46,0	27,3	38,6	30,3	6,4
1992	100,0	25,7	21,5	10,9	64,1	49,5	10,2
				Czech Republic			
1991	100,0	51,6	49,5	24,9	41,9	32,9	6,5
1992	100,0	22,1	21,0	8,5	67,8	52,8	10,1
				Slovak Republic			
1990	100,0	75,5	65,1	37,8	21,0	0,0	3,5
1991	100,0	63,0	55,5	33,0	31,0	24,2	6,0
1992	100,0	34,2	29,7	16,5	54,2	41,6	11,6

CSFRs' imports by region (shares in % derived from USD trade figures)

		Countries in transition			Western industrial		
	World	Total	F. CMEA[1]	F. USSR	Total	EEC	Developing count.
1988	100,0	79,6	75,7	41,1	17,2	10,1	3,2
1989	100,0	79,8	71,9	38,0	16,7	9,6	3,5
1990	100,0	76,3	66,2	32,2	20,7	11,6	3,0
1991	100,0	56,3	52,0	41,3	37,8	25,5	5,8
1992	100,0	29,7	28,9	22,7	64,8	43,9	5,5
				Czech Declaration (FOB)			
1991	100,0	49,2	46,6	33,8	44,3	30,6	6,5
1992	100,0	27,2	26,6	20,2	67,0	45,1	5,8
				Slovak Declaration (FOB)			
1991	100,0	70,0	66,2	0,0	25,2	15,9	4,8
1992	100,0	44,2	42,5	35,9	51,1	34,2	4,7
				Slovak Declaration (CIF)			
1990	100,0	73,3	60,6	24,5	23,8	0,0	2,9
1991	100,0	69,0	65,1	54,5	25,2	15,8	5,8
1992	100,0	43,9	42,2	35,6	50,8	34,0	5,3

[1] F. CMEA includes the former Soviet Union.
Source: Czechoslovak trade statistics.

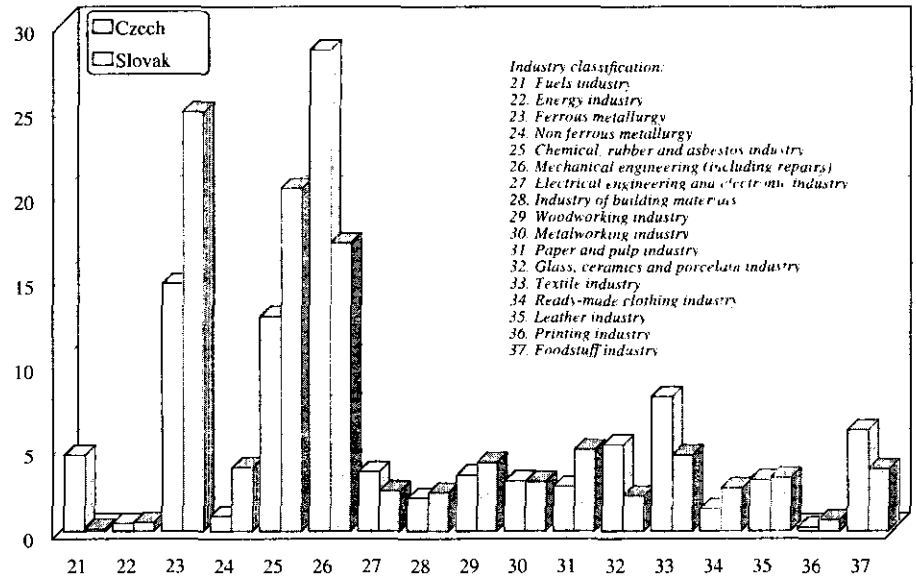
As mentioned above, the most important component of Czechoslovakia's trade with the West is the European Community (EC) which accounted for a mere 10% of manufacturing export and import flows in 1989 and now (1992) accounts for over 50% of export flows and about 45% of import flows. The detailed structural features of Czechoslovakia's trade flows with the EC and the growth patterns over the period 1989 to 1992 will be discussed in Section I.3. after pointing out some differences of the Czech and Slovak trade structures.

I.2.2. Differences between the Czech and Slovak trade structures

At an aggregate level Table I.2.1. above shows the significantly greater dependence of Slovakia upon ex-CMEA markets than the Czech region. At a more detailed level we can see (Graph. I.1.4.) the somewhat stronger representation of industries 23 (ferrous metals), 25 (chemicals), 28 (building materials), 29 (wood working), 31 (pulp and paper), and 34 (clothing) in exports from Slovakia. The Czech lands, on the other hand, have a distinctly stronger representation of the mechanical engineering industry (26) and of industries 32 (glass, ceramics) and 33 (textiles).

In the period of the major expansion of Czech and Slovak trade to the West, 1989 to 1992, the overall growth of exports to the West was very similar between Slovakia and the Czech lands, but Slovakia — with its stronger previous dependence upon CMEA markets — was more strongly affected by the collapse of CMEA and particularly the Soviet market.

GRAPH I. 2.(iii): **Czech and Slovak export structure convertible trade, 1991**



Note: The data used for Graph I.2.(iii) are derived from an enterprise dataset comprising information about all Czech and Slovak enterprises with more than 100 employees. The information in the Graph refers to trade in convertible currency in 1991; by January 1991 trade in non-convertible currency (i.e. transferable roubles) had virtually disappeared.

I.3. Trade structure and trade performance *vis-à-vis* the EC

As mentioned earlier, trade with the European Community (EC) accounts now for about 50% of overall CSFR trade and is still rising. A careful analysis of the pattern of trade with the EC and its trends can yield important insights into Czechoslovakia's current and future place in the international division of labour. In the following we will use a number of specialization and intra-industry trade indicators to examine specialization patterns in Czechoslovakia's trade with the EC and examine developments since 1989. Section I.4. will further examine specialization patterns in relation to factor intensities.

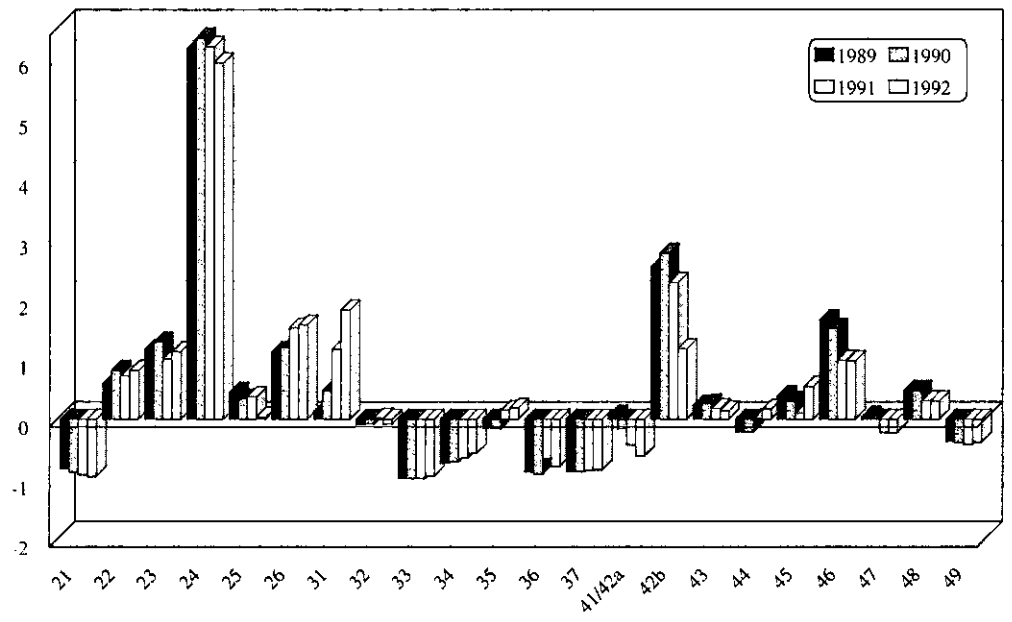
I.3.1 The structure of exports and imports to/from the EC and shifts 1989 to 1993

Graphs I.3.1.a and b show a comparison of Czechoslovakia's export structure to the EC with the EC's overall import structure at a two-digit NACE level and, similarly, Czechoslovakia's imports from the EC in comparison with the structure of EC exports. The annex tables in this issue of *European Economy* also show the disaggregated annual growth rates (in nominal ecu terms) of exports to the EC and imports from the EC for the years 1989 to 1992 and we do not want to reproduce them here.

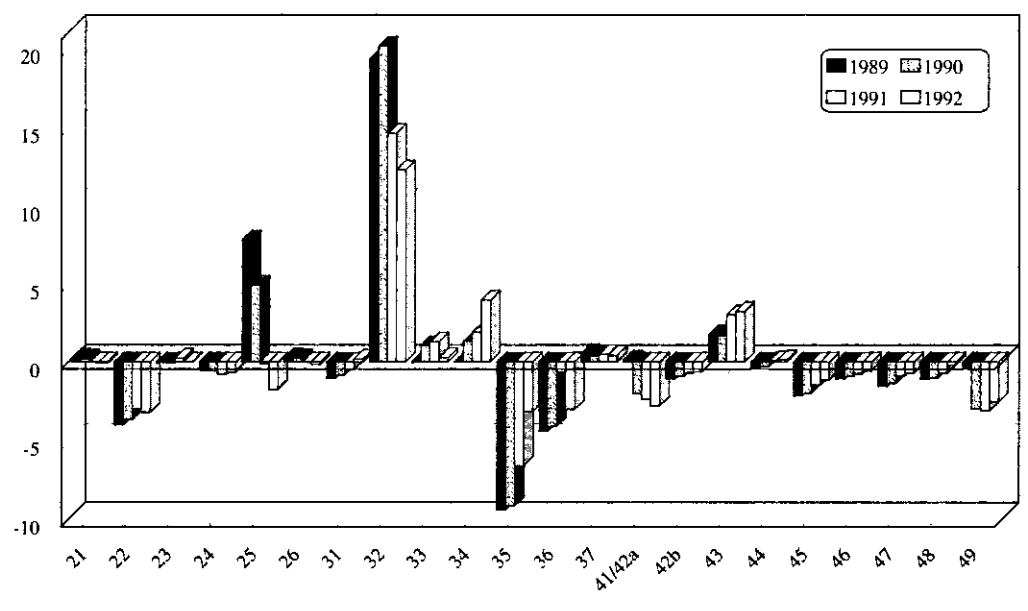
Overall growth of exports to the EC in 1991 and 1992 has been very impressive (43% in 1991 and 33% in 1992 for total manufacturing, 28% growth per annum on average since 1989, all in current price ecus). The growth rates are particularly high in metal products (31) and computing equipment (33), other engineering industries (34, 35, 36, 37) but also across a range of other industries (such as leather, clothing and footwear, 44 to 45). The performance was only very poor in food products (extraction of metals is a tiny export item). A rough analysis comparing export structure with export growth over the period 1989 to 1992 shows that the industries which were particularly underrepresented in the C&SRs' exports to the EC were also the ones which experienced the most dramatic export growth rates over the period 1989 to 1992.

Graphs I.3.2.a and b show this pattern for both Czechoslovakia and Hungary: industries which were underrepresented in Czechoslovakia's and Hungary's exports to the EC compared to overall EC's imports, in particular the engineering industries (32 to 37), experienced above average export growth to the EC over the period 1989 to 1992. This pattern is not particularly uniform for the other industries but is striking for the engineering industries.

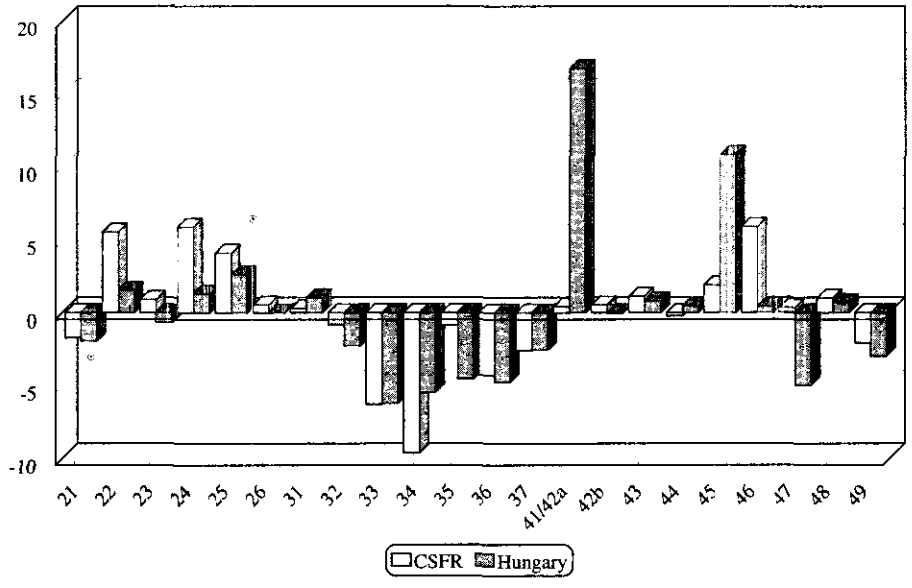
GRAPH I.3.1.a: **Czechoslovakia's export structure compared to EU import structure, 1989-92**



GRAPH I.3.1.b: **Czechoslovakia's import structure from the EU compared with total EU export structure, 1989-92**



GRAPH I.3.2.a: **Export structure to EU relative to general EU import structure in 1989**



GRAPH I.3.2.b: **Export growth 1989-92 relative to total manufacturing**

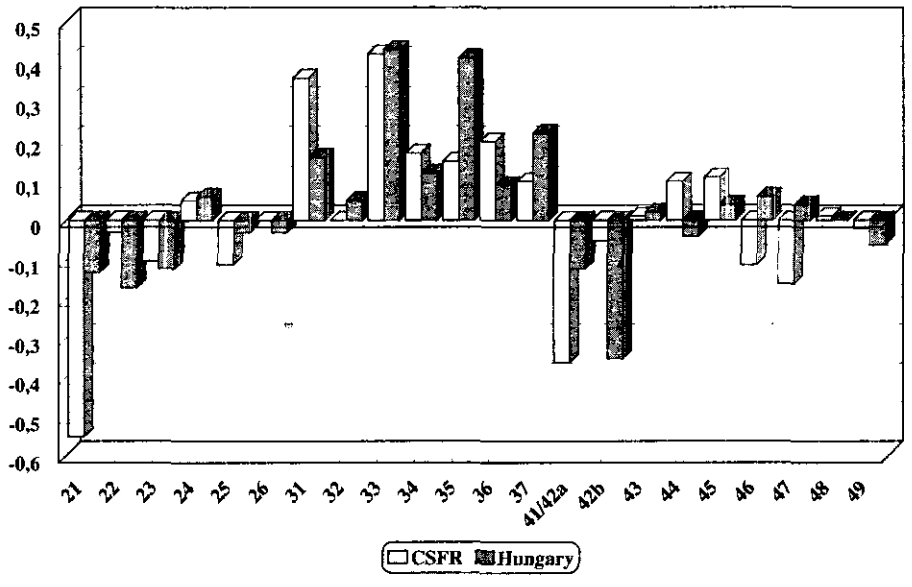


Table I.3.1

Distance measures of CEE's export (import) structures to/from the EC relative to overall EC import (export) structures

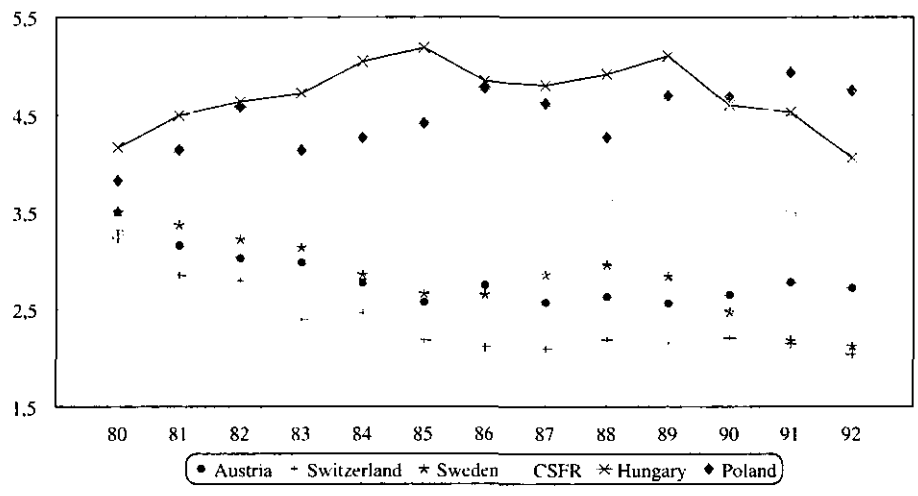
	CEE exports relative to overall EC imports				CEE imports relative to overall EC exports			
	1989	1990	1991	1992	1989	1990	1991	1992
Poland	4,705	4,692	4,936	4,757	3,973	4,073	2,271	2,763
Hungary	5,101	4,601	4,528	4,063	3,817	3,969	3,353	3,000
Czechoslovakia	3,623	3,709	3,492	3,487	5,154	5,092	3,700	3,214

Note: The distance measure used is the same as that used in the production structure comparisons in Section I.1. of the paper. See note to Table I.1.4 for precise definition of this measure.

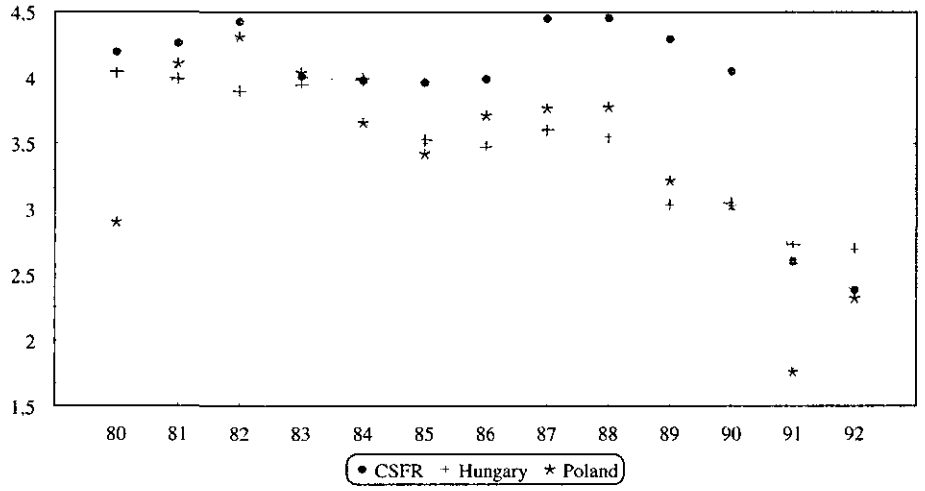
The adjustment of the structure of imports from the EC after 1989 was much more dramatic than the adjustment of the structure of exports to the EC. The 'overrepresentation' of chemical and engineering products in CEE imports from the EC shrank dramatically in all the three CEE economies while the 'underrepresentation' of cars (35) and other transport equipment (36) similarly declined dramatically and various light industrial and consumer goods also increased their shares. The overall measures of similarity between CEE import structures from the EC and overall EC export structures show a dramatic process of convergence particularly for Czechoslovakia and Poland (Table I.3.1). On the export side, there was much less dramatic adjustment.

Graphs I.3.4.a and b show graphically the evolution of distance measures between EC export and import structures and those of the CEE economies and (for comparative purposes) of a number of EFTA countries as well. These graphs repeat the message from Table I.3.1 that the convergence of import structures from the EC to those typical of EC exports in general was very dramatic. On the export side, we can see that the structure of EFTA exports to the EC have become continuously more similar to the structure of EC imports in general over the 1980s while the CEE's composition of exports has — in most cases — distanced itself further from a structure typical for EC imports in general; over the period 1989 to 1992 there is some evidence of very slight convergence (see also Table I.3.1.

GRAPH 1.3.3a: **Export structure compared to EU's general import structure — Composite distance indicator**



GRAPH 1.3.3b: **Import structure compared to EU total export structure — Composite distance measure**



above) for Hungary and the CSFR, while Poland's exports to the EC have further distanced themselves from the typical composition of imports to the EC

I.3.2. Measures of trade specialization

As regards measures of specialization and trade performance, annex tables A.I.3.1-2 show the industries with the highest trade coverage ratios and specialization indices in trade with the EC. Each time all the other indicators (trade coverage ratios, specialization indices, Grubel-Lloyd intra-industry trade indicators, export shares and per annum growth rates 1989 to 1991 or 1992) are given as well.

In the Summary Table I.3.2 in which we show the industries (at a 3-digit NACE level) with the highest trade coverage ratios and specialization indices in trade with the EC in 1991[1] we can distinguish two groups of industries:

(a) A top group of industries where intra-industry trade is very low (a low GL-index) but specialization and trade coverage very high. These industries comprise brewing (427), building materials (252, 321), wood processing and wood products (765, 961) glass and glassware (257); and

(b) another group of industries for which the trade coverage ratios and specialization indices are high but for which the Grubel-Lloyd (GL) index measuring the degree of intra-industry trade is high too; this heterogenous group of industries comprises wood products and wooden furniture (462, 467), clothing, footwear, leather products and knitting (453, 451, 492, 436), pulp and paper (471), concrete and cement (293), iron and steel (221), railway stock (362), forging (312), steel tubes (222), and petrochemicals (252). It is interesting to notice that engineering industries do not feature at all in either (a) or (b).

Czechoslovakia has strong revealed comparative advantage (i.e. high trade coverage ratios and specialization indices) in some areas where either the natural resource endowment is important (concrete, cement, wood processing, wood products, pulp and paper, wooden furniture, etc.), or where past access to cheap imported raw materials was important (petrochemicals), or where handicraft skills have led to strong market positions

[1] A check with the corresponding figures for 1992 shows that the industries in this group remain more or less the same with some slight shifts in the ranks.

Table I.3.2.

Summary table of industries with highest trade coverage ratios and specialization indices in trade with the EC in 1991

	NACE	SP1 rank	Trade coverage rank	Export share (%)	SP2	GL
Brewing	427	1	1	0,81	6,57	0,02
Other wood manufacturing	465	3	5	1,22	8,76	0,08
Sawing, wood processing	461	5	4	2,22	3,31	0,05
Cement, plaster	242	8	2	1,81	17,15	0,04
Building materials	231	11	3	1,15	4,89	0,04
Glass & glassware	247	12	6	4,51	6,35	0,13
Wooden furniture	467	7	14	2,20	2,38	0,32
Railway stock	362	9	15	1,69	15,97	0,32
Clothing	453	13	12	5,72	2,0	0,25
Iron & steel	221	18	9	7,51	3,38	0,18
Semi-finished wood products	462	14	17	0,65	1,73	0,35
Pulp, paper	471	17	16	3,05	1,28	0,34
Leather products	442	20	13	0,77	2,33	0,31
Footwear	451	10	25	2,01	1,84	0,50
Concrete, cement	243	29	11	0,26	2,59	0,21
Knitting	436	15	26	2,24	1,13	0,56
Forging	312	23	20	0,28	2,93	0,40
Steel tubes	222	25	24	1,57	2,84	0,50
Petrochemicals	252	30	28	9,12	1,72	0,61

Note: SP1 refers to a specialization measure which compares the share of an industry in Czechoslovak exports to the EC with its share in total EC exports (including intra-EC trade); SP2 refers to the same type of comparison in relation to EC imports (excluding intra-EC trade; share (%) refers to the share of that industry in Czechoslovak manufacturing exports to the EC (in %); GL refers to the Grubel-Lloyd index; for precise definitions of these indicators see Annex.

(glass and glassware, knitting). In addition there is evidence of the impact of the orientation of Czechoslovak industry towards heavy industrial and engineering products. Czechoslovakia reveals comparative advantage (i.e. high export-import ratios and specialization indices) in industries such as heavy chemicals, iron and steel, railway stock, steel tubes.

While Table I.3.2. picked out those industries which feature prominently in terms of specialization indicators, Table I.3.3. picks out the industries with the highest shares in total exports to the EC. A comparison of the two tables shows that some of the industries which in fact occupy an important place in Czechoslovak exports with the EC are industries where intra-industry trade is rather high but which are not currently characterized by high trade-coverage ratios and specialization indices in Czechoslovakia's favour; this is particularly true for a number of engineering industries (with the exception of NACE 31).

Table I.3.4. shows that there are a similar number of industries which, on the one hand, belong to the group of industries with the highest shares in total manufacturing exports to the EC and which, on the other hand, do (xx) or do not (oo) belong to the industries for which the export specialization indices and trade coverage ratios are particularly high.

The rather loose link between trade specialization and the importance (shares) of industries in Czechoslovak trade with the EC is confirmed by regression results which have been estimated both for the entire sample of (101) 3-digit NACE industries and on the subset of the 31 (NACE 3-d) industries which had an export share of more than 1% of total Czechoslovak manufacturing exports to the EC in 1991 and 1992 respectively. The regression results, summarized in Table I.3.5., report a rather weak relationship between export specialization indices and trade coverage ratios, on the one hand, and the importance of the industries in total manufacturing exports to the EC on the other hand. Within the sample of the 31 most important exporting industries there are only insignificant (and negative) coefficients. The same regressions across the full sample of 101 industries reveals some positive relationships between trade specialization and export shares for 1991 but this relationship dissolves for 1992.

We conclude that the representation/importance of industries in Czechoslovak exports to the EC does not correlate strongly and consistently with either specialization indices or with trade coverage ratios, i.e. industries which feature prominently in Czechoslovakia's exports to the EC are not necessarily those in which Czechoslovakia achieves either export surpluses or shows currently specialization advantages relative to other importers to the EC.

Table I.3.3.

Industries with highest shares in Czechoslovak exports to the EC

Sector	*Export shares*	Trade performance *vis-à-vis* the EC 1991 *Trade coverage*	*Specialization*	*Grubel-Lloyd*	*Specialization* with respect to EC imports
		Sectors with the 30 export shares			
252	90,12	2,26	1,84	0,61	1,72
221	7,51	9,86	2,91	0,18	3,38
351	5,99	1,50	0,64	0,80	0,69
453	5,72	6,95	5,56	0,25	2,00
247	4,51	14,57	5,70	0,13	6,35
471	3,05	4,83	2,94	0,34	1,29
224	2,77	1,49	1,27	0,80	0,75
316	2,58	1,66	1,24	0,75	1,36
253	2,58	1,87	1,91	0,70	1,74
322	2,40	0,84	1,91	0,91	2,36
436	2,24	2,56	5,08	0,56	1,13
461	2,22	40,49	23,76	0,05	3,31
467	2,20	5,27	18,96	0,32	2,38
342	2,10	0,69	0,87	0,81	1,01
451	2,01	2,99	7,79	0,50	1,84
325	1,88	0,50	0,98	0,67	1,27
242	1,81	49,05	16,94	0,04	17,15
328	1,78	0,24	0,36	0,38	0,48
362	1,69	5,16	8,49	0,32	15,97
481	1,61	1,71	1,83	0,74	1,59
223	1,59	4,37	2,74	0,37	3,14
222	1,57	3,03	2,08	0,50	2,94
321	1,49	2,03	2,31	0,66	3,24
412	1,36	1,73	0,73	0,73	0,75
483	1,34	0,76	61,85	0,86	0,59
495	1,24	0,70	3,14	0,82	0,47
465	1,22	23,83	67,34	0,08	8,76
455	1,20	11,21	0,64	0,16	3,62
231	1,15	47,13	6,26	0,04	4,89
314	1,14	1,93	1,88	0,68	2,61

Notes: See note to Table I.3.2 for definition of the specialization, trade coverage and intra-industry ratios.

Table I.3.4.

Groups of industries which belong to the industries with the largest shares in total manufacturing exports to the EC and which do (x) or do not (o) belong to the 30 industries which have the highest export specialization and/or trade coverage ratios

(oo):		(ox):	
1991:	351, 224, 43b, 316, 253, 461, 342, 325, 328, 412, 483, 495	1991:	453, 471, 436, 451, 231
1992:	351, 252, 316, 224, 436, 342, 43b, 325, 495, 322, 328, 483	1992:	453, 471, 253, 461
(xo):		(xx):	
1991:	322, 481, 321, 314	1991:	252, 221, 247, 467, 242, 362, 223, 222, 465, 455
1992:	481, 248, 321, 314	1992:	221, 247, 467, 451, 242, 222, 314, 223, 231, 465, 455

Note: All the 3-digit NACE industries in this table belong to the group of 31 industries which had a percentage share above 1% in total manufacturing exports to the EC in 1991 or 1992 respectively. (xx) and (oo) refer respectively to those industries in this group which did, and did not, also belong to the 30 industries with the highest export specialization and trade coverage ratios; (xo) and (ox) refer to those industries in this group which did, respectively, also belong to the 30 industries with the highest export specialization (xo) or trade coverage (ox) ratios.

Table I.3.4. shows groups of industries which belong to the industries with the largest shares in total manufacturing exports to the EC and which do (x) or do not (o) belong to the 30 industries which have the highest export specialization and/or trade coverage ratios.

Table I.3.5.

Summary of regression results on the relationship between industries' shares in total manufacturing exports to the EC and export specialization and trade coverage ratios. (Dependent variable: shares of industries in total manufacturing exports to the EC)

		Whole sample*	31 industries**
Regressors:			
Specialization indices	1991	+**	(–) insignificant
	1992	insignificant	(–) insignificant
Trade coverage	1991	+*	(–) insignificant
	1992	insignificant	(–) insignificant

Note: ** means strongly significant, * weakly significant; + or - refer to the sign of the relationship; see Annex for the full set of estimates. *) whole sample refers to 101 NACE 3-digit industries; **) 31 industries to the sample of 31 3-digit industries with shares in total CSFR manufacturing exports to the EC greater than 1.

I.3.3. Export growth pattern, 1989 to 1992

We will now analyse the recent pattern of the C&SRs' export growth to the EC at a more detailed (3-digit) level (see Section I.3.1 for a discussion at the 2-digit level). Table I.3.6 reports regressions which were estimated on the complete sample of (101) 3-digit NACE industries and on the subperiods 1989 to 1991, 1991 to 1992 and 1989 to 1992. There are interesting differences in the relationship between export growth and export specialization over the two periods 1989 to 1991 and 1991 to 1992: It turned out that the relationships between the structure of export growth and specialization and trade coverage ratios which were positive for the period 1989 to 1991 severely weakened for the year 1991-92, while the relationship between the structure of export growth and the Grubel-Lloyd index, insignificant for the period 1989 to 1991 became strongly significant and positive for 1991-92. Although one should be cautious to deduce longer-run tendencies from a shift which took place in one year, one can take this as evidence that the structure of Czechoslovak exports is shifting away from one determined by past inter-industry specialization patterns and towards more intra-industry trade with the EC. This interpretation is further reinforced by the increasing sign of the positive relationship between the structure of import growth from the EC and the structure of export growth to the EC (The full set of estimates can be found in the annex.)

There is one more important set of regression estimates we want to report on regarding the recent growth experience of the C&SRs' exports to the EC. Table I.3.7 shows the relationship between industries' previous dependence upon export sales to CMEA markets (measured by the proportion of total exports in 1987 which went to CMEA markets) and the relative growth rates of the different industries' exports to the EC for the periods 1989 to 1991, 1991 to 1992 and 1989 to 1992. The results show a strongly positive relationship between the relative growth rates over the periods 1989 to 1991 and 1989 to 1992 of 2-digit NACE industries' exports to the EC and their previous dependence upon CMEA markets. However, over the last year (1991-92) the relationship has become much weaker (in fact, it became insignificant). We also report in the table a negative relationship between a variable which measures the relative 'quality gap' with EC producers[1] and the relative growth rates of the different industries over the period 1989 to 1991. It shows that industries which had a high quality gap relative to EC producers experienced in fact higher export growth over that period than industries with lower quality gaps. That is, the growth of exports to the EC over the period 1989-91 was particularly high in those areas where the quality gap was relatively big.

The above analysis indicates that — in the period immediately after the start of the reform process in 1990 — Czechoslovakia's growth of exports to EC markets was mainly determined by the existence of large-scale capacities (and inventories) in branches which, formerly, predominantly exported to other CMEA markets and then had to reorientate their exports in response to the collapse of intra-CMEA trade; these industries do have a high 'quality' or 'technology gap' in comparison with Western exporters but can, at least in the short-run, sell at very low prices. This analysis will be further substantiated by the analysis of trade performance and trade specialization within the engineering sector in the next section.

[1] For details on this measure see Landesmann, 1991, and Landesmann and Shields, 1992. The relative quality gap variable reflects the relative price gap at which Czechoslovak exporters and other exporters sell their products in EC markets.

Table I.3.6.

Summary of cross-section regression results: Export growth 1989-92 on trade-specialization, trade coverage ratios, Grubel-Lloyd indices and the structure of import growth

Dependent variable / Regressors		Export growth 1989-91	1991-92	1989-92
Specialization industries	91	+**	insignificant	+**
	92	+**	insignificant	+**
Trade coverage	91	insignificant	insignificant	insignificant
	92	+**	insignificant	+**
Grubel-Lloyd	91	insignificant	+**	insignificant
	92	*insignificant*	+**	+**
Import growth	89-92	+**	+**(increased)	+**
Export shares	91	insignificant –*	–*	–*

(number of observations 103; d.o.f. 101; standard errors in brackets)
Note: ** means strongly significant, * weakly significant; + or – refer to the sign of the relationship; see Annex for the full set of estimates.

Table I.3.7.

Regression results: growth of Czechoslovak exports to the EC 1989-91 and previous export orientation towards the CMEA and the USSR and price (quality) gap

	Coefficient estimates
Export growth 1989-91 = f(exports to CMEA/total exports in 1987)	,613 (,142)
Export growth 1989-92 = f(exports to CMEA/total exports in 1987)	,528 (,119)
Export growth 1991-92 = f(exports to CMEA/total exports in 1987)	,357 (,284)
Export growth 1989-91 = f(exports to USSR/exports to CMEA in 1987)	1,15 (,78)
Export growth 1989-91 = f(relative quality of Czechoslovak exports to EC)	– 172,5 (55,7)

Note: Regressions have been estimated on the sample of 20 2-digit NACE industries with 18 degrees of freedom; standard errors in brackets next to coefficient estimates.

I.3.4. Intra-industry specialization in the engineering sector

Table I.3.8(i) gives some detailed information concerning the 'quality' (price gap) variable for Czechoslovak engineering exports to EC markets; it reveals, firstly, a 'quality gap' greater than for total manufacturing. Secondly, the indicators reveal no significant movements in closing this 'quality gap' over the period 1987 to 1991. This went along with rather dramatic increases in the market shares which Czechoslovak producers achieved in overall EC imports of engineering products (see Table I.3.8(ii)). This confirms our view that in the short-run the C&SRs (and other East European countries for which the same type of results are obtained) engineering exports compete on price rather than quality.

Next, we want to want to point out the current position of CEE producers in terms of intra-industry trade specialization within the engineering sector. Graphs I.3.5.a and b compare the relative specialization of Czechoslovakia's and Austria's exports to the EC in relation to the general structure of EC imports in two engineering branches. We can see rather clearly that, while Austria has an export structure which is rather similar to the structure of EC imports in general, the C&SRs and the other CEE economies show a rather high degree of intra-industry specialization.

Table I.3.8.(i)

Quality gap of Czechoslovak engineering exports to the EC, 1988-91 (EC-6 = 1,0)

NACE	Q_{88}	Q_{89}	Q_{90}	Q_{91}
31	,539	,561	,547	,512
32	,489	,478	,477	,447
33	—	,274	,375	,306
34	,442	,473	,399	,587
35	,413	,468	,477	,523
36	,282	,468	,329	,616
37	,427	,527	,334	,397

Total manufacturing ,671

Table I.3.8.(ii)

Market shares in EC imports of engineering products (in %)

(%)

NACE	1988	1989	1990	1991
31	,23	,24	,29	,64
32	,18	,17	,19	,26
33	,0	,01	,0	,01
34	,09	,08	,09	,14
35	,10	,11	,11	,25
36	,06	,05	,04	,21
37	,05	,05	,04	,07

Note: EC imports include intra-EC trade. 'Quality gap' is here measured as:

$$Q = \sum_{i \in J} \left[\frac{p_i^c}{p_i^l} \right] sh_i^c$$

where $p_i c$ refers to the unit-price at which country c sells commodity i (i belonging to a set J of differentiated products sold in industry j) and $p_i l$ refers to the unit-price at which the price leader (of whatever country of origin) sells commodity i; $sh_i c$ refers to the share of commodity i in country c's exports within industry group j.

Table I.3.9

Intra-industry trade specialization in engineering industries, CEE economies and Austria

NACE	CSFR	Hungary	Poland	Austria
31	7,04	6,69	10,86	2,36
32	8,99	5,75	3,39	3,69
33+34	14,51	14,99	15,08	12,99
35+36	9,21	13,86	8,81	13,58
37	13,49	15,52	24,95	7,17

Note: The measure calculated here compares the share of each 3-digit NACE industry in the 2-digit industry (j)'s exports with the share of that industry in EC imports of industry j:

$$1/n(j)\sum_{i=1}^{n(j)}\left|x_{ij}^{CE}/x_{j}^{CE}-m_{ij}^{EC}/m_{j}^{EC}\right|$$

where x_{ij} are exports (m_{ij} imports) of sub-industry i belonging to 2-digit industry j and n(j) is the number of 3-digit industries belonging to industry j. Superscripts CE refer to the CEE country, EC to the EC.

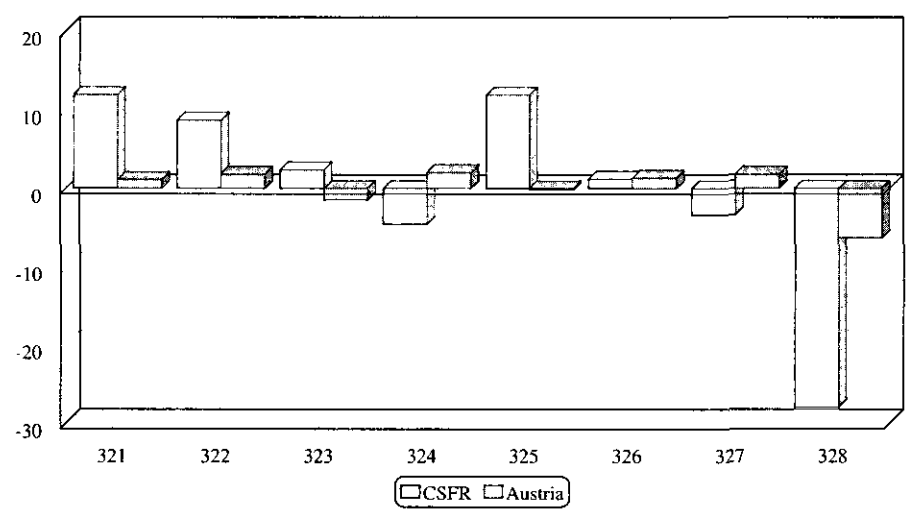
In Table I.3.9. we present a numerical indicator for the degree of intra-industry specialization for a range of 2-digit NACE engineering industries. This confirms the point that for the range of engineering industries CEE producers are characterized by a higher degree of intra-industry specialization than is the case for an EFTA country such as Austria.

I.3.5. Summary points from Section I.3

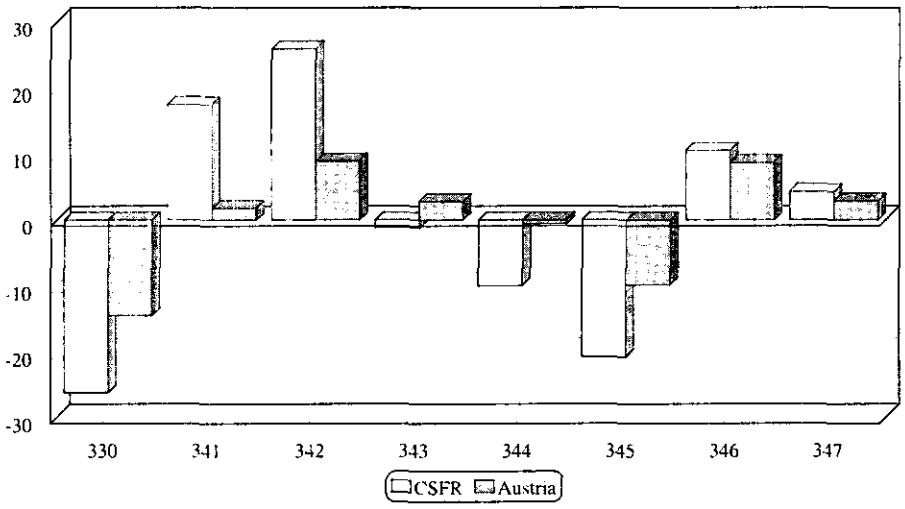
Summing up, the examination of Czechoslovak-EC trade relationships and recent developments over the period 1989 to 1992 have revealed the following features:

- Czechoslovakia currently has specialization advantages (as measured by two types of specialization indices and the trade coverage ratios) in two groups: in industries in which the extent of intra-industry trade (as measured by the Grubel-Lloyd indices) is rather low, and in another group in which intra-industry trade is rather high. In the former group, in particular, comparative advantages in the form of natural resource endowments (wood, building materials) or acquired craft advantages (brewing, glass and glassware) are underlying these revealed specialization patterns. The second group is more heterogenous, still comprising products where natural resource advantages and acquired craft skills are important (wood products and wooden furniture, knitting, pulp and paper), but also industries in which advantages were built on low cost (and possibly low quality) production (iron and steel, steel tubes, railway stock, forging, petrochemicals, etc.). In the second group the extent of intra-industry trade is high, thus

GRAPH I.3.5.a: **Intra-industry specialization in mechanical engineering, 1992**
Export structure to EU relative to EU overall import structure



GRAPH I.3.5.b: **Intra-industry specialization — Electrical engineering, 1992**
Export structure to EU relative to EU import structure



competition will be great, both on the domestic and the export market, and some of the cost advantages might disappear (as in the case of energy intensive products).

- It is also interesting to notice that industries which feature prominently in Czechoslovakia's export basket to the European Communities are often not the ones where high trade-coverage ratios or high specialization coefficients are achieved, i.e. there is no positive relationship between these two types of measures and the size of the export shares of different industries. There is also no significant positive relationship between recent export growth performance of the different industries and current revealed specialization advantages. This leads us to conclude that current specialization structures with the EC are not necessarily good indicators for either current or future trends of export growth of different industries.

- Over the period 1989 to 1991, the dominant features of export expansion to the West were — what is now generally called — 'distress exports'; that is, industrial branches which were particularly dependent upon exporting to CMEA markets in the past achieved, in many cases, the highest export growth rates to the West (particularly the engineering industries but also footwear); there is some evidence that such distress sales have declined in 1992 and the export pattern has changed somewhat in 1992 as compared to 1989 to 1991 (some of the engineering industries' exports are still growing above average but this is no longer the case with mechanical engineering; there is rapid export growth in building materials, steel and in a number of light industries such as footwear, clothing and other manufacturing).

- The analysis of intra-industry specialization of Czechoslovak exporters of engineering products to the EC (and the same is true for other CEEC producers) has revealed that they are much more specialized than is the case for an EFTA country such as Austria. The pattern of intra-industry specialization will be further analysed by factor-intensity characteristics in Section I.4.

- There is evidence that, over the 1989 to 1992 period, high 'quality gaps' did not deter fast exports to the West; the reason must have been the extreme price competitiveness of Czechoslovak exports given the — still — undervalued KCs and also the attempt to sell at whatever price, given the collapse of the ex-CMEA and domestic markets. As the real exchange rate appreciates and the domestic economy recovers, we would expect a change in the sales pattern of Czechoslovak exports. In particular, extremely low prices can no longer remain the only determining variable for export growth. I will return to a discussion of the shift from shorter-term to longer-term patterns of export growth and comparative advantage later on.

I.4. Factor intensity analysis of Czechoslovakia's trade specialization

Using information supplied by DG II we were able to obtain the factor contents of 3-digit NACE industries in the EC (see Statistical Annex Table 19; also consult that table for definition and coverage of the factor intensity information used in this section).[1] This information is used in this section to examine relative factor intensities of Czechoslovak exports and imports to/from the EC In Table I.4.1. we report on the shares of the 30 most capital-, labour-, R&D-, skill-, and energy-intensive sectors in Czechoslovakia's exports and imports to/from the EC.

Looking at developments since 1989 we can see that the 30 most capital- and energy-intensive industries (out of about 100) were the ones which were most strongly represented in Czechoslovakia's export basket to the EC (each of these two — partly overlapping — groups accounted for about 40% of total manufacturing exports). In contrast, the R&D- and skill-intensive industries accounted for only 16% and 18% of manufacturing exports. On the import side, the opposite was true; the 30 most R&D- and skill-intensive industries accounted for 49% and 38% of total manufacturing imports from the EC, while the 30 most capital- and energy-intensive industries accounted for 26% and 20% respectively. Interestingly, the group of labour-intensive industries accounted for around 19% in both exports to and imports from the EC. A further interesting fact emerging from Table I.4.1 is that the 30 manufacturing branches which were (using the 1991 Schumacher-Möbius indices[2]) most heavily protected by the EC accounted for 46% of Czechoslovak exports to the EC and only for 24% of Czechoslovak imports from the EC. (A more detailed analysis of the relationship between EC protection and Czechoslovakia's trade structure with the EC will be carried out in Section II of the paper.)

By 1992, a number of interesting developments had taken place: there was a sharp decline in the shares of the most capital- and energy-intensive industries in Czechoslovak exports to the EC (share decrease of about 6% in each case), and an increase in the shares of both labour-intensive and R&D-intensive industries (by 5,5% and 4% respectively). Skill-intensive branches' shares in Czechoslovakia's exports to the EC declined marginally. On the import side, capital-, labour- (because of the shift to consumer goods imports) and R&D-intensive branches increased their shares, with little movement in the other shares.

We now come to report on a number of regressions carried out to analyse Czechoslovakia's trading structure and trade performance in relation to factor intensities. Table I.4.2 presents a summary of a variety of regression results which relate various measures of trade specialization (the export specialization indices and the trade coverage ratios) as well as export shares as the dependent variables to the factor intensity measures as regressors.

The table shows that significant coefficients could be obtained for the years 1991 and 1992 for:

(i) capital intensity - negative sign (with specialization indices as dependent variable);

(ii) R&D intensity - negative sign (in regressions which exclude the skill intensity variable to overcome the multicollinearity problem);

Table I.4.1

Shares (%) of 30 most x-factor intensive industries in exports and imports to/from EC, 1980-92

Exports to EC

	1980	1985	1989	1990	1991	1992
K/L	37,06	38,31	41,55	40,39	34,32	33,96
L/Q	22,25	19,29	19,00	20,00	23,47	25,48
R&D	15,70	14,63	16,36	17,04	22,20	22,54
Skill	15,98	18,15	18,16	17,82	18,63	17,89
Energy	38,86	39,28	40,32	40,44	34,43	34,37
EC-TB	46,29	44,17	45,94	46,32	44,95	44,99

Imports from EC

	1980	1985	1989	1990	1991	1992
K/L	25,79	24,38	25,87	25,15	29,07	31,13
L/Q	15,91	19,13	18,44	20,08	20,66	22,45
R&D	41,52	44,62	49,43	52,22	54,02	54,21
Skill	31,94	36,02	37,71	38,18	38,97	36,88
Energy	24,65	24,32	19,76	18,07	17,34	17,56

[1] We should keep in mind that the factor intensity information used here and in the rest of this paper is derived from EC industries and we know, of course, that Czechoslovakia's industries employ almost certainly different technologies than do EC industries. Analysing Czechoslovakia's export structures in terms of the EC's factor intensities might nonetheless be of interest if there will be some convergence in the C&SRs-EC. technological practices over the coming years. Furthermore, even if the absolute ratios defining the factor intensities between the EC and the C&SRs were different, and they certainly are, the relative ranking of industries in terms of these factor intensities might nonetheless be quite similar. (For an explicit analysis of the similarity between EC and Bulgarian factor intensity information across industries, see the study by Dobrinski, 1994.)

[2] See Section II.1. for a discussion of this index taken over from Möbius and Schumacher, 1992a.

(iii) skill intensity - negative sign (with trade coverage ratios and export share structure as dependent variable);

(iv) energy intensity - positive sign (consistently with all three dependent variables).

Table I.4.2.

Summary of significant coefficients in cross-section regressions — export specialization, trade coverage and export shares on factor intensities

	K/L	L/Q	R&D	Skill	Energy
Sp. 1992	– 0,558				0,996
Sp. 1991	– 0,579				0,642
Sp. 1992wo.sk	– 0,642				1,047
Sp. 1991wo.sk.	– 0,580				0,643
TC 1992				– 0,173	0,378
TC 1991				– 0,207	
TC 1992 wo.sk.			– 0,252		0,577
TC 1991 wo.sk.			– 0,312		0,417
Exp. sh. 1992				– 0,042	0,140
Exp. sh. 1991				– 0,042	0,140
Exp. sh. 92 wo.sk.					0,189
Exp. sh. 91 wo.sk.					0,188

Note: See Annex A.I.4.2 for detailed regression results. The wo.sk. specifications exclude the skill intensity variable to avoid potential multicollinearity problems between R&D and skill intensity; the number of observations were 85.

An analysis of export specialization over the period 1989 to 1992 (see Annex Table A.I.4.3 which also contains results for Hungary and Poland) shows a strengthening of the negative coefficient on capital intensity and of the positive coefficient on energy intensity; there is also a strengthening of the negative coefficient on skill-intensity, but a weakening of the negative coefficient on R&D intensity. These results get further support from two sets of regressions analysing the evolution of the factor biases of export and import structures.

Firstly, an examination of changes of export and import share structures over the period 1989 to 1992 in terms of factor intensities gives the results presented in Table I.4.3. (see Annex for the full details).

Hence there is evidence of C&SRs' export structure changing in the direction of labour-intensive and away from capital- and energy-intensive exports.

Secondly, Graphs. I.4.1.a and I.4.1.b show the movements of the R&D- and skill-intensity coefficients in (uni-variate) regressions which analyse the factor bias of the export structure to and the import structure from the EC over the period 1980 to 1992; they reveal the consistently negative R&D- and skill-intensity coefficients for Czechoslovak's export structures to the EC and consistently positive R&D- and skill-intensity coefficients for import structures from the EC There is an interesting decline in the size of the negative coefficient of the R&D intensity coefficient in Czechoslovak export shares to the EC; the size of the (negative) skill-intensity coefficient remains stable.

We report in the Annex also separate regressions for the subset of engineering industries: in comparison to the entire set of manufacturing industries we do here obtain significant coefficients only for capital intensity (i.e. Czechoslovakia's export structure in the engineering goods sector is — in comparison to engineering imports of the EC in general — biased against capital-intensive engineering products) but we do not detect the same (significant) negative biases here with respect to R&D- and skill-intensive products as we did in the full sample of manufacturing industries.[1]

As mentioned above, comparative regression analysis carried out for other CEE economies (Hungary and Poland) and for EFTA countries (Austria, Switzerland and Sweden; see Annex Tables AI.4.3) show that the factor content analysis of export specialization gives rather powerful results for CEE economies with the size of the significant coefficients in a rather similar range to that of Czechoslovakia although the CEE economies differ in their movements over the period 1989 to 1992. For

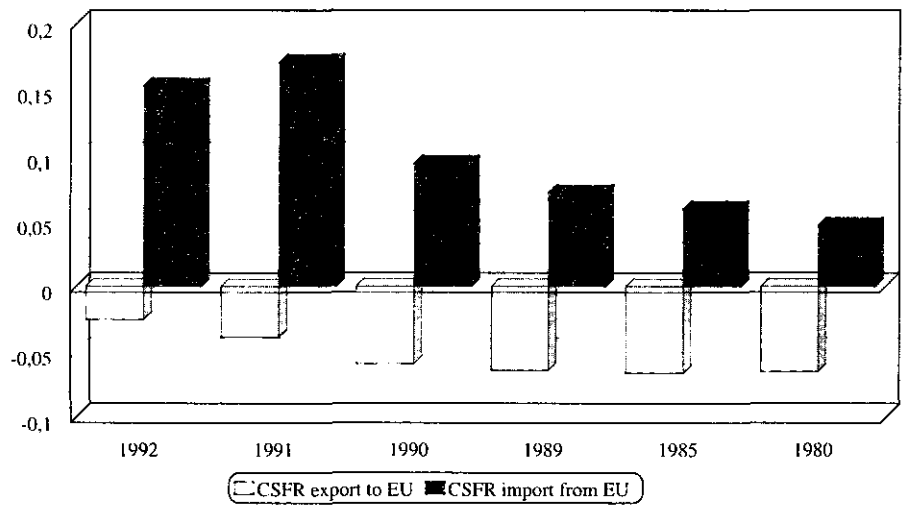
[1] One reason for the lack of significance in these estimates on the subset of engineering industries could be the fact that the R&D and skill information provided by the EC was available mostly only at the level of 2-digit industries which provides too little variation when used in the sub-sample of only 31 engineering industries.

Table I.4.3.

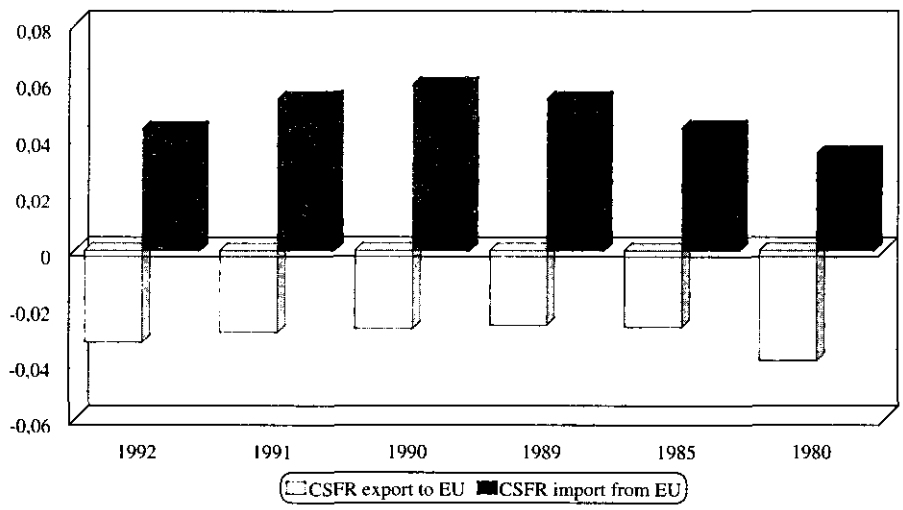
Changes in export and import structures, 1989-92, in relation to factor intensities

Dependent Variable		Regressors: Factor intensities				
		Capital	Labour	R&D	Skill	Energy
Change	in export structure 1989-92	–**	+**	insignificant	insignificant	–**
	in import	insignificant	insignificant	+**	insignificant	insignificant

GRAPH I.4.1.a: **R&D intensity of CSFR exports and imports to/from EU, 1980-92**



GRAPH I.4.1.b: **Skill intensity of CSFR exports and imports to/from EU, 1980-92**



EFTA countries, however, there are hardly any significant coefficients with this type of specification. This does indicate that while a model explaining inter-industry specialization between CEE and EC economies by means of factor-intensity biases is rather successful, trade between the more advanced EFTA economies and the EC can no longer be explained by means of factor-intensity biases.

This completes our short review of the regression results obtained with respect to factor intensities of Czechoslovak trade flows with the EC The full detail is available from the tables at the back of the paper.

II. Current trade performance, trade protection and market distortions

II.1. EC barriers to Czechoslovak exports

II.1.1. Tariff and non-tariff barriers and their reduction in the wake of the Europe Agreement and the Copenhagen summit

EC barriers to the C&SRs' exports to the EC broadly fall into three categories: tariffs, quantitative restrictions (QRs) and other non-tariff barriers (ONTBs). This classification and the quantitative evaluation of these measures in their incidence on CEE's exports to the European Communities follows the detailed series of studies undertaken by D. Schumacher and U. Möbius (1992a,b and c, 1993).[1] Table II.1.1, extracted from Möbius and Schumacher (1992b), gives an overview of the aggregate impact of tariff and non-tariff measures upon Czechoslovak exports to the EC. The liberalization of CEEC's access to EC markets proceeded in a number of steps: MFN (most favoured nation) *treatment — granted to all GATT members — had been granted* to East European countries before 1989. From January 1991, Czechoslovakia was included into GSP (Generalized system of preferences) — this had happened with Hungary and Poland already in 1990. In December 1991, the so-called Europe Agreements were signed with the CSFR, Hungary and Poland which aimed at abolishing all trade barriers on industrial products by 1998; the Europe Agreements came into force on March 1 1991. A further acceleration of trade liberalization was decided unilaterally by the EC at its Copenhagen Summit in June 1993. (For details of how the Europe Agreements and the Copenhagen Summit affected the different CEECs see Schumacher and Möbius, 1992b and 1993.)

[1] Schumacher and Möbius base their analysis of EC trade barriers *vis-à-vis* CEEC economies on information concerning tariff- and non-tariff barriers collected at the detailed 8-digit product level of the combined nomenclature of the EC. The authors then calculate the incidence of the various EC trade barriers at the 3-digit NACE level using the products' representation in each country's exports to the EC as weights; it is at this level that we make use of their results.

Non-tariff barriers (NTB) comprise quantitative restrictions (QR) such as the MFA and other restraint agreements and 'voluntary' export restraints, as well as other non-tariff barriers (ONTB) such as anti-dumping duties, variable components of duties, etc. Quantitative restrictions are highly concentrated in about 9 to 11 sectors including steel sectors, artificial fibres; textiles and clothing sectors. Other NTBs affect between 22 and 27 sectors including steel, chemicals, electrical motors, optical instruments, leather products, footwear, fur goods and musical instruments.

Table II.1.1

Overview of EC protection against Czechoslovak industrial exports to the EC

	Industrial imports (Million ECU)	Share in total EC industrial imports (%)	MFN	GSP	(Eur.) (Agr.)	QR	Import coverage ratio (%) ONTB
1988	1 977	0,6	6,2			21,8	17,5
1989	2 242	0,6	6,2			21,0	17,7
1990	2 397	0,6	6,9			22,9	18,5
1991	3 700	0,9	6,8	(4,4)		18,8	13,6
1992	5 162	1,4	6,8		(2,1)	.	.
1994					(1,1)		
1995					(0,4)		

Note: MFN refers to tariff rates under the most favoured nation treatment; GSP to the generalized system of preferences granted to the CSFR from January 1991; Eur. Agr. to the Europe Agreement which came into force in March 1992. The import coverage ratio refers to the share of imports affected by these NTBs.
Source: Möbius and Schumacher (1992a, 1993).

At a more detailed level, Table II.1.2 shows the Czechoslovak industries which faced the highest MFN tariff rates in 1992 and how GSP and the Europe Agreement affect tariff rates over the period 1992 to 1998. As we can see the reduction in tariff rates is very substantial leaving relatively high rates in 1992 only in textile products, fabrics and clothing which will be gradually phased out over the 1990s.

Finally, Table II.1.3. extracts those NACE industries which have a share of 1% or more in total Czechoslovak industrial exports to the EC and shows the relevance of the various types of protectionist measures. Möbius and Schumacher use a discrete evaluation scheme for each measure (0= no impact, 1= weak, 2= average, 3= strong). The total is a simple adding up of these points (we will use the abbreviation TB for this aggregate measure of EC protection.)

We can see that — with few exceptions — protectionist barriers are rather high in quite a few of those branches which

Table II.1.2.

Industries with highest tariff rates

(%)

	Export share 1992	MFN 1992	GSP 1991	Europe Agreement 1992	1995	1997	1998
222 Steel tubes	1,9	9,5	7,8	6,5	3,1	0,0	0,0
233 Salt extracting	0,0	19,2	11,9	9,6	0,0		
248 Ceramics	1,2	9,2	6,7	4,5	2,1	0,0	
345 Radio & TV	0,4	9,1	5,7	0,0			
351 Motor vehicles	6,2	12,1	5,2	0,0			
363 Cycles, motorcycles	0,4	12,7	3,9	0,0			
43B Woven fabrics	2,1	11,2	9,8	8,8	4,8	1,6	0,0
436 Knitting	2,4	13,1	11,0	9,3	5,6	1,9	0,0
438 Carpets, floor coverings	0,2	9,9	3,9	7,0	4,2	1,4	0,0
453 Clothings	5,8	13,3	12,3	9,3	5,6	1,9	0,0
455 Household textiles	1,1	11,0	9,9	7,3	4,4	1,5	0,0
462 Semi-finished wood products	0,6	9,5	1,8	0,0			
472 Paper processing	0,4	10,6	3,1	0,0			
483 Plast. processing	1,3	9,1	2,8	0,1	0,0		
Total		6,8	4,4	2,1	1,1	0,2	0,0

Note: Industries with an MFN tariff rate greater than 9% in 1992 have been included in this table.

feature prominently in Czechoslovak exports to the EC. Quantitative restrictions are high in iron and steel and non-ferrous metals, as well as in woven fabrics, knitting, clothing and household textiles; other non-tariff barriers are also high in iron and steel, metal processing, glassware, basic chemicals, electrical motors, footwear and rubber products; tariff protection is again high in iron and steel, steel products and metal structures, basic chemicals, rubber products and plastics, as well as in glassware, ceramics, fabrics, knitting, footwear, clothing and motor vehicles.

Table II.1.3.

EC protection against Czechoslovak exports in 1991

	NACE	Exports (Million ECU)	% of industr.	Duties	QR	ONTB	Public procurement	Total
221	Iron and steel	268 255	7,3	2	3	3	0	8
222	Steel tubes	55 998	1,5	3	0	3	0	6
223	Steel drawing	56 746	1,5	2	0	3	0	5
229	Non-ferrous manufacturing	99 104	2,7	1	3	3	0	7
231	Building materials	40 995	1,1	1	0	0	0	1
242	Cement, lime	64 738	1,7	1	0	0	0	1
247	Glassware	160 974	4,4	3	0	3	2	8
248	Ceramics	35 402	1,0	3	0	0	2	5
252	Petrochemicals	319 886	8,6	3	0	1	0	4
253	Other basic chemicals	92 142	2,5	3	0	3	0	6
260	Metal structures	40 559	1,1	2	0	0	0	2
316	Tools, metal products	92 169	2,5	2	0	1	0	3
321	Agricultural machinery	53 387	1,4	3	0	0	2	5
322	Machine tools	85 619	2,3	2	0	0	2	4
325	Plant for mines	67 014	1,8	2	0	0	2	4
328	Other machinery	63 490	1,7	2	0	1	0	3
392	Electrical motors	74 977	2,0	2	0	3	3	8
351	Motor vehicles	214 163	5,8	3	0	0	2	5
362	Railway equipment	60 479	1,6	2	0	0	3	5
438	Woven fabrics	87 389	2,6	3	3	0	2	8
436	Knitting	79 912	2,2	3	3	0	0	6
451	Footwear	71 700	1,9	3	0	3	2	8
453	Clothing	204 373	5,5	3	3	1	2	9
455	Household textiles	42 829	1,2	3	3	0	2	8
461	Sawing of wood	79 364	2,1	1	0	0	0	1
465	Other wood products	43 603	1,2	1	0	1	0	2
467	Wood furniture	78 477	2,1	2	0	1	0	3
471	Pulp, paper	109 074	2,9	2	0	0	0	2
481	Rubber products	57 538	1,6	3	2	3	2	10
483	Plastics	42 969	1,3	3	0	1	0	4

Source: Schumacher and Möbius (1992a).

II.1.2. EC protection and Czechoslovak comparative advantage

In this section we will relate the information on EC trade barriers to the characteristics of Czechoslovakia's trade structure.

II.1.2.1. Trade coverage ratios, export specialization and EC protection

A comparison of the C&SRs' export structure to the EC and import structure from the EC (see Table II.1.4) shows that the 30 branches in which EC protection is highest accounted for 45% of Czechoslovak exports to the EC in 1992 (very slightly down from 1989) while they accounted for 32% of EC imports to Czechoslovakia in 1992 (substantially up from only 24% in 1989). Overall there is thus a clear bias in Czechoslovakia's export-structure in the direction of the more highly protected branches; the asymmetry in relation to the structure of EC imports has been diminishing since 1989 as a result of the dramatic shifts in the C&SRs' import structure over that period.

A rather positive development is reported in the following regression: over the period 1988 to 1992 there is evidence in a cross-section analysis that the export specialization indices are moving away from those products which are strongly protected in EC markets. In other words, while Czechoslovakia's export specialization (its export structure as compared to EC's overall import structure) has in the past (1980 to 1988) moved in the direction of being more affected by EC trade barriers (as of 1991), since 1988 export specialization has moved the other way.

In general, the Möbius-Schumacher index is not a very powerful variable to use in regressions since much of the variance of the original series (of tariff- and non-tariff barriers) is lost by the discrete grouping of industries into protectionist classes. In regressions (not fully reported here) we obtained positive but insignificant coefficients on the relationship between EC protection and the specialization structure of Czechoslovak exports to the EC

Table II.1.4.

Shares (in %) of the 30 industries for which EC trade barriers are highest in the C&SRs' exports to and imports from the EC, 1980-92

(%)

	1980	1985	1989	1990	1991	1992
Exports	46,29	44,17	45,94	46,32	44,95	44,99
Imports	22,78	27,13	23,78	23,76	27,46	31,69

Note: EC TBs for 1991 were used for all years.

Table II.1.5.

Change in export specialization towards(+)/away from(–) areas in which EC protection is high

Dependent variable	Regressor: EC trade barriers in 1991		
Change in exports	1980-88	1988-92	1980-92
Specialization index	0,0689	-0,3172	-0,2484
	(0,0454)	(0,1417)	(0,1526)

Note: Number of observations 85; standard errors underneath the coefficients.

Annex Table A.II.1.1 meshes the information concerning the structure of EC protection *vis-à-vis* Czechoslovakia with the information on export-import coverage ratios of Czechoslovak trade with the EC The idea underlying this exercise is that, as EC protectionist barriers fall, Czechoslovak exports will be able to increase further, particularly in areas in which current trade coverage ratios already indicate a comparative advantage (a similar exercise could be undertaken using specialization indices). Table II.1.6 picks out the industries which fall into this category (i.e. the industries which currently face strong protectionist barriers in the EC but in which Czechoslovakia attains high export-import coverage ratios); they are metal processing (221, 222, 224), ready-made clothing (453), glass and glassware (247), footwear (451), meat (412), household textiles (455), brewing (427), and fruit and vegetables (414). All in all this group comprises 32% of total Czechoslovak manufactured exports to the EC. Together with the group of industries in which export-import ratios are similarly high but which face medium-strong protection in the EC, these industries comprise about 50% of total Czechoslovak exports to the EC in 1991. The argument that this group of industries could provide scope for increased exports to the EC as EC protection declines *vis-à-vis* the C&SRs is mainly short run. In the longer run, expansion of Czechoslovak exports could also come from areas in which current export-import ratios are not so favourable at the moment but in which Czechoslovakia could acquire specialization advantages (or make up for disadvantages) in the future.

II.1.2.2. Factor intensity analysis and EC protection

Using the information supplied by DG II on the factor contents of 3-digit NACE industries in the EC we grouped in Table II.1.7. industries in terms high, medium and low levels of protection by the EC (using Möbius and Schumacher's indices) and further grouped the industries according to the factor intensities which characterize these industries.

Table II.1.6.

Industries with high trade coverage ratios and which face high EC trade barriers (EC TB)

	NACE 3 digit	EC TB	Export share 1991	Trade coverage 91	Export growth 89-92
Glassware	247	8	4,38	14,6	0,14
Household textiles	455	8	1,16	11,2	0,24
Iron & steel	221	8	7,29	9,9	0,40
Clothing	453	9	5,56	6,9	0,41
Conserving fruit	414	9	0,65	3,8	0,03
Steel tubes	222	6	1,52	3,0	0,47
Footwear	451	8	1,95	2,9	0,45
Knitting	436	6	2,17	2,6	0,46
Man-made fibre	260	6	0,99	2,4	0,28
Meat	412	7	1,32	1,7	- 0,24
Rubber products	481	10	1,56	1,7	0,27
Starch & products	418	6	0,14	1,5	0,41
Non-ferrous metals	224	7	2,70	1,5	0,62
Textiles	439	6	0,57	1,2	0,34
Total			31,98		

Note: EC-TB refer to the M-S index of EC trade barriers, Export share is the industry's share in total manufacturing exports to the EC, Trade coverage is the trade coverage ratio and Export growth is the average annual growth rate of the industry's exports to the EC over the period 1989-92.

Table II.1.7.

Factor intensities and EC protection

	Export share 1991	Export share 1992	Growth exports 1989-92	Capital intensity	Labour intensity	R&D intensity	Skill intensity	Energy intensity
High protection	35,45	34,68	0,16	1,785	5,574	0,587	13,606	2,042
Medium protection	27,54	27,22	0,10	1,480	3,304	0,783	11,238	0,599
Low protection	17,33	20,64	0,05	0,921	1,586	0,175	5,476	0,591

Note: The industries' shares in this table do not add up to 100% since factor intensity information was not available for all 3-digit NACE industries. The last five columns give the average factor intensity for each protection cohort.

From Table II.1.7. we can see that the group of most highly protected branches[1] accounted for the largest share of Czechoslovak exports to the EC. Into this group fall the more capital-, energy-, and, to a lesser extent, the more labour- and skill-intensive industries.

The same theme is picked up in more detail in the detailed cross-classification of factor-intensity levels and levels of EC protection in Table II.1.8. To illustrate the information contained in this table: the group of industries falling, for example, into the top left box of the table show which of the 30 most capital-intensive branches in the EC are also amongst the most highly (trade) protected branches. Next to the NACE codes are the shares of these industries in Czechoslovakia's manufacturing exports to the EC in 1991.

We can see, first, that capital-, energy- and labour- intensive industries have the largest number of industries in the highly-protected segment of trade with the EC, while R&D- and skill-intensive industries are the least represented in that group; R&D and skill-intensive industries are, on the other hand, most represented in the medium protected group of industries.

Secondly, as regards Czechoslovakia's export structure to the EC, the 30 most energy- and capital-intensive industries

[1] The industries were grouped into highly-protected (TB>6,0), medium-protected (TB = 4, 5, 6) and low-protected industries (TB<3) using the Möbius-Schumacher aggregate index of EC protection.

account for the largest shares of total Czechoslovak exports (33,6% and 34,9% respectively) followed by the 30 most labour-intensive (25,2%) and R&D intensive ones (24,3%). The 30 most skill-intensive industries are the least represented in the 1991 structure of Czechoslovak exports to the EC (19,0%).

Furthermore, about half of the export shares of the 30 most capital (K)-, energy (E)- and labour (L)-intensive types of industries are also amongst the most highly protected types of industries. Only the smallest share of Czechoslovakia's exports in the 30 most K, E, L intensive group of industries fall into the low protected range of industries. In the R&D- and skill-intensive group, Czechoslovakia has the highest share in the medium-protected range.

A regression analysis (not fully reported here) indicated a weak negative relationship between EC trade protection (using the Möbius-Schumacher index) and the relative R&D- and skill-intensity of different branches of industries. This suggests that the more Czechoslovak (and other East European) exporters to the EC move into R&D- and skill-intensive branches the less will they be affected by EC trade barriers.

Table II.1.8.

Grouping of the 30 most x-factor intensive industries into high, medium and low EC protection classes (data are for 1991)

		Capital intensive sectors		Labour intensive sectors		R&D intensive sectors		Skill intensive sectors		Energy intensive sectors	
		Code	Export %	Code	Export %	Code	Export %	Code	Export %	Code	Export %
		221	7,51	453	5,72	342	2,10	342	2,10	221	7,51
		224	2,77	451	2,01					247	4,51
		414	0,67	455	1,20					224	2,77
	High	247	4,51	342	2,10					481	1,61
		421	0,11	481	1,61					438	0,26
										414	0,67
			15,57		12,64		2,10		2,10		17,33
		418	0,01	493	0,01	257	0,25	330	0,16	260	1,02
		330	0,16	442	0,77	345	0,51	256	0,71	248	0,99
		260	1,02	466	0,12	346	0,91	257	0,25	222	1,57
		416	0,00	492	0,52	347	0,30	344	0,33	418	0,01
		422	0,10	372	0,05	344	0,33	345	0,51	256	0,71
		256	0,71	495	1,24	341	0,56	341	0,56	223	1,59
		351	5,66	248	0,99	330	0,16	347	0,30	439	0,59
EC	Medium	462	0,65	361	0,02	256	0,71	346	0,91	462	0,65
trade		423	0,10	494	0,59	372	0,05	372	0,05	483	1,34
protection		257	0,25	362	1,69	351	5,99	361	0,02	341	0,56
		413	0,29	436	2,24	362	1,69	362	1,69	362	1,69
		345	0,51	326	0,44	323	0,62	260	1,02	326	0,44
		483	1,34	439	0,59	321	1,49	323	0,62	361	0,02
		223	1,59	347	0,30	322	2,40	322	2,40		
				344	0,33	325	1,88	321	1,49		
			12,72		9,89		17,84		11,01		11,18
		471	3,05	365	0,07	364	0,04	255	0,12	241	0,07
		411	0,28	464	0,05	343	0,17	259	0,12	471	3,05
		245	0,26	373	0,13	258	0,06	258	0,06	245	0,26
		241	0,07	313	0,37	259	0,12	471	3,05	311	0,31
		424	0,02	374	0,11	255	0,12	472	0,36	482	0,02
		259	0,12	465	1,22	374	0,11	473	0,90	312	0,29
	Low	258	0,06	371	0,17	373	0,13	343	0,17	243	0,26
		243	0,26	311	0,31	371	0,17	373	0,13	313	0,37
		472	0,36	482	0,02	352	0,26	371	0,17	465	1,22
		353	0,69	343	0,17	353	0,69	374	0,11	472	0,36
		373	0,13			365	0,07	364	0,04	343	0,17
						363	0,31	365	0,07		
						328	1,78	363	0,31		
						324	0,29	324	0,29		
			5,30		2,64		4,33		5,92		6,39
Share of total exports			33,60		25,16		24,27		19,03		34,90

II.2. Market imperfections in the Czech and Slovak Republics

The most important factor affecting Czechoslovak export performance in EC markets is the structure and conduct of its enterprise sector. By 1991, the direct interference by the State in industrial branches has become minimal; prices have been liberalized, energy supply prices have come into line with world market prices and there was — so far — a consistent orientation towards free trade from the side of the Czechoslovak (and now Czech) governments. Hence the overriding element in assessing how 'market imperfections' affect firm and branch behaviour is the legacy inherited from the past. Until 1990, Czechoslovakia had the features of one of the most centralized, highly monopolized command economies in Eastern Europe (see also Landesmann, 1991, Zemplinerova, 1991). It is clear that this legacy has shaped market structures, trade patterns, and enterprise behaviour in a fundamental way and will continue to exert a very strong influence for some time to come. The legacy is imprinted upon the output and employment structure discussed in Section I of this paper, upon the orientation and qualitative performance of export capacities and upon the skills and aspirations of the employees and managers manning Czechoslovak enterprises.

We will in this section of the paper review, first, the features of the rather dramatic process of trade liberalization which characterized the C&SRs' trade policy so far; we will then turn to use some proxies for the impact which past distortions may have had and may continue to have on C&SRs' trade structure and performance; finally, we will discuss further factors which continue to account for important supply-side differences relative to neighbouring Western economies and how these can affect current and future specialization advantages and disadvantages.

II.2.1. The process of trade liberalization and current developments

The liberalization of foreign trade has been seen as one of the cornerstones of the programme of transition implemented by the Czechoslovak and Czech governments since 1990. Probably more than in any other East European country, the Czech government declared itself a strong supporter of the principle of free trade, it pushed strongly and early on in the direction of dismantling the CMEA, used the exchange-rate instrument and wage restraint policy to achieve a quick and decisive reorientation of trade to the West, stressed the importance of multilateral (rather than bilateral) trade negotiations, dismantled most direct instruments of protection of the domestic market, set an external tariff rate which was on average lower than the EC's external tariff rate and has only been lately adopting a modest export promotion programme in line with Western practice.[1]

II.2.2. Proxies for past distortions and their impact on trade structure

As mentioned in the introduction to this section, Czechoslovakia has withdrawn most direct instruments of State intervention in industrial activity. It is true that a considerable fraction of manufacturing capacity is still in public ownership and that the (largely State-owned) banking sector has been considerably involved in the build-up of the dramatic level of corporate debt, but this would be better interpreted as evidence of the effects of 'State desertion' (see Abel and Bonin, 1993) rather than of discretionary involvement by an activist State. Hence, a quantitative evaluation of the impact of 'market distortions' upon export structure and performance in transition economies has therefore to collect primarily indicators of past allocative distortions (which still leave their trace upon existing capacities and skills) rather than evaluating current measures of State subsidization (which are minimal) or current price distortions (which, after comprehensive price liberalization in 1991, do still exist but are very difficult to assess) or current trade protectionist measures (which again are minimal in the case of Czechoslovakia). The main allocative distortions derive hence from the past and not from the present.

We will use two measures which — in our view — did affect export structure and performance in the past and continues to do so presently: one is the proportion of exports (of a particular sector) which went to other CMEA economies (and the Soviet Union in particular); the other is a measure of past price distortions which characterized bilateral trade flows amongst CMEA countries.[2]

Table II.2.1 shows the various measures used to proxy the historical heritage effect of export orientation to CMEA economies in 1989 (column 3) and the export to domestic price ratios at which exports were sold to CMEA countries in 1989 and 1990 respectively (columns 1 and 2).

[1] For a detailed discussion of Czechoslovak/Czech trade policy since 1990, see Stouracova (1993).

[2] The measure we will be using here is the ratio of the price (excluding transport costs) achieved in trade with other CMEA partner countries relative to the wholesale price achieved within Czechoslovakia. This measure — which has been used by Czechoslovak researchers before — is an indication of the implicit export subsidization which export pricing in intra-CMEA trade implied.

Table II.2.1

Export orientation towards Eastern Europe and the USSR in 1989 and implicit price subsidization in Czechoslovak exports to the CMEA

NACE codes	Px/Pd 90	Px/Pd 89	Export to Soc. (%) shares - 89	Expc 91 (%)	Expc 90 (%)
221,222,223	0,86	0,82	57,00	20,45	17,78
224	1,15	1,12	44,00	1,89	1,09
23+24-247-24	1,18	1,08	61,19	2,38	1,74
247	1,07	1,02	32,44	4,62	5,93
248	1,16	1,02	42,48	0,26	0,46
25-257	0,87	0,82	44,27	7,53	7,26
257	1,85	2,00	49,00	1,43	1,21
31	1,17	1,06	50,33	3,34	3,43
326	1,45	1,37	79,00	0,71	0,25
32-326	1,32	1,33	75,67	14,16	14,53
34	1,19	1,14	72,45	16,64	13,96
37	1,58	1,59	74,65	1,13	0,83
424+425	0,83	0,71	58,00	0,20	0,25
43+45-436	0,89	0,90	37,02	8,03	10,87
436	0,62	0,63	68,86	1,94	2,17
451	0,86	0,88	72,00	3,05	2,17
44-441	0,86	0,79	39,96	0,45	0,99
461+462	1,19	0,97	6,00	2,32	3,99
467	0,62	0,65	67,00	1,69	1,82
46-461-462-46	0,96	0,83	18,00	0,10	0,16
472	0,84	0,79	15,00	3,82	4,92
473	1,54	1,27	14,00	0,42	0,65
48-483	1,06	1,02	36,83	3,33	3,53
483	1,79	1,75	69,00	0,10	0,04

Note: The data used for this analysis is the entire sample of enterprises above 100 employees which in 1989 accounted for most of manufacturing industry. The dataset was made available to us at a Czechoslovak industrial classification and the NACE codes in column 1 represent a rough reclassification in NACE categories.

I am grateful to Alena Buchtikowa, Eva Macourkowa and Jiri Krovak for making this dataset available to me at an industrial (not enterprise) level.

Table II.2.2

Implicit export price subsidization and export orientation towards Eastern Europe

	Coefficient estimates
Share of exports to East (1989) = f(implicit price subsidization 1989)	14,49 (4,96)
Share of exports to East (1990) = f(implicit price subsidization 1990)	11,47 (4,91)

Sample: 64 industries; degrees of freedom 62.

It is interesting to observe in Table II.2.2. that our measure of implicit export price subsidization (in CMEA trade) correlates significantly with the share of exports which went to CMEA countries in 1989.

As regards the impact of inherited distortions in the different industrial categories and how these relate to factor intensities, Table II.2.3 groups industries in terms of implicit price subsidization in exports to the CMEA in 1989. The industries have been ordered in ascending order of implicit price subsidization. The price ratios are given in column 2; column 3 shows the shares of industrial exports which went to CMEA countries in 1989, columns 4 to 8 give the factor intensities (using again information about EC industries) and columns 9 and 10 show the percentage shares of the different industries in Czechoslovakia's exports to the EC in 1990 and 1991 respectively.

The information contained in Table II.2.3. has been used to undertake some regression analysis: using the price subsidization variable as the dependent variable and the various factor intensities as regressors, we see (Table II.2.4) that there is a significant positive relationship between implicit price subsidization and R&D, skill and — to some extent — capital intensity. From this we can conclude that the more R&D and skill intensive branches were preferably treated in the bilateral pricing arrangements of the CMEA. These implicit price advantages have disappeared through the shift towards trade at world prices. Hence, industries which were in the past gainers from the price arrangements within the CMEA were hit particularly badly by the dismantling of their trade links.

Table II.2.3.

Implicit export price subsidization and factor intensities

NACE codes	Weighted price ratio Px/Pd	CMEA shares 89	Capital intensity	Labour intensity	R&D intensity	Skill intensity	Energy intensity of output	Expc91 (%)	Expc90 (%)
436	0,63	68,86	2,11	16,14	0,14	27,10	1,72	1,94	2,17
467	0,65	67,00	2,38	14,13	0,19	23,20	1,55	1,69	1,82
424+425	0,71	58,00	6,24	4,2	0,24	37,20	1,42	0,20	0,25
472	0,79	15,00	4,92	10,95	0,14	48,80	2,52	3,82	4,92
44-441	0,79	39,96	1,42	18,14	0,59	28,70	0,76	0,45	0,99
221, 222, 223	0,82	57,00	6,46	7,81	0,60	33,40	8,70	20,45	17,78
25-257	0,82	44,27	5,78	7,63	4,21	53,20	2,40	7,53	7,26
46-461-462-467	0,83	18,00	2,94	14,65	0,19	23,50	1,85	0,10	0,16
451	0,88	72,00	1,35	18,64	0,14	24,50	0,98	3,05	2,17
43+45-436	0,90	37,02	1,61	18,66	0,14	24,96	1,29	8,03	10,87
461+462	0,97	6,00	0,74	0,28	0,02	2,85	0,23	2,32	3,99
48-483	1,02	36,83	3,45	14,35	1,14	33,70	3,91	3,33	3,53
248	1,02	42,48	3,12	17,43	0,60	29,50	5,75	0,26	0,46
247	1,02	32,44	5,59	12,70	0,60	29,50	7,85	4,62	5,93
31	1,06	50,33	3,13	13,94	0,59	28,70	2,75	3,34	3,43
23+24-247-248	1,08	61,19	6,01	10,79	0,60	29,50	6,49	2,38	1,74
224	1,12	44,00	6,64	6,03	0,65	33,40	7,85	1,89	1,09
34	1,14	72,45	3,76	13,51	9,00	48,40	1,34	16,64	13,96
473	1,27	14,00	4,18	11,68	0,14	48,80	1,48	0,42	0,65
32-326	1,33	75,67	3,17	12,14	1,18	40,90	1,37	14,16	14,53
326	1,37	79,00	3,99	15,95	1,18	40,90	2,17	0,71	0,25
37	1,59	74,65	3,08	16,16	3,98	47,60	1,02	1,13	0,83
483	1,75	69,00	5,16	11,63	1,14	33,70	2,94	0,10	0,04
257	2,00	49,00	6,13	7,81	9,48	53,20	1,52	1,43	1,21

Note: Expc=Czechoslovakia's exports to the EC.

The impact upon export performance is difficult to predict: on the one hand one might argue that these industries have been under the strongest pressure to adjust (just as the industries which exported predominantly to CMEA countries) and this pressure will lead to the strongest attempts to reorient trade to the West. Casual evidence suggests that these industries benefited in the early phase of the transition from having large depreciation funds (see the positive relationship between export price subsidization and capital intensity) and from sunk cost advantages and relatively strong monopolistic positions in the domestic market compared to other industries. The growth rate of these industries to the West was quite high after the collapse of intra-CMEA trade as these other factors compensated for the loss of implicit export price subsidization. Over the medium- and longer-term, however, the cost of adjustment will be high and we would expect export growth of these industries to fall relative to those which embody less the historical legacy of past distortions.

Table II.2.4.

Implicit export subsidization in intra-CMEA trade and factor intensities: regression, analysis

Dependent variable	Regressors: factor intensities				
Export price subsidization	K	L	R&D	Skill	Energy
1990	,046	–,009	,058**	,011**	–,00
	(,038)	(,015)	(,024)	(,006)	(,02)
1989	,051*	–,005	,073**	,013**	–,00
	(,038)	(,015)	(,024)	(,006)	(,02)

Note: Number of observations: 24; degrees of freedom: 22.

Next we look at the relationship between an industry's previous exposure to CMEA (rather than Western) markets and their current export-import trade performance with the EC. In Table II.2.5 we put industries which had a high (low) ratio of exports to the CMEA relative to total exports under the rubric 'highly dis(en)couraging'. However, it must be said here that it is not clear *a priori* whether industries which had a high orientation towards the CMEA or which were implicitly subsidized in their exports to CMEA countries are to be counted amongst those which will experience low or high export growth in the future. In fact, as we have reported earlier on, recent export growth to EC markets correlates positively and significantly with the degree to which industries exported in the past to the CMEA rather than to Western markets. The trade patterns which emerged immediately after liberalization might or might not be indicative of the trade patterns in the future; but these tendencies nonetheless raise the question whether the degree of past distortions will be an advantage or a disadvantage for prospective export growth once a country moves towards liberalization which, in due course, removes these distortions.

Table II.2.5.

Historicf exposure to ex-CMEA and current trade performance with the EC

		Measures affecting the CEEC's exports 1991 — based on EEFSU		
		Highly discouraging	*Neutral*	*Highly* encouraging
1991 CEEC's performance in EC's markets X^{ECii}/M^{ECII}	Good	45	24	46
		31	22	23
			26	47
	Medium	35	25	43
			48	44
			49	
	Bad	36		41/42
		34		
		32		
		37		
		33		

As we can see, there are mostly engineering industries in the rubric 'highly discouraging': these industries exported mostly to CMEA markets, most of them have at the moment very low export-import coverage ratios with the EC. Only metal products (31) has a high coverage ratio among this group of industries and so does the only non-engineering industry, footwear and clothing (45). My own view is that all these industries and particularly those with low export-import ratios have a lot of scope for increased export growth to EC markets. In the short run, it is a matter of redirecting their existing capacities to selling on Western markets, competing mainly on price rather than quality; in the longer-run Czechoslovakia will have to modernize production techniques and product programmes, acquire essential complementary skills in marketing, advertising, etc. and thus attempt to move upstream in this area of industrial production.

There are other industries, in which Czechoslovakia had, on the contrary, a relatively high trade orientation to the West in the past (those under the rubric 'highly encouraging'). Some of these industries, such as timber (46), building materials (231) and pulp and paper (471) already had a high trade coverage ratio and reveal a natural comparative advantage. It can be hoped that Czechoslovakia will be able to extend its strong export performances in these areas in the direction of more processed materials (furniture, paper products and printing, etc.). In other areas one can — at a more detailed level — perceive a clear instance of intra-industry specialization (e.g. in textiles where Czechoslovakia has a very high trade coverage ratio in knitting but rather low ratios in other textile products; in food where Czechoslovakia is importing a lot of processed food but exports less processed varieties, etc.). Again, a move towards the more processed commodity spectrum in these categories can be expected over the medium and longer run.

II.2.3. Import structure and the process of catching up

We now turn to imports. Here we analyse Czechoslovak imports from the EC according to two criteria:

(a) Whether import to export ratios are high or low in trade with the EC (horizontal classification); and

(b) Whether the past legacy of import demand patterns might point in the direction of rather sharp corrections of such patterns (vertical classification).

The variable used as a proxy for (b) is a comparison of Czechoslovak patterns of imports from the EC in the past (1988 to 1990) with those of West European economies.[1] The argument here is that import demand patterns were in the past, strongly affected by the relative closedness of the Czechoslovak economy *vis-à-vis* trade with the West and the industrial growth policy adopted by the Czechoslovak authorities. This led to a particular structure of Czechoslovak imports from the West which strongly emphasized imports to support production activity and neglected imports for final consumption.

In Table II.2.6, we report the actual per annum growth rates of Czechoslovak imports from the EC over the years 1989 to 1991

[1] The definition of the 'target import structure' (TGT in Table II.2.6) is a weighted set of West European countries' import patterns (from the EC); the weights used were in relation to the proximity of different West European economies' GDP per head relative to projections for Czechoslovakia by the year 2010. For details see Landesmann and Shields (1992).

(column 1), the difference between the 'target import structure' and Czechoslovakia's actual import structure from the EC in 1987 (column 2) and the difference between actual import structure in 1987 and that of 1991 (column 3).

Table II.2.6

Import growth 1989-91 and explanatory variables

NACE	IMPGR 88-91	TGT — MX87	MX91 — MX 87	EXPGR 89-91
21	- 37,69	- 70,3	- 67,8	- 25,81
22	35,72	57,7	32,6	20,97
23	117,32	174,6	426,4	12,53
24	19,34	0,4	- 5,5	38,54
25	- 2,30	- 37,4	- 53,6	27,43
26	- 3,64	- 16,4	- 36,9	29,63
31	43,90	68,9	43,7	93,81
32	17,97	- 56,4	- 32,9	39,70
33	46,89	45,5	100,6	59,40
34	41,19	- 11,3	- 11,9	53,99
35	116,39	555,2	811,5	64,65
36	585,06	228,7	840,6	276,42
37	28,19	- 8,4	- 5,8	45,70
41	4,39	0,2	- 53,1	- 9,98
42	95,54	101,5	10,2	44,39
43	64,11	55,9	- 27,7	51,77
44	127,66	240,7	346,1	44,77
45	77,26	196,9	83,2	49,49
46	61,93	183,5	92,1	6,77
47	56,60	146,2	46,2	4,07
48	40,04	125,5	13,4	25,72
49	28,40	12,3	19,5	20,74
	27,28			30,92

From this table we can see that Czechoslovakia imported a much larger share of mechanical engineering and chemical products from the EC than was the case for the rest of West European countries; on the other hand, the imports of motor vehicles were strongly underrepresented. By 1991, the imports of mechanical engineering and chemical products had dropped substantially, and the import share of motor vehicles increased dramatically (from 1,9% of total manufacturing imports from the EC to 17,5%!) In fact if we compare the actual import structure in 1991 with the target import structure, there is evidence for considerable overshooting in a number of cases. Not only has there been a substantial shift in Czechoslovakia's import structure towards a structure more similar to a West European pattern, but the shifts were in some cases too strong.

Hence returning to the two criteria stated above our conjecture is — in line with our analysis for exports — to put those industries in the rubric of 'highly encouraged' which were in the past (in 1987) very poorly represented in Czechoslovakia's imports from the EC compared with the 'target structure' defined above; industries which were overrepresented, on the other hand, come under the rubric 'highly discouraged'. This conjecture underlies the import projections in Landesmann and Shields (1992) and, looking at the most recent data for 1991, it gets strong support.[1] Substantial restructuring of import patterns in the direction of West European patterns has already taken place and — as mentioned above — some 'overshooting' has occurred (particularly in motor cars, other transport equipment, consumer electrical and electronic goods).

We can expect some corrections, over the coming years, in this respect, as — hopefully — investment activity will resume (leading to renewed growth in the imports of equipment goods and of other imports needed for productive purposes) and as the demand for imported consumer goods relaxes after the initial dramatic hike.

II.2.4. Some comments on continued 'supply-side distortions'

In the following we want to discuss a number of factors which are likely to continue to have an impact upon trade specialization patterns, both on the export and the import sides well as another factor, industrial and trade policies, which might gain in relevance in the future.

(i) Energy prices and existing capacities of energy-intensive industries

As was mentioned in Section I.4 (see Table I.4.1. and estimates in Tables I.4.2. and I.4.3), Czechoslovakia started off with a strong bias towards exporting industrial commodities which were very energy-intensive to produce. This can be accounted for by the strong efforts made in the past to build up heavy industry and the low supply price of oil and gas from the ex-Soviet Union. Since 1989, the share of the 30 most energy-intensive industries has declined rather dramatically from 40% to 34% of total manufacturing exports; this trend was confirmed by cross-section regressions across the whole sample of 3-digit NACE industries which showed that over the period 1989 to 1992 there was a significant decline in the energy-intensity of the export basket. Nonetheless, even in 1992, the 30 most energy-intensive branches accounted for 34,4% of exports to the EC and only 17,6% of imports from the EC; there is thus still a substantial gap and one can expect this asymmetry to continue to exist for some time to come. At this

[1] From regressions, import growth 1989-91 strongly correlates (in structure) with the difference between the 'target structure' and the actual import structure in 1987. The structure of import growth also strongly correlates with the structure of export growth (column 4 of Table II.2.7).

stage it is no longer the difference between domestic and world market price of energy (the gap here has closed substantially), but the existence of large and geographically very concentrated industrial capacities which will continue to exert an influence upon the supply structure of Czechoslovak exports.

(ii) Low-wage policy and the existence of a cheap manufacturing labour force

It is well known that the general level of wages is extremely low in the C&SRs. According to the OECD (1993), the wage level is about 40% lower than in Hungary and about 10% lower than in Poland — in spite of a similar or even higher level of labour productivity. Compared to OECD economies, the wage level in the C&SRs is about one tenth to one fifteenth of their level (see also Nesporova and Vintrova, 1993). The average share of labour costs in total production costs also declined over the period 1989 to 1991. While the average real wage rate has been increasing lately some of the former strong devaluation of the KCs has been eroded through differential price increases at home and abroad. Nonetheless, the Czech government seems committed to a strict wage policy so that expected productivity increases which would result from economic expansion, industrial restructuring including technological modernization of certain areas of Czech and Slovak industry could benefit from a very competitive wage level. Table I.4.1 and the regressions in Table I.4.3. have shown that the weight of labour-intensive industries has increased in C&SRs' exports to the EC.

(iii) Wage structure and shortages of particular qualifications

Apart from the general level of wages, the structure of wage rates and the relative abundance and shortages of particular skills and qualifications will affect the comparative position of different industries in international trade. Here we want to refer to two sets of data: one is a rough comparison of Czechoslovak and Austrian wage data by 3-digit NACE industries (see also Aiginger and Peneder, 1993); the other is an evaluation of census statistics for Germany and the CSFR undertaken by A. Nesporova (Nesporova, 1993).

The following table compares the share of employee costs in total costs of a number of industrial branches between Austria and Czechoslovakia in 1991 (the data are from the study by Peneder (1993)).

The table is very exploratory in nature; it shows, however, firstly that the share of labour costs is much lower in Czechoslovak industry than in Austrian industry and, secondly, that there is inter-branch variation in the Austria-Czechoslovak comparison in this regard; the latter point is of relevance to pursue further research on the relative attractiveness of different branches from the point of view of comparative labour cost advantages.

Table II.2.7.

Comparison of labour costs in Austrian and Czechoslovak industries (in % of total costs)

Austria 1989		Czechoslovakia 1991	
Petrol refining	10,5	Fuels	17,1
Metal manufacturing	31,2	Metal manufacturing	6,3
Stones, ceramics	15,0	Non-ferrous metals	7,7
Glass	34,8	*Glass, porcelain, ceramics*	14,3
Chemicals	20,2	Chemical, rubber products	4,3
Machines	31,2	Machines	11,7
Electrical engineering	28,3	Electrical engineering	12,1
Wood processing	26,3	Wood processing	10,3
Paper products	17,9	Paper products	5,9
Paper products	25,1		
Textiles	27,6	Textiles	11,8
Clothing	33,6	Clothing	19,5
Total	24,2		8,9

Note: The comparison is based on a rough match between Austrian and Czechoslovak industrial classifications.
Source: Peneder (1993), Tables 5.1 and 5.2.

Next, we reproduce some information from a study by Nesporova which compares the composition of the labour force in Czechoslovak and West German industry by occupation and qualification. At a broad level, there is, first of all, the expected relative underrepresentation in the Czechoslovak labour force of auxiliary and service workers and of white-collar labour (Table II.2.8.a; Table II.2.8.b then points out some of the main differences in the occupational structure of the Czech and West German labour forces in some detailed categories).

Table II.2.8.a

Broad comparison of the occupational structure of the Czech and West German labour force (in % of total labour force)

(%)

	Czech	FRG	
	1991	1976	1989
Blue collar workers	42,3	36,8	33,1
Auxiliary and service workers	23,5	29,4	28,3
White collar workers	32,7	34,6	38,7

Sources: Federal Republic of Germany — Social database of the Federal Statistical Office; Nesporova (1993), Tables 5.1. and 5.2.

Keeping in mind that there are great problems in more detailed occupational comparisons across countries, Nesporova found nonetheless that the occupational classifications between Germany and Czechoslovakia were remarkably similar. The comparison of the most striking differences in occupational structure (see Table II.2.8.b) shows clearly the relative strength of the Czechoslovak labour force of technically-skilled workers, on the one hand, and, on the other hand, the severe shortages of managerial, financial, economic specialists as well

as the small representation of employees on the retail side. Since changes in qualification structures have probably the longest gestation periods, one should attach great importance to the skill/qualification structure of the Czechoslovak labour force for future comparative advantages and disadvantages.

Table II.2.8.b

Comparison of specific occupational groups in the Czech and West German labour force (in % of total labour force)

(%)

	Czech 1991	FRG 1976	FRG 1989
Repair & maintenance	7,7	1,3	1,3
Workers in communications, banking, insurance	1,0	2,8	3,1
Retail trade	4,9	7,2	7,4
Mining and metal engineers	0,6	0,1	0,1
Technicians in engineering	1,9	1,1	1,3
Electro-technicians	1,0	0,7	0,9
Building engineers	1,5	1,0	1,1
Technical staff in chemical, transport, communication, other	3,7	3,1	3,6
Technical staff — total	9,5	6,1	7,1
Managerial & administrative	13,2	21,0	21,9
Managers	0,8	1,9	1,9
Economic specialists	5,7	11,5	12,5
Others in management & administration	1,2	2,6	2,8

Sources: Federal Republic of Germany — Social database of the Federal Statistical Office.
Source: Nesporova (1993), Tables 5.1 and 5.2.

In our own analysis there was some support for the idea that shortages of certain types of non-manual labour were constraining the competitive growth performance of certain branches in Czechoslovakia, i.e. over the period 1989 to 1992. The regressions reported in Annex Table A.1.4.2. have shown that the skill-variable became significantly more negative over the years 1989 to 1992. We should remember that skill-intensity was measured by the proportion of non-manual labour in the total industrial labour force and, hence, could pick up deficiencies in the supply of white-collar staff which A. Nesporova's data revealed as being in short supply. This contrasted with a rather positive development in R&D intensity of C&SRs' exports which, in turn, could be interpreted that the C&SRs' are not generally becoming less competitive in technologically more advanced branches but particularly in those in which non-manual (possibly non-production) skills are required.

(iv) Capital shortage and the failure of financial intermediation

We obtained rather strong support for the hypothesis that capital shortage became a very serious constraint in the export growth performance of industries which are relatively more capital-intensive. One of the important shifts that we observe in the export structure of East European economies is the dramatic decline in the shares of the most capital intensive industries which were formerly very strongly represented in exports to the West (see again Table I.4.1 and the regressions reported in Section I.4). While this adjustment might be linked to the decline of also highly energy-intensive industries, many studies now point to the serious constraint which capital shortage represents for the process of modernization and hence for longer-term competitive performance of many industrial branches. Capital shortage is made more severe by the very embryonic state of capital market institutions and the inheritance of highly distorting structures of inherited debts (see, for example, Bonin and Szekely, 1994).

(v) The re-emergence of industrial and export promotion policies

The previous system of central planning was, of course, characterized by strong features of industrial policy of a non-market type. Because of this legacy the notion of industrial policy became an almost 'taboo' subject after the changes in 1989 to 1990 in most East European countries. More recently, however, governments and economists in Eastern Europe have opened up to the use of industrial policy instruments very different from those used in the past but in conformity to the ones used in advanced Western economies. Since infrastructural constraints are tremendous, the need for retraining and changes in the skill structure of the labour force are very great and the importance of further expanding and consolidating trade performances on Western markets generally acknowledged, it is now much more likely that industrial policy instruments will be used more extensively in the future. By their very nature industrial (and trade) policy instruments are designed to have a structural impact on the economy and have thus to be taken into account in projecting future competitive strengths and weaknesses of different industrial branches.

III. Summary of the results and prospects for the C&SRs' trade with the EU

1. The paper starts with a discussion of the broad outlines of Czechoslovakia's industrial structure before 1990. The overall adjustment of Czechoslovakia's trade structure with the European Union (EU) takes and will take place against the background of a fundamental adjustment of the overall sectoral composition of the Czechoslovak economy: we can expect a rather dramatic fall of the share of the industrial sector in GDP, employment and investment. This could amount to a shift of

–10 to –15% of the share of the industrial sector in total employment; correspondingly, the share of the tertiary sector would increase roughly by that amount; there is also some scope for a further shift of employment out of agriculture.[1] Some of these shifts result from the process of vertical (and statistical) decomposition of Czechoslovakia's previously highly integrated industrial enterprise sector.

2. Next the paper points to some of the specific compositional features of Czechoslovakia's manufacturing sector both in comparison with other CEE economies as well as with West European economies:

The most striking feature is the very strong position of the mechanical engineering sector both in relation to West and East European economies; this is also (to a lesser extent) the case with the iron and steel industry. However, there is an underrepresentation of some of the other engineering industries such as electrical and instrument engineering although it again is not entirely clear whether vertical and horizontal enterprise integration might account for some of that; the motor vehicle and other transport equipment industries are well represented. In comparison with advanced West European economies there is an underrepresentation of the chemicals sector, timber products, paper and paper products and a strong representation of textiles, leather goods and footwear and clothing.

The conclusion from this analysis is that there is some scope for a diversification of the engineering sector (some contraction of mechanical engineering, expansion of other branches) although, if the industrial transition is successful, Czechoslovakia should remain the location of a strong engineering sector. This argument is based on the analysis of recent successes of Czechoslovak engineering exports to the West, some information about the allocation of foreign direct investment and, most importantly, the skill structure of the Czechoslovak labour force. There is likely to be a significant reduction of iron and steel capacities (as in many other CEE economies and as has happened and continues to happen in Western Europe). There is a rather strong presence of some labour-intensive branches such as textiles, clothing and footwear but less so than in other CEE economies. The question of the future of these industries is closely linked to the analysis of longer-term comparative advantage. However, in the short and medium term, Czechoslovakia and the other CEE economies are low-wage economies which makes them attractive for labour-intensive activities.

3. The paper discusses the legacy of the old CMEA-trade links upon Czechoslovakia's industrial structure. Prior to 1990, Czechoslovakia had a strongly dual export structure: exports to the CMEA were very strongly biased towards engineering products (which accounted for over 50% of total manufacturing exports to Eastern Europe) while exports to the West were more differentiated (with engineering exports accounting for about 15-17% of total manufacturing exports).

4. Next we discuss the dramatic process of trade reorientation which occurred over the period 1989 to 1992 and, in some detail, Czechoslovakia's trade structure and trade performance *vis-à-vis* the European Community.

It is still difficult to get a precise picture of the extent of trade contraction with the ex-CMEA economies since the dismantling of the CMEA trade and payments system caused a dramatic revaluation of trade flows (shift from transferable rouble trade to trade in convertible currency); there were also dramatic changes in the terms of trade with the West due to a succession of devaluations of the KCs. An analysis of the precise reallocation of real trade flows over the period 1989 to 1992 thus faces severe problems.

However, given that overall GDP (at constant prices) fell in 1991 by 16% and then again by 8,4% in 1992 while real exports fell by only 5% in 1991 and then increased by 4,1% in 1992 while the trade share of ex-CMEA countries fell from about 75% in 1988 to 22% in 1992 (roughly similar whether calculated from dollar or KCs values) this indicates that the dramatic process of trade reorientation was rather successfully achieved.

5. What were the features of this trade reorientation? Over the period 1989 to 1991, the dominant feature of export expansion to the West were — what is now generally called — 'distress exports'; that is, industrial branches which were particularly dependent upon exporting to CMEA markets in the past also, in many cases, achieved the highest export growth rates to the West (particularly the engineering industries but also footwear); there is some evidence that such distress sales have declined in 1992 and the export pattern has changed somewhat in 1992 as compared to 1989 to 1991 (some of the engineering industries' exports are still growing above average but this is no longer the case with mechanical engineering; there is rapid export growth in building materials, steel and in a number of light industries such as footwear, clothing and other manufacturing).

There is evidence that, over the 1989-92 period, high 'quality gaps' did not deter fast exports to the West; the reason must have been the extreme price competitiveness of Czechoslovak exports given the — still — undervalued KCs and also the attempt to sell at whatever price, given the collapse of the ex-CMEA and domestic markets. As the real exchange rate appreciates and the domestic economy recovers, we would expect a change in the sales pattern of Czechoslovak exports. In

[1] In comparison, the shifts in EC economies between 1979 and 1989 were: agriculture – 3,2%, industry (including construction) – 5,3%, services + 9,0%.

particular, extremely low prices can no longer remain the only determining variable for export growth. I will return to a discussion of the shift from shorter-term to longer-term patterns of export growth and comparative advantage later on.

6. On the import side there was (as with exports) rapid growth in 1991 and an acceleration in 1992 (which was not true for exports) and there was also a dramatic change in import structure from the West (more dramatic than the change in the structure of exports). It is again important to distinguish short-term from longer-term shifts in import structure: the pre-1990 structure of imports from the EC was characterized by a very heavy reliance upon the imports of chemical and engineering products (these two industries accounted for 54% of total manufacturing imports from the EC in 1988/89); the import share of these two industries declined to 36% in 1992; on the other hand, imports of consumer goods increased rather dramatically (cars, textiles, clothing, paper products, other manufacturing); there were also increases in purchases of electrical machinery and airplanes from the EC.

As was reviewed in a previous paper (Landesmann and Shields, 1993), most of these shifts bring Czechoslovakia (and other CEE economies) into line with a composition of imports from the EC which is rather typical for West European economies; this shift has, moreover — differently from exports — occurred over two years; some of the shift also reflects, however, the impact — equilibrating and disequilibrating at the same time — of the dramatic process of trade liberalization in the initial phase of the transition: the pent-up demand for imported consumer goods was released and the deep domestic recession affected the composition of imported goods. As the domestic economy recovers and the modernization process of Czechoslovak industry gets under way, one can expect a recovery of import demand for investment goods.

7. The detailed analysis of patterns of inter- and intra-industry specialization of Czechoslovak trade with the EC revealed the following features: Czechoslovakia has currently specialization advantages (as measured by the two types of specialization indices and the trade coverage ratios) in two types of areas: industries in which the extent of intra-industry trade (as measured by the Grubel-Lloyd indices) is rather low, and another group in which it is rather high. In the former group, in particular, comparative advantages in the form of natural resource endowments (wood, building materials) or acquired craft advantages (brewing, glass and glassware) underlie these revealed specialization patterns. The second group is more heterogenous, still comprising products where natural resource advantages and acquired craft skills are important (wood products and wooden furniture, knitting, pulp and paper), but also industries in which advantages were built on low cost (and possibly low quality) production (iron and steel, steel tubes, railway stock, forging, petrochemicals, etc.). The extent of intra-industry trade is high in these areas, thus competition will be great, both on the domestic and the export market, and some of the cost advantages might disappear (as in the case of energy-intensive products). Amongst the industries which feature most prominently in Czechoslovak exports to the EC, we found that Czechoslovakia has high trade coverage ratios and specialization indices in areas where the extent of intra-industry trade is rather low.

It is also interesting to notice that industries which feature prominently in Czechoslovakia's export basket to the European Community are often not the ones where high trade-coverage ratios or high specialization coefficients are achieved, i.e. there is no positive relationship between these two types of measures and the size of the export shares of different industries. There is also no significant positive relationship between recent export growth performance of the different industries and current revealed specialization advantages. This leads us to conclude that current specialization structures with the EC are not necessarily good indicators for either current or future trends of export growth of different industries.

8. Factor intensity analysis of Czechoslovakia's export structure to the EC (compared with the structure of total EC imports) reveals a negative and increasingly significant bias against capital-intensive exports to the EC (remember, however, that the factor intensity measures used were those of EC producers and not Czechoslovak producers). We also found strongly negative biases with respect to R&D and skill-intensive industrial exports and a strongly positive and increasing bias towards energy-intensive branches. In the 1980s, the bias against capital-intensive exports had been much less in evidence and also the bias against skill-intensive branches was less pronounced than in 1991 and 1992. However, in spite of this, the figures also reveal that the most R&D-intensive sectors significantly increased their share in Czechoslovak exports to the EC over the period 1989 to 1992 (which is not the case for, say, Poland) as do the shares of the most labour-intensive branches, while the share of the most capital- and energy-intensive branches decline.

A similar analysis of relative intra-industry specialization (again compared to all other non-EC exporters to EC markets) within the engineering sector revealed a strong negative bias against the more capital-intensive types of engineering products while other factor biases were not significant.

In summary, there is evidence that Czechoslovakia started off from a position of a strong negative bias against R&D and skill-intensive products in its exports to the EC; however, the share of R&D intensive industries in total Czechoslovak exports to the EC have increased without, however, changing its specialization index. There is an increasing negative bias against capital-intensive exports which confirms a view that CEE economies might face the strongest constraint in capital

shortage. The previously strong bias in the direction of energy-intensive branches is diminishing.

9. The detailed examination carried out by Möbius and Schumacher (1993) of EC trade barriers *vis-à-vis* CEE economies facilitated an analysis of how EC protection affects Czechoslovakia's exports and how the dismantling of such barriers may affect its exports in the future. The paper does not yet analyse the precise implications of the EC Agreements with the CEE economies for their future trade with the EC (which will be done in due course) but examines the structural implications of EC (tariff and non-tariff) barriers (as of 1991) for Czechoslovakia's exports.

EC trade barriers (in 1991) were high in some of the branches which feature rather prominently in Czechoslovakia's exports to the EC: quantitative restrictions were high in iron and steel and non-ferrous metals, as well as in woven fabrics, knitting, clothing and household textiles; other non-tariff barriers are also high in iron and steel, metal processing, glassware, basic chemicals, electrical motors, footwear and rubber products; tariff protection was again high in iron and steel, steel products and metal structures, basic chemicals, rubber products and plastics, as well as in glassware, ceramics, fabrics, knitting, footwear, clothing and motor vehicles.

An analysis of the relationship between current export-import ratios of Czechoslovakia's trade with the EC and the protectionist barriers (as of 1991) revealed that the group of industrial products in which Czechoslovakia currently achieves high export-import ratios (i.e. reveals a comparative advantage) and which faces high EC protection — comprising branches such as metal-processing, brewing, textiles, clothing, footwear, glass and glassware, meat, fruit and vegetables — covers about 27% of total Czechoslovak industrial exports to the EC; together with the group of products in which export-import ratios are similarly high and in which Czechoslovakia faces medium-strong protection in the EC this makes up about 60% of Czechoslovak exports to the EC. A fall in EC protectionist barriers would thus affect a very important segment of Czechoslovak exports to the EC.

However, as mentioned earlier, evidence concerning the evolution of Czechoslovakia's export structure over the period 1989 to 1992 indicates that there is — on balance — a move away from those product segments in which protection is high. Thus while a reduction of EC protectionist barriers would particularly benefit industries which show currently revealed comparative advantage with the EC, current and future expansion could (and does) come also from areas in which current export-import ratios are not as high at the moment but in which Czechoslovakia could acquire specialization advantages in the future.

Such tendencies would get reinforced by the fact that EC protection correlates negatively with the degree of R&D and skill-intensity of different branches which suggests that the more Czechoslovak (and other East European) exporters manage to overcome their negative compositional bias against R&D and skill-intensive areas the less will they be affected (given EC's current protectionist structures) by EC trade barriers.

10. Finally, we come to the impact which past, remaining and future 'market imperfections' have upon Czechoslovakia's trading structure with the EC. The paper emphasizes that here the distinction between the Czech and Slovak Republics is very important as the Czech Republic is the economy which has gone the furthest in dismantling trade barriers compared to any of the CEE economies and has — so far — committed itself to maintain this stance; Slovakia does not show the same commitment in this respect. However, while current trade barriers have been reduced to a very low level (even by advanced Western standards) there is, of course, a historical legacy of past distortions which continues to affect production and market structures: existing wage and salary structures between skilled and unskilled and between people working in industrial as compared to tertiary activities; the 'embodied' nature of past distortions (past allocations of capital including the continued pattern of allocation of credit during the transition, as well as of low energy prices in the past, of past employment policies, etc.) in the existing structure of capacities, of manning levels and skill compositions in the industrial sector. All these inherited distortions will keep producing echo effects in the course of a long drawn-out process of industrial transformation. In addition to these, there will be the impact of the inevitable (and — I would argue — necessary) use of a variety of instruments of both active and passive industrial policies (the latter reacting to social and political pressures arising from the process of transition while the former might be designed to support the speed and direction of the process of industrial modernization).

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Annex

Table A.I.3.1. Trade performance *vis-à-vis* the EC, 1991

Sector	Specialization	Trade coverage	Grubel-Lloyd	Export shares (%)	Specialization wrt EC imports
		Sectors with the 30 highest specialization indices			
427	119,94	81,58	0,02	0,91	6,57
495	69,92	0,70	0,82	1,24	0,47
465	67,34	23,83	0,08	1,22	8,76
483	61,85	0,76	0,86	1,34	0,59
461	23,76	40,49	0,05	2,22	3,31
494	22,71	0,67	0,80	0,59	0,74
467	18,96	5,27	0,32	2,20	2,38
242	16,94	49,05	0,04	1,81	17,15
362	8,49	5,16	0,32	1,69	15,97
451	7,79	2,99	0,50	2,01	1,84
231	6,26	47,13	0,04	1,15	4,89
247	5,70	14,57	0,13	4,51	6,35
453	5,56	6,95	0,25	5,72	2,00
462	5,47	4,77	0,35	0,65	1,73
436	5,08	2,56	0,56	2,24	1,13
495	3,14	0,70	0,82	1,24	0,47
471	2,94	4,83	0,34	3,05	1,29
221	2,91	9,86	0,18	7,51	3,38
223	2,74	4,37	0,37	1,59	3,14
442	2,41	5,39	0,31	0,77	2,33
260	2,32	2,42	0,58	1,02	1,68
321	2,31	2,03	0,66	1,49	3,24
312	2,15	4,02	0,40	0,29	2,43
243	2,08	8,73	0,21	0,26	2,59
222	2,08	3,03	0,50	1,57	2,94
315	2,08	1,36	0,85	0,61	3,12
322	1,91	0,84	0,91	2,40	2,36
253	1,91	1,87	0,70	2,58	1,74
314	1,88	1,93	0,68	1,14	2,61
252	1,84	2,26	0,61	9,12	1,72
		Sectors with the 10 lowest specialization indices			
482	0,02	3,28	0,47	0,02	1,28
364	0,01	0,01	0,02	0,04	0,01
428	0,01	0,01	0,02	0,00	0,02
415	0,00	0,01	0,01	0,00	0,00
426	0,00	0,25	0,40	0,00	0,04
425	0,00	0,00	0,01	0,00	0,00
429	0,00	0,00	0,00	0,00	0,00
211	0,00	0,00	0,00	0,00	0,00
416	0,00	0,00	0,00	0,00	0,00
232	0,00	0,00	0,00	0,00	0,00

Table A.I.3.2. Trade performance *vis-à-vis* the EC, 1991

Sector	Specialization	Trade coverage	Grubel-Lloyd	Export shares (%)	Specialization wrt EC imports
		Sectors with the 30 highest specialization indices			
427	81,58	119,94	0,02	0,91	6,57
242	49,05	16,94	0,04	1,81	17,15
231	47,13	6,26	0,04	1,15	4,89
461	40,49	23,76	0,05	2,22	3,31
465	23,83	67,34	0,08	1,22	8,76
247	14,57	5,70	0,13	4,51	6,35
455	11,21	0,64	0,16	1,20	3,62
464	10,11	0,43	0,18	0,05	3,25
221	9,86	2,91	0,18	7,51	3,38
492	8,74	0,34	0,21	0,52	5,32
243	8,73	2,08	0,21	0,26	2,59
453	6,95	5,56	0,25	5,72	2,00
442	5,39	2,41	0,31	0,77	2,33
467	5,27	18,96	0,32	2,20	2,38
362	5,16	8,49	0,32	1,69	15,97
471	4,83	2,94	0,34	3,05	1,29
462	4,77	5,47	0,35	0,65	1,73
223	4,37	2,74	0,37	1,59	3,14
241	4,25	0,98	0,38	0,07	1,45
312	4,02	2,15	0,40	0,29	2,43
491	3,95	0,26	0,40	0,64	0,50
414	3,84	0,94	0,41	0,67	0,68
482	3,28	0,02	0,47	0,02	1,28
222	3,03	2,08	0,50	1,57	2,94
451	2,99	7,79	0,50	2,01	1,84
436	2,56	5,08	0,56	2,24	1,13
260	2,42	2,32	0,58	1,02	1,68
252	2,26	1,84	0,61	9,12	1,72
313	2,19	1,24	0,63	0,37	1,26
311	2,11	1,16	0,64	0,31	1,36
		Sectors with the 10 lowest coverage ratios			
364	0,01	0,01	0,02	0,04	0,01
428	0,01	0,01	0,02	0,00	0,02
415	0,01	0,00	0,01	0,00	0,00
425	0,00	0,00	0,01	0,00	0,00
233	0,00	0,04	0,01	0,00	0,07
417	0,00	0,00	0,00	0,00	0,00
429	0,00	0,00	0,00	0,00	0,00
232	0,00	0,00	0,00	0,00	0,00
416	0,00	0,00	0,00	0,00	0,00
211	0,00	0,00	0,00	0,00	0,00

Table A.I.4.2.

Regression results on factor intensities and export specialization

1992					
Regression output					
Constant			9,128264		
Std err of Y est			1,03065		
R. squared			0,47802		
No. of observations			83		
Degrees of freedom			77		
	K/L	L/Q	R&D	Skill	Energy
X coefficient(s)	- 1,172960	- 0,254820	0,084173	- 2,154010	1,061730
Std err of coef.	0,465679	0,471474	0,118214	0,666655	0,233486

1991					
Regression output					
Constant			7,983407		
Std err of Y est			1,135634		
R. squared			0,420317		
No. of observations			83		
Degrees of freedom			77		
	K/L	L/Q	R&D	Skill	Energy
X coefficient(s)	- 1,343260	- 0,446580	- 0,038670	- 1,669770	1,060398
Std err of coef.	0,513114	0,519499	0,130255	0,734562	0,257269

1990					
Regression output					
Constant			4,07719		
Std err of Y est			1,201155		
R. squared			0,372501		
No. of observations			83		
Degrees of freedom			77		
	K/L	L/Q	R&D	Skill	Energy
X coefficient(s)	- 0,862510	0,114613	- 0,20956	- 1,155650	0,853995
Std err of coef.	0,542719	0,549472	0,13777	0,776943	0,272113

1989					
Regression output					
Constant			4,579701		
Std err of Y est			1,140761		
R. squared			0,349832		
No. of observations			83		
Degrees of freedom			77		
	K/L	L/Q	R&D	Skill	Energy
X coefficient(s)	- 0,713350	0,010811	- 0,164070	- 1,271740	0,763594
Std err of coef.	0,515431	0,521844	0,130843	0,737878	0,258431

Table A.I.4.2.

Regression results on factor intensities and export specialization (continued)

Univariate regressions: Dependent variable; Export structure to the EC	
Shares in exports to EC = f (R&D intensity)	Shares in exports to EC = f (Skill intensity)
1992	1992
X-coefficient(s) – 0,025370	X-coefficient(s) – 0,032600
Std. err. of coef. 0,043899	Std. err. of coef. 0,012583
Shares in exports to EC = f (R&D intensity)	Shares in exports to EC = f (Skill intensity)
1991	1991
X-coefficient(s) – 0,038670	X-coefficient(s) – 0,028940
Std. err. of coef. 0,042621	Std. err. of coef. 0,012336
Shares in exports to EC = f (R&D intensity)	Shares in exports to EC = f (Skill intensity)
1990	1990
X-coefficient(s) – 0,059260	X-coefficient(s) – 0,027720
Std. err. of coef. 0,043382	Std. err. of coef. 0,012686
Shares in exports to EC = f (R&D intensity)	Shares in exports to EC = f (Skill intensity)
1989	1989
X-coefficient(s) – 0,064180	X-coefficient(s) – 0,026430
Std. err. of coef. 0,044681	Std. err. of coef. 0,013136
Shares in exports to EC = f (R&D intensity)	Shares in exports to EC = f (Skill intensity)
1985	1985
X-coefficient(s) – 0,066320	X-coefficient(s) – 0,027070
Std. err. of coef. 0,043177	Std. err. of coef. 0,012679
Shares in exports to EC = f (R&D intensity)	Shares in exports to EC = f (Skill intensity)
1980	1980
X-coefficient(s) – 0,06525	X-coefficient(s) – 0,038990
Std. err. of coef. 0,047111	Std. err. of coef. 0,013510

Table A.I.4.2.

Regression results on factor intensities and export specialisation (continued)

Dependent variable; Import structure from the EC	
Shares in exports to EC = f (R&D intensity)	
1992	
X-coefficient(s)	0,153048
Std. err. of coef.	0,052588
Shares in exports to EC = f (R&D intensity)	
1991	
X-coefficient(s)	0,171172
Std. err. of coef.	0,050563
Shares in exports to EC = f (R&D intensity)	
1990	
X-coefficient(s)	0,094263
Std. err. of coef.	0,058317
Shares in exports to EC = f (R&D intensity)	
1989	
X-coefficient(s)	0,071923
Std. err. of coef.	0,056350
Shares in exports to EC = f (R&D intensity)	
1985	
X-coefficient(s)	0,059844
Std. err. of coef.	0,056888
Shares in exports to EC = f (R&D intensity)	
1980	
X-coefficient(s)	0,046958
Std. err. of coef.	0,052526
Shares in exports to EC = f (Skill intensity)	
1992	
X-coefficient(s)	0,043378
Std. err. of coef.	0,015713
Shares in exports to EC = f (Skill intensity)	
1991	
X-coefficient(s)	0,053680
Std. err. of coef.	0,014921
Shares in exports to EC = f (Skill intensity)	
1990	
X-coefficient(s)	0,058694
Std. err. of coef.	0,016394
Shares in exports to EC = f (Skill intensity)	
1989	
X-coefficient(s)	0,053753
Std. err. of coef.	0,015860
Shares in exports to EC = f (Skill intensity)	
1985	
X-coefficient(s)	0,043952
Std. err. of coef.	0,016334
Shares in exports to EC = f (Skill intensity)	
1980	
X-coefficient(s)	0,034620
Std. err. of coef.	0,015230

Table A.I.4.3.

Summary of significant coefficients in cross-section regressions (log. specification) — Export specialization and export shares on factor intensities

	CSFR					
	K/L	L/Q	R&D	Skill	Energy	R^2
Sp. 1992	- 1,090			- 2,532	1,061	0,412
Sp. 1991	- 1,143			- 2,033	1,080	0,332
Sp. 1990	- 0,767			- 1,607	0,853	0,297
Sp. 1989	- 0,614			- 1,712	0,764	0,274
Sp. 1992 wo. sk.	- 1,557				1,323	0,331
Sp. 1991 wo. sk.	- 1,518				1,291	0,290
Sp. 1990 wo. sk.	- 1,063		- 0,273		1,019	0,269
Sp. 1989 wo. sk.	- 0,930		- 0,240		0,941	0,238

Notes: Degrees of freedom in these regressions; 79; + these coefficients were insignificant but were left in the table so that their values could be compared with other years.

	Hungary					
	K/L	L/Q	R&D	Skill	Energy	R^2
Sp. 1992	- 0,787 +	- 0,572 +		- 2,244	0,397 +	0,174
Sp. 1991	- 1,480	- 1,030		- 1,608	0,780	0,217
Sp. 1990	- 1,257	- 1,010		- 1,935	0,740	0,252
Sp. 1989	- 1,282	- 1,483		- 2,404	0,676	0,250
Sp. 1992 wo. sk.	- 1,201		- 0,144 +		0,629	0,112
Sp. 1991 wo. sk.	- 1,777		- 0,179 +		0,946	0,189
Sp. 1990 wo. sk.	- 1,614		- 0,256		0,940	0,211
Sp. 1989 wo. sk.	- 1,725		- 0,216		0,924	0,189

	Poland					
	K/L	L/Q	R&D	Skill	Energy	R^2
Sp. 1992	- 1,692	- 0,689 +		- 2,448	1,047	0,444
Sp. 1991	- 1,792	- 1,226		- 2,338	1,094	0,530
Sp. 1990	- 1,688	- 1,084		- 2,408	1,089	0,495
Sp. 1989	- 1,428	- 0,755+		- 2,114	0,935	0,419
Sp. 1992 wo. sk.	- 2,144		- 0,242		1,300	0,378
Sp. 1991 wo. sk.	- 2,223	- 1,095	- 0,289		1,335	0,457
Sp. 1990 wo. sk.	- 2,132		- 0,278		1,338	0,422
Sp. 1989 wo. sk.	- 1,822		- 0,324		1,156	0,365

Note: Estimates of this type for Austria, Switzerland and Sweden give the following results: Austria — no significant coefficients; Switzerland — weakly significant positive coefficients for specialization in R&D and energy-intensive exports; Sweden — significant positive coefficients for specialization in R&D and energy-intensive exports.

Table A.1.4.3.

Summary of significant coefficients in cross-section regressions (log. specification) — Export specialization and export shares on factor intensities (continued)

Export shares = f (Factor intensities)

Dependent variable: shares of industries in total manufacturing exports to the EC in 1992

Regressors	CSFR	Hungary	Poland	Austria	Switzerland	Sweden
K/L	- 0,602	- 0,299	- 1,205*	0,381	0,033	0,330
	(0,705)	(0,796)	(0,801)	(0,605)	(0,572)	(0,58)
L/Q	0,096	- 0,283	- 0,400	0,562	0,225	0,169
	(0,690)	(0,796)	(0,784)	(0,593)	(0,560)	(0,57)
R&D	- 0,300**	- 0,222	- 0,147	0,247*	0,250**	0,239*
	(0,177)	(0,205)	(0,201)	(0,152)	(0,144)	(0,15)
Skill	- 1,920**	- 1,632*	- 1,836*	0,129	0,286	0,564
	(1,004)	(1,158)	(1,141)	(0,862)	(0,815)	(0,83)
Energy	0,516*	- 0,149	0,501	0,289	- 0,283	- 0,22
	(0,354)	(0,408)	(0,402)	(0,304)	(0,287)	(0,29)

Note: Number of observations 85; degrees of freedom 79; standard errors in brackets underneath the coefficients.
* (**): significant estimates at the 10% (5%) significance level.

Table A.II.1.1.

Trade coverage ratios and EC protection

		EC trade protection (Möbius & Schumacher) 1991					
		Low	Export share	Medium	Export share	High	Export share
		471	3,05	252	9,12	221	7,51
		316	2,58	351	5,99	453	5,72
		461	2,22	253	2,58	247	4,51
		467	2,20	436	2,24	224	2,77
		242	1,81	362	1,69	451	2,01
		465	1,22	223	1,59	412	1,36
		231	1,15	222	1,57	455	1,20
		314	1,14	321	1,49	427	0,91
		473	0,90	260	1,02	414	0,67
		353	0,69	248	0,99		
	Good	313	0,37	346	0,91		
		311	0,31	442	0,77		
		363	0,31	462	0,65		
		313	0,29	491	0,64		
		245	0,26	315	0,61		
1991		243	0,26	439	0,59		
CEEC's		463	0,22	492	0,52		
performance		212	0,12	347	0,30		
in EC's		239	0,11	420	0,15		
markets		374	0,11	361	0,02		
ECX_{ii}		241	0,07				
———		464	0,05				
ECM_{ii}		482	0,02				
		Total	19,46		33,43		26,66
	Medium	365	0,07	413	0,29		
		Total	0,07		0,29		
		328	1,78	322	2,40	342	2,10
		472	0,36	325	1,88	438	0,26
		327	0,35	483	1,34	421	0,11
		324	0,29	495	1,24	425	0,00
		411	0,28	256	0,71		
		352	0,26	323	0,62		
		343	0,17	494	0,59		
		371	0,17	341	0,56		
		373	0,13	345	0,51		
		259	0,12	326	0,44		
	Bad	255	0,12	344	0,33		
		258	0,06	441	0,26		
		364	0,04	257	0,25		
		246	0,03	330	0,16		
		424	0,02	466	0,12		
		244	0,01	456	0,11		
		233	0,00	423	0,10		
		415	0,00	422	0,10		
		426	0,00	372	0,05		
		211	0,00	418	0,01		
		232	0,00	419	0,01		
		429	0,00	493	0,01		
				428	0,00		
				416	0,00		
				417	0,00		
		Total	4,21		11,79		2,47

Note: Export share refers to an industry's share in total industrial exports to the EC; Xi^{EC}/Mi^{EC} are the export-import ratios of Czechoslovakia's trade with the EC.

Chapter 5

The economic interpenetration between the EC and Eastern Europe: Poland

The economic interpenetration between the EC and Eastern Europe: The consequences for Polish industry

Dariusz Rosati[1]

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1. Introduction

Important structural changes have been taking place in the Polish economy since 1989. The changes have mainly been driven by a comprehensive programme of stabilization and market reforms, as well as by sweeping liberalization of external economic relations. One of the main objectives of transformation is to integrate the Polish economy into the international economy, and especially into the European Union.

This study has been undertaken within the framework of a broader research project which aims at examining certain structural aspects of the prospective economic integration between the European Community and Central and East European countries in the 1990s. Specifically, the study attempts to describe the current structural adjustment in Polish industry and trade, to assess key factors behind the adjustment process, and to identify industrial sectors which are likely to be most affected by such adjustments. An important objective of the study is to identify the potential areas of Poland's comparative advantage under new market conditions. The analysis concentrates on changes in intensity and composition of commercial flows between the EC and Poland between 1988 and 1992.

The main finding of the study is that Poland tends to specialize chiefly in natural-resource based, energy-intensive products and, to a lesser extent, labour-intensive products. Traditional export sectors, oriented towards former CMEA markets, have substantially weakened their position. In the medium-term future, however, there is a strong potential for expansion of labour-intensive sectors and partial revival of engineering. These conclusions are recapitulated in the summary.

The study is organized into four main chapters. It starts with an overview of the Polish industrial and trade structure, and its evolution over the period of 1988 to 1992. Then, the analysis concentrates on Polish trade with the EC, with various analytical and statistical tools being used to describe and explain the pattern of trade developments, specialization and competitiveness. In Chapter 4, the current trade performance is examined against the background of various trade distorting factors, such as the EC-imposed trade barriers, and domestic distortions in the Polish economy. The purpose of this section is to obtain an idea of a future trade development pattern, which is expected to be influenced by the gradual removal of various policy-induced and market-induced trade barriers. In the fifth chapter, factors underlying the current trade structure are analysed, and an attempt is made to explain the observed trade performance by standard trade theory based on proportions of factor endowments. Trade reorientation away from the ex-CMEA towards the EC and future sectoral specialization under different scenarios are discussed in Chapter 6.

Most of the statistical analysis of trade has been done at NACE 3-digit classification level, which has allowed us to obtain a reasonably disaggregated picture of structural change, and has made possible a detailed analysis of Polish trade performance *vis-à-vis* the EC. Trade figures have been taken from Eurostat, rather than from Polish sources, because the latter do not offer trade figures at NACE 3 classification. Also, due to many changes in the rules of statistical reporting in Poland, Polish data are not fully comparable across the 1990 to 1992 watershed. In some cases, however, NACE 3 data was either incomplete, or simply unavailable, and national statistics had to be used instead. This raised some problems of consistency and comparability of results, but an effort has been made to reduce these problems to minimum.

2. Summary and conclusions

1. The purpose of the study is to describe the current structural adjustment in Polish industry, to identify industrial sectors which are likely to be most affected by such adjustments, and to analyse the impact of these changes on the level and composition of trade flows between Poland and the EC in manufactured goods. The analysis is carried out in four steps. It starts with an overview of structural characteristics of Polish industry and foreign trade. The second part discusses conditions of trade with the EC. In the third part, main factors of trade are identified and their importance examined. In the fourth part, some projections are made as to the future pattern of trade between Poland and the EC.

2. Data on the evolution of industrial structure in the Polish economy during the transition from central planning to a market system reveal that a major structural change has been under way. A commonly-held opinion claims that Poland, as other transition countries of the region, being relatively well endowed with skilled and unskilled manpower, would generally specialize in labour-intensive production. This opinion receives only partial support from empirical evidence. An assessment of changes in sectoral shares in output and employment at NACE 2 aggregation level (21 sectors of manufacturing industry) shows a substantial decline in the relative position of many traditional industrial sectors has been observed in the period 1988 to 1992. Among the 'losers' were engineering, textile, clothing, and leather and footwear industries (NACE groups 31-37, 43-45), while the 'winners' included metal processing, food processing, wood and paper industries (NACE groups 41/42, 21, 24-25). Generally, a shift can be observed away from heavy and engineering industries to natural-resource-based industries.

3. While the changes in industrial structure have been largely reflected by corresponding changes in the structure of trade with (former) CMEA countries, they have not been matched by changes in the structure of trade with the EC. Trade with the

CMEA grouping collapsed in 1991 and its share fell to less than 20%, down from 50% in the mid 1980s. Trade with the EC expanded fast and its share in total Polish trade exceeded 50% in 1991, up from 20% in the mid 1980s. However, the export expansion was rather of across-the-board character, with all industrial sectors increasing their sales to the EC markets at broadly similar rates. As in the past, Polish exports were dominated by clothing and apparel, metals, processed food, wood products, chemicals, motor vehicles, and textiles. Ten NACE 3 groups with highest export shares in 1992 accounted for 54,2% of total Polish industrial exports to the EC. Polish imports were less concentrated; highest import shares were reported for various machinery, woven fabrics, motor vehicles, telecommunications equipment, and miscellaneous manufactures. Analysis of similarity of commodity composition of exports and imports between 1985 and 1991 demonstrated relatively high stability of the structure of Polish exports to the EC, which may suggest that institutional and policy changes introduced in the Polish economy during 1989 to 1991 had only minor impact on the commodity composition of exports.

4. Various analytical tools have been applied to examine the pattern of specialization in trade between Poland and the EC. The use of trade coverage ratios and specialization indices yielded very similar results. It has been found that Poland tends to specialize in two broad categories of products: natural-resource-based products, such as metals, wood products, industrial chemicals, blast furnace coke, building materials and foodstuffs, and low-technology manufactures, such as clothing, textiles, footwear. Apart from important differences, both categories have also some common characteristics: they are produced with traditional technologies, they face strong competition from developing countries, their output is relatively unprocessed, and demand for their output is relatively income-inelastic. As a result, their manufacture value-added potential is limited. The analysis of intra-industry trade between Poland and the EC, using Grubel-Lloyd indices, revealed that the degree of intra-industry trade has increased again in 1991-92, after a sharp decline in 1990.

5. Analysis of trade coverage ratios (TC) and specialization indices (SI) allowed for dividing all sectors into four categories. Sectors with TC>1 and SI>1 are unambiguously export-oriented sectors, while sectors with TC<1 and SI<1 are import-oriented ones. Sectors with TC>1 and SI<1 have been identified as potentially expanding export sectors, while sectors with TC<1 and SI>1 have been classified as potentially contracting export sectors.

6. Trade with the EC has been hampered by numerous trade restricting measures, but their significance for Polish exports varies across the measures used. Tariffs were relatively low (weighted average rate of 6% in 1991); nevertheless, Polish exports displayed a bias towards higher-rate products (e.g. clothing). Quantitative restrictions are more important, because they affect some 20% of Polish exports. While only 11 NACE 3 groups are covered by QRs, Polish exports in 1991 was much more concentrated in these groups than the EC-wide average (11 groups account for 33% of Polish exports, but only for 14% of total EC imports). Other non-tariff barriers (ONTBs) are equally important: 24 NACE 3 groups are affected, accounting for 60% of Polish exports, while in total EC imports, these groups account for 36% of imports. Generally, if the presence of QRs and ONTBs may be considered as a hallmark of high 'sensitivity', Polish exports are indeed heavily concentrated in 'sensitive' sectors.

7. Trade is also affected by domestic distortions. Most of market distortions have been removed from the Polish economy in the course of market reforms over the last four years: price controls have been largely eliminated, subsidies were cut, tax-rates realigned, and administrative interventions drastically reduced. Nevertheless, some distortions still remain. Most important include: (a) lower energy prices (coal, coke, heat and electricity), (b) low relative wages of skilled manpower, (c) the excess-wage tax, and (d) the 'dividend' tax. Assuming price-maximizing behaviour of exporters and importers, these distortions should result in specialization in exports of energy-intensive products, labour-intensive products, and skilled-labour-intensive products. While this conclusion is generally confirmed by empirical data in case of energy-intensive goods and, to a lesser extent, also in case of labour-intensive goods, it is not confirmed for skills-intensive products.

8. Most of the trade barriers in Poland's trade with the EC were removed in 1992 after the Association Agreement had been signed. However, the impact of elimination of tariffs has been negligible: no positive correlation has been found between the rates of tariff reduction by sectors and the corresponding rates of exports growth in 1992. The impact of liberalization of QRs has been only slightly more pronounced. This may suggest that most of export potential is concentrated in 'sensitive' sectors where liberalization has been only marginal.

9. Shifting to a more dynamic perspective, the potential impact of the removal of the EC trade restrictions on Polish exports has been examined. If it is assumed that strongest expansion can be expected in the product groups with highest trade coverage ratios and specialization ratios and facing currently highest trade barriers, then the future potential is concentrated primarily in some low-technology manufactures, such as iron and steel, clothing, textiles, sugar, processed fruits and vegetables, and processed fish. This group is followed by other foodstuffs, industrial chemicals, glass, footwear and leather, and metal products.

10. Looking for the determinants of the current trade pattern, country-specific proportions of factor endowments are typically

the main candidates. Five main production factors were identified (capital, labour, skilled labour, energy and science), and factor intensities were assumed in the Polish economy to be identical as in the EC (lack of data enforced this very critical assumption). The picture of factor intensity of Polish exports was obtained through calculating the cumulative share in total exports for NACE 3 sectors with intensity with respect to each factor. The results demonstrate, that Polish exports are primarily dominated by energy-intensive products and, albeit to a lesser extent, by labour-intensive products. This seems to be only partly consistent with the perceived pattern of Poland's comparative advantage. Capital-intensive goods are less important, and typically concentrated in natural-resource-based sectors. By contrast, the share of R&D-intensive and skilled-labour-intensive goods is unimportant, and has even further declined between 1988 and 1992.

11. It is interesting to look into the prospects of particular export sectors characterized by different factor-intensities in the context of the gradual removal of trade barriers between Poland and the EC. Since the highest trade barriers have been concentrated in selected capital-intensive goods (processed food, transport vehicles, metallurgy), labour-intensive manufactures (clothing, textiles, footwear), and some energy-intensive products (iron and steel, sugar), these sectors may be expected to experience largest improvement in market access. Many of these goods are already important in Polish exports to the EC, and they have chances for further expansion. It should be noted, however, that this assessment depends rather heavily on some critical assumptions on the adopted technique of factor-intensities estimation.

12. More generally, the present commodity composition of Poland's exports displays dual characteristics: on the one hand, it shows a significant proportion of natural-resource-based products, such as metals, minerals, foodstuffs, which are by definition less labour-intensive, and on the other hand, it also shows a growing share of labour- intensive products, such as textiles, footwear, and some engineering goods. This factor of non-homogeneity of exports is likely to continue in the future, although with a tendency for labour-intensive goods to expand faster.

13. Looking into the pattern of trade between Poland and the EC, it is sometimes assumed that this pattern is likely to be affected by a massive reorientation of Polish trade away from the ex-CMEA markets to Western markets. Empirical evidence supports this conjecture, especially for 1992. Various measures of similarity and structural distance between the CMEA trade structure and the EC trade structure show indeed a considerable degree of structural convergence between 1988 and 1992, with the changes being much stronger in trade with ex-CMEA. However, the initial expansion of exports to the EC in 1990-91 was rather the effect of emerging 'new' trade, and not of the 'old' CMEA trade being redirected to Western markets.

14. Two alternative medium-term scenarios have been applied to conjecture development of Poland's foreign trade into year 2000 — the 'trend' scenario and the 'integration' scenario. Trade with the EC is expected to expand fastest, although trade with ex-CMEA is also likely to recover; hence, no major change in territorial composition of trade is foreseen, with the share of the EC increasing only marginally to some 60% of total trade. Industrial sectors with highest export potential have been identified through a multi-criterial evaluation procedure. These sectors concentrate in NACE groups 31 (metal products), 34 (electrical engineering), 36 (other transport means) and 43-45 (textiles, leather, footwear and clothing).

3. Recent evolution and the current situation of Poland's industrial structure and foreign trade

3.1. Definition of industrial structure

The role of the industrial sector in the Polish economy has been relatively significant. This was essentially the result of the adopted strategy of intensive industrialization pursued since the late 1940s through the mid 1970s, which reflected high priority for development of industry and low priorities assigned to other sectors, such as agriculture and services. The industry-oriented pattern of development in Poland, as in other Central and East European countries, broadly emulated the economic strategy pursued in the Soviet Union, which in turn was dictated basically by political and military considerations.

The share of industry in net material product (NMP produced) has been systematically increasing until the late 1970s, then fell during the crisis in 1980-81, and started to grow again recently (see Table 1).[1] It should be noted, that this proportion has been consistently higher than in developed market economies in the West, where the largest chunk of GDP is produced by the service sector, while the contribution of industry varies typically between 25 and 40%.[2]

[1] The data for 1990 may not be fully comparable with the earlier data because of the massive change in relative prices, which took place in 1989 and 1990 as a result of the widespread price liberalization and realignment during the first stage of the stabilization programme, as well as because of changes in statistical reporting methodology in 1990.

[2] See OECD in figures, 1990 edition, OECD, Paris, 1990, pp. 28-29.

Table 1

Poland: the percentage share of industry in NMP and in GDP, various years, current prices

(%)

	1960	1970	1975	1980	1985	1988	1989	1990	1991	1992
NMP:	39,5	49,8	52,1	52,1	47,6	48,1	50,2	54,1	—	—
GDP:	—	—	—	—	40,9	41,7	44,1	44,9	40,2	41,3

Source: GUS Statistical Yearbook, various issues.

During the central planning era, industrial development mostly concentrated on heavy industry and capital goods sectors, such as coal mining, metallurgy, engineering and chemical industry. Light and consumer goods sectors received less investments and grew at a slower pace; nevertheless, as a result of pursuance of import-substitution strategy, important capacities were built in textile, footwear and clothing, and food-processing sectors.

Table 2

Manufacturing industry in Poland: sectoral percentage shares in output and employment, NACE 2 classification, 1988-92

(%)

NACE	Output				Employment			
	1988	1990	1991	1992	1988	1990	1991	1992
21	0,87	1,50	1,26	2,09	0,90	1,00	0,76	1,44
22	12,02	16,72	12,96	8,27	5,55	5,67	6,00	5,06
23	1,34	1,48	1,51	1,43	1,50	1,61	1,70	1,10
24	3,91	4,19	4,72	4,60	5,92	5,91	6,07	5,80
25	7,52	8,23	8,66	10,83	4,46	4,65	4,88	7,36
26	0,82	0,81	0,64	0,52	0,88	0,86	0,77	0,59
31	4,76	4,81	5,00	4,99	7,13	7,16	7,19	7,03
32	8,04	6,94	5,58	6,46	9,74	9,59	9,07	11,17
33	0,52	0,31	0,14	0,44	0,39	0,37	0,34	0,87
34	7,54	7,11	6,54	4,40	9,41	9,50	8,89	5,59
35	4,19	4,01	3,06	3,20	3,52	3,69	3,62	2,99
36	2,50	2,72	2,11	3,53	3,35	3,23	2,87	5,05
37	1,11	0,86	0,86	0,47	1,95	1,80	1,69	0,86
41/42	22,45	23,15	28,83	31,51	13,04	14,03	15,82	16,57
43	7,83	5,14	4,45	3,65	10,29	9,96	8,49	6,64
44	1,25	0,76	0,63	0,43	1,23	1,14	1,07	0,68
45	4,50	2,80	3,20	3,41	8,82	8,31	8,89	9,22
46	3,43	3,29	4,10	4,78	5,27	4,91	5,47	6,21
47	2,38	2,52	2,72	2,57	2,86	2,87	2,80	2,58
48	2,36	2,24	2,69	2,50	2,63	2,63	2,77	2,27
49	0,66	0,41	0,34	0,25	1,26	1,11	0,84	0,59
Total	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00
Total output *(in ZL billion at current prices)*	24 869	401 703	474 070	691 814				
Total employment *(in thousands)*					3 258	2 870	2 604	2 810

Note: For details of conversion of Polish national classification (SWW) into NACE 2, see Annex.

Source: Own calculations from GUS data.

This specific pattern of industrial development remained essentially unchanged until the end of the 1980s, when the comprehensive reform programme was launched, aimed at replacing the centrally-planned system by a market economy of the Western type. The recent evolution of the Polish industrial structure is illustrated by data in Table 2, which shows changes of sectoral shares in output and employment at the NACE 2-digit aggregation level between 1988 and 1992.

The evolution of industrial structure during 1988 to 1991 period was an outcome of a combination of factors, with sharp changes in relative prices, deep domestic recession and the collapse of CMEA markets being of primary importance. At NACE 2 classification level, food processing (NACE 41/42) remained the largest sector, followed by ferrous and non-ferrous metallurgy (NACE 22). Both sectors further strengthened their relative position in terms of output and employment. Table 2 confirms also the importance of engineering industries in the Polish economy; the combined share of NACE 31 through NACE 37 in 1988 exceeded 28% of industrial output and 35% of employment. However, this position declined in 1991 to 23% and 33%, respectively.

Interesting changes occurred in 1992. While the declining tendency in heavy metallurgy observed since 1988 continued, there has been a clear upturn in some sectors of engineering, such as mechanical machinery and transport means (NACE 32, 35 and 36), as well as a partial revival of footwear and clothing (NACE 45). The rising output shares of these industries have been generally accompanied by rising shares in total employment.

Table 2 provides a good illustration of the dramatic change which has been taking place in Polish industry over the last four to five years. Some sectors have seen their position rapidly declining, some others have expanded. The biggest 'losers' and 'winners' in terms of output share loss (in per cent) are shown in the first panel of Table 3 below.[1] As can be seen, the heaviest losses were registered by engineering (NACE 32-35 and 37) and light industries (NACE 43-45) sectors, whereas among the 'winners' dominated extraction of metal ores, mineral and chemical products, transport means, food-processing, and timber and wood industries.

The rapid eclipse of the dominant position of engineering industries and the expansion of food processing and non-ferrous metallurgy is broadly confirmed by the evolution of employment structure, as shown in the second panel of Table 3. While broadly consistent with the changes in output shares, the pattern of changes in employment reveals nevertheless some differences. There are several sectors for which output and employment shares have changed in opposite direction. NACE 23, 24, 31, 47 and 48 registered a relative increase of output and a fall of employment, which resulted in an improvement of labour productivity. An opposite tendency could be observed in NACE 32, 33 and 45 sectors (mechanical engineering, data processing, and footwear and clothing), where the steep fall of output was accompanied by a relative increase of employment, indicating a strong inflexibility of employment levels with respect to output changes.

Table 3

'Winners' and 'losers' in Polish manufacturing industry: percentage changes in sectoral shares in output and employment between 1988 and 1992

(%)

A. Output			
'Losers' NACE		'Winners' NACE	
44	– 65,6%	21	+ 140,2%
49	– 62,1%	25	+ 44,0%
37	– 57,7%	36	+ 41,2%
43	– 53,4%	41/42	+ 40,4%
34	– 41,6%	46	+ 39,4%
26	– 36,6%	24	+ 17,6%
22	– 31,2%	47	+ 8,0%
45	– 24,2%	23	+ 6,7%
35	– 23,6%	48	+ 5,9%
32	– 19,7%	31	+ 4,8%
33	– 15,4%		
B. Employment			
'Losers' NACE		'Winners' NACE	
37	– 55,9%	33	+ 123,1%
49	– 53,2%	25	+ 65,0%
44	– 44,7%	21	+ 60,0%
34	– 40,6%	36	+ 50,7%
43	– 35,5%	41/42	+ 27,1%
26	– 33,0%	46	+ 17,8%
23	– 26,7%	32	+ 14,7%
35	– 15,1%	45	+ 4,5%
48	– 13,7%		
47	– 9,8%		
22	– 8,8%		
24	– 2,0%		
31	– 1,4%		

Source: Calculated from Table 2.

Generally, the observed evolution of industrial structure over the period 1988 to 1992 indicates, that the traditional sectors dominating Polish industry for many years (heavy metallurgy and engineering) have been rapidly losing ground, while their position is gradually taken by natural-resource-based industries, such as minerals, metal processing, food processing, and wood products. There has been some partial reversal of this tendency in 1992, most probably connected with emerging recovery in the Polish economy, but it is yet uncertain to what extent this change can be sustainable in the longer term.

[1] The 'winners' and 'losers' are identified on the basis of changes in sectoral shares between 1988 and 1992, $s_i(88)$ and $s_i(92)$, according to the formula: $s_i(92)/s_i(88)*100$.

3.2. Definition of trade structure

The Polish foreign trade has been for years oriented towards huge and largely undemanding Soviet market. Trade links with the West were limited to exports of coal, foodstuffs, and semi-processed materials in exchange for more sophisticated capital goods and selected raw materials, which were unavailable within the CMEA grouping. The role of industrialized countries in Polish trade started to expand in the 1970s, especially on the import side, fuelled by large inflows of credits from the West, but diminished again after 1980. The CMEA markets continued to dominate Polish trade until the late 1980s, and only after the CMEA dismantling and the collapse of the Soviet market in 1991, their role fell sharply. The socio-economic and political changes which swept through Eastern Europe during 1989-90 brought about substantial changes in the territorial pattern of Polish foreign trade.

Polish trade with the EC has been expanding fast during the last few years. After 1989, the Community has become the main trading partner for Poland, far exceeding the former CMEA countries, EFTA countries and the rest of world. The dramatic shift in the territorial structure of the Polish foreign trade is illustrated by data in Table 4. The EC, accounting already for more than half of the trade turnover in 1992, assumed the dominant position in Poland's trade. The CMEA region, which was the key trading partner for Poland for more than four decades, has seen its position rapidly declining over the last few years, when its share in trade diminished by almost two thirds.[1]

This remarkable expansion raised the level of Poland's trade with the EC in 1992 to USD 7,6 billion on the export side and to USD 8,4 billion on the import side. The lion's share in trade is taken by manufactured products, accounting for 73,5% of total Polish exports and 87,4% of imports in 1991. The balance is made up mostly by fuels and agricultural goods.

High rates of growth of trade with the EC in 1990 and 1991 suggest that a substantial trade creation effect stemming from the general trade liberalization and currency convertibility must have been reinforced by a trade diversion from CMEA markets to the West. But the rate of expansion slowed down somewhat in 1992, especially on the Polish exports side, partly because of deepening recession in Western Europe, partly because of restricted access to EC markets, and partly due to some real appreciation of the Polish currency. According to Polish customs statistics, exports to the EC declined in 1992 by 7,9% (in current dollars), while Polish imports from the Community increased by 9,3%. These figures, however, should be taken with caution, as data for 1991 and 1992 are not fully comparable because of changes in the Polish statistical system in 1992.[2] In the future, Poland's trade with the EC is likely to expand further, being additionally fuelled by trade preferences granted in the Association Agreement.

It is interesting to note that the expansion of trade with the EC has generally been of across-the-board character, and have been registered in almost all sectors. Tables A.1 and A.2 (in the Annex)) show the values of Polish trade with main country groups from 1988 to 1991, by NACE 2 sectors, while Table 5 below shows the increasing share of EC in Polish exports and imports of industrial goods. As can be seen, the share of EC in Polish exports increased in all but two NACE 2 groups (21 and 22).

The EC markets have traditionally been the main outlets for Polish exports of metallurgy, foodstuffs and wood products (NACE 21, 22, 41, 46). But more recently a strong export redirection towards the EC markets has been also registered in some other sectors, such as minerals, building materials and chemicals (NACE 23, 24, 25), metal products (NACE 31), engineering (NACE 32-36), textiles, footwear and clothing (NACE 44-46), and rubber and plastics (NACE 48). Only two sectors diminished their share in Polish exports between 1988 and 1992 (metal ores and minerals — NACE 21 and 23).

On the import side, the trade diversion towards the EC has been equally strong as in exports. The most dynamic growth has been registered in all categories of engineering, non-metallic minerals, wood, paper, rubber and plastic products.

Tables A.1 and A.2 also illustrate structural shifts in Poland's trade with ex-CMEA countries: exports of engineering goods have been particularly hard hit, while exports of consumer manufactures, and especially of food products expanded considerably. On the import side, the sharp fall of machinery and equipment has been accompanied by a relative increase of raw materials and fuels.

[1] It should, however, be remembered, that the sharp decline of the officially-reported share of CMEA markets in Polish foreign trade in 1988 to 1990 was partly due to the rapidly depreciating rouble cross-rate against the dollar. The change of the rouble/dollar cross-rate from Rb/USD 2,21 in 1988 to Rb/USD 2,96 in 1989 and to Rb/USD 4,52 in 1990 had a dwarfing effect on valuation of CMEA trade flows in national currency and in dollars. This depreciation only partly reflected the falling 'real' value of the rouble, especially on the Polish import side.

[2] In 1992, Poland switched from 'faktura'-based to customs-based reporting of trade flows, introducing standard documents which have been used in the EC (SAD — single administrative document). This step entailed a number of changes in trade statistics, such as valuation of imports at CIF prices instead of FOB prices, classification of flows by country of origin and destination, rather than by country of transaction, elimination of some services from reported export values (construction), etc.

Table 4

Structure of Polish foreign trade, 1981-91, current prices

(%)

Country	1981	1985	1988	1989	1990	1991	1992
			A. Exports				
OECD	36,9	34,7	43,5	49,1	..	73,8	71,9
of which: EC	23,2	23,2	28,3	32,1	47,2	55,6	58,0
CMEA[1]	45,2	48,2	40,8	34,8	21,4	16,8	15,4
RoW[2]	17,9	17,1	15,7	16,1	..	9,4	12,7
			B. Imports				
OECD	37,2	32,2	45,9	53,0	..	68,9	72,4
of which: EC	20,4	20,4	28,3	33,8	45,6	49,9	53,2
CMEA[1]	51,4	54,3	40,5	32,2	22,2	19,0	16,3
RoW[2]	11,4	13,5	13,6	14,8	..	11,1	11,3

Note: Rouble trade converted into zloties at the official rate for each year.
[1] 'CMEA' group refers only to the European CMEA members.
[2] Rest of world.

Source: Own calculations from GUS data.

Table 5

The percentage share of EC markets in total Polish trade in 1988 and 1990-92, by NACE 2 sectors

(%)

NACE 2 sector	Exports 1988	1990	1991	1992	Imports 1988	1990	1991	1992
21	55,8	78,6	51,7	50,1	19,7	38,1	27,9	4,9
22	68,1	66,4	68,4	56,3	45,1	47,7	64,5	55,9
23	28,7	22,9	26,9	34,0	19,4	22,7	30,8	32,0
24	41,8	49,7	71,6	71,5	31,1	39,1	71,8	68,8
25	26,8	45,4	41,3	50,3	54,7	61,5	71,9	64,0
26	21,0	44,3	55,6	54,7	52,5	38,1	37,3	48,5
31	29,7	49,3	67,3	75,1	22,0	42,6	59,3	63,6
32	4,6	14,3	29,0	54,7	33,4	59,1	60,9	76,2
33	0,8	1,0	5,9	34,1	19,3	34,3	52,8	48,7
34	14,8	48,5	44,5	50,9	19,5	34,3	52,8	60,9
35	14,7	7,0	18,7	82,1	14,0	27,8	57,2	63,3
36	9,1	20,7	36,3	40,8	8,5	23,5	47,1	38,6
37	7,0	12,8	62,4	39,1	31,8	43,2	62,4	58,0
41/42	50,0	59,2	64,4	61,4	33,8	50,9	65,0	55,0
43	33,0	41,8	52,4	59,7	21,1	24,7	40,1	39,2
44	47,9	55,5	66,5	81,4	3,2	17,1	34,2	42,6
45	32,5	71,1	62,6	74,8	35,0	42,1	43,5	34,8
46	62,6	69,2	79,8	81,1	1,5	24,2	55,9	62,4
47	44,6	48,7	52,9	53,7	22,6	32,1	53,1	50,9
48	38,5	50,2	61,5	68,8	44,5	53,1	62,3	67,7
49	30,4	48,1	43,7	68,0	28,0	56,9	63,7	53,5
Total	29,6	43,6	54,9	57,9	28,3	38,5	49,9	53,2

Source: Calculated from Tables A.1 and A.2 (Annex).

The following preliminary conclusions can be drawn from the analysis of structural change. First, the changes in industrial structure of the Polish economy show a clear shift away from traditional heavy industry sectors, such as metallurgy and engineering. Second, while the evolution of trade structure with CMEA follows essentially the same pattern as the changes in Poland's industrial structure, the similarities are less pronounced for trade with OECD. Third, the emerging comparative advantage of Poland seems to be located in the areas of traditional industries and natural-resource-based industries. Fourth, the 'high technology' sectors, such as precision instruments, electronics or data processing, geared

mostly to CMEA markets in the past, have sharply diminished their exports because of the collapse of these markets.

This pattern of 'spontaneous' structural change demonstrates the fragility and weakness of the previous specialization base, when confronted with market competition. However, it may also suggest that in the absence of any systematic industrial and trade policies, industrial sectors with high value-added and high-tech potential can disappear during transition. This outcome cannot be considered as optimal. If market mechanism is distorted or inefficient, or externalities involved in the threatened sectors are large compared to costs of restructuring, there may be a room for stronger structural policies.

3.3. Trade performance *vis-à-vis* the EC

A. Trade with the EC: the structure of Polish exports and imports

By contrast to the intra-EC trade structure, the commodity composition of Polish exports to, and imports from, the EC displays significant differences. Table 6 shows the NACE 3 groups with the highest shares in Polish industrial exports to the EC.

Table 6

NACE 3 groups with highest share in Polish industrial exports to the EC in 1991

Rank 1991	NACE 3	Sector	Percentage share 1992	
1	453	Clothing and accessories	14,2	13,1
2	224	Non-ferrous metals	10,9	10,9
3	467	Wooden furniture	5,5	5,1
4	414	Processed fruits and vegetables	4,0	4,9
5	252	Petrochemicals, coke	3,7	5,4
6	253	Other industrial chemicals	3,6	5,0
7	351	Motor vehicles	3,6	0,7
8	221	Iron and steel	3,6	3,4
9	412	Meat products	2,8	3,3
10	436	Knitting industry	2,3	2,2
11	461	Sawing and processing of wood	2,3	2,0
12	316	Tools and metal products	2,3	2,2
13	415	Fish and sea foods	2,1	2,2
14	465	Other wood manufactures	2,0	2,0
15	314	Structural metal products	1,9	1,5
16	451	Footwear	1,9	2,2
17	495	Miscellaneous manufactures	1,8	1,6
18	328	Other machinery and equipment	1,7	1,9
19	247	Glass and glassware	1,4	1,8
20	471	Pulp, paper and board	1,2	1,1

Source: Calculated from the Eurostat foreign trade database (Comext).

Polish exports seem to be highly concentrated; first 10 NACE 3 groups (out of 106 industrial sectors being covered by the analysis) account for 54,2% of total manufactured exports to the EC in 1992 (55,7% in 1991); among the first 10 in 1992, 8 sectors were in the first 10 in 1991, and first 6 groups on the list had also highest the export shares in 1990.

As can be seen from Table 6, Polish industrial exports are dominated by low-processed goods, such as metals, metal products, coke and chemicals, and by relatively low-tech manufactures, such as textiles, furniture and processed food. The commodity structure of exports has not changed much during last several years, which is demonstrated by relatively high correlation between export structures registered in the 1980s and in 1991 (see Table 9). One remarkable exception is exports of motor vehicles (NACE 351), which increased sharply in 1992.[1] Another is the decline of share of exports of chemical and petrochemical products.

Table 7

NACE 3 groups with highest shares in Polish industrial imports from the EC in 1991

Rank	NACE 3	Sector	Percentage share 1992	1991
1	43B	Woven fabrics	7,5	5,7
2	328	Other machinery & equipment	5,9	6,1
3	324	Machinery for food and chemical industries	4,5	4,8
4	351	Motor vehicles	4,4	6,7
5	483	Plastic products	3,9	3,2
6	344	Telecommunication equipment	3,6	3,1
7	252	Petrochemicals	3,0	3,1
8	257	Pharmaceuticals	3,0	2,9
9	495	Miscellaneous manufactures	2,8	2,4
10	258	Soap, detergents, etc.	2,6	2,2
11	325	Machinery for mines, foundries, etc.	2,5	2,1
12	345	Radio & TV equipment	2,5	2,9
13	256	Other chemicals	2,4	2,3
14	330	Office machinery and data processing	2,4	2,7
15	316	Tools and metal goods	2,3	1,9
16	472	Paper & board	1,9	1,6
17	411	Vegetable and animal oils & fats	1,8	0,7
18	342	Electrical machinery	1,7	1,4
19	353	Parts and accessories for motor vehicles	1,7	0,8
20	436	Knitting	1,6	1,7

Source: Calculated from the Eurostat foreign trade database (Comext).

[1] This is the result of the multi-billion lira contract signed between FIAT and the FSM company, under which FSM supplies the FIAT group with cars and parts for the Cinquecento model.

Table 7 shows the NACE 3 groups with the highest percentage shares in Polish industrial imports from the EC. Polish imports are less concentrated than exports: the first 10 NACE 3 groups with the highest imports shares account for 41,2% of total industrial imports from the EC in 1992 (39,5% in 1991). Also, there were some significant changes between 1991 and 1992 import structures; the share of plastics products, oils and fats, and motor parts increased, while the share of motor vehicles and especially shipbuilding dropped sharply from 6,7% to 4,4%, and from 4,0% to 0,7%, respectively. This is the result of higher tariffs imposed on imports of automobiles in 1992,[1] and growing competition from domestic shipyards. Continuously high position of textile products on the import ranking list reflects probably a high level of 'outward processing transactions', given the substantial exports of Polish clothing and apparel. The high rates of import growth of various machinery and equipment, high technology goods and processed chemical goods are likely to continue in the future.

As can be seen from Table 7, Polish industrial imports are dominated by highly-processed goods (machinery, equipment, transport means, and high-technology goods (telecommunications, electronics, computers). These sectors have registered the fastest expansion in production and trade over the last two to three decades. In addition, because of their high intensity with respect to skilled manpower, the value-added contents of products dominating in Polish industrial imports from the EC is probably much higher than that of Polish exports.

Commodity concentration of Polish exports and imports displayed a long-term declining trend in the 1980s, but the tendency was reversed in exports during 1991-92. This can be readily observed from Table 8, which shows the values of Hirschman's concentration coefficients for exports and imports.[2] As can also be seen, the concentration of exports has always been much higher than the concentration of imports.

Table 9 shows the values of correlation coefficients of NACE 3 trade structures for particular years. The figures in the first line of each of the two panels show the correlation of 1992 data with previous years' data, while the figures on the main diagonal of both panels show the correlation between consecutive years. Two observations can be made immediately.

First, the commodity structure of Polish industrial exports to the EC in 1992 has not changed much as compared with the period of 1988-89. Specifically, the correlation analysis does not reveal any major structural reversal in 1990 or in 1991 as a result of the dramatic policy and systemic reforms undertaken in these two years. Changes between 1989 and 1992 are in fact only marginal. This may suggest that either the pattern of Polish exports in the 1980s was not as fundamentally distorted as commonly believed, because it seems not to have changed much under new market conditions, or that the distortions which shaped that pattern under central planning have not yet been totally eliminated. This important issue will be discussed in Chapter 4.

Table 8

Commodity concentration of Polish trade with the EC, at NACE 3 aggregation level, 1980-92

Year	Exports	Imports
1980	0,2604	0,2002
1985	0,2331	0,1872
1988	0,2108	0,1933
1989	0,2098	0,1774
1990	0,2078	0,1855
1991	0,2176	0,1680
1992	0,2204	0,1632

Note: For the definition of concentration coefficients, see footnote 2 this page.

Source: Author's calculations.

Table 9

Correlation matrix of trade structures, 1980-91

A. Polish exports to EC	1980	1985	1988	1989	1990	1991
1992	0,7746	0,8318	0,9375	0,9420	0,9523	0,9783
1991	0,7619	0,8556	0,9290	0,9464	0,9802	—
1990	0,8025	0,8885	0,9504	0,9771	—	—
1989	0,8762	0,9217	0,9805	—	—	—
1988	0,9032	0,9469	—	—	—	—
1985	0,9120	—	—	—	—	—
B. Polish imports from EC						
1992	0,5461	0,7137	0,7470	0,7962	0,8770	0,9220
1991	0,5989	0,6555	0,6921	0,7562	0,8329	—
1990	0,6842	0,7873	0,8440	0,9006	—	—
1989	0,7939	0,9153	0,9616	—	—	—
1988	0,8375	0,9551	—	—	—	—
1985	0,8345	—	—	—	—	—

Source: Author's calculations.

[1] Tariffs for imports of cars and trucks were raised from 15% to 35% on 1 January 1992, and are planned to remain at that level until the end of 1994 (except for a 30 000 duty-free quota granted for imports of cars produced within the EC), according to the Association Agreement with the EC signed in December 1991. After 1994, the tariffs for imports from the EC will be gradually phased down at the annual rate of 5 percentage points.

[2] This coefficient (see Hirschman 1945) is defined as a square root of the total of squared exports shares of all sectors, i.e: $HC = \sqrt{\Sigma_i(s_i 2)}$.

Second, the change in the import structure was much more pronounced than the change in the export structure, especially in 1990 and 1991, which suggests that trade liberalization has had stronger impact on the import side than on the export side.[1] The apparent asymmetry of changes in the export and import structures also suggest that short-term adjustments in the Polish economy are stronger on the demand side than on the supply side. This conclusion is consistent with the general perception that supply adjusts to changes in demand only with a lag.

B. Poland's specialization in the EC market

The analysis of export (import) shares informs the reader about the relative position of particular sectors in total Polish exports, but offers only limited information on the pattern of international specialization. The degree of the country's specialization on the EC market can be measured with the so-called specialization index, defined as the ratio of the share of one sector's exports to the EC in the total of Poland's manufacturing exports to the EC, divided by the share of imports to the EC of the same sector in total EC manufacturing imports. An index value greater than 1 indicates that the country specializes more than the 'the rest of world' in exports of a given product group on the EC market. Thus, this is a relative measure of specialization on a given foreign market, or a measure of 'external' comparative advantage. Table 10 shows sectors with the highest and lowest specialization indices for Polish exports to the EC market.

It can be seen immediately, that the 'revealed', relative specialization of Poland as measured by the specialization indices is strongest in three categories of goods: wood and wood products (three NACE groups in the top 10), metal products (three NACE groups in the top 10 and five groups in the top 20), and non-metallic mineral products, such as cement, lime, concrete, salt (also three NACE groups in the top 10 and five groups in the top 20). These are followed by processed food (three groups in the top 20) and clothing. No high-technology groups can be seen among the first 20 sectors. Bodies for motor vehicles (NACE 352) is the only engineering products group present on the list. This pattern of export specialization confirms the earlier observations. Poland tends to specialize currently in natural-resource-based products (wood, building materials, metals, food), and low-technology manufactures (textiles, clothing, bulk industrial chemicals).

The index values are lowest for certain specific sectors of food processing (ciders, wines, spaghetti, soft drinks, starch), most of high-tech products, such as electronics, data processing, optical, photographic and aerospace equipment, as well as some raw materials (potassium, iron ore). While some of these trade flows reflect differences in natural conditions (wine products, tobacco, some minerals), most of them are in advanced manufactures, and demonstrate technological superiority of EC producers (for example, in aerospace, optical and office equipment, telecommunications, etc).

Looking from a more dynamic perspective and taking into consideration changes between 1988 and 1992, Poland maintained its specialization in foodstuffs, metal products, strengthened its export position in wood products, and established a new area of specialization in building materials. Also, its relative disadvantage in high-tech products seems to have deepened between 1988 and 1992.

C. Trade coverage ratios

The country's areas of current (static) comparative advantage can broadly be identified through examining the so-called trade coverage ratios (TC), defined as the proportion of the country's imports of a given sector covered by the country's exports of the same sector (that is, ratio of exports to imports). When the ratio value is greater than one, it indicates that the country specializes in the given sector, because its exports exceed imports. It may then be assumed, that the country has a (revealed) comparative advantage over its foreign competitors in the given sector (although important caveats limit the usefulness of this instrument). It is important to remember that the TC ratio refers to exports and imports of the same country, and hence is a measure of 'internal' comparative advantage. Table 11 shows NACE groups with highest and lowest values of trade coverage ratios in Poland's trade with the EC in 1992, and their values in 1991 and 1988 (see Table 13 in the statistical annex for the full list of trade coverage ratios for all NACE 3 sectors).

Table 11 demonstrates again that the areas of Poland's 'revealed' comparative advantage *vis-à-vis* the EC (this time measured by trade coverage ratios), are concentrated mostly in natural-resource-based industries and in low-technology manufacturing (the high value of TC for iron ore for 1992 can be ignored because the amount of trade is negligible). They include manufacture of wood and wood products, metals and metal products, building materials, industrial chemicals, textiles

[1] An alternative measure of differences between two vectors of trade shares is the so-called trade similarity index, defined as follows:

$$TS = 1 - \sum_{1} e(i,t) - e(i,t-k)]^2$$

where e(i,t) is the share of sector 'i' in total exports in period 't'. The value of TS index between the Polish export structures in 1992 and 1991 is 0,9983, between 1991 and 1990 is 0,9985, and between 1992 and 1990 is 0,9963, which confirms the stability of Polish export structure during the last three years. The values of TS index for the Polish import structures were lower (0,9972, 0,9927, and 0,9945, respectively). The high absolute values of TS index are caused by the size of the sample (the larger the sample the higher are TS values). The TS index can, however, be normalized to eliminate the effect of the size of the sample.

Table 10

Polish industrial exports to the EC: NACE 3 sectors with highest and lowest specialization indices in 1992

Rank	NACE 3 group	Sector	Index value 1992	1991	1988
A. Highest values					
1	242	Cement, lime	13,09	15,11	18,65
2	465	Other wood manufactures	10,31	10,96	3,51
3	315	Boilers, tanks, metal containers	9,06	7,41	2,62
4	464	Wooden containers	7,62	6,25	1,35
5	467	Wooden furniture	7,43	7,71	6,52
6	314	Metal products	6,84	6,27	5,94
7	233	Salt extraction	6,53	9,65	2,40
8	414	Processed fruits and vegetables	4,20	5,01	4,56
9	312	Forging	4,01	5,54	4,05
10	243	Concrete, cement, plaster product	3,85	2,25	0,58
11	352	Bodies for motor vehicles	3,58	3,66	1,57
12	311	Foundries	3,51	3,50	2,53
13	413	Dairy products	3,28	5,09	6,02
14	453	Clothing and accessories	3,23	2,94	2,87
15	231	Building materials	3,16	1,80	0,25
16	482	Retreated rubber tyres	3,12	4,01	6,06
17	247	Glass and glassware	2,96	3,94	3,61
18	221	Iron & steel	2,78	2,77	2,68
19	415	Processed fish and seafood	2,60	2,65	3,10
20	412	Meat & meat products	2,57	3,22	3,62
B. Lowest values					
1	232	Potassium salt & phosphates	0,00	0,00	0,00
2	426	Cider & other wines (excluding grapes)	0,00	0,00	0,00
3	429	Tobacco products	0,00	0,01	0,01
4	211	Iron ore	0,01	0,00	0,00
5	330	Office machinery & data processing	0,01	0,01	0,01
6	364	Aerospace equipment	0,01	0,02	0,01
7	374	Clocks, watches	0,01	0,01	0,02
8	418	Starch	0,01	0,23	0,04
9	373	Optical & photo-instruments	0,03	0,05	0,08
10	416	Grain milling	0,04	0,42	0,02
11	425	Wines (from fresh grapes)	0,04	0,37	0,00
12	417	Spaghetti, macaroni, etc.	0,06	0,01	0,00
13	344	Telecommunications, etc.	0,07	0,07	0,07
14	345	Radio & TV	0,07	0,08	0,13
15	428	Soft drinks	0,07	0,06	0,00
16	427	Brewing & malting	0,08	0,25	0,72
17	493	Photo- & cine-laboratories	0,08	0,13	0,18
18	257	Pharmaceuticals	0,10	0,09	0,14
19	491	Jewellery, etc.	0,11	0,09	0,05
20	372	Medical equipment	0,13	0,13	0,09

Source: Calculated from the Eurostat foreign trade database (Comext).

and food processing. The areas of comparative disadvantage include certain specific food products, various chemical products for consumer use, office equipment, telecommunications and precision instruments, pharmaceuticals and printing. The trade pattern has been relatively stable over the last four years, displaying only few major changes, such as the expansion of exports of salt, building materials, and some wooden products.

Table 11

NACE 3 groups with highest and lowest trade coverage ratios, 1989-91, ranked by ratio values in 1991

Rank	NACE 3 group	Sector	Trade coverage ratio 1992	1991	1988
A. Highest values					
1	211	Iron ore	143,33	—	—
2	461	Sawing and processing of wood	52,25	30,22	304,53
3	242	Cement, lime	37,88	74,12	80,38
4	464	Wooden containers	31,56	17,23	2,08
5	465	Other wood manufactures	23,31	28,25	17,13
6	224	Non-ferrous metals	11,61	12,26	16,43
7	453	Clothing and accessories	10,03	7,49	13,27
8	212	Non-ferrous metal ores	9,44	7,02	12,10
9	414	Processed fruits & vegetables	7,80	6,64	21,76
10	462	Semi-finished wood products	7,73	9,73	291,30
11	467	Wooden furniture	7,04	6,47	87,19
12	233	Salt extraction	6,73	13,40	—
13	312	Forging	5,33	4,17	5,69
14	463	Carpentry and flooring	4,85	3,02	3,96
15	231	Building materials	4,78	3,75	0,22
16	415	Fish and seafood	4,50	2,51	8,63
17	455	Household textiles	3,33	2,86	10,82
18	253	Other industrial chemicals	3,24	4,15	2,01
19	363	Cycles, motor cycles & parts	2,91	2,36	2,75
20	451	Footwear	2,75	1,47	6,66
B. Lowest values					
1	426	Cider & wines (excluding grape)	0,00	0,00	0,00
2	232	Potassium & phosphates	0,00	2,00	—
3	429	Tobacco products	0,00	0,00	0,01
4	428	Soft drinks	0,00	0,00	0,00
5	416	Grain milling	0,00	0,05	0,09
6	418	Starch	0,01	4,41	0,28
7	425	Wine from grapes	0,01	0,02	0,00
8	417	Spaghetti, macaroni, etc.	0,01	0,00	0,00
9	427	Brewing and malting	0,01	0,02	0,11
10	258	Soap, detergents	0,02	0,01	0,01
11	330	Office machinery, data processing	0,02	0,02	0,05
12	423	Other processed food	0,03	0,04	0,03
13	419	Bread and flour confectionery	0,03	0,00	1,69
14	257	Pharmaceuticals	0,04	0,03	0,04
15	422	Animal & poultry foods	0,05	0,11	0,07
16	373	Optical, photographic instruments	0,05	0,06	0,25
17	344	Telecommunication	0,05	0,05	0,08
18	473	Printing	0,06	0,04	0,14
19	255	Paints and varnishes	0,06	0,05	0,01
20	324	Machinery for food & chemical industries	0,06	0,07	0,08

Source: Calculated from the Eurostat foreign trade database (Comext).

Data on specialization indices and trade coverage ratios provide information on relative export strength of Polish industrial sectors viewed from two somewhat different angles: while the former informs about the relative strength of a given sector's exports from Poland *vis-à-vis* other exports coming from outside the EC, the latter gives the idea of the relative strength of the same exports *vis-à-vis* the sector's imports from the EC to Poland. The comparison of both indices across sectors allows for some interesting observations. In principle, they should reveal broadly similar ranking of sectors.[1] A high ranking position on both scores for a given sector means that a sector with a high 'revealed' comparative advantage in trade

[1] This is valid only under the assumption of identical consumer preferences and in the absence of trade distortions outside the EC.

with the EC also enjoys a high import specialization position on the EC market. If, however, a given sector has high specialization ratio, but low trade coverage ratio, or vice versa, then Poland and the EC have different trade positions *vis-à-vis* the rest of world (for a given sector, the EC would have a comparative disadvantage *vis-à-vis* the rest of world, but a comparative advantage *vis-à-vis* Poland, or vice versa). Such a trade pattern would typically result from differences in consumer preferences, or from market distortions caused by trade and industrial policy measures, or from imperfect competition.

To a certain extent, this seems to be the case of Poland. The similarity of vectors of trade coverage ratios and specialization indices for all 108 NACE 3 sectors (including zero trade flows) has been systematically increasing during the 1980s, but the trend reversed in 1992. The (simple) correlation coefficient between the two vectors rose from 0,104 in 1980 to 0,156 in 1985, to 0,541 in 1990, and to 0,704 in 1991, but then it fell steeply in 1992 to 0,211.[1] Among 20 sectors with the highest trade coverage ratios in 1992, 10 sectors are also among 20 sectors with the highest specialization ratio (but in 1991 this was the case for 16 sectors). Among 10 remaining sectors with highest trade coverage ratios, three (NACE 211, 212, 363) have the specialization ratio less than one (0,01, 0,53, 0,24, respectively); but the absolute value of these sectors' exports is very small.

D. Intra-industry trade

It is interesting to see what is the scope of intra-industry trade between Poland and the EC at NACE 3 classification level. A high level of intra-industry trade would suggest that the trade pattern is determined mostly by technological links and demand factors, rather than by factor endowments or natural-resource endowments. One popular measure of intra-industry trade intensity is the so-called Grubel-Lloyd index, defined as a difference between unity and the quotient of the absolute difference between exports and imports of a given sector, and the total of import and export values for the same sector. Tables 12 and 13 give some aggregate and sectoral information on intra-industry trade between Poland and the EC.

Table 12

Grubel-Lloyd index of intra-industry trade between Poland and the EC, total manufacturing trade, 1980-92

1980	1985	1988	1989	1990	1991	1992
0,371	0,348	0,383	0,418	0,389	0,407	0,429

Source: Author's calculations.

[1] But if NACE 211 (iron ore) is excluded from calculations (it strongly distorts the picture because it has a very high trade coverage coefficient in 1992 but both exports and imports were extremely low: ECU 430 000 and 3 000 respectively), the correlation coefficient for 1992 would be 0,571.

Table 13

Grubel-Lloyd indices of intra-industry trade between Poland and the EC, manufacturing trade only, ranked by their index value, 1988 and 1992

Rank	NACE 3	Sector	Index value
A. Sectors with highest index value in 1988			
1	413	Dairy products	0,989
2	245	Stone & non-metallic mineral products	0,983
3	313	Treatment and coating of metals	0,944
4	321	Agricultural machinery & tractors	0,926
5	345	Radio & TV sets	0,922
6	491	Jewellery & gold	0,883
7	316	Tools & finished metal goods	0,876
8	482	Retreaded rubber tyres	0,813
9	495	Miscellaneous manufactures	0,808
10	374	Clocks & watches	0,795
B. Sectors with highest index value in 1992			
1	346	Domestic electric appliances	0,999
2	223	Steel products	0,995
3	481	Rubber products	0,995
4	362	Railway & tramway rolling-stock	0,986
5	326	Transmission equipment for motive power	0,976
6	252	Petrochemicals	0,973
7	243	Concrete, cement, plastic products	0,969
8	456	Furs and fur goods	0,957
9	424	Alcohols and spirits	0,948
10	341	Insulated wires & cables	0,943
C. Sectors with lowest index value in 1988[1]			
1	211	Iron ore	0
2	232	Potassium salt & natural phosphates	0
3	233	Salt	0
4	417	Spaghetti, macaroni, etc.	0
5	425	Wines (made of grapes)	0
6	426	Ciders, wines (excluding grapes)	0
7	428	Soft drinks	0
8	461	Sawing & processing of wood	0,007
9	462	Semi-finished wood products	0,007
10	429	Tobacco products	0,010
D. Sectors with lowest index value in 1992[1]			
1	232	Potassium & natural phosphates	0
2	426	Ciders, wines (excluding grapes)	0
3	429	Tobacco products	0,001
4	428	Soft drinks	0,007
5	416	Grain milling	0,009
6	211	Iron ore	0,014
7	418	Starch	0,019
8	425	Wines (made of grapes)	0,020
9	417	Spaghetti, macaroni, etc.	0,025
10	427	Brewing & malting	0,028

[1] Sectors with no trade at all, or with either zero exports or zero imports, have been assumed to have zero G-L values.

Source: Author's calculations.

As can be seen from Tables 12 and 13, the share of intra-industry trade in total manufacture trade between Poland and the EC has increased somewhat since the mid 1980s; acceleration has been visible especially in 1992, when the aggregate index rose to its highest recorded value of 0,427 (for NACE 3 aggregation level). But the overall level of intra-industry trade is still rather low by international standards, and accounts for about 40% of total manufactured trade.[1] Interestingly enough, the ranking of sectors with the highest index value in 1988 and 1992 seems to be completely different, as none of the top 10 sectors figures on both lists. But a more detailed scrutiny (see Annex for a complete list of G-L indices for all sectors) reveals that the change has not been that dramatic: out of the first ten sectors in 1988, 8 maintained their respective G-L index values above 0,6. But the only 2 high-tech sectors on the 1988 list (radio & TV sets, and clocks & watches — NACE 345 and 374) reduced drastically the level of their intra-industry trade to 0,228 and 0,162, respectively, in 1992. By contrast, sectors with lowest G-L index values have remained broadly the same: out of the top 10 in 1988, 7 sectors maintained their positions on the list in 1992.

The ranking of sectors with the highest share of intra-industry trade was, however, largely unrelated to the pattern of trade specialization and comparative advantage.[2] It should not be surprising, however. Sectors with the lowest share of intra-industry trade are more dependent on relative and absolute resource endowments.

It should be remembered that statistical analysis of intra-industry trade raises a number of methodological and technical problems, and thus the results obtained should be interpreted with some caution. In principle, the more disaggregated classification of sectors, the more accurate are the results. At NACE 3 disaggregation level there is still substantial risk of taking a large proportion of trade in finished goods as intra-industry trade (for example, exports of vodka and imports of scotch whisky does not prove the existence of intra-sectoral technological links which are relevant to the concept of intra-industry trade, and yet, since both goods belong to the same NACE 3 category, these transactions are classified as intra-industry trade).[3]

E. Summary tables

The summary of Poland's trade performance analysis is given in Tables 14 and 15, where sectors with the highest and lowest trade coverage ratios and specialization indices have been identified. Sectors are ranked according to values of their trade coverage ratios.

The ranking obtained suggests that Poland's specialization areas lie currently in natural-resource-based sectors (iron and steel, non-ferrous metallurgy, wood and wooden products, building materials, processed food), and selected sectors of light industry (textiles, clothing). The main economic characteristics of these sectors are similar and can be summarized as follows:

(i) their output is relatively unprocessed;

(ii) they employ traditional production technologies;

(iii) demand for their output is relatively income-inelastic;

(iv) strong competition exists on markets for these sectors from suppliers from third countries (developing countries, as well as other European transition countries).

These characteristics imply that not only all these sectors have rather low value-added potential, but prospects for their future expansion are rather limited.

Interesting conclusions can also be drawn from the comparison of trade coverage ratios (TC) and specialization indices (SI) for all sectors. As already mentioned, in principle there should be some similarity between the two vectors for a given year. At a very basic level of analysis, for a given sector both indices

[1] The share of intra-industry trade for the manufacturing sector in the EC as a whole in 1991 was 88% for NACE 3 classification (Grubel-Lloyd index = 0,8802).

[2] By definition, the higher the value of the Grubel-Lloyd coefficient, the more balanced is trade within a given NACE group. Therefore, for sectors with high Grubel-Lloyd values, the trade coverage ratios are close to unity, and these sectors obviously do not display any strong export or import orientation.

[3] The principal problem with any index of this type is the difficulty of defining the term 'industry' which would be empirically operational. This definition presents a fundamental ambiguity stemming from the fact that identification and measurement of intra-industry trade heavily depends upon the degree and the kind of homogeneity of the commodities included in each 'statistically' defined industry. Most of investigators have accepted the third digit of the most commonly used classifications (SITC, ISIC, NACE) as a suitable level of statistical disaggregation to approximate the concept of 'industry'. But no rigorous argument has been given for this choice (for more extensive discussion of the G-L index, see: Grubel, Lloyd (1975), Aquino (1978, Finger (1975), Greenaway, Milner (1984).

should either be greater than one, or smaller than one. Sectors belonging to the first group are clearly export-oriented, because they combine strong domestic export potential (exports exceed imports) with an established position on export markets (specialization index greater than one). By the same reasoning, sectors belonging to the second group are import-oriented.

Possible departures from this 'normal' state of affairs include two cases. First, if, for a given industry, the TC ratio is smaller than one, but the specialization index is greater than one, it means that the exporting country has a relatively strong position in a given sector on the EC market, even though it does not seem to have comparative advantage in this sector (as its imports exceed exports). Second, if the TC ratio is greater than one, but the SI is smaller than one, it means that while the exporting country has a 'revealed' comparative advantage in this industry, this advantage is not reflected in its exports to the EC market, where the industry's share in total exports of this country is lower that the industry's share in total EC's imports from the outside world.

If one assumes perfect markets and no discrimination in trade, the following conclusions can be drawn. In the first case, prospects for exports seem to be limited, because the exporting country does not have a 'revealed' comparative advantage, and the share of a given sector's exports in total exports is higher than the share of this sector in total EC imports. These sectors can be therefore expected to lose gradually their export position. But the second case seems to be of special interest for our analysis. It means that there is a potential for the exporting country to expand its exports from the given product to the EC market, not only because it enjoys a comparative advantage in this sector, but also because its exports are still small relative to the total EC's imports of the given product.

Table 14

Sectors with highest and lowest trade coverage ratios, 1992

Rank	NACE 3	Sector	Trade coverage ratio	Share in exports (imports) in %[1]	Specialization index	GL index
A. Highest values						
1	211	Iron ore	143,33	0,00	0,01	0,014
2	461	Sawed, processed wood	52,25	2,33	1,53	0,038
3	242	Cement, lime	37,88	1,28	13,09	0,051
4	464	Wooden containers	31,56	0,12	7,62	0,061
5	465	Other wood manufactures	23,31	2,03	10,31	0,082
6	224	Non-ferrous metals	11,61	10,94	0,84	0,159
7	453	Clothing and accessories	10,03	14,21	3,23	0,181
8	212	Non-ferrous metal ores	9,44	0,36	0,53	0,192
9	414	Fruits & vegetables	7,80	4,04	4,20	0,227
10	462	Semi-finished wood products	7,73	0,94	1,72	0,229
B. Lowest values						
1	426	Cider & wines (excluding grape)	0,00	0,00	0,00	0,00
2	232	Potassium & phosphates	0,00	0,00	0,00	0,00
3	429	Tobacco products	0,00	0,48	0,00	0,001
4	428	Soft drinks	0,00	0,32	0,00	0,007
5	416	Grain milling	0,00	0,09	0,04	0,009
6	418	Starch	0,01	0,09	0,01	0,019
7	425	Wine from grapes	0,01	0,04	0,04	0,020
8	417	Spaghetti, macaroni, etc	0,01	0,04	0,06	0,025
9	427	Brewing and malting	0,01	0,13	0,08	0,028
10	258	Soap, detergents	0,02	2,62	0,27	0,037

[1] Share in exports for sectors with highest trade coverage ratios, share in imports for lowest trade coverage ratios.

Source: Author's calculations.

Table 15

Sectors with highest and lowest specialization ratios, 1992

Rank	NACE 3	Sector	Trade coverage ratio	Share in exports (imports) in %[1]	Specialization index	GL index
A. Highest values						
1	242	Cement, lime	13,09	1,28	37,88	0,051
2	465	Other wood manufactures	10,31	2,03	23,31	0,082
3	315	Boilers, tanks, etc	9,06	0,97	1,57	0,780
4	464	Wooden containers	7,62	0,12	31,56	0,061
5	467	Wooden furniture	7,43	5,45	7,04	0,249
6	314	Metal products	6,84	1,93	2,37	0,593
7	233	Salt	6,53	0,02	6,73	0,259
8	414	Fruits, vegetables	4,20	4,04	7,80	0,227
9	312	Forging	4,01	0,43	5,33	0,316
10	243	Concrete, cement, plaster	3,85	0,14	0,94	0,969
B. Lowest values						
1	232	Potassium salt & phosphates	0,00	0,00	0,00	0,000
2	426	Cider & other wines	0,00	0,00	0,00	0,000
3	429	Tobacco products	0,00	0,48	0,00	0,001
4	211	Iron ore	0,01	0,00	143,33	0,014
5	330	Office machinery & data processing	0,01	2,42	0,02	0,040
6	364	Aerospace equipment	0,01	0,18	0,26	0,409
7	374	Clocks, watches	0,01	0,04	0,09	0,162
8	418	Starch	0,01	0,09	0,01	0,019
9	373	Optical & photo-instruments	0,03	0,66	0,05	0,095
10	416	Grain milling	0,04	0,09	0,00	0,009

[1] Share in exports for sectors with highest trade coverage ratios, share in imports for lowest trade coverage ratios.

Source: Author's calculations.

To identify the areas of Polish potential export expansion and contraction, it is convenient to divide all sectors into four categories:

I — sectors with TC > 1, and SI > 1, (38 sectors)

II — sectors with TC > 1, and SI < 1, (9 sectors)

III — sectors with TC < 1, and SI < 1, (49 sectors)

IV — sectors with TC < 1, and SI > 1, (10 sectors)[1]

Category I includes export-oriented sectors, while category III includes import-oriented sectors. Apart from these 'normal' sectors, there are two categories of sectors which are in an 'unstable' position. Category II includes those export-oriented sectors which have not yet, however, established a strong position on export markets, while category IV includes sectors which have a relatively strong external position, but they are essentially import-oriented, as their imports exceed exports in the exporting country (Poland). Thus, category II sectors can be considered as a group of potentially expanding export sectors, while category IV sectors can be considered as a group of potentially contracting export sectors. Plotting all sectors on a TC/SI plane, the results can be seen in Table 16.

Sectors in the north-east quadrant are clearly export-oriented, as both TC and SI values are greater than one. They include all metals (NACE 22), most of non-metallic minerals (231, 233, 242, 247), petrochemicals, other chemicals and man-made fibres (252, 253, 260), metal articles (311 to 315), agricultural machinery and transmission equipment for motive power (321 and 326), cables, wires and electric lamps (341, 347), ships and railway rollingstock (361, 365), processed meat, fruits, vegetables and fish (412, 414, 415), all categories of footwear

[1] NACE 232 and 426 have zero values for both TC and SI.

and clothing (NACE 45), all categories of timber and wooden products (NACE 46), and rubber products (481, 482).

The group of potentially expanding export sectors (north-west quadrant) includes: iron and non-ferrous metal ores, peat extraction, cycles and motor cycles, sugar, leather products, pulp and paper, and musical instruments. In this category domestic output surpluses are substantial and may translate in the future into increased export market share in the EC.

Sectors in the south-west quadrant are import-oriented, as both TC and SI values are smaller than one. They include certain non-metallic mineral goods, most of chemicals, large majority of mechanical and electrical engineering, office machinery and data processing, motor vehicles and aerospace equipment, all instruments, most food, drink and tobacco products, textiles, paper and printing, plastics, and other manufactured goods.

The group of potentially contracting export sectors (south-east quadrant) includes: clay products, concrete, cement and plaster products, selected non-metallic mineral products, ceramic goods, tools and metal goods, domestic electrical appliances, bodies for motor vehicles, other transport equipment, dairy products, and hides and leather. In the case of these sectors, their relatively strong position in exports to the EC market is not matched by sufficiently large domestic production potential. Unless new investments take place, or substantial intra-industry links develop, these sectors are likely to see their export expansion slowing down.

Table 16

Distribution of NACE 3 sectors, by TC and SI values, 1992

TC > 1, SI < 1	TC > 1, SI > 1
211, 212, 239, 363, 420, 436, 442, 471, 492,	221, 222, 223, 224, 231, 233 242, 247, 252, 253, 260, 311 312, 313, 314, 315, 321, 326 341, 347, 361, 362, 412, 414 415, 451, 453, 455, 456, 461 462, 463, 464, 465, 466, 467 481, 482,
TC < 1, SI < 1	**TC < 1, SI > 1**
244, 246, 255, 256, 257, 258, 259, 322, 323, 324, 325, 327, 328, 330, 342, 343, 344, 345, 351, 353, 364, 371, 372, 373, 374, 411, 416, 417, 418, 419, 421, 422, 423, 424, 425, 427, 428, 429, 43A, 43B, 438, 439, 472, 473, 483, 491, 493, 494, 495,	241, 243, 245, 248, 316, 346 352, 365, 413, 441,

Source: Author's calculations.

It is interesting to see that the obtained picture of 'potential' specialization displays some important divergences with the actual pattern of trade. Some goods with relatively high shares in Polish exports, such as textiles, transport vehicles, or building materials, belong to import-oriented, or export-contracting categories. In some cases, for examples in textiles, this apparent inconsistency arises from the large share of 'outward processing transactions' (OPT), but more generally, it may also be due to the fact that the results presented in Table 16 are derived from trade figures for one year only, i.e. 1992.[1]

4. Current trade performance and market distortions

4.1. EC barriers to Polish exports

The trade barriers imposed on Polish industrial exports by the EC can be classified into three broad categories: import tariffs, quantitative restrictions on imports (QRs), and other non-tariff barriers (ONTBs).[2]

A. Customs tariffs

Tariffs are not considered to be of primary importance in restricting the access to the EC market for Polish industrial goods. The average tariff incidence on Polish industrial imports, weighted by NACE 3 commodity shares, was 6,3% in 1991, slightly higher from 6,2% in 1990.[3] Tariff rates ranged from 0% in the case of some industrial raw materials, such as lignite, metal ores, potassium and selected minerals, to 16,2% for cycles and motorcycles, 13,7% for clothing and 13,4% for knitting industries. Sectors protected with highest and lowest tariffs in 1991 are shown in Table 17.

[1] However, the results obtained for 1992 are broadly confirmed also by 1991 data. In 1991, 5 among nine NACE sectors belonging to the 'expanding' category (TC>1 and SI<1) were the same as in 1992 (239, 363, 436, 442 and 471), while among 14 NACE sectors belonging to the 'contracting' category, 9 were the same as in 1992 (241, 243, 245, 248, 316, 346, 352, 413, and 441).

[2] The discussion of EC trade barriers is based on data provided in Möbius and Schumacher (1992a). The data refer to 1991, and do not take into account the liberalization measures introduced in March 1992 on the basis of the Association Agreement between Poland and the EC. The impact of the reduction of tariffs in 1992 on trade level and composition is examined in Section II.4.

[3] This is the weighted average of MFN duty rates. It should be remembered, that in 1990-91 Polish exports to the EC enjoyed some tariff preferences within the GSP framework, and the average effective tariff rate in 1991 was 4,0%.

Polish exports to the EC have generally been biased towards higher-rates products. While more than 30% of Polish industrial exports fell in the group of 20 sectors with highest tariff rates, only 20,5% of exports were in the 20 sectors with the lowest tariff rates. The correlation of tariff rates and export shares for 86 NACE 3 groups (excluding groups 41 and 42) is positive, though rather weak (0,0961 for 1990, and 0,1303 for 1991).

There is also a distinct asymmetry between the average tariff charged by the EC on Polish exports (6,3% in 1991) and the average tariff levied on Polish imports (trade-weighted average of 11,5% on total imports after the new tariff was implemented in August 1991).

Table 17

EC imports from Poland: NACE sectors with highest and lowest tariffs, 1991[1]

No	NACE	Sector	Tariff in %	Share in imports (%)
A. Highest rates				
1	363	Cycles, motor cycles	16,2	0,3
2	453	Clothing, accessories	13,7	13,4
3	436	Knitting	13,4	2,3
4	233	*Salt extraction*	12,8	0,0
5	455	Household textiles	11,7	0,9
6	43B	Woven fabrics[2]	11,3	0,8
7	248	Ceramics	10,4	0,5
8	351	Motor vehicles	10,2	0,8
9	472	Paper processing	9,9	0,2
10	259	Chemicals for households use	9,8	0,2
11	462	Semi-finished wood products	9,8	1,0
12	483	Plastics	9,2	0,6
13	247	Glassware	9,1	1,8
14	438	Carpets, etc	9,1	0,1
15	252	Petrochemicals, coke	9,0	5,4
16	255	Paints, varnishes	9,0	0,0
17	345	Radio, TV sets	9,0	0,5
18	439	Other textiles, industry	9,0	0,1
19	373	Optical and photographic instruments	8,3	0,1
20	222	Steel tubes	8,1	0,9
B. Lowest rates				
1	211	Iron ore	0,0	0,0
2	212	Non-ferrous metal ores	0,0	0,3
3	231	*Building materials extraction*	0,0	0,4
4	232	Potassium	0,0	0,0
5	239	Other minerals	0,0	0,1
6	461	Sawing, processing of wood	0,2	2,0
7	464	Aerospace equipment	0,6	0,1
8	361	Shipbuilding	0,9	0,7
9	224	Non-ferrous metals	1,1	1,2
10	491	Jewellery	1,7	0,2
11	473	Printing	2,0	0,1
12	245	Stone working	2,4	0,1
13	441	Tanning	2,5	0,5
14	242	Cement, lime	3,2	1,2
15	465	Other wooden products	3,3	2,0
16	246	*Abrasive products*	3,3	0,0
17	243	Cement products	3,4	0,1
18	327	Other specified equipment	3,8	0,3
19	324	Machinery for food, chemical industries	4,0	0,4
20	322	Machine tools	4,1	0,7

[1] Tariff rates have been calculated as average rates for each NACE 3 group, weighted by values of 8-digit product lines of CN;
[2] Includes products from NACE 436.

Source: Tariff rates taken from Möbius, Schumacher (1992a).

B. Quantitative restrictions

Until March 1992, quantitative restrictions on industrial imports from Poland to the EC were imposed on 11 NACE 3 groups presented in Table 18.

Table 18

QRs on Polish industrial imports to the EC, 1990 and 1991

		Imports subject to QRs as % of respective import value		Share in imports in %	
NACE	group	1991	1990	1991	1990
221	Iron and steel	99,1	99,1	3,5	4,7
224	Non-ferrous metals	1,3	2,2	11,2	10,2
260	Artificial fibres	10,4	9,2	0,3	0,5
43A	Yarns	62,9	50,4	0,1	0,1
43B	Woven fabrics	91,3	89,7	0,8	0,8
436	Knitting industries	98,9	99,0	2,3	1,8
438	Carpets	00,0	100,0	0,1	0,2
439	Other textiles, industry	91,2	94,8	0,1	0,1
453	Clothing	96,4	96,1	13,4	11,5
455	Households textiles	83,8	82,3	0,9	0,7
481	Rubber products	1,0	2,9	0,8	0,7

Source: Data on QRs taken from Möbius, Schumacher (1992a).

Generally, import QRs concentrate on those commodity groups, which are relatively important in Polish exports to the EC (metals, textiles). The proportion of exports subject to import quotas on the EC market to total Polish industrial exports to the EC ('import coverage') increased from 19,2% in 1990 to 20,3% in 1991.

If the presence of QRs can be interpreted as an indication of 'sensitive' industries, then imports from Poland are clearly concentrated in these industries. The share of 11 NACE groups subject to QRs in EC imports from Poland in 1991 was 33,5%, while the share of these groups in total EC imports was only 13,6%.

C. Other non-tariff barriers (ONTB)

While quotas are trade policy measures of a more individual and binding character, because they are typically country-specific, ONTBs are of more general character and normally apply to imports originating from all countries. For the purpose of this study, the ONTBs can be classified into five broad categories:

(i) anti-dumping duties;

(ii) variable component of duties;

(iii) import surveillance;

(iv) basic (minimum) import prices;

(v) anti-dumping measures.[1]

Many of these measures are in fact deterrent policies, and they need not be triggered to have a restrictive effect on imports from an outside country (see, for example, Rollo and Smith (1992)). But they are generally considered as more flexible than direct QRs, although they are also less transparent and open for discretion of respective authorities. According to Möbius and Schumacher, ONTBs were relevant for 25 NACE groups of EC imports from Poland in 1990-91 (see Table 19).

Table 19

The relevance of ONTBs in EC imports from Poland

		Imports subject to ONTB as % of respective import value		Share in imports in %	
	NACE sector	1991	1990	1991	1990
221	Iron and steel	99,2	99,1	3,4	4,8
222	Steel tubes	20,2	15,4	0,9	0,9
223	Steel drawing	51,8	58,1	0,8	1,0
224	Non-ferrous metals	1,3	2,2	11,0	10,4
252	Petrochemicals, coke	0,1	0,2	5,4	5,7
253	Other basic industrial chemicals	5,4	6,4	5,0	5,5
256	Chemicals for industry	1,3	0,6	0,9	0,6
316	Tools, metal products	0,0	0,1	2,2	1,8
328	Other machinery	0,1	0,0	1,9	2,0
342	Electrical motors	16,4	26,7	0,9	1,0
373	Optical instruments	0,1	0,2	0,1	0,1
441	Tanning	100,0	100,0	0,5	0,3
442	Leather products	66,8	70,7	0,4	0,5
451	Footwear	100,0	100,0	2,2	2,1
453	Clothing and accessories	1,0	2,0	13,2	11,5
456	Furs and fur products	94,3	95,0	0,1	0,1
465	Other wooden products	0,3	0,2	2,0	1,6
466	Cork, straw products	4,9	3,7	0,2	0,2
467	Wooden furniture	1,9	2,5	5,1	4,2
481	Rubber products	3,2	2,6	0,7	0,7
483	Plastics	1,5	1,5	0,6	0,5
491	*Jewellery*	27,7	15,6	0,2	0,3
492	Musical instruments	90,7	95,1	0,1	0,1
494	Toys, sports goods	1,9	1,6	0,3	0,3
495	Miscellaneous manufactures	2,8	0,8	1,6	0,1

Source: ONTB rates taken from Möbius, Schumacher (1992a).

[1] Other classifications are also possible, such as for example: voluntary export restraints (VERs), anti-dumping provisions, safeguard provisions, rules of origin, etc.

As compared with 1990, the number of NACE groups subject to some form of ONTB remained unchanged, but the actual incidence, measured by the proportion of imports subject to ONTB to total EC imports from Poland ('import coverage'), declined from 10,2% in 1990 to 8,6% in 1991.

If the presence of ONTBs can be considered as another indication of 'sensitive' industries, then the data on ONTB are consistent with the results of the earlier analysis of tariffs and QRs and confirm that the structure of EC imports from Poland is heavily biased towards sensitive sectors. The share of the 24 NACE groups subject to ONTB in Polish industrial exports in 1991 was 59,7%, while their share in total EC imports was only 35,9%.

4.2. Market imperfections in Poland

A. Introductory remarks

Most of market distortions typical for centrally-planned economies, such as autonomous price system, negative interest rates, overvalued exchange rates, high monopolization, have been eliminated during last four years. Comprehensive market reforms undertaken in Poland in 1989-90 included sweeping price liberalization, sharp devaluation and unification of exchange rates, privatization and establishment of many market institutions. Domestic relative prices have been broadly realigned with international relative prices, in response to the combined impact of foreign trade liberalization, price decontrols and convertibility of the domestic currency. Interest rates were raised to positive real levels, subsidies have been drastically reduced, and administrative restrictions on initiating and conducting commercial activities have been largely eliminated.

However, the reform process has not been completed yet and some distortions still remain in the Polish economy. In order to assess their impact on trade levels and structure, it is convenient to examine domestic market distortions falling into four main categories: (a) taxes, (b) subsidies, (c) price controls, and (d) administrative restrictions and monopolistic market structure.

B. Taxes

Taxes can be charged on income (production), on consumption, on trade, and on use of resources. In Poland, a uniform flat rate of corporate income tax of 40% is applied on an enterprise's taxable profits. Exemptions are sometimes granted (tax holidays for newly-established businesses in preferential areas), but their role is rather insignificant. Until 1992, individual incomes were generally exempted from income taxation, and

only highest incomes were taxed with a progressive personal income tax (with the highest rate of 40%). In 1992 a general personal income tax (PIT) came into force, replacing several other taxes paid by individuals, with a moderately progressive scale (between 20 and 40%). In general, the neutrality principle seems to have been broadly observed in the policy of incomes taxation which means that there have been no major distortions in taxing production activities.

Taxes on consumption typically take the form of sales tax. Here the distortionary effects are probably more pronounced than in production because sales tax rates were more differentiated. Enterprises purchasing inputs for further processing were exempted from this tax until 1991. In the beginning of 1992, three basic rates were established: 0% for few staple food products, 5% for other foodstuffs, and 20% for other goods, and tax exemptions are only exceptional. Some changes took place in the course of 1992 (for example, the increase of tax for electronics and cars, an additional 1% tax on trading activities). In addition, excise taxes are levied on certain consumer goods, such as fuels, alcoholic beverages, luxury goods. Generally speaking, the indirect tax system which was in force from 1990 to 1992, may have had some distortionary effects on the structure of individual consumption, but the impact on trade levels and structure seems to be rather small with some notable exceptions (for example, a sharp fall of imports of personal cars in 1992).[1]

There is no direct impact of sales tax on export sales because exports are exempted from indirect taxation. Imports, in turn, are charged with the same tax rates as domestic supplies, and hence no distortion as between domestic and foreign sales and purchases is introduced.

Taxes on trade take the form of custom duties, import surcharges and export taxes. Customs tariffs on imports have been modified several times over the last few years. A new tariff was introduced in January 1989, with the average (frequency weighted) incidence of 18,3%, and the average incidence on manufactures more than 20%.[2] Coupled with the deeply undervalued zloty exchange rate, the tariffs contributed to high domestic prices of imported inputs. In an effort to stimulate the economic recovery and to bring inflation under control, the Polish Government suspended tariffs for about 60% of all tariff items (mostly raw materials and capital goods) between March and July 1990. This resulted in the weighted average tariff declining from 18,3 to 5,5% (see: OECD (1992)). Originally introduced for a short period, the suspensions and reductions were maintained to the end of July 1991.

In August 1991, a new tariff schedule was introduced with generally much higher tariff rates; at the same time, most of the suspensions were eliminated. This resulted in the weighted average tariff being increased from 5,5 to 18,4%, a level very similar to that at the start of the transformation programme. There was also a shift in the sectoral distribution of tariff rates, as compared with 1989-90, tending in general to reduce the sectoral dispersion in tariff rates and to reduce spikes in the schedule. Concerning sectoral averages, the most important change was the increase in tariffs on 'sensitive' products, i.e. agricultural products, textiles, clothing and foodstuffs. Table 20 provides a comparison of Poland's customs tariffs between 1989 and 1991.[3]

Table 20

Customs tariffs in Poland, 1989-91 (harmonized system trade categories)

Product groups	Jan. 89-July 90	Aug. 90-July 91	After Aug. 91
Agricultural	17,2	4,0	26,2
Mineral	7,8	3,4	8,9
Chemical	13,5	3,9	14,1
Plastic	19,9	5,5	15,0
Fur and leather	17,2	5,1	25,7
Wood and paper	18,7	7,4	13,4
Textiles, footwear, clothing	22,2	9,7	20,6
Industrial minerals and metals	15,4	4,2	14,7
Machinery, transport equipment, precision instruments	21,9	3,9	16,1
Jewellery, arms, art objects, miscellaneous	19,9	11,6	19,1
All categories	18,3	5,5	18,4

Note: Average rates calculated on a frequency-weighted basis.

Source: OECD (1992), p. 134.

[1] The system of turnover taxes was replaced in July 1993 by a VAT system, which introduced three base tax rates (0, 7, and 22%).

[2] The arithmetic average tariff was only 12%. The customs tariff was restructured in January 1990 to make it compatible with the harmonized commodity description and coding system, recommended by GATT but tariff rates remained practically unchanged.

[3] A new customs tariff was introduced on 1 July 1993 with higher rates on consumer durables and agricultural goods and lower rates on raw materials, semi-products and investment goods. The arithmetic average tariff rate fell by 1 percentage point.

Tariff rates are applicable to imports originating in all GATT member countries but a number of duties had been already decreased or eliminated in March 1992 for imports coming from EC countries on the basis of the Association Agreement. It seems that the increase of tariffs in 1991 was motivated primarily by the calls for higher protection coming from sectors most exposed to foreign competition (agriculture, light industries), but tactical considerations cannot be excluded (to secure a better negotiating position in talks with the EC and EFTA on trade concessions). In some cases, also industrial policy objectives seem to have played a role, especially in increasing nominal tariffs on imports of trucks and motor vehicles in January 1992 from 15 to 35%. The move resulted in a sharp decline of imports of cars and trucks to Poland in 1992.[1]

A tax on imports is equivalent to a tax on exports.[2] Thus, sectors protected with high tariff rates may become less export-oriented than sectors with low tariff rates. For this effect to gain some importance, however, relative prices have to be broadly similar at home and abroad. But it is rather unlikely, that from 1990 to 1992 the tariff differentials in Poland were large enough to dominate relative price differentials, inherited from the central planning period.[3] Changes in the trade pattern were dictated mostly by price arbitrage operations, aimed at exploiting huge price differentials existing between domestic and international markets (for the evidence, see Rosati (1992)).

The only export tax which was temporarily applied in Poland after 1989 was the tax on exports of coal (20%). It was meant to make up the difference between the controlled domestic price for coal and the world market price. The tax was discontinued in the second half of 1991 when the domestic coal prices approached export fob price levels.

Economic units in Poland also pay taxes on use of resources (labour, land, capital assets, natural resources). While these taxes generally have rather marginal significance in determining rates of return, there are two important exceptions. The first is the excess wage tax ('popiwek'), and the second is the 'dividend' tax.

There are two separate taxes which are charged on the use of labour. The regular wage tax is a 20% flat rate on the wage bill paid by the enterprise. Since it is both uniform and moderate, its distortionary effect is negligible. By contrast, the excess wage tax ('popiwek'), introduced as early as in 1982 and continued since then with only minor modifications, is charged on wage increases exceeding the predetermined growth rates, linked to the current inflation rate. It has been conceived as a measure to control the growth of wages in State-owned enterprises, where the lack of private owners and large internal powers of workers' councils may have led to excessive wage payments at cost of profits. Typically, wages were allowed to grow by a fraction of the current inflation rate (the indexation coefficient was increased from 0,2 to 0,3 during first months of 1990, thereafter to 0,6), and punitive tax rates (200 to 500%) were charged on wage increases paid above that limit.

Initially, enterprises displayed remarkable discipline in keeping wage hikes within prescribed limits and effective excess wage tax payments remained relatively small (between 1 and 3% of budget revenues during 1986 to 1989). But in 1990 and 1991, in view of the drastic cuts in real incomes in the wake of the stabilization programme, more and more enterprises decided to increase wages above the limits and paid the excess wage tax out of net profits (its share in the budget revenues increased to 4,8% in 1990 and to 12,7% in 1991).

Apart from being an instrument of macroeconomic controls, the excess wage tax has also a strong distortionary effect on the functioning of the labour market and on microeconomic efficiency. First, it keeps manpower unit costs depressed and induces the 'over-employment'. Second, it reduces the efficiency of wage setting and thus hinders industrial restructuring. Third, it helps to maintain the 'old', distorted wage structure inherited from the central planning era and allows little room for work incentives. Fourth, it may create a bias towards using more labour-intensive technologies.

While the government tried to eliminate some of these deficiencies through exempting the whole private sector from the tax (1991), and introducing some additional incentives for export-oriented firms (1992), the distortionary effects have not been fully neutralized. Under the present setting, while wage costs are kept under control (even though this control seems to have loosened the grip in 1991-92 and is planned to be scrapped altogether by the end of 1993), the potential efficiency effect is hampered by excessive employment levels

[1] A duty-free quota of 30 000 cars annually has been established to be distributed among those foreign companies willing to invest in the Polish car-making industry (several companies have already concluded investment and cooperation agreements with Polish firms or are in various stages of negotiations, for example, Fiat, General Motors, Peugeot and Volkswagen).

[2] This is the A.P. Lerner's 'symmetry theorem'. It is generally valid under a flexible exchange rate.

[3] According to Rosati (1992), Poland's private sector export/import ratios (trade coverage ratios) for 1991 are negatively correlated with average tariff rates, although the relationship is weak (for total trade and for EC trade). This result is not surprising. Higher protection tends to reduce both exports and imports of a given sector. Additional explanation is that the private sector tends to specialize in relatively unprocessed products, which are normally charged with lower tariffs (agriculture being an important exception). In trade with the ex-CMEA and the rest of world, domestic tariffs seem to be largely irrelevant. Similarly, no systematic relationship has been found between the EC tariffs and the pattern of Polish trade with the EC. In sum, neither domestic nor EC tariffs do seem to have played a decisive role in shaping the private trade pattern.

and low productivity, which cannot be stimulated with upward-rigid wages. It is likely, that prior to 1991 the overall micro-economic impact of the tax was that it kept manpower costs relatively low, and that it may have resulted in a shift towards more labour-intensive exports. However, under the present regulations where the tax is linked to the average monthly wage rather than to a wage bill (this change was introduced in 1991), it is unclear whether labour costs are ultimately lower or higher, and, in the trade context, whether there is a tilt towards more labour-intensive goods in exports. Generally, it may be assumed that the distortionary effects of the excess wage tax were strongest in 1990 and 1991, but have been less significant in 1992.

The second tax with potentially important implications for the trade pattern is the so-called 'dividend' tax, paid by all State-owned enterprises as a proportion of the value of their fixed assets. The tax rate is calculated as a certain percentage rate (linked to the refinancing rate of the central bank to protect its real value) on the net value (periodically revalued, net of depreciation) of assets, and is to be paid irrespective of the level of company's profits. This method not only puts an excessive fiscal burden on enterprises (they pay in fact the 'double' real rate of return on assets, because the nominal rate, including inflationary component, is applied on assets the book value of which is independently adjusted upwards according to the inflation rate), but also the 'dividend' differs widely among enterprises, depending on the 'accounting' value of their assets. Thus, enterprises operating in capital-intensive sectors have had to pay rather high 'dividends', amounting in some cases to 70 to 80% of their profits, whereas firms in other sectors, and especially those with largely depreciated assets, have paid a very small 'dividend'.

Because the 'dividend' tax clearly penalizes capital-intensive sectors, as well as those enterprises which have relatively modern capital equipment (because its book value is relatively high), then — in the trade context — there may be a tendency to reduce the share of capital-intensive goods in exports, and replacing them with labour-intensive or natural resource-intensive goods. Because both the excess wage tax and the 'dividend' tax work in the same direction, their impact can be expected to reinforce each other.

C. Subsidies

Consumer and producer subsidies, while important in maintaining low domestic prices in the central planning era, were drastically reduced in 1990. Their share in total budget expenditures declined from 32,7% in 1989 to 19,1% in 1990 and to 12,1% in 1991. Subsidies are still paid to certain coal mines, where production costs are above the sectoral average (the value of these subsidies declines every year in real terms) to transport tariffs and certain consumer goods and services. Indirect subsidies are still paid to housing and agriculture in form of preferential credits and some rent controls.

Subsidies to trade played an important role before 1990. Trade with the CMEA countries was based on largely artificial transferable rouble prices, which were typically obtained through converting international dollar prices paid for similar goods into roubles at the IBEC rate of 0.6 TR/USD. These pricing rules generally resulted in a highly distorted price structure, with raw materials, fuels and energy being relatively cheap. This price structure obviously differed from the domestic price structure, and therefore an elaborate system of price equalization settlements through differential taxes and subsidies had to be put into operation in order to compensate for differences (export and import 'profits' and 'losses') between the two autonomous price systems. Also in 1989, a uniform subsidy of 20% for agricultural exports was paid to all exporters (discontinued after the devaluation of the zloty in January 1990).

After price liberalization in 1990, this system was dismantled and replaced with direct subsidies for exporters to CMEA markets (but only for export transactions covered by inter-governmental protocols). When the CMEA was dissolved in 1991, all remaining export subsidies were eliminated.

D. Price controls

As already mentioned, after the sweeping price liberalization in January 1990, price controls have only been maintained for coal, electrical energy, gas, rents for public housing, telecommunications and public transport tariffs. In the foreign trade context, the most important distortion has been caused by the controlled energy prices.

Despite the 400% increase in January 1990, domestic coal prices remained substantially below international levels and the gap did not close until May-June 1991, after a series of consecutive price increases. Since May 1991, the price of hard coal in the domestic market has stabilized at the level of USD 25-30 per metric tonne at the coal mine (costs of transport not included), while world market prices (cif basis) have fluctuated around USD 45-50 per tonne. The evolution of coal prices is shown in Table 21.

Table 21

Price of hard coal in Poland, 1989-92

Item	1989	1990	1991	1992
1. Average domestic market price				
zl/tonne	8 890	90 220	18 7888	37 5200
USD/tonne	6,1	9,5	17,8	27,5
2. Export price, cif, (a)				
USD/tonne	47,6	50,5	50,5	46,7

(a) Average export contract price for steam coal obtained by Polish exporters on the EC market, including cost of transport.

Source: Foreign Trade Research Institute, International Energy Agency, and Rzeczpospolita, 3.12.1993.

Table 22

Energy intensity of output by sectors, in tera-joules (TJ) per ZL 1 billion of output sold, current prices

	Sector[1]	1989	Rank	1990	Rank	1992	Rank
1	Coal & coke	19,89	8	2,68	7	1,34	8
2	Fuels (excluding coal)	24,19	6	2,58	8	1,83	7
3	Iron & steel	56,44	2	6,95	1	5,96	1
4	Non-ferrous metallurgy	10,62	9	1,25	10	1,21	10
5	Metal processing	5,82	13	0,80	16	0,54	15
6	Machinery & equipment	6,45	11	1,00	12	0,77	11
7	Precision instruments	2,39	22	0,46	22	0,35	17
8	Transport equipment	5,28	15	0,74	17	0,75	12
9	Electric & electronics	3,22	21	0,57	18	0,47	16
10	Chemical industry	34,79	4	5,09	5	3,35	5
11	Building materials	57,62	1	6,59	2	4,40	2
12	Glass products	35,23	3	5,72	3	3,83	4
13	Ceramic products	22,65	7	3,96	6	2,78	6
14	Wood products	7,48	10	1,18	11	0,75	13
15	Paper & pulp	34,02	5	5,21	4	4,35	3
16	Textile industry	6,36	12	1,51	9	1,22	9
17	Clothing & apparel	0,80	24	0,17	24	0,14	19
18	Leather & footwear	1,70	23	0,42	23	0,32	18
19	Food processing	5,40	14	1,00	13	0,65	14

[1] Polish national classification.

Source: Calculated from Rocznik Statystyczny 1992, GUS, Warszawa 1992.

Prices of electrical energy are linked to coal prices because in Poland, 90% of energy is produced out of coal (both hard coal and lignite). Domestic coal prices were only one fifth of international prices in 1989; in 1990 this ratio increased to some 30%, and in 1991 to 50%. These relatively low coal prices allowed for cheap energy for industrial users. This has been one of the major distortions in the Polish economy which led to the excessive energy intensity of production. Only in the second half of 1991, when domestic coal prices exceeded the level of USD 30 per tonne, approaching the export 'transaction' price, the distortion has been largely eliminated (the difference between the international price and the price at the coal mine is made up by local and foreign transport costs, insurance costs, and profit margins of trading companies).

The commonly-held view is that socialist economies specialized for decades in energy-intensive goods because of low energy prices and relative abundance of energy in the CMEA (see for example, Hughes and Hare (1991)). The impact of low energy prices would be confirmed if the trade pattern displayed a distinct bias towards more energy-intensive products. Table 22 presents data on energy intensity of production in individual sectors in 1989, 1990 and 1992.

But despite the evidence of (relatively) low energy prices, their impact on Polish trade is not easily discernible. In a study on trade performance of the private sector in Poland (Rosati (1992)) no positive correlation has been found between the energy intensity and trade coverage ratios by sectors (at 24 sectors aggregation level) for Poland's private sector trade in 1990-91. While low energy costs undoubtedly contributed to a wasteful and distorted production structure, the bias may be less obvious in trade.[1]

[1] Regression of private export/import ratios and energy intensity by sectors has not demonstrated any statistically significant relationship between the two variables in 1991. Simple correlation coefficients for private-sector trade were close to zero, and only Spearman rank coefficients showed a weak positive correlation (0,22 for total trade, and 0,16 for trade with the EC — see Rosati (1991)). One possible explanation is that, except for relatively unprocessed industrial products (such as metals, basic chemicals, building materials), the premium offered by cheap energy could not offset large quality and technical standards differentials between domestic and foreign industrial goods. This means, that for processed manufactures the extra profitability margin due to low energy unit costs was largely irrelevant under competitive conditions of the world markets (except for CMEA markets). Furthermore, the sharp increase of energy prices in 1990 made many energy-intensive activities unprofitable, especially in heavy and engineering industries.

But energy intensity seems to be much more important factor for total Polish trade, if both the private and public sectors are taken into consideration (see Chapter 5). More detailed analysis of the relationship between energy intensity and the commodity composition of exports shows a distinct bias in favour of more energy-intensive products in Polish exports to the EC. This seems to suggest that the private sector's behaviour in 1991 may not be representative for the whole trade of Poland.

E. Wage controls

Under the central planning system, relative wages in Poland did not correspond to relative productivities. Rather, wages were treated as a means of egalitarian income redistribution, generally from high-skilled manpower and 'white collars' to workers. In result, the inherited wage structure was distorted, with more educated labour compensated below their productivity levels. In the trade context, this could be expected to result in a shift towards exports of goods with a relatively high human capital ('skills') component. But the available evidence does not support this observation, and the share of skill-intensive goods in Polish exports to the EC remains rather low (see Section 5.1).

The commonly-held view, that skilled labour has been relatively underpaid in centrally planned economies, though confirmed by statistics and evidence on migration from East to West, does not seem to have an influence on trade specialization. Skill-intensive goods do not play any significant role in Polish exports to the EC (see Chapter 5 for more details). One possible explanation is that marginal productivity of skilled labour in Poland is much lower than in market economies because of low technical standards of physical assets, low work discipline, and poor management. In such case, the low valuation of skilled labour may not be surprising.

F. Administrative restrictions and monopoly powers

The two last categories of market imperfections refer to administrative restrictions on production or trade, and to imperfect market structure. As far as the former is concerned, no restrictions exist on undertaking business activities (in December 1988, the Law on Entrepreneurship was passed, which established a general principle that everything is permitted unless explicitly prohibited by law). Moreover, almost all quantitative restrictions in trade have been eliminated as a result of trade liberalization in January 1990. Few remaining restrictions concern exports of weapons and arms, imports of alcoholic beverages and fuels, where licenses have been introduced. Licenses are also required for exports of coal, but they are granted without problems if the contract price is not too low.[1] No other restrictions in trade existed from 1990 to 1992.

Imperfections in the market structure typically take the form of monopoly powers. While it is true that the Polish economy has been highly monopolized because of relatively high concentration of production in big State-owned enterprises, there were not so many cases of abuse of monopoly powers.[2] Moreover, powers of Polish domestic monopolies are much more limited when they operate under a liberal trade regime, or on more competitive international markets.

4.3. Trade performance and trade distortions

A. Trade performance and EC trade protection in 1991

This section makes use of the results obtained in Sections 3.3 and 4.1. The natural question arises: What is the relationship between the observed pattern of trade between Poland and the EC, and the structure of trade protection in the EC? Some insights can be obtained through combining information on Poland's trade performance as measured by sectoral trade coverage ratios, and the structure of protection, measured by sectoral intensities of EC trade barriers. The results are given in Table 23.

In view of rather wide disparities among sectoral trade coverage ratios, it was decided to set the limit separating 'good' and 'medium' sectors at TC=1,5, and the limit separating 'medium' and 'bad' sectors at TC=0,5.[3] That left approximately one quarter of all NACE 3 sectors in the 'medium' category.

The preliminary conclusion which can be drawn from Table 23 is that there are rather few sectors which may be regarded as having potential prospects for export expansion once the EC trade barriers are lowered. These are in the first instance the sectors located in the right-upper corner of the table, i.e. iron and steel (221), clothing (453), household textiles (455), sugar (420), processed fruits and vegetables (414), starch (418) and processed fish and sea foods (415). But this group has already a substantial share in total Polish exports (24,2% in 1991). This

[1] Contract prices of 'Weglokoks', the leading Polish coal exporting company, are normally taken as the reference.

[2] Out of the 83 cases investigated by the anti-monopoly board in 1991, only 20 were ruled as illicit (Rzeczpospolita, 8 January, 1992).

[3] An alternative specification, assuming the borderline cases for sectoral trade coverage ratios at 1,1. and 0,9, respectively, would locate only 7 NACE 3 sectors (out of 106) in the 'medium' category, and would yield a classification of little analytical value.

Table 23

Poland's trade performance and EC trade protection, by NACE 3 sectors, in 1991

Trade coverage ratio	EC trade barriers[1] Low	Medium	High
Good: TC > 1,5	242, 461, 465, 464, 233, 224, 462, 212, 467, 312, 231, 463, 311, 363, 239, 313, 232, 471, 482, 314	253, 442, 315, 341, 466, 247	453, 455, 221, 420, 414, 418 415
Total Sectors:	20 sectors	6 sectors	7 sectors
% of exports	27,7%	8,9%	24,2%
Medium: 1,5 > TC > 0,5	316, 245, 243, 495	347, 252, 223, 326, 436, 260, 481, 222, 456, 321, 346, 248, 441, 492, 491	451, 342, 412, 413, 411, 424
Total Sectors:	4 sectors	15 sectors	6 sectors
% of exports	5,2%	14,0%	7,9%
Bad: TC < 0,5	353, 371, 352, 365, 244, 246, 328, 343, 241, 327, 364, 259, 472, 255, 473, 258, 211, 374	362, 256, 494, 322, 325, 493, 323, 483, 439, 361, 345, 372, 324, 373, 344, 257, 330	438, 351, 422, 421, 416, 423 427, 425, 419, 429, 428, 417 426
Total Sectors:	18 sectors	17 sectors	13 sectors
% of exports	5,1%	5,8%	1,2%

[1] Intensity of trade barriers has been measured with an index taking (integer) values between 0 and 9, reflecting the relative incidence of tariffs, QRs, and ONTBs on individual NACE sectors (see Möbius and Schumacher (1992a)). The full list of indices of EU trade protection against Poland and other East European countries for all NACE 3 categories can be found in the statistical annex (Table 16).

Source: Author's calculations.

group may be followed by sectors with medium trade coverage ratios and facing currently high trade barriers, i.e. footwear (451) and electrical motors (342), meat products (412), dairy products (413), vegetable and animal oils and fats (411) and alcohol (424), and by sectors with high trade coverage ratios and facing currently medium trade barriers. i.e. glass ware (247), other basic industry chemicals (253), boilers and tanks (315), electric wires (341), leather products (442), cork and straw products (466). The two other groups of sectors accounted for 16,8% of Polish exports to the EC in 1991. Together with the first group, they represent 41% of Polish exports, which means that potential benefits arising from lower protection may accrue mainly to those sectors which are already strongly represented in Polish exports (clothing, textiles, metals, processed food).

These observations confirm the earlier conclusions. Poland's comparative advantage seems to lie currently in natural-resource-based industries, light industries, low-tech manufactures and processed food. These sectors may be expected to be first to expand their exports to the EC, once trade barriers are reduced or eliminated. This hypothesis will be examined below against data for 1992.

B. The impact of domestic distortions

The review in Section 4.2 demonstrates that while many distortions still remain in the Polish economy, most of them have either a negligible impact on trade, or their impact is generally neutral. But three among the identified market imperfections are likely to affect the foreign trade pattern in a more systematic way: low energy prices, taxes on resource use (the excess wage tax and the 'dividend' tax), and the distorted wage structure (undervalued skilled manpower). While lower energy prices may be expected to have yielded a bias in Polish exports towards energy-intensive goods, the excess wage tax and the 'dividend' tax may have resulted in a relative shift towards labour-intensive and natural resource-intensive goods, as opposed to capital-intensive goods. The observed pattern of Poland's trade with the EC in 1990-91 seems to be consistent with these conclusions, at least to some extent. One apparent and important deviation refers to the impact of undervalued human capital ('skills' factor), which has not tilted the Polish export structure in favour of skill-intensive goods. This issue is discussed in Section 5.1. But the results may be again influenced by the assumption on the identical skill-intensity pattern in Polish and EC industry. A more elaborated analysis

of relative factor endowments would be required in order confirm these results.

4.4. The impact of the Association Agreement on Polish trade with the EC in 1992

The Association Agreement between Poland and the European Communities (the so-called Europe Agreement), which was signed in December 1991 and entered into force on 1 March 1992, introduced wide-ranging liberalization measures in mutual trade, but at the same time maintained and even reinforced important restrictions in some selected areas. All trade has been classified into five categories. General provisions, extended to some 75% of EC imports from Poland and some 50% of Poland's imports from the EC, envisaged zero tariffs and zero QRs. Special provisions cover four groups: 'basic' products (metals, sulphur, leather, etc) for which tariffs are to be scaled down over two to four years; 'sensitive' products (referring to 31 NACE 3 groups), where both tariff-quotas and tariffs are to be gradually abolished over five years; textile products under MFA (Multifibre Arrangement — nine NACE 3 groups), for which tariffs are planned to be reduced to zero over six years, and QRs over five years (pending to GATT negotiations); and, finally, steel and coal, for which tariffs are to be eliminated over four years, and QRs already in 1993 (with the exception of exports of coal to Germany and Spain).

Some of these timetables have been cut short as a result of decisions taken by the EC during the summit meeting in Copenhagen in June 1993. It should also be remembered that the opening up of the Polish market will take longer than the opening up of the EC market which is the reflection of the 'asymmetry' principle agreed upon in the Association Agreement.

Substantial, one-time liberalization of access to the EC market in 1992 was widely expected to result in an increase of Polish exports to the EC, especially in various categories of manufactures which were covered by general provisions of the association treaty. Some experts, however, were sceptical about these prospects, because Polish export potential has been concentrated mainly in 'sensitive' sectors, where protection devices are to be retained for some time to come (Messerlin (1992), pp. 115-116). Trade results for 1992 offer the possibility to examine the early outcome of the Association Agreement.

According to Möbius and Schumacher (1992b), as a result of the tariff reduction for imports from Poland, zero tariffs have been applied to 69 NACE 3 categories since March 1992 (out of the total of 89 sectors, excluding NACE 41/42), a sharp increase from only 5 NACE 3 categories which enjoyed zero tariffs in 1991. In almost all remaining sectors, tariff rates have been reduced, typically by one third to one half of their initial levels. Table 24 shows sectors where tariff protection was maintained for 1992.

Table 24

Poland's exports to the EC: NACE 3 sectors facing import tariffs in the EC in 1992 and their percentage share in total Polish industrial exports to the EC[1]

Rank	NACE 3	Sector	Tariff rate	Share in exports
1	453	Clothing	9,7	14,2
2	436	Knitting	9,6	2,3
3	43B	Woven fabrics[2]	8,3	0,7
4	455	Household textiles	7,0	0,7
5	233	Salt	6,5	0,0
6	438	Carpets	6,5	0,1
7	248	Ceramics	5,8	0,5
8	260	Man-made fibres	5,8	0,4
9	439	Other textiles	5,8	0,2
10	43A	Yarns	3,9	0,3
11	221	Iron & steel	3,5	3,6
12	451	Footwear	3,5	1,9
13	222	Steel tubes	3,2	0,8
14	247	Glass products	2,5	1,4
15	462	Semi-finished wood products	2,2	0,9
16	253	Other industrial chemicals	0,4	3,6
17	212	Non-ferrous metals	0,3	10,9
18	351	Motor vehicles	0,3	3,6
19	481	Rubber products	0,3	0,9
20	441	Tanning and dressing of leather	0,1	0,7

[1] Tariff rates calculated as average rates for each NACE 3 group, weighted by values of 8-digit product lines of CN.
[2] Includes products from NACE 436.

Source: Tariff rates taken from Möbius, Schumacher (1992b).

The weighted average tariff incidence on Polish imports to the EC in 1992 was 2,2%, down from 6,3% in 1991, with remaining tariffs concentrated in 'sensitive' sectors. The share of the 20 sectors charged with import tariff rates in total Polish industrial exports to the EC in 1992 was 47,7%, while the share of all 69 sectors with zero rates was 52,3%. In other words, almost half of Polish exports is still subject to tariff protection, including such important products as textiles, metals and minerals.

If Polish exports were indeed susceptible to tariff protection in the EC, one could expect to see larger relative increases of exports in those sectors for which tariff rates have been reduced more than proportionately (or eliminated altogether) in 1992.

To test this hypothesis, a regression analysis has been applied to investigate the relationship between relative changes in Polish exports by sectors and corresponding rates of tariff reduction in 1992. However, the result obtained suggests almost complete insignificance of the 1992 tariff reduction for current Polish export expansion.[1] To cross-check this somewhat unexpected result, another regression has been run for tariff reductions and changes in exports in 1992 for a subset of 17 sectors in which the tariff reductions were largest in 1992 (3 percentage points or more). Also in this case, no statistically significant correlation has been detected.[2] It may therefore be concluded that the short-term impact of tariff reduction in imports from Poland to the EC has been negligible.

In fact, this result should not be seen as surprising, because it has already been observed that tariffs were not of primary importance in restricting access to the EC markets. It is nevertheless interesting to see that out of 88 sectors, 24 sectors registered actual falls in exports in 1992 (and 8 out of 25 sectors with the largest tariff reductions). Sectors with negative export growth are concentrated in intermediate and capital goods (NACE 24, 32, 36, and 37), which suggests that the falls may have been associated with falling investment demand and recession in the EC.

Similarly, the impact of removing QRs and other non-tariff barriers has not been very pronounced either. For manufactured products, quotas have been used in 1992 on nine NACE 3 categories of goods, covered by the Multifibre Arrangement (MFA). The link between future liberalization of QRs and changes in exports can be investigated on the basis of data given in Table 25, where the relevance of QRs in these sectors is measured by the import coverage ratio and the actual utilization rate in 1991.

In principle, the impact on exports of removing QRs could be expected to be substantial only in case of binding quotas; however, in the case of Polish exports, no QRs were fulfilled in 1991, with the utilization rate varying from zero to 70% (Messerlin (1992)). The regression of exports growth rates and modified import coverage ratios shows weak negative correlation between the two variables.[3] This would suggest that the lower is the actual coverage of imports by QRs in a given sector, the faster the growth of imports to that sector. If this is the case, the fastest export growth in the future can be expected in sectors with low coverage ratios, such as man-made fibres, rubber products, carpets and yarns.

Table 25

Polish exports to the EC: liberalization of QRs for MFA product groups and the impact on exports in 1992

		Import coverage ratio in 1991		Utilization rate of QR in 1991	Modified coverage ratio in %	Export growth rate in 1992
NACE 3	Sector	A	B	in %	C	in %
260	Man-made fibres	10	0	0	0	51,5
43A	Yarns	63	3	8	0,2	68,8
43B	Woven fabrics	91	67	48	29	10,2
436	Knitting	99	63	61	38	27,2
438	Carpets, etc	100	0	0	0	25,7
439	Other textiles	91	27	23	6	24,5
453	Clothing	96	44	54	23	30,5
455	Household textiles	84	36	71	21	- 1,9
481	Rubber products	1	0	0	0	51,5

Note: A — proportion of the sector's imports covered by quotas on the basis of Multifibre Arrangement (MFA); B — imports subject to QRs as percentage of imports covered by MFA; C — import coverage ratio of MFA multiplied by values in column B and by the utilization rate in 1991.
Source: Data on QRs taken from Möbius, Schumacher (1992b).

[1] The following regression equation has been obtained for 88 industrial sectors (excluding NACE 41/42 and NACE 211):
r(E) = 25,735 + 2,730*dT, R(square) = 0,0054
(4,002)
where r(E) is the 1992 rate of growth of exports of a given sector (in percent), and dT is the change in tariff rate (in percentage points). Effective GSP tariff rates for EC imports from Poland 1991 have been used to calculate corresponding tariff reductions.

[2] The following regression equation has been obtained (see previous footnote for explanation):
r(E) = 10,548 + 8,262*dT, R(square) = 0,0090
(22,379)

[3] The regression yielded the following equation:
r(exports) = 53,72 - 1,25 (modified import coverage)
(1,32)
R(square) = 0,1143, correlation coefficient = 0,338.

5. Factor endowments and market imperfections

5.1. Trade and factor endowments

The standard theory of international trade explains the trade pattern by differences in relative factor endowments in individual countries. While the rapid development of intra-industry trade in the post-war period brought also to the attention of trade analysts other causes of trade, such as product development cycles, economies of scale, 'learning curves', differences in consumers' tastes, or trade barriers, different proportions of factor endowments in individual countries nevertheless remain an important determinant for a large part of international trade, particularly for inter-industry trade. Production factors are typically divided into natural resources, capital, unskilled and skilled labour. Depending on data availability, the list can also be extended to include technology components and energy.

For the purpose of this study, five key production factors have been identified: capital (measured by investment expenditures), labour (measured by number of employees), research and development inputs (measured by R&D expenditures), human skills (measured by the share of non-manual workers in total employment), and energy inputs. Dividing labour, R&D expenditures, and energy costs by output levels, and investment expenditures by the number of employees by industrial sectors, allowed for estimation of factor intensities for individual sectors (data were obtained from statistical services of the EC). In result, it was possible to establish a ranking of sectors from the point of view of their factor intensity (for some NACE 3 sectors data were unavailable, hence not all sectors appear in the analysis).

In order to verify the dependence of the Polish-EC trade pattern on relative factor endowments, detailed and accurate data on capital, skilled and unskilled labour and possible other factors by sector would be required. The most obvious solution would be to look directly into factor proportions in individual sectors. Unfortunately, the data on sectoral factor endowments in Poland are not available for NACE 3 classification, and besides, they would not be comparable with the EC data, especially for fixed capital assets and R&D expenditures.[1] It was therefore decided to take the EC data for factor endowments in particular NACE sectors as a proxy for Polish data, under the assumption that factor proportions in Polish industry are similar. Obviously this is a very restrictive qualification which can only be accepted as a preliminary hypothesis.[2] While in the case of some production factors, such as energy or human capital (skilled labour), factor intensities may indeed be similar, much bigger differences can be expected in the case of capital/labour ratios. The main problem is the valuation of capital expenditures which were almost certainly understated in Poland. Under the circumstances, cases of factor intensity reversal cannot be excluded. Table 26 gives the ranking of NACE 3 sectors according to their factor intensity.

Table 26

First 10 NACE 3 sectors ranked according to factor intensity

Rank	Capital	Labour	R&D	Human capital	Energy
1	427	453	364	330	242
2	242	493	342	255	241
3	471	451	257	256	221
4	418	442	341	257	471
5	420	244	343	258	245
6	411	466	344	259	224
7	330	492	345	471	247
8	260	372	346	472	260
9	416	495	347	473	311
10	422	248	330	34	248

Source: Compiled from Table 19 of statistical annex.

The impact of natural resource availability on the Polish trade pattern is quite clear and explains the high export/import ratios for sectors such as coal and coke, non-ferrous metallurgy and products of agriculture. It is however less obvious in explaining strong export specialization in glass, ceramics, forestry, and especially, wood and wood products, in which Poland seems to have no distinct natural advantage over EC countries.

The most capital-intensive activities are observed in the food, drinking and tobacco industries (NACE 41/42) — which may

[1] Historical 'book' values of fixed assets reflect artificial prices and interest rates from the pre-1989 period.

[2] The assumption on identical factor intensities for Poland and the EC obviously ignores specific factor proportions in the Polish economy, resulting from many years of investment decisions biased in favour of heavy industry and engineering sectors. Unfortunately, there is no immediate possibility of examining these differences in detail because of incomparability of data on existing fixed capital assets. It should, however, be kept in mind that the assumption on identical factor intensities may lead to a systematic error in obtained results.

be somewhat surprising[1] — and in the non-metallic mineral industry, for example cement (NACE 242). The most labour-intensive production concentrates in footwear, clothing and leather sectors, and in miscellaneous industries. The highest R&D-intensity is observed in the production of transport vehicles, various sectors of mechanical and electrical engineering and in pharmaceuticals. Skilled manpower is used most intensively in office machinery and data processing, various branches of the chemical industry and in paper production. Finally, non-metallic minerals (NACE 24), and ferrous and non-ferrous metallurgy (NACE 22) are among the most energy-intensive sectors.

To determine the factor content of Polish exports to the EC, a cumulative share in total exports has been calculated for NACE 3 sectors with the highest intensity with respect to each factor. The results for 1988, 1991 and 1992 are reported in Table 27.

The first column in Table 27 shows the proportion of subsequent groups (the first 10, 20 and 30 sectors with the highest intensity) in the total of 92 sectors analysed and should be compared with the cumulative export shares which are shown in other columns. For a uniform distribution, i.e. the one not showing any particular factor intensity orientation, the proportions in the first columns and the cumulative export share should be broadly equal.

As can be seen immediately, the picture of factor intensity of Polish exports to the EC in 1992 appears to be rather clear for the first '10' sectors: exports are primarily dominated by energy-intensive and labour-intensive products. In both cases the cumulative export shares are roughly twice as high as the corresponding proportion of the uniform distribution. The first 10 NACE 3 sectors with the highest energy- and labour-intensity account respectively for 20 and 19% of total exports in 1992, and there has been only little change in this pattern since 1988. Contrary to common opinions, capital-intensive goods are much less important, and also less concentrated: the most capital-intensive goods, such as NACE 41/42, 242, 471, or 330 are not among the largest Polish exports.

Table 27

Polish industrial exports to the EC: percentage share in total exports of NACE 3 sectors with highest factor intensity, 1988 and 1991

1988			Intensity			
'Top' sectors	Proportion[1]	Capital	Labour	R&D	Skills	Energy
First '10'	10,87	3,52	15,44	4,62	3,27	20,25
First '20'	21,74	26,62	22,76	10,82	6,87	24,68
First '30'	32,61	36,57	26,62	15,07	12,57	28,93
1991			Intensity			
'Top' sectors	Proportion[1]	Capital	Labour	R&D	Skills	Energy
First '10'	10,87	4,08	18,28	4,24	3,41	20,14
First '20'	21,74	21,60	23,49	6,51	7,02	25,28
First '30'	32,61	31,62	29,19	10,98	10,59	30,28
1992			Intensity			
'Top' sectors	Proportion[1]	Capital	Labour	R&D	Skills	Energy
First '10'	10,87	3,63	19,02	4,34	3,29	20,03
First '20'	21,74	23,81	24,28	9,56	8,28	24,40
First '30'	32,61	32,12	30,54	13,36	11,58	29,36

[1] Proportion of the total of 92 NACE 3 sectors covered by the analysis (percentage).
Source: Own calculations.

[1] Using Polish data, Rosati (1992) discovers that the most capital-intensive sectors in the Polish economy in 1990 were: fuel production, iron & steel, non-ferrous metallurgy, paper & pulp, and chemical industries. But the food-processing industry, which is on the top of the EC list, ranks only 10th among 22 industrial sectors, with average capital-intensity roughly 2,5-3 times lower than in metallurgy. This striking difference between the two rankings may partly be explained by various price distortions in the EC (affecting especially agricultural prices), and especially in Poland, and partly by different measures of capital-intensity (the EC data are obtained through dividing average investment by the number of employees, while in Rosati's study capital-intensity is measured by the value of fixed assets per employee).

Capital-intensive goods gain some importance beyond the first '10' sectors, but the share of the first '20' sectors with the highest capital-intensity is only marginally higher than the corresponding proportion of the uniform distribution (23,81% vs. 21,74%).[2] For the first '20' sectors, the distribution of

[2] According to some other studies, capital intensity of Polish exports may be somewhat higher (Rosati (1992)). The difference may arise from the assumption adopted in the present study on the identical factor intensities in Poland and in the EC.

capital-intensive, labour-intensive, and energy-intensive sectors becomes practically even, and the situation has not changed much between 1991 and 1992. This conformity with the even distribution is even stronger for first '30' sectors (30/92 = 32,61% as compared with 32,12%, 30,54%, and 29,36%).

Neither labour intensity, nor capital intensity, nor energy intensity seem to have displayed significant changes between 1991 and 1992 (although there was some increase in the share of the first 10 labour-intensive sectors between 1988 and 1991). If the sharp increase of exports of sector 351 (motor vehicles) is excluded, a weak declining tendency in capital intensity can be, however, identified.

On the other hand, the share of research-intensive and skilled-labour-intensive sectors is rather unimportant, and, after the fall between 1988 and 1991, no significant change can be observed. The increase in the share of R&D-intensive goods in 1992 is again almost totally due to the increase of exports of motor vehicles (NACE 351).

It may be concluded that the pattern of factor-intensity of Polish exports has not changed radically between 1988 and 1991. Nevertheless, the position of R&D-intensive goods deteriorated and that of labour-intensive goods somewhat improved. The change in the position of capital-intensive goods is almost entirely due to the sharp fluctuations of the export share of transport vehicles (the share of NACE 351 first fell from 4,97% in 1988 to 0,75% in 1991, and next increased to 3,57% in 1992).

5.2. EC trade protection and factor endowments

It would be interesting to see how does the specific structure of protection in the EC affect exports with various factor intensities, i.e. whether the EC trade barriers target imports with a particular factor content or rather, are indifferent with respect to the factor content. This information can be obtained from Table 28, which shows the distribution of NACE 3 sectors according to factor intensity and level of trade protection.

Table 28 demonstrates that the highest trade barriers in 1991 were mostly concentrated in capital-intensive sectors, such as food processing, metallurgy and motor vehicles, but they were also targeted on specific labour-intensive industries, such as textiles, clothing and footwear, as well some energy-intensive industries, such as iron and steel, starch and sugar. High protection is of the greatest importance for labour-intensive goods, as it affects three sectors with a relatively large share in Polish exports (16,6%). On the other hand, all other labour-intensive exports which fall into medium- or low-protection categories, only account for a small fraction of total exports, as their combined share amounted to 6.9% in 1991. It may be observed that skill-intensive and research-intensive sectors enjoy almost unrestricted access to the EC market, but these sectors only account for a rather limited chunk of Polish exports, as illustrated by figures given in Tables 27 and 28.

Table 28

Sectoral factor intensity and level of protection in the EC, 1991[1]

EC trade protection	Capital	Labour	R&D	Skills	Energy
High	427, 418 420, 411 416, 422 221, 351 423, 424	453, 451 455	—	—	221, 418 420
% of exports	5,9%	16,6%	0	0	4,1%
Medium	330, 260 256, 257	442, 466 492, 372 248, 361 494, 362 436, 373 326	342, 373	342, 373	260, 222 481, 223
% of exports	1,4%	4,7%	1,0%	1,0%	2,7%
Low	242, 471 245, 224 241, 462	244, 495 365, 464 313	364, 257 341, 343 344, 345 346, 347 330, 255 256, 258 259, 371 372, 374 351, 352	330, 255 256, 257 258, 259 471, 472 473, 341 343, 344 345, 346 347, 371 372, 374	242, 241 471, 245 224, 247 311, 248 256, 312 482, 243 313
% of exports	14,3%	2,2%	5,5%	6,0%	18,5%

[1] First 20 sectors with highest factor intensity for each production factor. Ranking of sectors based on factor intensity.

Source: Author's calculations.

5.3. Further remarks on factor endowments in the EC and Poland's trade performance

Notwithstanding all the reservations, the analysis of the pattern of Polish trade with the EC from the point of view of factor endowments allows for some interesting observations. The upper panel of Table 29 shows the values of the correlation coefficient between the sectoral trade coverage ratios and sectoral factor intensities, while the lower panel shows the values of the correlation coefficient between the sectoral specialization indices and sectoral factor intensities (obtained for 92 NACE 3 sectors).

Table 29

Correlation between Poland's trade coverage ratios and specialization indices and factor intensities, 1988 and 1990-92

Production factor[1]	Correlation coefficient 1988	1990	1991	1992
A. Trade coverage ratios and factor intensities				
1. Capital	0,0549	0,3556	0,2822	0,0585
2. Labour	– 0,0230	– 0,1853	– 0,1127	0,0008
3. R&D	– 0,1267	– 0,1487	– 0,1512	– 0,1710
4. Human capital	– 0,2559	– 0,2462	– 0,2670	– 0,3412
5. Energy	0,0795	0,5131	0,5402	0,2895
B. Specialization indices and factor intensities				
1. Capital	10,1096	0,0257	0,0321	– 0,0360
2. Labour	– 0,0235	– 0,0116	0,0001	0,0490
3. R&D	– 0,2054	– 0,2148	– 0,2446	– 0,2359
4. Human capital	– 0,2635	– 0,3490	– 0,4154	– 0,4381
5. Energy	0,5375	0,4261	0,4435	0,3860

[1] The definition of factor intensities as in Table 29 of statistical annex.
Source: Own calculations on the basis of Eurostat data.

The overall picture of relationships between trade performance and factor intensities which emerges from Table 29 seems to be more complex than suggested by earlier observations. First of all, the correlation analysis shows no relationship whatsoever between labour intensity and trade performance, which partly contradicts the results obtained in Table 27. The most plausible explanation for this apparent paradox is the non-homogeneity of Polish exports: apart from labour-intensive goods such as clothing, footwear, knitting, ceramics, etc., a substantial share in exports is taken by semi-processed materials, such as metals and minerals, which are characterized by very low labour intensity.

Second, Polish exports to the EC do not display any particular capital-intensity orientation, although there may have been some temporary increase in the export share of capital intensive goods in 1990 and 1991 (higher correlation coefficients for trade coverage ratios are not, however, matched by similar values for correlation with specialization indices).

By contrast to capital and labour, the relationship between three remaining factor intensities and trade performance is much clearer. The structure of Polish exports to the EC has been consistently biased against R&D-intensive products, and even more strongly against skill-intensive products. The latter tendency seems even to have strengthened recently. On the other hand, the structure of exports is biased in favour of energy-intensive products, although their position in Polish exports has weakened somewhat after 1990.[1]

[1] It is interesting to note the large difference for correlation with respect to energy-intensity for 1988, which underlines the difference between the TC and SI, as the measures of 'internal' (domestic market) and 'external' (EC market) comparative advantage.

These results are rather consistent with the conclusions obtained in Chapter 3, but seem to be at odds with some of the observations on existing market imperfections in the Polish economy. Specifically, neither the distortion in relative prices of capital and labour, nor the distortion in relative wages seem to play a primary role in shaping the current Poland-EC trade structure. It may also be assumed that the distortions on the Polish labour market will tend to diminish in the future, as both the excess wage tax and the 'dividend' tax are planned to be eliminated in 1994. On the other hand, the strong position of energy-intensive goods confirms the role of underpriced energy in shaping the trade pattern. This tendency may be of a more permanent character, given the structural dependence of Polish production sector on domestically produced coal and relatively low transaction costs for imports of natural gas from CIS countries.

The results reported in Table 29 suggest also, that Poland's apparent specialization in labour-intensive exports is still rather problematic. While the overall trend towards more labour-intensive goods can indeed be observed, it will take some time before these sectors may be expected to assume a dominant position in Polish exports.

6. Future sectoral specialization

6.1. Changes in the volume of Polish trade with the EC

The future pattern of trade with the EC will be an outcome of the combination of a number of factors with Poland's domestic policies, the evolution of the regime of trade between Poland and the EC and the speed of recovery in Eastern and Western Europe probably being the most influential ones. After a period of liberal orthodoxy in 1990-91, domestic policies in Poland have been shifting gradually in favour of more interventionism, with new instruments of export support and more differentiated industrial policy tools gaining importance. This trend may be expected to continue in the next few years. This will result in both exports and imports growing faster than GDP, with income elasticity of imports varying between 1,5 and 2.

Prospects for economic recovery in Poland look somewhat brighter now than only a year ago. The continuous growth of industrial output, observed since April 1992, seems now to be of a more permanent character and GDP forecasts are being revised upwards. After having registered positive growth of GDP in 1992 (by about 1,5 to 2,0%), the Polish economy is likely to grow at the rate of 4 to 5% in 1993. The growth has already been reflected by the strong expansion of imports in 1992 and in the first half of 1993. The picture may further improve if the inflow of FDIs will accelerate. For the time

being, Poland has lagged behind Hungary and the Czech Republic in total amount of FDI registered, most probably because of her less stable political situation and uncertainty surrounding new legislation; but the political scene appears to have gained stability after the September 1993 parliamentary elections.

The impact on trade of the subsequent liberalization steps envisaged in the Europe Agreement will be smaller in 1993 to 1997 than in 1992, especially on the export side, because most of tariff and non-tariff barriers were removed in one sweep in 1992. Three important exceptions include agricultural goods and coal, which are not covered by the present study, as well as MFA products (textiles), for which, however, the existing QRs have not been fully utilized in the past. By contrast, the impact on Polish imports in 1993 to 1997 may be stronger, chiefly because the initial liberalization in 1992 has been smaller than in the case of EC imports (due to the 'asymmetry' principle).

Other external factors, such as the emerging recovery in the West, successful conclusion of GATT negotiations under the Uruguay Round, or the planned access of some EFTA countries to the EC are likely to contribute to further expansion of Polish-EC trade. On the negative side, the uncertainty surrounding political and economic developments in the CIS countries, as well as the war in former Yugoslavia may still inflict some additional adjustment costs on the Polish economy (although the bulk of adjustment to these two shocks already took place in 1991-92), but should not directly hamper its trade with the EC.

Generally, prospects for the development of trade between Poland and the EC appear now to be more favourable than a year ago. Nevertheless, uncertainties are still high. In a number of studies, many authors have examined the likely paths of economic growth for Eastern Europe, and, against this background, prospects for mutual trade with the EC (see, for example, Collins, Rodrik (1991); Hamilton, Winters (1991); CEPII (1992)). Typically, two or three scenarios were envisaged, with 'pessimistic' and 'optimistic' variants being in some cases supplemented by a 'continuity' variant.

In making forecasts about the future of Polish-EC trade, this study will broadly rely on three alternative scenarios produced by CEPII (1992); however, the 'pessimistic' (or 'protectionist') scenario will not be considered, as it has been — to some extent — invalidated by events in 1992 and 1993. In fact, what is called a 'trend' scenario can be regarded as a rather 'pessimistic' variant of future developments (see CEPII, 1992).

Table 30 reproduces the CEPII forecasts for 1993 to 2000 for major macroeconomic variables under two scenarios ('trend' and 'integration'), but figures for 1990 to 1993 are updated and modified according to new data and revised estimates. In addition, the forecasted rates of imports growth have been revised upwards, from 2,3 to 3,0% for the 'trend' scenario, and from 4,2 to 5,5% for the 'integration' scenario.[1]

It can be seen that most variables have undergone wide fluctuations during the period 1990 to 1993. The fall of GDP in 1990 was accompanied by a steep rise in exports and fall of imports, while GDP growth in 1992-93 has been associated with an opposite behaviour of exports and imports. To illustrate better these diverging tendencies, changes during 1991 to 1993 subperiod have been shown separately in Table 30. As to the future, the CEPII forecasts raise some doubts, if most recent data are taken into account. Export and import rates of growth are likely to be somewhat higher than those shown in Table 30 (see also Collins and Rodrik (1991), and Hamilton and Winters (1991), and the 'integration' scenario appears now to be more realistic than even the 'trend' scenario. Nevertheless, the CEPII forecasts will be considered here, not only to assure consistency with the studies on other East European countries, but also for reasons of caution.

Table 30

Poland: average annual percentage rates of growth, 1990-2000

			2000/1993	
Item	1993/90	1993/91	Trend	Integration
GDP	– 3,5	– 0,6	3,0	5,5
Consumption	– 2,1	2,6	2,2	4,3
Investment	– 2,9	– 0,4	1,9	3,3
Exports	0,3	– 3,0	4,1	7,2
Imports	4,8	14,0	3,0[1]	5,5[2]

[1] CEPII forecast is 2,3%.
[2] CEPII forecast is 4,2%.

Source: CEPII (1992), national statistics and author's estimates.

Assuming in addition that the average rate of economic growth in the EC from 1993 to 2000 will be 2,5% p.a., and the average rate of export and import growth will be 4 to 5% p.a., it is possible to estimate the future territorial composition of Poland's trade. No further decline in trade with ex-CMEA countries is foreseen; on the contrary, it is assumed that 'eastern' trade will gradually recover at the average rate of between 2.5 and 6 per cent in 1993-2000, depending on the development scenario. The fastest expansion is expected in

[1] Large differences between the export and import growth rates postulated by CEPII seem to be inconsistent with the assumed GDP growth rates and most recent observations.

Table 31

Poland's trade, by country group: territorial composition in 1992 and in 2000, percentage growth rates, 1993-2000 (constant prices)

Item	Territorial composition in 1992	Rates of growth in 1993-2000		Territorial composition in 2000	
		Trend	Integration	Trend	Integration
Exports	100,0	4,1	7,2	100,0	100,0
OECD	71,9	4,5	7,8	74,1	76,0
EC	58,0	4,8	8,2	61,3	63,2
Ex-CMEA	15,4	3,5	6,0	14,6	14,2
ROW	12,7	2,8	3,6	11,3	9,8
Imports	100,0	3,0	5,5	100,0	100,0
OECD	72,4	3,3	6,2	73,9	76,2
EC	53,2	3,7	6,5	56,0	57,3
Ex-CMEA	16,3	2,5	4,0	15,6	14,5
ROW	11,3	2,0	3,0	10,4	9,3

Source: National statistics, CEPII (1992), and author's estimates.

trade with the EC (3,7 to 8,2%), while trade with rest of world (ROW) will develop at considerably lower rates (2,0 to 3,6%). These scenarios are summarized in Table 31.

It can be observed that no major trade reorientation is forecasted; in fact, in the opinion of the author, the bulk of economically justified reorientation did already take place in 1991-92. Trade with Western countries is still expected to expand fastest but a relatively strong recovery is also foreseen for trade with former CMEA member countries, especially with Russia, and the Visegrad countries.

6.2. Reorientation of trade from the ex-CMEA towards the EC

The dramatic fall of trade with former CMEA member countries and the dynamic expansion of trade with the West makes many experts believe that massive reorientation of trade from Eastern to Western markets have taken place between 1989 and 1992. However, what available statistics actually demonstrate is only a change in the territorial structure of Polish trade, but they do not show the extent of actual diversion of trade between the two directions. If this was the case and a diversion would actually take place, production and skills-potential accumulated in the traditional CMEA-oriented sectors (mostly metallurgy and engineering) would not simply be lost, but rather would be adapted to new conditions and redirected towards new markets. But the reality may well be different. Specifically, the observed expansion of exports to the West may be the result of shifting sales away from the domestic market because of faltering demand, rather than from the ex-CMEA markets.

Empirical analysis of trade reorientation is an inherently difficult task not only because of aggregation and statistical problems arising from the need to make trade flows comparable across different periods and different trading areas, but also because a method must be found to eliminate the 'leakages' of exportables into the domestic market. But this is virtually impossible if data on domestic demand are not available at the same level of disaggregation. Given this constraint, one is left with less perfect methods of analysis of trade structures.

One possible approach is to apply the so-called similarity coefficients, defined as the difference between unity and the sum of squared differences between sectoral export shares on two export markets.[1] The numerical values of trade similarity coefficients are given in Table 32.

Table 32

Trade similarity coefficients for sectoral composition of manufactured exports and imports (NACE 2 classification), by main trading areas, in 1988 and 1991

Relationship	1988	1991	1992
Exports			
CMEA and EC	0,8256	0,8979	0,9748
CMEA and ROW	0,9783	0,9553	0,9685
Imports			
CMEA and EC	0,9401	0,9795	0,9535
CMEA and ROW	0,8635	0,9414	0,9646

Source: Data from Table A.1 in the annex and author's calculations.

The results suggest a rather substantial increase of similarity between the structure of Poland's exports to CMEA and to the EC, especially in 1992, as well as of Poland's imports from CMEA and rest of world (ROW). The changes suggest a considerable degree of structural convergence but its magnitude cannot be estimated with desired precision. This is because trade similarity coefficients are only indicators of structural convergence, not of the actual diversion of trade. Even if in most cases the two phenomena are inter-linked, there may be exceptions (if trade diversion takes place in sectors with low relative share in exports, the similarity coefficient would decline, thus failing to reflect the actual diversion).

[1] For the definition of trade similarity index (TS), see footnote 1 on page 406.

Given the uncertainty, it is advisable to apply other methods to cross-check the results. Another measure of distance between trade structures is the coefficient proposed by Finger and Kreinin (1979).[1] The comparison of the values of the coefficient's values for 1988 and 1992 confirm some degree of structural 'rapprochement', as illustrated in Table 33. A third technique used to assess structural similarity is based on comparison of structure of trade with CMEA in 1988 and structure of trade with the EC in 1991-92. It can be assumed, that if export diversion does take place, the share in total exports to EC markets of those sectors which dominated the commodity structure of CMEA exports in the past, should subsequently increase. This would mean that the commodity structure of exports to the EC in 1992 would be more similar to the commodity structure of exports to CMEA in 1988 than was the commodity structure of exports to the EC in 1988. Hence, a correlation has been calculated between the corresponding vectors of sectoral shares of exports and imports to/from CMEA and EC for 1988 and 1992. The results, which are reported in Table 34, demonstrate again that the distance between product composition of Polish exports to CMEA in 1988 and Polish exports to the EC in 1992 has narrowed significantly.

Table 33

Finger-Kreinin coefficients of similarity between commodity composition of Polish exports in 1988, 1991 and 1992

Exports to	1988	1991	1992
CMEA and OECD	0,4504	0,4766	0,6299
CMEA and EC	0,4174	0,4550	0,5925
CMEA and ROW	*0,3838*	*0,4021*	*0,5003*

Source: Author's calculations.

Table 34

Correlation coefficients between the structure of Poland's trade with CMEA in 1988, and the structure of Poland's trade with the EC in 1988, 1991 and 1992

Trade flow	1988	1991	1992
		Exports to the EC	
Exports to CMEA in 1988	0,0414	0,0578	0,1881
		Imports from the EC	
Imports from CMEA in 1988	0,6719	0,6625	0,7322

[1] The coefficient is defined as follows:
$FK(i,j) = \sum_i [\min s(i,k), s(i,l)]$
where s(i,k) is the share of sector i in exports to market k. The value of the coefficient varies between zero for totally different trade structures, and one for identical trade structures.

Even though all three coefficients indicate substantial degree of structural convergence, the scope of the phenomenon is rather difficult to estimate.[2] A more precise picture of the possible reorientation can be obtained if structural changes are examined at the level of particular sectors. As can be seen from Table 35, which reproduces sectoral trade shares from Tables 4 and A.1, exports towards CMEA were dominated by engineering products: the combined share of NACE 31 through 37 was 71,1% in 1988. Other commodity groups of higher importance were NACE 25 (chemicals and petrochemicals) and 22 (metals), accounting for 10,0% and 5,1% of manufactured exports, respectively. By contrast, exports to the EC in 1988 was concentrated in NACE 22 and 41/42 (24,8% and 20,4%, respectively), while the share of engineering products (NACE 31-37) was only 16,3%.

In 1992, the situation was radically different on the side of exports towards ex-CMEA, but much less so on the side of exports to the EC. The combined share of NACE 31-37 in exports to CMEA dropped to 32,3%, while the share of NACE 25 and 22 increased to 13,9% and 14,9%, respectively. It should be remembered that these changes in product composition occurred under generally falling absolute levels of overall trade, by more than 50% over the four years period; hence, the collapse of engineering exports in absolute terms was in fact much deeper than suggested by the fall in relative shares. Changes in relative positions of other sectors have been less pronounced.

Sectoral shifts in exports to the EC were less pronounced. Nevertheless, the share of exports of NACE 31-37 in 1992 increased to 28,3% of total exports, while that of NACE 22 and NACE 41/42 declined to 16,6% and 10,3%, respectively. However, because the absolute level of exports to the EC more than doubled between 1988 and 1992, the increase in relative shares suggests in fact a rather substantial reorientation of sales of engineering products to the West.

It may be concluded that there is quite ample, though indirect, evidence of 'some' export diversion from CMEA towards the West. The shares of certain key commodity groups in exports to the EC and ex-CMEA became much less divergent (for example, the share of NACE 31-37 in exports to the EC was 28,3%, and in exports to ex-CMEA 32,3%). This result contradicts some earlier studies (for example, Rodrik, (1992)), but supports some others (for example, Ponte-Ferreira, (1993)). But the actual magnitude of trade diversion cannot be estimated without looking into the changes in domestic demand by sectors. Unfortunately, available data do not allow for such

[2] To assess the magnitude of trade diversion, the changes in coefficient values would have to be confronted with some 'standardized' distribution of values. Unfortunately, no such reference exists for the three coefficients applied.

Table 35

Reorientation of trade between CMEA and the EC: sectors with the highest shares in exports and imports, 1988 and 1991[1]

NACE 2	Sectors	Shares in trade, in % 1988 CMEA	1988 EC	1991 CMEA	1991 EC	1992 CMEA	1992 EC
Polish exports of							
32	Mechanical engineering	31,1	3,0	18,4	3,5	9,7	5,4
34	Electrical engineering	12,4	4,1	8,3	4,6	7,8	5,6
25	Chemicals, petrochemicals	10,0	10,0	20,9	9,4	13,9	9,7
36	Other transport means	8,6	1,9	10,2	3,7	3,9	3,8
33	Office machinery, data,	6,0	0,1	3,6	0,1	0,7	0,1
22	Metals	5,1	24,8	4,3	22,5	14,9	16,6
35	Motor vehicles	4,3	2,3	3,4	0,5	3,4	5,1
37	Instruments	4,1	0,5	1,7	1,5	3,6	0,8
31	Metal products	4,1	4,4	1,7	5,6	3,5	7,5
Polish imports of							
32	Mechanical engineering	29,0	21,4	16,6	16,0	5,4	19,2
35	Motor vehicles	8,5	2,1	13,0	7,7	7,2	5,5
22	Metals	8,4	10,9	3,4	3,2	5,7	3,5
25	Chemicals, petrochemicals	7,8	26,1	11,9	13,6	24,0	18,6
34	Electrical engineering	7,6	3,7	5,2	11,9	4,0	10,6
36	Other transport means	7,4	0,9	5,6	1,4	0,6	0,5
31	Metal products	6,0	2,7	5,0	4,0	4,6	5,2
43	Textiles	4,1	4,2	5,2	3,5	8,2	2,2

[1] Sectors are ranked according to their share in exports (imports) to (from) CMEA in 1988.
Source: Author's calculations.

analysis. On the other hand, the dynamic expansion of Polish exports to the EC in 1990-91 should only partly be attributed to the possible reorientation of trade; this expansion seems to have been primarily a result of emerging 'new' trade, as well as of redirection of sales which were previously marketed domestically.

6.3. The future sectoral composition of trade between Poland and the EC

It can be assumed that the future sectoral composition of trade between Poland and the EC will be chiefly determined by changes in structure of protection in access to EC markets, relative factor endowments, export expansion from sectors with large production capacities inherited from the CMEA period. Furthermore, it may be expected that future inflows of FDIs will concentrate in sectors with comparative advantage, such as natural-resource-based sectors, labour-intensive sectors, and, to some extent, selected branches of engineering. Finally, domestic trade and industrial policies will most probably tend to support sectors with large unused capacities, chiefly in engineering.

In order to identify sectors with large export potential to the EC, four main criteria can be used: the current protection level, labour intensity (with respect both to skilled and unskilled manpower), the share in CMEA exports prior to 1991, and the relationship between the trade coverage ratio and specialization index. The first criterion says that the abolition of trade barriers may be expected to result in high export increases in sectors with high trade coverage ratios. The second criterion says that, given the relative abundance of skilled and unskilled manpower, future export expansion will concentrate in labour-intensive sectors. The third criterion says that the largest unused capacities exist in sectors which dominated CMEA-oriented exports in the past and that these sectors will gradually reorient to Western markets, supported by various measures of industrial and trade policies. And the fourth criterion says that there is a potential for increasing export share on the EC market.

More specifically, the first criterion will draw on Table 23. Two categories of sectors are selected from the upper-right corner of the table: facing high trade barriers in 1991 and with the TC ratio exceeding 0,5, and facing medium barriers and with the TC ratio exceeding 1,5 — altogether 19 sectors. As to the

second criterion, 20 sectors with highest labour intensity and 20 sectors with the highest human capital intensity are selected. Next, from Table 34, 49 sectors with the highest export shares to CMEA are selected, i.e. all sectors belonging to NACE 22, 25, 31-36, 371-2, and 45. Finally, sectors with TC > 1 and SI < 1 are taken from Table 14 (upper left panel). Table 36 shows the list of sectors which meet at least two of the four criteria.

As can be seen in Table 36, the highest rates of growth of exports to the EC in the future can be expected in footwear and clothing, metal products, electrical engineering products, transport vehicles, precision instruments, leather, knitting, cork and straw products, pulp and paper, and certain instruments. It should be remembered that this forecast is based on a number of critical assumptions, especially concerning domestic industrial policy and investments.

7. A concluding remark

The current pattern of comparative advantage which emerges from the analysis cannot be regarded as best suiting Poland's needs, possibilities, and aspirations. Poland is considered as a country relatively abundant in skilled, relatively-inexpensive labour. This fact has not been clearly reflected in the emerging trade structure. In a dynamic perspective, the pattern of trade can and probably will evolve in favour of more labour-intensive goods, possibly restoring some of the export specializations from the past (machinery and equipment, precision instruments, miscellaneous manufactures). However, to allow this process to take place at a reasonable speed, more active macroeconomic and industrial policies would most probably be needed, aimed at encouraging exports from manufacturing industries, attracting foreign direct investments, and further eliminating remaining market imperfections.

Table 36

Sectors with highest potential for increase of exports to the EC

Rank	NACE 3	Sectors	Criteria 1	2	3	4
1	341	Wires and cables	+	+	+	–
2	342	Electrical machinery	+	+	+	–
3	451	Footwear	+	+	+	–
4	453	Clothing	+	+	+	–
5	455	Household textiles	+	+	+	–
6	442	Leather products	+	+	–	+
7	221	Iron & steel	+	–	+	–
8	313	Processing of metals	–	+	+	–
9	315	Boilers, containers	+	–	+	–
10	326	Transmission equipment	–	+	+	–
11	330	Office machinery & data process	–	+	+	–
12	343	Electrical apparatus, batteries	–	+	+	–
13	344	Telecommunications equipment	–	+	+	–
14	345	Radio & TV sets	–	+	+	–
15	346	Domestic electric appliances	–	+	+	–
16	347	Lamps & lighting equipment	–	+	+	–
17	361	Shipbuilding	–	+	+	–
18	362	Railway & tramway rolling-stock	–	+	+	–
19	363	Cycles, motor cycles, parts	–	–	+	+
20	365	Other transport equipment	–	+	+	–
21	371	Precision instruments	–	+	+	–
22	372	Medical instruments	–	+	+	–
23	436	Knitting	–	+	–	+
24	466	Cork & straw products	+	+	–	–
25	471	Pulp, paper, & board	–	+	–	+
26	492	Musical instruments	–	+	–	+

Note: For explanations, see text.
Source: Author's calculations.

Annex

I. Polish statistics: Data and classification problems and methodological remarks

Polish macroeconomic statistics, which for many years were based on the material product system, began to be changed into the system of national accounts (SNA) only several years ago. At present, both systems are used in statistical reporting, but the SNA dataseries are still incomplete and limited to the last few years. In particular, the last available input-output table (for 1989 data) was still prepared on the basis of the MPS classification.

Available industrial statistics are based (in most cases) on a 25-sector classification (see below), but in some cases (for example, on a more detailed trade structure) data are given for 'groups of branches' only (9 groups — see below). The input-output table consists of 38x38 sectors, but, again, it only covers 25 industrial sectors. This classification is not fully compatible with NACE or ISIC classifications, and while a correspondence between national classification and NACE can be established, some inconsistencies seem unavoidable. For the purpose of this study, the key has been established to translate the national classification into 2-digit NACE (shown below).

Polish trade statistics have traditionally been published for 'groups of branches' and, additionally, for selected products (which reflected the ex-CMEA standard commodity classification). Even though the territorial classification changed in 1991 (after the CMEA had been dismantled), extracting data for trade with the EC does not pose problems for 'groups of branches'. More detailed classification is not, however, readily available. Since 1985, the trade data have also been available in SITC classification (2-digit) but for total trade figures only.

II. Polish system of industrial classification

A. Sectorial classification of Polish industry, by 25 industrial branches

1. Coal mining
2. Fuel industry (without coal)
3. Electrical energy and heat
4. Iron and steel industry
5. Non-ferrous metallurgy
6. Metal-processing industries
7. Non-electrical machinery and equipment
8. Precision and scientific instruments
9. Transport equipment
10. Electrical and electronic machinery and equipment
11. Basic chemicals
12. Other chemicals
13. Building materials
14. Glass products
15. Ceramic products
16. Wood products
17. Paper products
18. Textiles
19. Clothes and wearing apparel
20. Leather and footwear
21. Processed meat products
22. Other processed food
23. Fodder industries
24. Printing
25. Other industries

B. Sectorial classification of Polish industry, by 9 'groups of branches'

1. Fuels and energy
2. Metallurgy
3. Electro-engineering
4. Chemical industries
5. Mineral industries
6. Wood and paper
7. Light industries
8. Food processing
9. Other industries

C. Correspondence between Polish national industrial classification (SWW) and the NACE classification (a)

Table A.1.

Correspondence between Polish national industrial classification (SWW) and the NACE classification[1]

NACE 2-digit	SWW
21	041, 051
22	042, 043, 044, 045, 046, 047, 048, 053, 054, 055, 056, 057
23	028, 121, 141
24	142, 143, 144, 145, 146, 147, 148, 151, 152, 153, 154, 161, 162, 163, 284
25	122, 123, 124, 125, 126, 128, 129, 131, 132, 133, 134, 135
26	127
31	061, 062, 063, 064, 065, 067
32	072, 073, 074, 075, 076, 077, 078, 079, 081, 082, 084, 085, 086, 087, 103
33	092, 093
34	071, 111, 112, 113, 115
35	102
36	101, 104, 105, 106, 107
37	091, 094, 095, 096, 097
41/42	231, 232, 233, 234, 235, 241, 242, 243, 244, 245, 246, 247, 248, 249, 251, 252, 253, 254, 255, 256, 261, 262
43	191, 192, 193, 194, 195, 196, 201, 202, 203, 206, 207
44	221, 223, 227
45	211, 218, 222
46	171, 172, 173, 174, 175, 176, 177
47	181, 182, 271
48	136, 137
49	281, 282, 288

1 Production 'S' has been allocated in the following way: 74,4% to NACE 32, 5,6% to NACE 33, 6,0% to NACE 34 and 14,0% to NACE 36

III. Polish foreign trade by NACE 2 classification

Table A.2.

Polish foreign trade by NACE 2 classification

NACE 2	CMEA	USSR	OECD	EC	ROW	Total
	Poland exports, NACE 2 classifications, 1988 (in ZL billion)					
Total	2 111,1	1 376	2 370,7	1 571,4	819,3	5 301,1
21	2,1	0,0	36,7	24,4	4,9	43,8
22	92,5	53,6	376,1	307,4	75,4	544,0
23	37,7	15,4	49,3	40,5	54,0	141,0
24	10,4	1,9	48,4	29,6	12,0	70,8
25	181,1	139,9	198,6	123,4	80,9	460,6
26	2,4	0,3	4,7	2,2	3,4	10,5
31	73,6	41,5	82,5	54,5	27,3	183,4
32	565,8	340,3	64,0	36,7	164,1	793,9
33	109,6	83,3	1,9	1,0	7,1	118,6
34	233,7	137,6	78,5	50,8	80,5	392,8
35	78,0	44,9	68,6	28,3	45,4	192,0
36	156,4	127,2	60,8	23,8	44,1	261,2
37	73,7	43,1	10,0	6,6	9,3	93,0
41	47,8	29,0	407,5	253,3	49,7	505,1
43	41,6	23,8	116,0	64,8	39,0	196,6
44	6,5	4,6	16,3	11,2	0,6	23,3
45	62,0	57,9	66,9	42,7	2,5	131,4
46	19,1	15,8	135,5	101,8	8,2	162,8
47	5,1	3,1	23,7	17,3	10,0	38,8
48	12,5	7,1	20,5	15,2	6,5	39,5
49	4,8	1,1	5,9	3,4	0,5	11,43
Total 21	1 816,5	1 171,4	1 872,5	1 239,1	725,5	4 414,5
Other exports	294,7	204,9	498,2	332,3	94,0	886,8

Table A.2.

Polish foreign trade by NACE 2 classification (continued)

NACE 2	CMEA	USSR	OECD	EC	ROW	Total
	Poland exports, NACE 2 classifications, 1990 (in ZL billion)					
Total	26 833	18 580	71 846	49 494	14 896	113 574
21	61	0	705	566	13	780
22	1 565	770	14 421	10 656	1 625	17 611
23	493	178	792	624	1 442	2 727
24	122	23	1 581	1 023	354	2 057
25	2 368	1 622	7 487	5 302	1 834	11 689
26	60	2	272	182	80	412
31	689	406	2 997	2 106	590	4 276
32	5 986	3 984	2 197	1 412	1 724	9 907
33	1 715	1 529	105	19	46	1 867
34	2 299	1 435	3 067	2 160	1 383	6 748
35	1 714	1 396	942	215	431	3 088
36	3 039	2 853	1 586	1 086	614	5 238
37	1 183	728	324	205	90	1 597
41	689	329	10 636	7 327	1 042	12 367
43	557	294	2 314	1 415	515	3 385
44	62	28	356	241	18	435
45	1 166	1 141	1 522	1 000	24	2 712
46	118	89	3 436	2 591	189	3 743
47	82	29	742	529	262	1 086
48	196	134	589	443	97	883
49	48	19	126	87	7	180
Total 21	24 210	16 987	56 196	39 181	12 381	92 778
Other export	2 623	1 594	56 196	10 305	2 514	20 787

Table A.2.

Polish foreign trade by NACE 2 classification (continued)

Poland exports, NACE 2 classifications, 1991 (in ZL billion)

NACE 2	CMEA	USSR	OECD	EC	ROW	Total
Total	23 221	16 329	104 504	77 455	13 318	141 042
21	548	0	905	775	44	1 497
22	782	172	18 442	13 674	1 758	20 983
23	756	400	1 255	866	1 214	3 225
24	558	410	4 037	3 411	168	4 763
25	3 837	3 254	8 629	5 704	1 340	13 806
26	35	2	295	223	72	402
31	304	160	4 337	3 424	449	5 090
32	3 365	2 471	3 045	2 105	847	7 257
33	658	628	75	46	43	776
34	1 524	1 158	3 716	2 812	1 077	6 317
35	626	546	792	298	172	1 590
36	1 867	1 785	2 821	2 267	1 564	6 252
37	302	209	1 105	933	87	1 495
41	1 577	1 362	13 786	10 496	932	16 295
43	508	454	3 575	2 273	254	4 337
44	85	83	693	519	2	780
45	518	454	2 106	1 661	30	2 655
46	77	31	9 321	7 559	67	9 466
47	78	21	1 161	767	211	1 450
48	194	104	870	693	63	1 127
49	114	90	232	154	6	352
Total 21	18 314	13 793	81 199	60 659	10 403	109 915
Other exports	4 907	2 536	23 304	16 796	2 915	31 127

Table A.2.

Polish foreign trade by NACE 2 classification (continued)

Poland exports, NACE 2 classifications, 1992 (in ZL billion)

NACE 2	CMEA	USSR	OECD	EC	ROW	Total
Total	27 221	17 066	129 754	104 198	32 198	179 687
21	616	279	1 380	1 086	217	2 166
22	1 843	237	17 629	14 695	6 733	26 070
23	705	305	1 197	1 126	1 686	3 312
24	390	216	4 277	3 506	393	4 902
25	2 750	1 663	11 712	8 574	3 730	17 041
26	44	3	523	383	133	699
31	522	231	7 807	6 691	698	8 911
32	1 738	1 101	5 991	4 785	1 661	8 752
33	153	121	158	112	87	330
34	1 699	1 045	6 398	4 984	2 496	9 794
35	687	457	4 739	4 570	439	5 566
36	1 173	956	4 739	3 404	3 158	8 347
37	662	343	960	699	407	1 786
41	2 674	2 445	13 509	10 859	2 828	17 692
43	902	762	418	3 246	713	5 440
44	104	83	1 099	987	57	1 213
45	810	751	7 610	6 385	517	8 538
46	222	130	11 047	9 243	186	11 389
47	354	103	1 464	1 290	614	2 404
48	370	253	1 833	1 552	191	2 256
49	85	53	710	562	58	826
Total 21	18 503	11 537	105 200	88 739	27 002	147 434
Other exports	9 208	5 522	21 314	15 851	2 429	32 950

Table A.2.

Polish foreign trade by NACE 2 classification (continued)

Poland imports, NACE 2 classifications, 1988 (in ZL billion)

NACE 2	CMEA	USSR	OECD	EC	ROW	Total
Total	45,9	42,8	26,4	20,5	32,3	104,5
21	123,6	69,4	181,2	146,6	20,0	324,7
22	13,3	8,7	18,2	13,9	41,1	72,7
23	15,4	1,3	15,2	10,9	4,9	35,4
24	114,8	44,7	470,6	351,3	55,7	641,0
25	9,5	3,1	29,7	21,3	1,4	40,6
26	87,2	27,9	51,6	35,8	23,6	162,3
31	424,3	162,6	402,3	287,5	35,4	861,9
32	39,5	10,9	27,8	14,7	8,9	76,2
33	111,3	42,5	127,0	50,0	19,5	257,8
34	124,8	38,5	54,9	28,3	22,5	202,2
35	108,4	49,1	31,4	12,1	3,3	143,1
36	53,5	16,0	68,0	40,4	7,9	129,3
37	49,6	18,0	288,9	165,0	146,6	485,0
41	59,9	34,8	108,3	55,9	98,0	266,2
43	2,7	0,0	0,6	0,5	11,9	15,2
44	4,7	0,0	27,7	15,9	12,6	45,0
45	19,6	10,7	1,0	0,4	3,7	24,2
46	23,6	16,4	64,1	20,5	4,1	91,8
47	26,7	3,4	66,2	48,8	17,4	110,3
48	5,2	1,2	12,1	4,8	0,9	18,3
49	1 463,2	602,1	2 073,0	1 345,2	571,6	4 107,7
Total 21	0,0	0,0	0,0	0,0	0,0	0,0
Other exports	665,4	617,3	320,6	126,0	112,7	1 098,7

Table A.2.

Polish foreign trade by NACE 2 classification (continued)

Poland imports, NACE 2 classifications, 1990 (in ZL billion)

NACE 2	CMEA	USSR	OECD	EC	ROW	Total
Total	21 967	15 327	46 052	29 413	8 299	76 318
21	547	429	913	630	193	1 652
22	1 351	1 191	2 703	2 034	209	4 263
23	126	84	298	223	460	884
24	141	12	321	197	42	504
25	761	272	5 838	4 280	360	6 959
26	71	3	303	164	58	431
31	668	235	1 148	857	198	2 014
32	2 874	930	12 837	9 447	287	15 997
33	210	52	880	413	114	1 205
34	943	227	4 376	1 954	361	5 681
35	816	134	1 444	697	246	2 506
36	678	402	602	323	94	1 374
37	375	76	1 624	901	88	2 087
41	315	72	4 061	2 594	716	5 091
43	348	175	1 356	721	1 207	2 910
44	14	0	46	37	153	214
45	47	2	540	370	279	866
46	58	37	43	26	9	109
47	128	52	960	360	43	1 130
48	125	22	1 077	731	179	1 381
49	55	9	511	334	22	588
Total 21	10 650	4 415	41 881	27 294	5 316	57 847
Other exports	11 318	10 912	4 171	2 119	2 983	18 471

Table A.2.

Polish foreign trade by NACE 2 classification (continued)

Poland imports, NACE 2 classifications, 1991 (in ZL billion)

NACE 2	CMEA	USSR	OECD	EC	ROW	Total
Total	31 080	23 147	112 276			
21	1 294	1 244	1 230	81 297	19 612	162 968
22	459	227	3 058	812	385	2 908
23	153	99	328	2 327	93	3 610
24	259	25	2 033	225	247	728
25	*1 616*	*607*	*12 984*	*1 684*	52	2 343
26	143	21	742	9 902	677	15 277
31	681	391	3 960	419	238	1 123
32	2 246	1 020	16 100	2 924	290	4 931
33	125	58	4 186	11 656	778	19 125
34	711	308	12 388	2 928	1 232	5 544
35	1 761	358	7 139	8 689	2 358	15 457
36	764	564	1 319	5 589	875	9 774
37	163	42	3 602	1 018	78	2 161
41	1 610	275	14 622	2 432	154	3 919
43	701	530	3 765	11 471	1 327	17 559
44	14	4	241	2 537	1 864	6 330
45	139	13	1 764	186	288	543
46	88	40	925	1 321	1 137	3 040
47	264	76	3 792	606	84	1 097
48	322	20	3 319	2 277	187	4 243
49	44	17	1 747	2 381	183	3 824
Total 21	13 559	5 938	99 243	1 407	422	2 212
Other exports	17 521	17 209	13 033	72 792	12 947	125 750

Table A.2.

Polish foreign trade by NACE 2 classification (continued)

Poland imports, NACE 2 classifications, 1992 (in ZL billion)

NACE 2	CMEA	USSR	OECD	EC	ROW	Total
Total	35 865	26 163	159 488	117 023	43 328	219 950
21	2 273	2 249	578	165	1 690	3 389
22	1 321	730	5 009	3 645	632	6 526
23	526	436	847	685	954	2 142
24	504	85	3 126	2 528	66	3 676
25	*3 988*	*1 921*	*24 659*	*19 444*	*2 040*	30 395
26	466	213	949	716	106	1 477
31	896	486	7 282	5 462	611	8 590
32	982	390	24 891	20 022	558	26 288
33	33	5	5 644	3 497	1 512	7 185
34	759	254	15 213	11 038	2 300	18 121
35	1 486	474	7 313	5 775	694	9 119
36	297	230	867	484	299	1 254
37	243	117	7 059	4 419	415	7 624
41	2 570	921	14 145	10 787	3 203	19 609
43	1 438	1 172	3 069	2 335	1 627	5 955
44	8	5	215	150	130	352
45	128	69	1 732	1 195	1 590	3 438
46	166	101	1 978	1 415	165	2 267
47	648	210	7 507	4 397	601	8 635
48	569	55	6 622	5 092	356	7 518
49	84	14	1 659	1 279	744	2 392
Total 21	19 385	10 137	140 274	104 530	20 293	175 952
Other exports	16 480	16 025	15 577	9 714	20 208	37 133

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Part C

EU sensitivity

Chapter 1

Italy's manufacturing trade with Eastern Europe — Specialization patterns and possible impact of liberalization on Italian industry

Italy's manufacturing trade with Eastern Europe — Specialization patterns and possible impact of liberalization on Italian industry[1]

Giovanni Graziani[1]

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Introduction

Trade liberalization and the recent Association Agreements between the EU and the CEECs (Poland, the Czech Republic, Slovakia, Hungary, Romania and Bulgaria) are viewed with mixed feelings by Italian firms. Some of them perceive the threat of enhanced competition both in the domestic and the EU market, others see in the new opening an opportunity to expand their exports and foreign investment. Like all trade liberalizations, the association of Eastern Europe is not going to have a uniform effect on all sectors: some industries are likely to be hurt, some may receive some benefits, others may obtain contrasting results. A precise quantitative appraisal of the impact of trade opening on the individual sectors of Italian industry is an almost impossible task, due to the very uncertainty of the transition period for the CEECs coupled with the already doubtful forecasts for future EU economic growth. What is presented here are reasonable expectations about potential winners and losers in the Italian industrial sectors. Although it takes account of trends since 1985, the study concentrates on the last four years, when the first signs of liberalization started to be felt. The analysis is conducted for industrial sectors at the NACE 3-digit level for trade and the NACE 4-digit level for production groups. Two interviews with Italian firms appear in the annex.

1. The asymmetrical importance of Italy and Eastern Europe in their reciprocal trade

Italy ranks rather high among EU members in Eastern Europe's trade orientation. Roughly one fifth of Romanian trade with the EU, 17% of Bulgarian and Hungarian trade and more than 10% of Czechoslovakia's and Poland's commercial flows with the EU are destined for Italy. In most cases, too, these shares have recently been growing. Exceptions are Czechoslovakia's exports and imports and Bulgarian imports (Table 1). Within the EU, Italy comes second after Germany both as a supplier and as an outlet, except for Bulgarian imports and Polish exports, where she comes third after Greece and the Netherlands, respectively.

As for total trade, Italy's share in total Bulgarian trade is roughly 8% followed by Hungary, Romania, Poland and Czechoslovakia, where its share is just over 5% (Table 2). Particularly important are Italy's shares in Bulgarian exports (8,6%) and imports (8,0%), Hungarian exports (8,2%), and Romanian imports (7,4%). In none of the bilateral flows does Italy account for less than 5% (imports from Czechoslovakia).

The reverse however is not true. One will note here a structural asymmetry in reciprocal importance, which is also a basic feature of EU trade with Eastern Europe (Graziani 1993). None of the five CEECs figure among the top 20 Italian trade partners. The most importance is reached by Poland in Italian exports (0,6), while all the other countries obtain a lesser share both in Italian imports and exports (Table 3). Altogether, Eastern Europe accounts for 1,96% and 1,72% of Italian world exports and imports, respectively.

Reciprocal trade flows were rather modest until 1988. From 1989, trade liberalization led to a substantial growth rate in

Table 1

Italy's share in Eastern Europe's trade with the EC

(%)

	1985	1986	1987	1988	1989	1990	1991	1992
				Italy's share in exports to EC				
Bulgaria	17,5	17,5	16,3	19,4	20,1	18,5	17,9	18,3
Czechoslovakia	6,8	7,1	6,9	7,4	8,5	9,9	13,4	10,2
Hungary	18,3	18,6	18,2	18,7	18,8	17,5	17,6	16,9
Poland	10,1	10,5	11,2	8,0	8,0	8,6	7,9	9,2
Romania	31,0	29,9	32,1	31,0	37,7	28,1	16,1	18,1
				Italy's share in imports from EC				
Bulgaria	13,3	13,4	12,5	12,3	16,6	17,4	20,3	16,7
Czechoslovakia	6,8	7,3	7,7	6,9	6,7	7,1	13,3	11,2
Hungary	13,0	12,0	11,0	12,6	11,7	13,1	14,1	17,0
Poland	10,4	9,5	11,2	11,6	11,0	11,0	8,5	10,8
Romania	16,5	15,0	7,8	10,8	11,0	6,1	17,0	20,8

Sources: Own calculations from IMF, DOTS, The year 1992 was calculated from OECD.

Table 2

Italy's and the EC's share in Eastern Europe's world trade

(%)

		1985	1986	1987	1988	1989	1990	1991	1992
From	To				Exports				
Bulgaria	Italy	3,0	3,6	3,5	3,5	3,9	5,5	7,0	8,6
	EC	17,1	20,6	21,2	18,1	19,2	29,7	39,3	47,1
Czechoslovakia	Italy	1,5	1,7	1,7	1,8	2,2	3,2	5,4	5,2
	EC	22,8	23,4	24,4	24,2	25,7	32,0	40,6	50,6
Hungary	Italy	2,9	3,2	3,6	4,2	4,7	5,9	7,0	8,2
	EC	16,0	17,3	19,8	22,5	24,7	33,5	39,6	48,7
Poland	Italy	2,3	2,2	2,9	2,3	2,4	3,3	3,7	5,3
	EC	22,6	21,3	25,8	29,4	30,1	38,1	47,3	58,2
Romania	Italy	7,5	6,8	8,3	7,4	9,5	8,8	5,5	6,8
	EC	24,1	22,6	25,9	24,0	25,2	31,4	34,2	37,8
To	From				Imports				
Bulgaria	Italy	4,4	4,8	4,6	4,1	6,0	7,4	9,1	8,0
	EC	33,5	36,1	36,7	33,8	36,0	42,8	45,0	47,7
Czechoslovakia	Italy	1,5	1,8	2,0	1,8	1,7	2,2	4,3	5,0
	EC	22,6	24,1	26,1	26,5	26,0	31,1	32,1	44,5
Hungary	Italy	2,8	2,7	2,7	3,2	3,3	4,0	5,9	6,9
	EC	21,6	22,5	24,3	25,2	28,5	30,9	41,9	40,7
Poland	Italy	2,0	1,8	2,5	3,2	3,0	6,6	5,4	6,0
	EC	19,5	19,3	22,6	27,9	27,2	59,9	62,8	56,0
Romania	Italy	1,7	1,5	0,5	0,7	0,6	1,2	4,6	7,4
	EC	10,2	9,8	6,2	6,2	5,6	19,6	26,7	35,5

Sources: See Table 1.

Table 3

Eastern Europe's share in Italian world trade

(%)

	1985	1986	1987	1988	1989	1990	1991	1992
				Share in Italian world exports				
Poland	0,31	0,25	0,27	0,29	0,32	0,49	0,49	0,64
Czechoslovakia	0,22	0,20	0,21	0,22	0,19	0,21	0,26	0,46
Hungary	0,30	0,28	0,26	0,25	0,27	0,31	0,36	0,46
Romania	0,20	0,16	0,07	0,06	0,06	0,11	0,15	0,28
Bulgaria	0,21	0,20	0,18	0,16	0,19	0,15	0,14	0,12
Total	1,25	1,09	0,99	0,97	1,03	1,27	1,40	1,96
				Share in Italian world imports				
Poland	0,34	0,32	0,31	0,32	0,33	0,37	0,33	0,47
Czechoslovakia	0,24	0,26	0,23	0,24	0,25	0,25	0,33	0,43
Hungary	0,34	0,32	0,32	0,35	0,35	0,38	0,44	0,51
Romania	1,00	0,63	0,70	0,60	0,59	0,27	0,19	0,19
Bulgaria	0,09	0,10	0,08	0,08	0,08	0,08	0,09	0,12
Total	2,01	1,64	1,65	1,59	1,59	1,35	1,38	1,72

Source: Own calculations from EC trade files.

Italian imports between 1989 and 1992 from four CEECs (Tables 4 and 5), the exception being Romania from where imports fell. Particularly impressive in 1992 were the growth rates from Poland (40%), Czechoslovakia (29%) and Bulgaria (33%), although these all started from a very low level. Italian exports grew constantly during this same period, with the exception of those to Bulgaria, which have shrunk constantly since 1990. In 1992, export growth rates were especially high to Romania (82%), Czechoslovakia (80%), Poland (31%) and Hungary (28%).

If, compared to the EU average, Italian imports from the CEECs grew more rapidly in 1992 (except from Czechoslovakia), and 1989 (except from Hungary), in 1990-91 they increased by less than the EU average. On the export side, Italian products also fared better than the EU average in 1992, if one excludes Bulgaria, and 1990. Conversely, 1991 was a worse year compared to the EU average with all the CEECs, as was 1989 with Poland and Czechoslovakia. One should however recall that EU imports in 1991 were artificially inflated *vis-à-vis* 1990 by the inclusion of the former GDR in German statistics.

Another striking feature of the last four years is that in the majority of cases Italian exports to the CEECs grew more than the corresponding imports. Italian exports fared worse than imports only with Bulgaria, except for 1989, Poland in 1992, Czechoslovakia in 1989 and 1991, and Hungary in 1991. The result was a growing surplus with Poland and a lesser deficit with Hungary in 1992. Also in 1992, structural deficits with Czechoslovakia and Romania turned into surpluses. Trade with Bulgaria saw the only contrary trend, with a structural surplus turning into a deficit in 1992 (Table 6).

Table 4

Values of Italian imports and exports from/to Eastern Europe

(1 000 ECU)

	1985	1986	1987	1988	1989	1990	1991	1992
					Italian imports			
Poland	401 749	329 777	339 065	375 884	455 406	533 129	490 931	686 774
Czechoslovakia	285 953	262 995	247 736	283 652	347 000	353 676	479 966	620 358
Hungary	403 518	330 645	350 990	407 394	479 899	538 155	651 204	744 236
Romania	1 193 921	647 117	755 595	697 667	820 922	392 030	274 905	280 193
Bulgaria	110 283	98 458	89 759	94 025	108 572	114 952	135 669	180 440
					Italian exports			
Poland	324 317	252 578	269 452	316 889	405 676	650 042	671 387	880 705
Czechoslovakia	231 903	199 061	213 702	236 948	245 190	287 558	353 015	636 471
Hungary	310 574	273 711	264 498	268 818	342 216	409 196	490 846	627 686
Romania	210 630	159 478	67 660	60 974	82 038	148 578	211 270	385 422
Bulgaria	219 572	198 268	182 823	172 342	245 253	198 054	193 190	169 258

Source: EC trade files.

Table 5

Growth rates of Italian trade with Eastern Europe

(%)

	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92
				Italian imports			
Poland	- 17,91	2,82	10,86	21,16	17,07	- 7,92	39,89
Czechoslovakia	- 8,03	- 5,80	14,50	22,33	1,92	35,71	29,25
Hungary	- 18,06	6,15	16,07	17,80	12,14	21,01	14,29
Romania	- 45,80	16,76	- 7,67	17,67	- 52,25	- 29,88	1,92
Bulgaria	- 10,72	- 8,84	4,75	15,47	5,88	18,02	33,00
				Italian exports			
	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92
Poland	- 22,12	6,68	17,60	28,02	60,24	3,28	31,18
Czechoslovakia	- 14,16	7,36	10,88	3,48	17,28	22,76	80,30
Hungary	- 11,87	- 3,37	1,63	27,30	19,57	19,95	27,88
Romania	- 24,29	- 57,57	- 9,88	34,55	81,11	42,19	82,43
Bulgaria	- 9,70	- 7,79	- 5,73	42,31	- 19,25	- 2,46	- 12,39

Source: Calculated from Table 4.

Table 6

Italian trade balances with Eastern Europe

(1 000 ECU)

	1985	1986	1987	1988	1989	1990	1991	1992
Poland	– 77 432	– 77 199	– 69 613	– 58 995	– 49 730	116 913	180 456	193 931
Czechoslovakia	– 54 050	– 63 934	– 34 034	– 46 704	– 101 810	– 66 118	– 126 951	16 113
Hungary	– 92 944	– 56 934	– 86 492	– 138 576	– 137 683	– 128 959	– 160 358	– 116 550
Romania	– 983 291	– 487 639	– 687 935	– 636 693	– 738 884	– 243 452	– 63 635	105 229
Bulgaria	109 289	99 810	93 064	78 317	136 681	83 102	57 521	– 11 182

Source: See Table 4.

2. The importance of manufactures in Italian trade with Eastern Europe

As in most industrialized countries, manufactures constitute the largest share of Italian trade. They account for 94% of its total exports to the world and 84% of its imports. The same holds true in its trade with the CEECs. Manufactures represent 94% of its exports and 80% of its imports from Eastern Europe. The latter share has undergone a continuous and rapid increase since 1985, when it represented just over one half that value (42%). By comparison, manufactures still only constitute 45% of Italian imports from developing countries (Table 7).

Wide differences exist among individual CEECs. As a share of Italian exports, manufactures go from a high of 97% in the case of Poland to a low of 87% for Romania. The picture appears reversed on the import side: 95% from Romania down to 71% from Poland, the other three CEECs ranging in between.

Given such quantitative importance, any policy affecting manufacturing trade should in principle have an impact on the partners involved. However, if we consider Italy's manufacturing trade, none of the individual CEECs represent even 1% of Italian manufacturing exports (Table 8). Poland (0,66%) is the leader, followed by Hungary (0,46%), Czechoslovakia (0,45%), Romania (0,26%) and Bulgaria (0,12%). Altogether, Italian exports to Eastern Europe represent a mere 1,94% of its exports to the world. This share has risen continuously since 1989, especially in 1992, and compares with 1985 when it was 1,21%. Meanwhile, EFTA's share is 8,04%, and has been losing ground in recent years, whilst the developing countries' share is 15,65%, a share which has gone up since 1990.

Table 7

Manufacturing as a share of total Italian trade

(%)

Partner	1985	1986	1987	1988	1989	1990	1991	1992
				Exports				
Poland	95,01	95,09	95,21	95,53	96,19	95,37	94,58	97,44
Czechoslovakia	85,82	89,78	91,80	93,90	91,91	91,83	87,09	91,94
Hungary	88,11	92,39	94,71	95,95	96,20	95,20	94,25	95,04
Romania	87,02	87,09	96,47	93,02	98,16	90,76	85,77	86,78
Bulgaria	86,71	92,79	92,12	96,31	97,33	96,39	93,31	92,52
5 CEEC	89,01	91,83	93,87	95,25	95,73	94,44	92,02	93,75
World	92,00	94,20	94,65	95,24	95,10	94,78	94,55	94,79
Intra-EC	90,45	92,73	93,51	94,78	94,33	93,62	93,94	94,16
Extra-EC	91,68	93,43	94,11	94,75	94,42	94,08	93,73	93,89
EFTA	90,40	92,41	92,85	93,61	93,41	92,43	92,23	92,37
Other industries	92,55	94,77	94,67	95,24	95,28	95,42	95,27	94,24
LDCs	91,11	91,79	93,47	94,34	93,47	93,27	93,35	94,20
				Imports				
Partner	1985	1986	1987	1988	1989	1990	1991	1992
Poland	40,96	45,06	49,54	56,28	47,97	52,40	57,02	70,67
Czechoslovakia	82,68	88,30	91,31	88,85	85,84	86,42	83,17	83,86
Hungary	65,36	69,30	67,32	68,67	70,57	72,60	73,65	78,07
Romania	22,01	39,47	29,51	37,08	33,13	43,73	61,39	95,50
Bulgaria	65,87	69,55	71,72	73,82	73,49	80,58	83,96	89,44
5 CEEC	41,75	55,95	51,47	57,65	54,56	64,17	70,91	80,24
World	64,61	77,61	79,37	82,81	82,02	82,03	82,76	84,42
Intra-EC	84,62	87,09	88,38	89,75	89,35	89,66	89,37	90,37
Extra-EC	46,49	58,04	61,74	67,60	67,03	65,91	67,05	69,72
EFTA	89,07	90,05	91,26	92,10	91,51	90,88	90,86	90,65
Other industries	76,44	81,04	83,11	83,20	84,23	85,21	86,23	87,46
LDCs	20,98	29,82	35,45	44,36	43,43	40,27	40,86	45,41

Source: Own calculations from EC trade files.

Table 8

Share of different countries and regions in Italian manufacturing trade with the world

(%)

Partner	1985	1986	1987	1988	1989	1990	1991	1992
				Exports				
Poland	0,32	0,26	0,27	0,29	0,32	0,49	0,49	0,66
Czechoslovakia	0,21	0,19	0,21	0,21	0,19	0,21	0,24	0,45
Hungary	0,29	0,27	0,26	0,25	0,27	0,31	0,36	0,46
Romania	0,19	0,15	0,07	0,05	0,07	0,11	0,14	0,26
Bulgaria	0,20	0,20	0,18	0,16	0,20	0,15	0,14	0,12
5 CEEC	1,21	1,06	0,98	0,97	1,04	1,26	1,37	1,94
World	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00
Intra-EC	45,24	52,62	55,29	56,78	55,91	57,52	58,59	57,32
Extra-EC	52,81	45,62	43,34	42,30	42,93	41,09	40,25	41,55
EFTA	8,84	9,23	9,71	9,49	9,22	9,06	8,53	8,04
Other industries	20,63	17,13	16,07	15,50	15,92	15,32	13,88	13,28
LDCs	18,82	15,07	13,34	13,28	13,62	13,05	14,16	15,65
				Imports				
Partner	1985	1986	1987	1988	1989	1990	1991	1992
Poland	0,21	0,19	0,20	0,22	0,19	0,24	0,23	0,39
Czechoslovakia	0,31	0,29	0,26	0,26	0,26	0,26	0,33	0,42
Hungary	0,34	0,29	0,28	0,29	0,30	0,33	0,39	0,47
Romania	0,34	0,32	0,26	0,27	0,24	0,15	0,14	0,22
Bulgaria	0,09	0,09	0,08	0,07	0,07	0,08	0,09	0,13
5 CEEC	1,30	1,18	1,07	1,11	1,06	1,06	1,18	1,64
World	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00
Intra-EC	58,82	62,17	62,95	62,32	61,79	62,78	62,33	62,93
Extra-EC	39,40	33,06	33,70	34,54	35,10	33,92	33,96	33,62
EFTA	10,70	10,02	10,75	10,15	9,90	10,05	9,57	9,47
Other industries	17,49	13,53	12,94	13,70	14,07	13,41	13,54	12,66
LDCs	8,46	6,80	7,43	7,73	8,00	7,58	7,43	7,57

Source: Own calculations from EC trade files.

Table 9

Growth rates of Italian manufacturing trade with Eastern Europe

(%)

Partner	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92
				Imports			
Poland	- 9,70	13,03	25,94	3,26	27,89	0,21	73,38
Czechoslovakia	- 1,77	- 2,59	11,42	18,19	2,61	30,61	30,32
Hungary	- 13,12	3,12	18,40	21,05	15,37	22,76	21,15
Romania	- 2,82	- 12,71	16,02	5,15	- 36,97	- 1,57	58,56
Bulgaria	- 5,74	- 5,99	7,82	14,95	16,10	22,96	41,69
				Exports			
Partner	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92
Poland	- 22,05	6,81	18,01	28,90	58,87	2,43	35,14
Czechoslovakia	- 10,20	9,77	13,41	1,29	17,18	16,43	90,33
Hungary	- 7,59	- 0,93	2,96	27,64	18,33	18,76	28,95
Romania	- 24,23	- 53,00	- 13,11	41,98	67,46	34,37	84,58
Bulgaria	- 3,37	- 8,45	- 1,45	43,81	- 20,03	- 5,57	- 13,12

Source: Calculated from EC trade files.

The growth rate of Italian manufacturing exports to all CEECs was higher than the EU average in 1990 and 1992, apart from exports to Bulgaria in the latter year. EU data show that the contrary was true in 1991, except in the case of Romania. However, 1991 data for the EU include for the first time export flows from the former GDR, which obviously inflate the EU total. Impressive growth rates were obtained in 1992 towards Czechoslovakia (90%), Romania (84%), Poland (35%) and Hungary (29%) (Table 9).

Is Italy relatively more export oriented towards Eastern Europe than the EU average? If we look at the indicators of Italian relative geographical specialization — calculated as the ratio between the shares of Italian export structure and the corresponding ones for the EU average — one can see that in 1992 Italian exports were slightly more oriented to the whole of the CEECs than the EU (Table 10). However this is the result of a marked underspecialization towards Czechoslovakia and a slight one towards Poland, more than compensated by considerable specialization towards the other three countries, particularly Romania.

If we look at the import side, here too we notice the slight, although growing, importance of Eastern Europe in Italian world manufacturing trade. Hungary takes the lead with 0,47%, followed by Czechoslovakia (0,42%), Poland (0,39%), Romania (0,22%) and Bulgaria (0,13%) (Table 8). All together 1,64% in 1992, as against 1,30% in 1985. By comparison, EFTA accounts for 9,47%, although it has lost ground since 1990, and the developing countries for 7,57%, up a little since 1991.

Table 10

Indicators of Italian geographical specialization in manufacturing trade relative to the EC average

					Exports			
Partner	1985	1986	1987	1988	1989	1990	1991	1992
Poland	1,01	0,87	0,99	0,98	0,93	1,29	0,75	0,98
Czechoslovakia	0,88	0,79	0,81	0,90	0,82	0,87	0,71	0,83
Hungary	0,93	0,87	0,91	0,97	0,96	1,15	1,16	1,27
Romania	1,45	1,29	0,87	0,81	0,98	1,02	1,31	1,71
Bulgaria	1,06	1,10	0,99	1,02	1,41	1,80	1,59	1,28
5 CEEC	1,02	0,93	0,92	0,96	0,98	1,17	0,91	1,07
Intra-EC	0,93	0,98	0,99	0,98	0,96	0,97	0,98	0,96
Extra-EC	1,11	1,08	1,08	1,07	1,11	1,09	1,08	1,10
EFTA	0,85	0,87	0,90	0,90	0,91	0,90	0,90	0,87
Other industries	1,18	1,17	1,15	1,16	1,22	1,22	1,19	1,17
LDCs	1,18	1,10	1,06	1,07	1,11	1,06	1,12	1,17
					Imports			
Partner	1985	1986	1987	1988	1989	1990	1991	1992
Poland	0,62	0,60	0,65	0,68	0,62	0,57	0,47	0,69
Czechoslovakia	1,02	1,02	1,01	1,06	1,07	1,04	0,91	0,86
Hungary	1,32	1,20	1,14	1,26	1,24	1,25	1,28	1,38
Romania	1,39	1,30	1,22	1,36	1,32	1,19	1,17	1,70
Bulgaria	1,63	1,54	1,47	1,63	1,61	1,71	1,59	1,79
5 CEEC	1,08	1,03	1,00	1,07	1,04	0,96	0,89	1,02
Intra-EC	1,03	1,01	1,01	1,03	1,01	1,01	1,01	1,01
Extra-EC	0,98	0,92	0,95	0,93	0,95	0,94	0,93	0,93
EFTA	1,00	0,99	1,06	1,05	1,04	1,06	1,05	1,05
Other industries	0,93	0,86	0,87	0,85	0,88	0,88	0,86	0,84
LDCs	1,03	0,90	0,93	0,90	0,93	0,91	0,88	0,90

Note: The indicators are calculated as the ratio between the shares of different countries in Italian trade and the corresponding shares in EC trade.
Source: Own calculations from EC trade files.

Growth rates of Italian manufacturing imports from all five CEECs have been particularly impressive, especially in 1992: 73% from Poland, 58% from Romania, 42% from Bulgaria, 30% from Czechoslovakia and 21% from Hungary (Table 9). These growth rates were higher than the EU average, except for flows from Czechoslovakia. As for manufacturing imports, Italy seems relatively less oriented than the EU average towards Poland and Czechoslovakia (whose indicators of relative geographical specialization are well under unity) and much more oriented to sourcing its imports from Bulgaria, Romania and Hungary.

If we compare import and export growth rates in Italian manufacturing trade with the CEECs, exports have generally risen faster than imports. The contrary was true only for Bulgaria and Poland in 1992, Czechoslovakia and Hungary in 1991.

Two broad considerations can be drawn from the preceding analysis. First, trade liberalization seems to have enhanced Italian trade with Eastern Europe more than the corresponding average EU trade. Second, Italy's exports have tended to grow faster than its imports. Considering only 1992, the first year which could show the initial impact of the association agreements with three of the CEECs, one notices that the Italian import growth rate was lower (although only slightly) than in 1991 both for Czechoslovakia and Hungary. A real jump occurred only in the case of Poland. On the export side, on the contrary, there was a steep increase for all of them. Italian recession has presumably reduced the beneficial effects of trade liberalization on its imports, while neither the transition economies' recessions, nor their apparently slower pace of import liberalization (as set out in the Association Agreements) seem to have restrained Italian export flows.

3. The commodity composition of Italian manufacturing imports from Eastern Europe

Italian manufacturing imports from Eastern Europe are rather concentrated and the concentration ratio tends to be more or less inversely correlated with the degree of industrialization of the different CEECs. The top 10 3-digit NACE industries account for 73% of total manufacturing imports from Romania, 72% from Poland, 67% from Bulgaria, 60% from Hungary and 56% from Czechoslovakia (Table 11).

Table 11

The top five 2-digit and top three 3-digit components of Italian manufacturing trade with Eastern Europe, 1992 (in % of total manufacturing)

Imports from									
Poland		Czechoslovakia		Hungary		Romania		Bulgaria	
2-digit NACE	%	2-digit NACE	%	2-digit NACE	%	2-digit NACE	%	2-digit NACE	%
Motor vehicles	38,1	Metals	20,8	Chemicals	23,6	Footwear & clothing	41,7	Footwear & clothing	34,1
Chemicals	9,3	Chemicals	15,0	Food & drinks	16,9	Metals	13,5	Metals	11,9
Food & drinks	9,3	Footwear & clothing	10,4	Footwear & clothing	15,7	Timber & furniture	8,5	Textiles	9,5
Footwear & clothing	6,9	Mechan, engineering	7,7	Metals	9,4	Chemicals	8,0	Mechanical engineering	8,3
Metals	6,5	Textiles	7,1	Timber & furniture	6,3	Electrical engineering	6,3	Food & drinks	7,9
Total	70,1	Total	61,0	Total	71,9	Total	78,0	Total	71,7
Memo item Top 10 3-digit items: 72,1		Memo item Top 10 3-digit items: 56,3		Memo item Top 10 3-digit items: 60,5		Memo item Top 10 3-digit items: 73,0		Memo item Top 10 3-digit items: 67,1	
of which:		of which:		of which:		of which:		of which:	
motor vehicles	36,5	iron & steel	12,9	petrochemicals	21,1	clothing	27,3	footwear	15,6
slaughtering	7,1	petrochemicals	10,9	slaughtering	13,0	footwear	13,0	clothing	12,4
other industrial chemicals	4,7	clothing	4,6	clothing	9,6	iron & steel	9,2	household textiles	5,9
Exports to									
Poland		Czechoslovakia		Hungary		Romania		Bulgaria	
2-digit NACE		2-digit NACE		2-digit NACE		2-digit NACE		2-digit NACE	
Mechanical engineering	26,0	Mechanical engineering	40,8	Mechanical engineering	17,7	Mechanical engineering	26,3	Mechanical engineering	24,4
Motor vehicles	17,3	Electrical engineering	9,2	Textiles	11,7	Textiles	16,7	Chemicals	14,4
Electrical engineering	9,2	Motor vehicles	6,7	Chemicals	9,9	Food & drinks	11,7	Footwear & clothing	12,7
Textiles	7,2	Textiles	6,0	Footwear & clothing	8,6	Footwear & clothing	10,5	Textiles	11,7
Chemicals	6,4	Chemicals	5,9	Electrical engineering	7,1	Electrical engineering	6,9	Motor vehicles	5,7
Total	66,1	Total	68,6	Total	55,0	Total	72,1	Total	68,9
Memo item Top 10 3-digit items: 52,7		Memo item Top 10 3-digit items: 56,3		Memo item Top 10 3-digit items: 49,1		Memo item Top 10 3-digit items: 59,6		Memo item Top 10 3-digit items: 57,1	
of which:		of which:		of which:		of which:		of which:	
machinery for food, chemical industries	9,3	other machinery	11,4	woven fabrics	7,4	woven fabrics	12,0	footwear	10,6
other machinery	9,3	machinery for food, chemical industries	9,1	other machinery	6,8	machinery for specific use	8,9	machinery for food, chemical industries	9,9
parts of motor vehicles	9,0	machinery for mines, steel industry	7,5	petrochemicals	5,4	machinery for food, chemical, industries	6,2	woven fabrics	6,6

Source: Own calculations from EC trade files.

There are two broad (NACE 2-digit) industrial sectors which occur among the top five export sectors for all the CEECs. The first is the footwear and clothing industry (mostly clothing, except for Bulgaria), in which Italy's deficit with the CEECs has been increasing. Also increasing has been the share of this sector in Italian industrial imports from each CEEC, especially Romania and Bulgaria (to 42% and 34% respectively in 1992) from where it is the leading industrial import as well as from Hungary, where it came third (16%). Clothing by itself ranks first among the 3-digit industrial imports from Romania (27%), second from Bulgaria (12%) behind footwear (16%), third from Hungary (10%) and Czechoslovakia (5%). As we shall see later, the practice of 'outward processing traffic' is one of the main reasons for this boom.

The other NACE 2-digit category always present among the top five industrial imports from all five CEECs is metals, in which Italy again runs a deficit. Its share, however, has been decreasing in all cases. Nonetheless, it still ranks first for Czechoslovakia (21%), mainly iron and steel (13%), second for Romania (13%) and Bulgaria (12%), but only fourth and fifth for Hungary and Poland, respectively.

Other industries losing ground are chemicals and food and drinks. Chemicals still come first for Hungary (24%), mainly represented by petrochemicals (21%), second for Czechoslovakia (15%), of which petrochemicals represent 11%, and for Poland (9%, of which 5% are petrochemicals). Food and drinks rank second for Hungary (17%, of which slaughtering and meat preparations represent 13%), and second for Poland (9%, mainly constituted by slaughtering - 7%) and fifth for Bulgaria (8%).

The list of industries losing ground, although relatively important only for some of the CEECs, is finally completed by timber and furniture for Hungary and Romania, mechanical engineering for Czechoslovakia and Bulgaria, and electrical engineering for Romania.

Growing sectors are, meanwhile, textiles from Czechoslovakia and Bulgaria, and motor vehicles from Poland, which represent 38% of total Italian manufacturing imports from that country (as explained later, enhanced local FIAT production seems to explain much of this).

All in all, the CEECs' manufacturing exports to Italy still seem to be based on excessively capital- and energy-intensive products, more so for Poland and Hungary than for the other three countries, where labour-intensive manufactures are more important. Skill intensive sectors are, on average, either marginal or else losing ground. As is generally true for their exports towards the EU (Graziani 1994), the upgrading of the CEECs' export structure with Italy seems to be rather slow.

4. Competition between Eastern Europe and Italy on the EU market for manufacturing products

Enhanced competition due to trade liberalization can take place both on foreign and domestic markets. As for the first, I consider here only the EU market, by far the most important for all the competitors under examination. Areas of specialization for each of the five CEECs in both markets will be identified by calculating indices of relative export specialization (or normalized relative export performance ratios) and weighted trade balances (or normalized net export indices, which imply a stronger focus on absolute rather than on relative advantage) at the SITC 3-digit level for 108 industries. Since our aim is to identify the potential threats to Italian industry, Eastern Europe's export performance indices have been calculated both for the EU market relative to Italian exports to the EU and for the Italian market relative to world exports to Italy. Indicators were calculated on the basis of the EU's and Italy's import data. Particular attention will be drawn to the period 1990 to 1992, when some of the effects of transition and trade liberalization started to be felt.

As already said, trade liberalization may provoke a certain trade diversion on the EU market, in this case a displacement of Italian exports to the EU by imports from the now preferred Eastern European sources. A possible insight into the likely threat to Italian industrial sectors is represented by the competitive pressure of Eastern European products on their Italian counterparts in the EU market. An indirect indicator of such a situation is given by the CEECs' export specialization indices for the EU market relative to Italian exports to the same market. The results appear in Table 12.

As expected, Czechoslovakia appears relatively more specialized than Italy in a much larger range of products than any of the other CEECs (52 out of 108 industries, of which 33 have increased their value between 1991 and 1992). The numbers for the other CEECs are the following: 39 for Hungary, 38 for Poland, 36 for Bulgaria and 26 for Romania.

Table 12

Relative export specialization indicators of Eastern Europe *vis-à-vis* Italy on the EC market

NACE code	Industry	Poland 1985	1986	1987	1988	1989	1990	1991	1992	Rank 1992	Rank 1989
242	Cement, lime and paper	79,51	100,81	88,11	253,96	231,51	249,45	406,42	464,23	1	1
461	Sawing and processing of wood	439,70	415,24	462,74	233,90	125,22	133,60	91,13	102,16	2	2
420	Sugar manufacturing and refining	31,42	162,53	13,69	7,39	13,79	89,27	61,45	35,43	3	5
415	Processing and preservation of fish	9,78	21,97	29,58	21,60	20,70	27,56	22,49	23,94	4	4
212	Extraction of non ferrous metals	213,43	29,71	68,18	109,64	7,29	25,72	32,20	23,03	5	10
464	Wooden containers	0,69	0,48	1,10	0,78	1,40	5,28	10,73	11,35	6	33
211	Extraction of iron ore	0,00	0,00	0,00	0,00	0,00	0,00	0,00	11,25	7	105
495	Miscellaneous manufacturing	6,50	6,77	6,27	9,06	5,83	3,25	8,56	10,14	8	12
224	Production of non ferrous metals	9,33	9,90	8,96	8,26	7,33	7,65	9,33	9,80	9	9
465	Other wood manufactures	1,35	2,23	2,31	1,74	2,64	6,44	7,77	7,96	10	22
463	Carpentry, joinery, parquet	0,51	0,85	1,36	1,48	1,93	2,77	5,69	7,63	11	29
253	Other industrial chemicals	15,22	13,78	11,03	8,09	7,86	9,22	9,61	6,69	12	7
231	Extraction of building materials	0,24	0,29	0,58	0,39	0,30	0,52	3,27	6,29	13	71
314	Structural metal products	1,52	2,90	2,45	3,25	3,76	3,32	3,84	5,30	14	16
462	Semi-finished wood products	4,00	4,86	5,73	4,94	4,62	5,19	5,20	4,74	15	14
361	Shipbuilding	18,45	4,18	5,86	16,96	3,56	1,80	2,69	4,60	16	17
233	Salt extraction	0,02	0,36	1,01	1,62	6,05	7,61	5,48	4,44	17	11
455	Household textiles	2,21	2,81	3,78	4,03	3,54	3,50	4,78	4,26	18	18
412	Slaughtering, preparation and preservation of meat	7,69	8,96	11,03	6,41	8,11	7,18	5,32	3,92	19	6
453	Ready-made clothing	1,94	2,35	2,66	2,83	2,86	2,88	3,48	3,70	20	21
456	Furs and fur goods	1,26	2,25	3,54	2,82	2,38	2,15	1,59	3,36	21	24
315	Boilermaking	0,81	1,40	1,26	0,96	1,21	1,71	2,88	3,14	22	41
414	Processing and preservation of fruit and vegetables	2,04	3,45	2,83	3,25	4,07	4,17	3,76	3,12	23	15
411	Vegetable and animal oils	5,84	3,87	2,95	5,63	3,09	4,04	3,20	2,41	24	19
466	Articles of cork, straw, plaiting	3,41	3,51	3,50	2,57	1,92	1,99	2,40	2,21	25	30
221	Iron and steel industry	1,87	2,04	1,76	1,98	2,34	2,35	2,00	2,21	26	25
239	Extraction of other minerals	2,76	1,37	0,75	0,76	1,31	1,95	2,34	1,98	27	37
312	Forging	5,57	6,41	5,55	1,59	2,30	2,35	2,22	1,90	28	26
311	Foundries	1,65	1,86	1,64	1,13	1,69	1,97	1,96	1,82	29	32
467	Wooden furniture	1,00	1,12	1,29	1,32	1,39	1,39	1,69	1,80	30	34
352	Bodies for motor vehicles	0,20	0,25	0,72	0,76	1,21	1,31	1,50	1,47	31	40
252	Petrochemicals	1,26	1,33	1,36	1,09	1,25	2,22	2,08	1,45	32	38
413	Dairy products	2,93	3,31	3,51	4,19	7,58	4,84	2,34	1,35	33	8
247	Glass and glassware	1,14	1,27	1,44	1,44	1,32	1,44	1,70	1,32	34	36
471	Pulp, paper and board	1,23	1,10	1,38	1,02	1,21	1,03	1,16	1,31	35	42
482	Retreading and repairing of rubber	0,12	0,31	0,75	2,09	2,91	2,18	1,46	1,25	36	20
341	Insulated wires and cables	0,57	0,99	1,90	3,33	4,79	6,32	1,82	1,08	37	13
243	Concrete	0,21	0,21	0,29	0,09	0,17	0,25	0,46	1,02	38	85

Note: The export specialization index on the EC market for each of the competing countries (Italy and the five CEECs) was calculated as the share of the product in EC total manufacturing imports from the country, normalized by the share of the same product in EC total manufacturing imports from the world, A value >1 indicates relative specialization, <1 a despecialization, Each index of the individual CEECs was then divided by the corresponding one pertaining to Italy, The table shows only the products in which the CEECs exhibit a ratio higher than 1 (meaning relative specialization *vis-à-vis* Italy).

Source: Calculated from EC trade files.

Table 12 *(continued)*

NACE code	Industry	Czechoslovakia 1985	1986	1987	1988	1989	1990	1991	1992	Rank 1992	Rank 1989
242	Cement, lime and paper	53,44	40,29	29,12	73,66	67,71	144,80	592,66	814,87	1	3
427	Brewing and malting	253,29	252,49	234,08	221,42	172,13	106,52	89,67	102,06	2	2
461	*Sawing and processing of wood*	709,74	662,15	734,17	354,58	217,68	249,54	98,97	71,31	3	1
420	Sugar manufacturing and refining	2,50	17,23	1,30	0,59	2,05	22,05	13,15	14,25	4	21
464	Wooden containers	0,04	0,08	0,13	0,67	0,19	0,86	5,39	11,95	5	84
495	Miscellaneous manufacturing	7,65	8,41	10,42	9,01	7,63	5,30	6,66	9,18	6	6
231	Extraction of building materials	12,87	11,37	11,76	10,27	10,06	10,04	8,93	9,02	7	5
463	Carpentry, joinery, parquet	0,89	1,17	1,53	0,90	0,81	1,23	3,93	8,67	8	41
455	Household textiles	5,84	6,56	7,22	7,73	7,14	6,61	6,22	6,20	9	7
314	Structural metal products	0,46	0,30	0,30	0,56	0,59	1,44	2,92	5,08	10	53
253	Other industrial chemicals	3,01	3,59	3,29	3,23	3,24	3,94	4,84	4,79	11	18
212	Extraction of non ferrous metals	29,72	16,06	19,14	13,03	20,44	11,01	15,23	4,41	12	4
221	Iron and steel industry	4,61	4,68	5,52	5,41	4,96	5,78	4,28	4,36	13	11
241	Clay products	0,06	0,07	0,06	0,11	0,08	0,21	1,78	4,30	14	95
465	Other wood manufactures	3,27	3,58	3,40	3,26	3,32	4,34	4,69	4,19	15	16
492	Musical instruments	4,49	5,69	6,18	5,75	6,26	7,19	5,63	4,09	16	8
456	Furs and fur goods	3,15	4,29	4,81	3,80	4,02	2,17	2,42	3,62	17	13
422	Animal and poultry food	0,63	0,74	0,54	0,67	1,12	1,00	2,90	3,34	18	32
247	Glass and glassware	5,11	5,18	5,25	5,20	5,08	5,07	4,13	3,29	19	10
471	Pulp, paper and board	4,65	5,02	4,68	4,79	4,80	4,39	3,02	3,10	20	12
411	Vegetable and animal oils	0,12	0,01	0,00	0,46	0,57	0,39	1,69	2,89	21	55
243	Concrete	1,55	1,79	1,67	1,56	1,35	1,79	1,90	2,88	22	29
341	Insulated wires and cables	0,36	0,41	0,72	0,88	0,51	0,71	1,39	2,82	23	61
462	Semi-finished wood products	5,59	5,03	4,91	4,16	3,95	3,31	3,25	2,80	24	14
224	Production of non ferrous metals	0,59	0,67	0,72	0,71	0,73	0,70	2,31	2,77	25	45
232	Mining of potassium	0,00	0,00	0,00	0,00	0,00	0,00	0,00	2,54	26	103
223	Cold rolling of steel	1,77	1,39	1,46	1,87	2,29	2,18	2,13	2,45	27	20
239	Extraction of other minerals	1,01	1,05	0,90	1,71	2,56	2,39	2,85	2,30	28	19
252	Petrochemicals	3,61	3,35	3,24	3,28	3,26	3,62	3,43	2,26	29	17
315	Boilermaking	0,48	0,63	0,47	0,75	0,68	1,37	2,22	2,23	30	48
482	Retreading and repairing of rubber	0,07	0,09	0,16	0,29	0,35	0,57	1,19	2,20	31	71
244	Asbestos products	0,64	0,99	0,98	0,40	0,54	1,80	1,09	2,01	32	57
362	Railway rolling-stock	0,61	2,44	9,87	2,12	1,83	1,86	22,89	1,92	33	22
222	Steel tubes	0,88	0,94	0,97	0,83	1,05	0,99	1,38	1,76	34	35
352	*Bodies for motor vehicles*	0,10	0,09	0,03	0,13	0,40	0,49	1,00	1,61	35	68
260	Man-made fibres	1,15	1,11	1,02	0,92	1,19	1,40	1,52	1,54	36	31
311	Foundries	0,58	0,78	0,91	0,51	0,71	0,94	1,08	1,52	37	47
453	Ready-made clothing	0,88	0,91	1,06	1,09	1,07	1,17	1,48	1,51	38	34
439	Miscellaneous textile industries	0,72	0,82	1,09	1,21	1,22	1,31	1,41	1,51	39	30
312	Forging	0,66	0,72	0,60	0,71	0,74	0,93	1,25	1,45	40	44
325	Machinery for mines, iron and steel industries	0,55	0,62	0,71	0,64	0,49	0,79	1,11	1,40	41	63
342	Electrical machinery	1,36	1,11	1,18	1,08	0,87	1,04	1,30	1,39	42	40
442	Leather products	1,37	1,57	1,70	1,41	1,37	1,38	1,46	1,38	43	28
321	Agricultural machinery	1,44	1,12	1,21	1,64	1,41	1,43	1,50	1,35	44	26
466	Articles of cork, straw, plaiting	1,51	1,57	1,69	1,54	1,44	1,34	1,46	1,31	45	25
481	Rubber products	1,23	1,14	1,35	1,26	1,37	1,45	1,18	1,25	46	27
365	Transport equipment	0,54	0,67	0,46	0,64	0,78	0,85	1,22	1,14	47	42
322	Machine tools	1,29	1,67	1,55	1,82	1,67	1,47	1,52	1,13	48	23
374	Clocks, watches and parts	3,32	2,55	2,47	1,81	1,51	1,68	1,61	1,12	49	24
412	Slaughtering, preparation and preservation of meat	3,72	5,11	5,12	3,89	5,76	4,99	2,17	1,07	50	9
494	Toys and sport goods	0,93	1,16	1,26	1,29	0,95	0,88	1,00	1,07	51	36
323	Textile machinery	1,81	0,99	0,75	0,83	0,48	0,64	1,30	1,06	52	65

Table 12 *(continued)*

NACE code	Industry	Hungary 1985	1986	1987	1988	1989	1990	1991	1992	Rank 1992	Rank 1989
461	Sawing and processing of wood	100,84	93,49	138,04	56,25	27,14	32,43	34,42	33,64	1	2
412	Slaughtering, preparation and preservation of meat	21,83	24,22	23,24	19,88	26,81	23,81	20,56	14,55	2	3
420	Sugar manufacturing and refining	0,60	5,14	0,67	1,18	2,60	17,61	16,04	13,38	3	18
422	Animal and poultry food	10,95	15,74	14,73	16,44	15,51	16,52	17,33	10,39	4	5
244	Asbestos products	0,14	0,79	0,61	0,53	1,24	1,09	2,35	10,23	5	35
495	Miscellaneous manufacturing	9,52	8,76	9,80	7,53	8,17	4,14	7,09	8,47	6	6
463	Carpentry, joinery, parquet	3,82	5,69	7,10	5,72	4,99	5,05	7,68	7,54	7	10
341	Insulated wires and cables	0,16	0,46	0,63	0,63	1,36	3,10	4,63	6,52	8	30
212	Extraction of non ferrous metals	4,60	2,75	0,56	1,95	7,43	3,00	2,89	5,78	9	9
456	Furs and fur goods	3,69	7,37	10,40	8,36	7,92	4,34	5,54	5,65	10	7
455	Household textiles	2,99	2,91	4,02	4,38	3,93	4,71	5,14	5,50	11	11
352	Bodies for motor vehicles	0,58	0,07	0,16	0,05	1,36	1,12	2,35	4,92	12	31
252	Petrochemicals	3,72	2,89	2,83	2,47	2,59	3,07	3,14	3,17	13	19
464	Wooden containers	0,93	0,10	1,40	0,99	1,20	5,88	9,26	3,16	14	39
314	Structural metal products	0,82	1,09	2,90	1,13	1,24	1,86	2,22	3,13	15	36
453	Ready-made clothing	2,43	2,72	2,87	3,26	3,08	2,85	2,91	3,11	16	15
423	Other food products	3,12	3,68	3,11	3,89	3,53	2,89	2,82	2,82	17	13
427	*Brewing and malting*	0,85	1,40	3,89	4,29	15,53	1,16	1,46	2,70	18	4
224	Production of non ferrous metals	3,04	2,85	3,44	3,07	3,08	3,62	2,64	2,64	19	14
242	Cement, lime and paper	0,87	1,95	13,86	46,89	41,82	42,61	3,10	2,62	20	1
414	Processing and preservation of fruit and vegetables	1,39	2,02	2,40	2,57	2,50	2,36	3,02	2,38	21	21
347	Electric lamps and lighting	2,95	3,37	2,81	2,67	2,17	2,02	1,82	2,22	22	23
465	Other wood manufactures	2,17	3,08	3,20	3,14	2,69	4,22	2,84	2,08	23	17
466	Articles of cork, straw, plaiting	4,79	5,18	3,99	2,77	1,98	1,94	1,83	2,06	24	25
442	Leather products	1,15	1,47	1,35	1,48	1,43	1,49	1,78	1,83	25	28
315	Boilermaking	0,46	0,87	0,83	0,82	1,27	1,73	1,87	1,64	26	33
311	Foundries	1,40	1,67	1,33	1,34	1,39	1,72	1,49	1,58	27	29
247	Glass and glassware	1,36	1,42	1,42	1,44	1,12	1,11	1,68	1,53	28	40
221	Iron and steel industry	1,40	2,22	2,60	2,51	2,16	2,40	1,42	1,49	29	24
253	Other ind. chemicals	5,79	5,68	4,83	3,89	3,65	3,97	3,36	1,46	30	12
342	Electrical machinery	0,99	0,94	1,02	1,10	1,08	1,05	1,32	1,45	31	41
374	Clocks, watches and parts	0,85	0,64	0,68	0,80	0,60	0,64	1,38	1,43	32	58
462	Semi-finished wood products	0,97	1,13	1,29	1,24	1,65	1,27	0,86	1,24	33	26
451	Footwear	0,50	0,61	0,67	0,69	0,81	0,91	1,00	1,24	34	47
411	Vegetable and animal oils	1,02	3,64	2,86	2,16	1,34	0,81	0,90	1,16	35	32
239	Extraction of other minerals	0,54	1,16	1,00	1,29	1,50	1,38	1,57	1,15	36	27

NACE code	Industry	Romania 1985	1986	1987	1988	1989	1990	1991	1992	Rank 1992	Rank 1989
242	Cement, lime and paper	0,00	1,38	12,32	305,41	253,80	710,61	1346,37	713,35	1	1
461	Sawing and processing of wood	172,87	198,02	240,79	99,63	55,73	55,50	27,22	24,99	2	2
464	Wooden containers	14,44	13,63	11,88	9,70	12,27	20,42	20,38	14,02	3	3
466	Articles of cork, straw, plaiting	13,19	12,88	14,13	11,82	10,29	10,65	10,80	10,49	4	4
453	Ready-made clothing	4,09	3,58	4,23	4,77	5,11	5,76	5,66	7,17	5	8
467	Wooden furniture	5,43	5,67	6,64	6,14	6,41	6,77	6,07	5,28	6	5
456	Furs and fur goods	1,13	1,83	2,47	1,80	2,25	2,38	3,92	4,47	7	16
463	Carpentry, joinery, parquet	1,13	1,48	1,76	2,44	3,30	3,93	4,07	4,44	8	12
455	Household textiles	2,86	2,38	3,76	3,85	3,91	5,11	4,34	3,97	9	11
221	Iron and steel industry	2,07	2,38	2,03	2,96	2,93	3,11	2,59	3,84	10	13
495	Miscellaneous manufacturing	1,17	0,71	1,22	1,10	0,86	1,22	2,25	3,25	11	30
253	Other industrial chemicals	6,58	9,01	6,14	4,20	4,11	2,67	4,05	3,15	12	10
462	Semi-finished wood products	5,98	7,68	6,77	6,67	6,09	3,65	2,37	3,09	13	6
412	Slaughtering, preparation and preservation of meat	2,91	4,04	5,32	3,54	4,81	1,64	3,90	2,99	14	9
362	Railway rollingstock	8,00	0,01	0,00	3,05	1,84	0,19	8,95	2,80	15	20
247	Glass and glassware	1,39	1,22	1,71	1,85	1,88	1,94	1,89	2,07	16	19
326	*Transmission equipment*	1,45	1,59	1,67	1,71	2,28	3,25	2,08	1,86	17	15
465	Other wood manufactures	2,45	2,63	3,03	2,01	2,48	2,43	2,23	1,61	18	14
438	Carpets	2,07	1,51	1,76	1,40	1,63	2,78	2,74	1,54	19	21
361	Shipbuilding	0,00	0,86	0,00	0,00	0,00	0,22	0,35	1,51	20	97
436	Knitting	0,98	0,99	1,13	1,06	1,14	1,41	1,47	1,51	21	26
222	Steel tubes	0,59	0,56	0,45	0,98	0,87	0,95	1,12	1,46	22	28
260	Man-made fibres	2,20	2,30	1,75	1,37	1,93	1,28	1,36	1,43	23	18
252	Petrochemicals	1,78	1,55	1,28	1,30	1,23	1,10	1,39	1,40	24	23
451	Footwear	0,63	0,62	0,66	0,63	0,50	0,85	1,06	1,34	25	38
492	Musical instruments	0,60	0,82	0,84	0,87	1,15	1,47	1,16	1,27	26	25

Table 12 *(continued)*

NACE code	Industry	Bulgaria 1985	1986	1987	1988	1989	1990	1991	1992	Rank 1992	Rank 1989
242	Cement, lime and paper	0,00	0,00	0,00	5,85	1,44	96,20	94,00	94,32	1	30
461	Sawing and processing of wood	33,05	28,66	48,24	25,37	23,66	32,50	44,86	39,68	2	3
422	Animal and poultry food	32,44	42,86	55,81	78,65	66,39	86,23	64,27	29,18	3	1
455	Household textiles	3,07	3,37	4,44	6,16	9,92	9,05	8,37	12,11	4	6
253	Other industrial chemicals	3,61	4,84	8,31	5,84	7,86	9,84	14,97	10,88	5	8
464	Wooden containers	1,49	1,05	8,58	5,23	9,87	14,74	13,37	10,76	6	7
224	Production of non ferrous metals	2,17	2,23	2,68	4,16	2,45	3,13	5,87	7,86	7	17
212	Extraction of non ferrous metals	11,02	1,02	0,52	0,45	35,71	25,53	48,75	7,60	8	2
495	Miscellaneous manufactures	18,71	26,15	31,17	28,23	15,34	11,43	7,87	6,33	9	4
456	Furs and fur goods	0,94	1,78	2,02	3,10	2,22	1,17	2,35	4,24	10	19
412	Slaughtering, preparation and preservation of meat	3,36	4,71	5,21	4,69	7,66	8,27	4,84	3,94	11	9
462	Semi-finished wood products	3,41	2,03	3,48	3,17	2,62	6,16	5,92	3,86	12	15
453	Ready-made clothing	2,18	2,12	1,95	1,83	1,89	2,26	2,82	3,81	13	23
231	Extraction of building materials	1,93	1,67	1,42	1,68	2,12	2,98	2,42	3,72	14	20
221	Iron and steel industry	8,38	9,62	9,27	3,83	5,50	6,75	5,20	3,24	15	11
442	Leather products	0,98	1,04	1,25	1,49	1,22	1,61	2,75	2,96	16	36
414	Processing and preservation of fruit and vegetables	2,04	2,00	1,84	2,63	3,01	3,67	3,98	2,72	17	14
413	Dairy products	7,31	7,93	8,29	7,54	5,70	4,43	3,91	2,69	18	10
411	Vegetable and animal oils	0,65	0,22	0,00	0,09	1,40	0,44	0,58	2,45	19	32
259	Chemicals for household use	0,06	0,33	1,06	0,93	1,41	1,40	1,93	2,33	20	31
415	Processing and preservation of fish	0,96	1,24	4,55	2,29	2,12	2,76	1,63	2,19	21	21
420	Sugar manufacturing and refining	0,01	0,00	0,00	0,05	0,04	6,05	0,00	2,02	22	94
491	Jewellery, gold and silver	0,54	1,12	0,51	0,54	0,38	0,38	1,05	1,97	23	63
311	Foundries	0,07	0,09	0,26	0,43	0,42	0,36	0,80	1,95	24	62
463	Carpentry, joinery, parquet	0,10	0,12	3,19	0,24	0,55	1,09	1,48	1,85	25	54
471	Pulp, paper and board	0,65	0,53	1,32	2,44	3,49	1,82	1,72	1,76	26	12
325	Machinery for mines, iron and steel industries	3,20	3,24	2,89	3,59	3,37	2,50	2,17	1,69	27	13
451	Footwear	0,18	0,14	0,14	0,09	0,23	0,33	0,61	1,51	28	73
239	Extraction of other minerals	0,04	1,16	0,34	0,71	1,80	1,66	1,56	1,43	29	24
223	Cold rolling of steel	0,18	0,62	1,13	0,87	0,54	0,81	0,79	1,23	30	58
481	Rubber products	0,12	0,04	0,10	0,48	0,81	1,10	1,03	1,23	31	44
436	Knitting	0,71	0,71	0,77	0,57	0,57	0,92	0,94	1,16	32	53
322	Machine tools	1,31	1,31	1,30	1,51	1,72	1,55	1,24	1,12	33	25
343	Electrical apparatus for industry	0,77	0,56	0,69	0,99	1,47	0,89	0,83	1,05	34	29
260	Man-made fibres	2,07	1,76	1,06	0,65	0,43	0,38	0,34	1,03	35	61
252	Petrochemicals	4,45	3,67	2,90	4,44	2,50	2,48	1,52	1,03	36	16

For all these products, the CEECs perform better than Italy on the EU market. Some of them, however, belong to areas in which Italy shows a negative weighted trade balance in its trade with the EU. In such instances, the indicators would suggest a possible further impact on Italian despecialization in the EU market. Cases in point are, for instance, steel and iron, non-ferrous metals, building materials, chemicals, man-made fibres, textile machinery, electrical machinery, sugar refining, brewing and malting, pulp and paper, fur goods, wooden containers (Table 13).

Table 13

Italian weighted trade balances with the EC

NACE code	Industry	Italian positive WTB with the EC in 1992							
		1985	1986	1987	1988	1989	1990	1991	1992
417	Spaghetti, macaroni	0,99	0,99	0,99	0,99	0,99	0,99	0,99	0,98
467	Wooden furniture	0,89	0,90	0,88	0,88	0,87	0,87	0,86	0,85
451	Footwear	0,93	0,92	0,91	0,90	0,90	0,88	0,85	0,82
436	Knitting	0,86	0,87	0,86	0,84	0,81	0,80	0,78	0,76
245	Working of stone and non metallic	0,75	0,72	0,71	0,73	0,71	0,70	0,71	0,72
493	Photographic and cinematographic laboratories	0,54	0,62	0,63	0,65	0,67	0,61	0,71	0,69
442	Leather products	0,82	0,77	0,74	0,77	0,75	0,76	0,71	0,68
465	Other wood manufactures	0,79	0,77	0,78	0,74	0,73	0,73	0,67	0,65
441	Tanning and dressing of leather	0,67	0,65	0,64	0,65	0,61	0,62	0,63	0,63
491	Jewellery, gold and silver	0,57	0,61	0,60	0,57	0,57	0,58	0,61	0,62
426	Cider	- 1,00	- 1,00	- 0,50	- 0,78	- 0,78	- 0,41	0,09	0,62
346	Domestic type electric appliances	0,66	0,64	0,63	0,62	0,61	0,61	0,61	0,61
248	Ceramic goods	0,47	0,50	0,48	0,53	0,55	0,54	0,54	0,57
313	Secondary transf, of metals	0,60	0,61	0,60	0,50	0,50	0,53	0,52	0,56
232	Mining of potassium	- 0,91	- 0,45	- 0,70	0,01	0,97	0,68	0,78	0,56
321	Agricultural machinery	0,61	0,61	0,58	0,60	0,61	0,55	0,57	0,55
432	Woven fabrics	0,47	0,47	0,44	0,48	0,45	0,46	0,50	0,54
241	Clay products	0,80	0,80	0,80	0,69	0,62	0,46	0,43	0,54
453	Ready-made clothing	0,72	0,71	0,68	0,66	0,65	0,63	0,57	0,53
362	Railway rolling-stock	- 0,27	- 0,25	- 0,61	- 0,61	- 0,23	0,24	- 0,10	0,48
365	Transport equipment	0,07	0,22	0,19	0,36	0,42	0,45	0,44	0,46
363	Cycles and motorcycles	0,56	0,54	0,62	0,69	0,64	0,58	0,50	0,44
316	Tools, finished metal goods	0,43	0,45	0,43	0,40	0,40	0,42	0,43	0,43
243	Concrete	0,59	0,61	0,59	0,56	0,50	0,47	0,46	0,42
416	Grain milling	0,68	0,80	0,70	0,72	0,10	- 0,04	0,31	0,41
473	Printing and allied industries	0,41	0,41	0,36	0,39	0,41	0,44	0,50	0,41
347	Electric lamps and lighting	0,31	0,34	0,30	0,32	0,39	0,39	0,43	0,40
492	Musical instruments	0,42	0,37	0,39	0,42	0,39	0,26	0,31	0,39
324	Machinery for food, chemical industries	0,43	0,49	0,47	0,41	0,43	0,41	0,41	0,39
312	Forging	0,27	0,18	0,19	0,05	0,16	0,30	0,40	0,38
341	Insulated wires and cables	0,40	0,29	0,25	0,37	0,36	0,31	0,39	0,38
222	Steel tubes	0,44	0,44	0,47	0,50	0,41	0,46	0,40	0,36
352	Bodies for motor vehicles	0,17	0,34	0,21	0,22	0,19	0,27	0,35	0,34
314	Structural metal products	0,40	0,39	0,42	0,43	0,41	0,44	0,41	0,34
494	Toys and sport goods	0,36	0,32	0,31	0,24	0,29	0,31	0,30	0,33
414	Processing and preservation of fruit and vegetables	0,57	0,47	0,40	0,39	0,36	0,36	0,33	0,32
425	Wine of fresh grapes	0,39	0,26	0,23	0,24	0,19	0,21	0,22	0,30
483	Processing of plastics	0,15	0,18	0,17	0,26	0,26	0,27	0,28	0,29
328	Other machinery	0,18	0,20	0,21	0,21	0,25	0,25	0,27	0,25
322	Machine tools	0,26	0,25	0,15	0,14	0,14	0,24	0,22	0,25
327	Other machinery, machinery for specific industries	0,19	0,26	0,16	0,15	0,21	0,21	0,22	0,21
438	Carpets	0,19	0,18	0,12	0,12	0,10	0,11	0,13	0,21
462	Semi-finished wood products	0,31	0,34	0,33	0,33	0,31	0,28	0,22	0,19
223	Cold rolling of steel	0,18	0,20	0,16	0,15	0,15	0,20	0,18	0,17
315	Boilermaking	- 0,17	- 0,32	- 0,35	- 0,10	0,02	0,08	0,12	0,16
311	Foundries	0,03	- 0,03	0,01	0,04	- 0,06	- 0,07	0,05	0,14
472	Processing of paper and board	- 0,06	0,01	- 0,04	0,01	0,00	0,03	0,12	0,14
482	Retreading and repairing of rubber	- 0,09	- 0,09	- 0,07	0,08	0,07	0,09	0,18	0,14
463	Carpentry, joinery, parquet	0,28	0,33	0,19	0,19	0,24	0,23	0,07	0,11
247	Glass and glassware	0,04	0,07	0,05	0,03	0,05	0,07	0,10	0,10
364	Aerospace equipment	- 0,13	0,18	0,19	0,14	0,05	- 0,00	0,01	0,09
419	Bread and flour confectionery	- 0,03	0,06	0,13	0,11	0,08	0,11	0,08	0,09
481	Rubber products	0,13	0,06	0,04	0,02	0,02	0,04	0,05	0,08
353	Parts of motor vehicles	0,05	0,08	0,08	0,11	0,09	0,08	0,03	0,07
325	Machinery for mines, iron and steel industries	- 0,08	- 0,01	- 0,06	0,05	0,08	0,12	0,03	0,05
421	Cocoa, chocolate and sugar	- 0,16	- 0,07	- 0,02	- 0,05	- 0,06	- 0,03	0,03	0,05
326	Transmission equipment	- 0,08	- 0,09	- 0,10	- 0,07	- 0,06	- 0,05	0,01	0,04
431	Yarns	- 0,07	0,00	- 0,10	- 0,15	- 0,18	- 0,08	0,01	0,04
455	Household textiles	0,34	0,24	0,15	0,06	0,07	0,13	0,06	0,03
246	Production of grindstones	- 0,11	- 0,03	- 0,02	0,05	- 0,01	- 0,02	- 0,04	0,03
361	Shipbuilding	0,29	0,13	0,30	0,26	0,35	0,20	0,12	0,03

Table 13 ***(continued)***

NACE code	Industry	Italian negative WTB with the EC in areas of CEECs' relative specialization on the EC market 1985	1986	1987	1988	1989	1990	1991	1992
471	Pulp, paper and board	- 0,02	- 0,06	- 0,12	- 0,09	- 0,08	- 0,08	- 0,01	- 0,06
323	Textile machinery	- 0,19	- 0,16	- 0,08	- 0,11	- 0,06	- 0,11	- 0,11	- 0,11
342	Electrical machinery	- 0,23	- 0,24	- 0,24	- 0,24	- 0,18	- 0,20	- 0,19	- 0,17
464	Wooden containers	0,40	0,31	0,17	0,05	- 0,24	- 0,26	- 0,30	- 0,21
260	*Man-made fibres*	- 0,13	- 0,17	- 0,13	- 0,06	- 0,18	- 0,23	- 0,24	- 0,25
255	Paints	- 0,52	- 0,50	- 0,52	- 0,44	- 0,43	- 0,39	- 0,37	- 0,32
221	Iron and steel industry	- 0,28	- 0,26	- 0,34	- 0,32	- 0,35	- 0,30	- 0,32	- 0,33
256	Chemicals for industry	- 0,52	- 0,47	- 0,45	- 0,43	- 0,41	- 0,40	- 0,42	- 0,43
253	Other industries chemicals	- 0,45	- 0,49	- 0,47	- 0,45	- 0,45	- 0,46	- 0,47	- 0,46
224	Production of non ferrous metals	- 0,48	- 0,45	- 0,48	- 0,45	- 0,47	- 0,44	- 0,43	- 0,47
259	Chemicals for household use	- 0,46	- 0,45	- 0,46	- 0,47	- 0,47	- 0,52	- 0,52	- 0,48
252	Petrochemicals	- 0,54	- 0,52	- 0,50	- 0,47	- 0,49	- 0,54	- 0,51	- 0,51
231	Extraction of building materials	- 0,48	- 0,44	- 0,49	- 0,47	- 0,44	- 0,46	- 0,50	- 0,52
456	Furs and fur goods	- 0,01	- 0,67	- 0,75	- 0,72	- 0,72	- 0,65	- 0,63	- 0,68
420	Sugar manufacturing and refining	- 0,78	- 0,95	- 0,35	- 0,11	- 0,36	- 0,89	- 0,92	- 0,91
427	Brewing and malting	- 0,98	- 0,98	- 0,98	- 0,98	- 0,97	- 0,94	- 0,92	- 0,96

Note: WTB = (exports - imports)/(exports + imports). A value = 0 should indicate perfectly balanced trade. The ratio varies between -1 (only imports) and +1 (only exports).
Source: Calculated from EC trade files.

The number of products in which the two areas of specialization seem to be conflicting is then much more reduced, although the ranking of the various CEECs is similar: 27 products for Czechoslovakia, 19 for Hungary, 16 for Poland, 15 for Romania and 14 for Bulgaria (Table 14). These are products in which the CEECs have a specialization relative to Italy in the EU market and where the latter country exhibits a positive weighted trade balance (WTB) in its intra-EU trade (Table 13).

There are four products in which all five CEECs are specialized and Italy has a positive WTB: clothing, household textiles, semi-finished wood products and carpentry, joinery and parquet. Three products in which four CEECs are specialized whilst Italy has a positive WTB are glass and glassware, foundries and other wood manufactures. Cold rolling of steel, structural metal products, wires and cables, bodies for motor vehicles, machinery for mines and the steel industry, processing of fruit and vegetables, leather and rubber products are all products where Italy has a positive WTB and are the specializations of three CEECs. Finally, Italy seems to conflict with the specialization pattern of only one or two CEECs in the following products: steel tubes, potassium, clay products, concrete, boilermaking, agricultural machinery, machine tools, transmission equipment, electric lamps, shipbuilding, railway rolling-stock, other transport equipment, knitting, carpets, wooden furniture, musical instruments and toys and sport goods.

Table 14

Possible areas of conflicting specialization between Italy and the CEECs on the EC market

NACE code	Industry
	With all the five CEECs:
453	Ready-made clothing
455	Household textiles
462	Semi-finished wood products
463	Carpentry, joinery, parquet
	With four CEECs:
247	Glass and glassware (excluding B)
311	Foundries (excluding R)
465	Other wood manufactures (excluding B)
	With three CEECs:
223	Cold rolling of steel (P,C,B)
314	Structural metal products (P,C,H)
325	Machinery for mines, iron and steel industries (C,H,B)
341	Insulated wires and cables (P,C,H)
352	Bodies for motor vehicles (P,C,H)
414	Processing and presentation of fruit and vegetables (P,H,B)
442	Leather products (C,H,B)
481	Rubber products (C,H,B)
	With one or two CEECs:
222	Steel tubes (C,R)
232	Mining of potassium (C)
241	Clay products (C)
243	Concrete (C)
315	Boilermaking (C,H)
321	Agricultural machinery (C,H)
322	Machine tools (C,B)
326	Transmission equipment (R)
347	Electric lamps and lighting (H)
361	Shipbuilding (P,R)
362	Railway rolling-stock (C,R)
365	Transport equipment (C)
436	Knitting (R,B)
438	Carpets (R)
467	Wooden furniture (P,R)
492	Musical instruments (C,R)
494	Toys and sport goods (C)

Note: The above cited products are those in which the CEECs exhibit a specialization index relative to Italy on the EC market higher than 1, while Italy has a positive weighted trade balance in her intra-EC trade. P=Poland; C=Czechoslovakia; H=Hungary; R=Romania; B=Bulgaria.

Source: Own calculations from EC trade files and Tables 12 and 13.

In general, a real threat could only materialize if the quantities involved and the growth rates of CEECs' exports were substantial, particularly in the latter group of products. If we then compare the areas of conflicting specialization with the corresponding shares in the EU import structure and their growth rates, the products where CEECs' competition may be threatening become merely a handful. First and foremost, clothing. On the EU market, this category by itself accounts for almost 28% of Romanian exports, 15% of Bulgarian and Polish exports, 12% of Hungary's and 6% of Czechoslovakia's exports. In the last three years, on average, it has grown roughly by 60% for Bulgaria, more than 40% for Poland and Czechoslovakia, 20% for Hungary, decreased in the first two years and then more than recovered (+42%) in 1992 for Romania. Household textiles, semi-finished wood products, carpentry, other wood manufactures, foundries, while never representing separately more than 2% of individual CEECs' exports, in most cases have maintained sustained growth rates and are present in the better performing exports of five or four CEECs. Finally, there remain other products whose share in at least one CEEC is equal or larger than 3%. These are: (i) processing and preservation of fruit and vegetables (4% of Poland's and Bulgaria's exports, 3% of Hungary's), with a recent negative growth; (ii) wooden furniture — 16% for Romania, 5% for Poland, 3% for Czechoslovakia, plus 2% for Hungary and Bulgaria, with high and positive growth, except Romania; (iii) glass and glassware — 3% for Czechoslovakia and between 1-2% for each of the other CEECs, with generally positive and high growth rates; (iv) footwear — 6% for Bulgaria, 5% for Hungary and Romania, plus 2% for Czechoslovakia and Poland, characterized by high growth rates in 1992; (v) knitting — 7% for Romania, 5% for Bulgaria, 4% for Hungary, plus 2% for Poland and Czechoslovakia, showing average growth rates above 20%, except for Romania (12% in the last two years).

What are the characteristics of these CEEC products exported to the EU market? A very rough and imperfect indicator such as the EU's import unit values to proxy different quality shows that, in almost all cases, CEECs' unit values tend to be much lower — less so for Czechoslovakia and Hungary — than their Italian counterparts on the EU market, but that on average the gap tends to narrow between 1990 and 1992. Although the level of aggregation is too high and conclusions should be taken very cautiously, this would suggest that the CEECs tend to export lower quality goods than Italy, but that a certain upgrading is taking place.

5. Specialization and import penetration on the Italian market

As previously said, competitive pressures from the CEECs might also materialize on the domestic market.

On the Italian market, the number of 3-digit industries in which the CEECs appear to be specialized compared to the world (index > 1) seem to be more or less inversely correlated to their degree of industrialization: out of the 108 3-digit industries, 44 for Czechoslovakia, due to its more diversified industrial structure, 31 for Poland, 30 for Hungary, 29 for Bulgaria and 25 for Romania (Table 15). At the end of the Table I also calculated the relative dispersion of all the export performance indices. According to some authors (Balassa 1989), it indicates the particular 'markedness' or 'clearness' of the specialization pattern: the lower the index, the higher the degree of diversification is supposed to be.

Table 15

Indicators of Eastern Europe's specialization relative to the world on the Italian market

NACE code	Industry	Poland 1985	1986	1987	1988	1989	1990	1991	1992	Rank 1992	Rank 1989
464	Wooden containers	0,00	0,00	0,58	0,97	0,00	0,97	4,56	4,06	1	83
455	*Household textiles*	6,21	6,07	4,27	3,95	3,38	4,48	7,55	3,61	2	5
321	Agricultural machinery	0,16	0,46	2,02	1,88	2,61	1,63	4,36	3,58	3	9
441	Tanning and dressing of leather	0,00	0,00	0,04	0,13	0,40	1,92	3,76	3,49	4	44
311	Foundries	5,84	6,35	5,53	3,47	5,79	4,90	4,29	3,21	5	2
253	Other industrial chemicals	6,02	5,10	3,88	3,00	2,97	3,17	3,02	3,13	6	7
312	Forging	1,72	0,06	1,87	0,36	0,08	0,18	1,59	3,07	7	65
351	Manufacture and assembly of motor vehicles	4,51	4,13	3,72	4,24	3,57	1,61	0,84	3,04	8	4
465	Other wood manufactures	3,99	7,88	6,75	5,91	2,74	2,84	3,01	2,85	9	8
463	Carpentry, joinery, parquet	0,00	0,19	0,27	0,00	0,08	0,68	2,94	2,84	10	66
467	Wooden furniture	4,02	3,41	2,73	2,56	2,57	2,69	4,12	2,74	11	11
248	Ceramic goods	0,75	0,84	0,70	0,38	0,55	1,88	3,73	2,72	12	38
326	Transmission equipment	2,22	2,60	2,61	2,61	3,89	3,46	3,37	2,67	13	3
451	Footwear	0,74	0,00	0,00	0,03	0,03	1,19	3,66	2,30	14	76
414	Processing and preservation of fruit and vegetables	1,58	2,74	3,35	4,61	6,38	8,73	5,41	2,25	15	1
412	Slaughtering, preparation and preservation of meat	2,55	2,95	2,68	2,22	2,28	3,01	3,20	2,13	16	12
453	Ready-made clothing	0,15	0,25	1,65	2,11	2,99	3,53	3,70	2,06	17	6
314	Structural metal products	0,79	0,00	0,06	0,14	0,57	3,86	4,43	2,05	18	36
471	Pulp, paper and board	0,04	0,06	0,02	0,01	0,21	0,40	0,74	1,92	19	56
461	Sawing and processing of wood	0,83	1,63	2,64	4,26	1,97	1,46	2,17	1,82	20	15
436	Knitting	0,03	0,15	0,03	0,21	0,83	0,93	1,45	1,65	21	30
343	Electrical apparatus for industry	0,25	0,34	0,20	0,39	0,77	1,15	1,22	1,52	22	31
352	Bodies for motor vehicles	0,01	0,00	0,15	0,20	0,91	1,24	2,14	1,45	23	24
432	Woven fabrics	0,84	0,78	0,77	1,37	0,84	1,28	1,02	1,31	24	28
247	Glass and glassware	1,32	1,28	0,92	0,68	0,63	1,58	2,50	1,23	25	33
424	Distilling of ethyl, spirit	1,65	2,19	1,95	1,46	1,87	1,72	1,68	1,19	26	16
456	Furs and fur goods	1,38	1,07	1,79	1,68	1,35	0,82	0,52	1,17	27	20
222	Steel tubes	0,02	0,08	0,01	0,13	0,24	0,42	1,52	1,13	28	51
462	Semi-finished wood products	0,12	0,15	0,21	1,12	1,40	2,57	2,72	1,09	29	19
322	Machine tools	1,47	1,98	2,19	1,77	1,66	2,06	1,23	1,06	30	17
Memo item on 108 products											
Standard deviation		1,36	1,46	1,25	1,20	1,17	1,31	1,48	1,06		
Average		0,72	0,77	0,77	0,71	0,72	0,91	1,16	0,78		
Coefficient of variation		1,89	1,89	1,62	1,69	1,62	1,45	1,28	1,36		

Table 15 *(continued)*

NACE code	Industry	Czechoslovakia 1985	1986	1987	1988	1989	1990	1991	1992	Rank 1992	Rank 1989
464	Wooden containers	0,73	0,06	0,49	1,34	0,12	0,26	6,15	10,43	1	68
222	Steel tubes	1,67	1,41	1,58	1,50	1,34	1,39	4,75	7,27	2	27
313	Secondary transformation of metals	6,71	7,83	8,87	7,48	5,90	4,84	6,81	7,06	3	4
465	Other wood manufactures	1,71	3,11	2,14	1,49	1,38	1,00	6,08	6,38	4	26
247	Glass and glassware	12,93	12,67	11,43	9,68	9,88	9,38	8,26	6,26	5	1
311	Foundries	0,00	0,17	0,43	0,30	0,38	1,04	1,93	6,03	6	46
223	Cold rolling of steel	1,60	0,53	0,13	0,66	3,14	3,56	3,26	5,40	7	9
451	Footwear	0,01	0,13	0,10	0,16	0,32	0,20	2,00	5,34	8	49
492	Musical instruments	12,02	13,22	10,43	9,42	9,60	9,84	9,64	4,99	9	2
221	Iron and steel industry	5,46	5,60	6,12	5,00	4,79	5,54	6,23	4,56	10	5
461	Sawing and processing of wood	6,18	6,87	8,19	7,39	6,64	6,81	4,52	3,71	11	3
455	Household textiles	3,98	4,30	2,68	4,42	4,00	4,78	4,28	3,56	12	6
432	Woven fabrics	2,27	2,54	2,41	2,35	1,88	2,14	2,59	3,08	13	16
467	Wooden furniture	1,04	0,73	1,03	1,36	1,33	2,12	1,81	2,90	14	28
456	Furs and fur goods	2,89	2,70	2,15	2,18	3,10	2,11	2,04	2,90	15	10
321	Agricultural machinery	0,22	1,19	2,10	2,57	2,85	3,44	3,21	2,88	16	11
312	Forging	1,20	0,18	0,72	2,02	0,24	1,83	1,78	2,76	17	59
314	Structural metal products	1,66	1,11	1,09	2,46	0,70	0,36	0,66	2,67	18	36
362	Railway rolling-stock	0,00	0,04	0,00	0,68	0,26	2,15	0,60	2,65	19	56
453	Ready-made clothing	1,52	1,32	1,57	1,57	1,45	0,98	1,69	2,50	20	25
260	Man-made fibres	0,48	0,43	0,27	0,60	0,31	0,36	1,20	2,43	21	50
315	Boilermaking	0,00	0,00	0,21	0,49	1,79	1,92	1,63	2,31	22	19
253	Other industrial chemicals	2,01	1,88	1,79	1,62	1,94	2,71	2,60	2,28	23	15
241	Clay products	0,00	0,00	0,00	0,00	0,00	0,00	0,86	2,25	24	88
326	Transmission equipment	1,05	1,08	1,36	1,30	0,89	0,83	1,37	2,24	25	32
322	Machine tools	2,25	3,00	3,62	6,04	3,18	2,89	4,02	2,22	26	8
471	Pulp, paper and board	1,36	2,55	1,84	2,39	1,98	1,69	1,58	2,19	27	13
248	Ceramic goods	2,12	2,21	2,00	1,90	1,78	1,74	1,63	2,19	28	20
462	Semi-finished wood products	0,46	0,82	0,80	1,06	1,95	2,74	3,11	2,03	29	14
427	Brewing and malting	3,04	3,21	3,56	3,61	3,25	3,04	2,88	2,01	30	7
244	Asbestos products	0,92	0,75	0,75	0,52	0,00	3,03	2,14	1,90	31	88
436	Knitting	0,48	0,87	0,20	0,24	0,13	0,14	0,58	1,87	32	66
441	Tanning and dressing of leather	0,04	0,05	0,20	0,10	0,08	0,22	0,89	1,70	33	75
252	Petrochemicals	1,84	1,30	1,29	1,57	1,84	1,94	2,07	1,69	34	17
231	Extraction of building materials	1,98	2,86	2,55	2,17	1,81	1,96	1,56	1,68	35	18
439	Miscellaneous textile industries	0,65	0,90	0,66	0,62	0,95	1,71	1,75	1,35	36	31
347	Electric lamps and lighting	2,12	1,17	1,37	1,03	1,06	1,49	1,02	1,27	37	30
481	Rubber products	0,75	0,75	0,64	0,36	0,47	0,52	0,97	1,23	38	43
463	Carpentry, joinery, parquet	0,36	0,99	0,25	0,47	0,51	0,46	0,72	1,18	39	41
472	Processing of paper and board	0,03	0,01	0,01	0,08	0,17	0,30	0,52	1,15	40	61
442	Leather products	0,65	0,86	1,05	0,59	0,30	0,13	0,20	1,13	41	51
325	Machinery for mines, iron and steel industries	0,38	0,56	1,03	0,61	0,54	1,05	1,40	1,11	42	39
342	Electrical machinery	2,71	1,83	2,12	1,82	1,61	1,21	1,25	1,05	43	23
327	Other machinery, machinery for specific industries	0,58	0,39	0,48	0,59	0,72	0,60	0,82	1,01	44	35
Memo item on 108 products:											
Standard deviation		2,01	2,12	2,00	1,82	1,72	1,72	1,83	1,92		
Average		1,00	1,04	1,01	1,02	0,96	1,07	1,20	1,39		
Coefficient of variation		2,01	2,04	1,97	1,78	1,79	1,62	1,53	1,38		

Table 15 *(continued)*

Hungary

NACE code	Industry	1985	1986	1987	1988	1989	1990	1991	1992	Rank 1992	Rank 1989
465	Other wood manufactures	1,23	7,07	4,33	4,49	3,89	8,04	9,83	9,99	1	10
451	Footwear	0,13	0,09	0,11	0,21	1,28	1,42	3,92	6,96	2	28
422	Animal and poultry food	5,64	7,84	7,02	6,76	6,76	5,44	6,74	5,26	3	5
453	Ready-made clothing	0,94	1,13	0,76	0,88	1,40	2,33	3,96	5,18	4	25
247	Glass and glassware	1,07	1,50	2,57	2,23	1,69	1,55	3,91	5,18	5	20
315	Boilermaking	0,00	0,00	0,03	0,11	0,57	0,67	4,37	4,25	6	40
442	Leather products	2,79	3,90	2,28	1,67	1,10	1,95	2,26	4,08	7	30
412	Slaughtering, preparation and preservation of meat	6,51	5,63	5,92	6,97	7,48	6,64	5,58	3,83	8	3
461	Sawing and processing of wood	2,54	3,58	4,37	3,30	2,64	2,45	3,56	3,52	9	13
420	Sugar manufacturing and refining	0,43	0,60	2,02	5,20	5,82	3,34	4,46	3,47	10	6
464	Wooden containers	1,36	0,74	1,93	0,52	0,74	1,01	2,84	3,27	11	36
252	Petrochemicals	2,83	2,16	2,81	2,17	2,07	2,34	2,99	3,27	12	17
243	Concrete	0,23	1,59	3,94	4,22	4,32	2,99	5,52	3,18	13	9
347	Electric lamps and lighting	7,06	9,60	6,85	3,15	3,18	3,65	2,17	2,78	14	11
436	*Knitting*	*0,48*	*0,25*	*0,28*	*0,11*	*0,06*	*0,95*	*1,79*	*2,52*	*15*	*68*
221	Iron and steel industry	1,18	3,54	3,28	3,65	2,49	3,05	1,62	2,12	16	14
248	Ceramic goods	3,13	3,96	3,06	2,97	2,81	2,16	2,04	2,01	17	12
462	Semi-finished wood products	3,00	5,36	5,36	4,15	4,59	3,73	2,23	1,79	18	8
456	Furs and fur goods	2,65	5,34	6,15	4,58	5,58	2,87	4,07	1,70	19	7
245	Working of stone and non metallic	0,00	0,00	0,06	0,48	0,45	1,42	1,58	1,52	20	46
418	Starch and starch products	6,41	6,44	5,31	6,43	9,57	10,3	9,31	1,46	21	2
431	Yarns	0,83	1,18	1,21	1,91	2,41	2,09	1,53	1,33	22	16
467	Wooden furniture	2,02	1,62	1,89	1,82	1,98	1,92	1,96	1,27	23	18
241	Clay products	0,00	0,00	0,00	0,00	0,00	0,00	0,43	1,25	24	94
463	Carpentry, joinery, parquet	2,03	2,49	2,75	2,00	1,68	2,79	1,78	1,25	25	21
466	Articles of cork, straw, plaiting	0,97	0,62	0,91	0,83	0,17	0,44	1,06	1,23	26	61
222	Steel tubes	2,60	2,88	2,65	2,12	1,64	4,31	3,35	1,23	27	22
326	Transmission equipment	0,02	0,06	0,16	0,11	0,24	1,09	1,62	1,20	28	57
439	Miscellaneous textile industries	0,94	1,30	1,39	1,65	1,38	0,95	1,12	1,16	29	26
346	Domestic type electric appliances	0,00	0,00	0,00	0,07	0,04	0,25	0,39	1,04	30	70
Memo item on 108 products:											
Standard deviation		1,41	1,84	1,61	1,56	2,02	1,70	1,99	1,62		
Average		0,75	0,98	0,89	0,92	1,11	1,04	1,24	1,00		
Coefficient of variation		1,88	1,89	1,80	1,70	1,82	1,63	1,60	1,62		

Romania

NACE code	Industry	1985	1986	1987	1988	1989	1990	1991	1992	Rank 1992	Rank 1989
451	Footwear	0,06	0,02	0,04	0,05	0,24	4,85	8,19	16,19	1	42
453	Ready-made clothing	30,50	25,60	27,34	20,01	21,45	20,18	13,78	14,72	2	2
467	Wooden furniture	9,23	11,19	16,42	17,15	23,34	29,32	20,18	11,21	3	1
466	Articles of cork, straw, plaiting	7,18	11,28	13,88	12,97	11,88	11,36	10,45	10,65	4	3
438	Carpets	13,86	8,59	10,82	8,54	9,43	15,60	17,49	7,64	5	5
463	Carpentry, joinery, parquet	2,00	3,33	4,12	7,61	10,51	12,15	9,56	7,47	6	4
462	Semi-finished wood products	9,81	10,47	11,19	8,37	7,65	7,17	6,29	6,94	7	7
222	Steel tubes	0,07	0,01	0,00	5,35	2,65	2,00	4,47	5,11	8	13
464	*Wooden containers*	9,52	*6,38*	19,78	4,91	8,72	2,45	4,90	4,53	9	6
221	Iron and steel industry	2,30	1,27	2,05	2,96	2,34	3,43	1,66	3,26	10	15
465	Other wood manufactures	1,64	7,42	4,49	5,60	5,98	8,59	6,30	3,10	11	8
456	Furs and fur goods	2,11	2,80	2,83	2,23	2,86	4,16	7,22	3,04	12	12
455	Household textiles	3,95	1,79	7,52	3,18	3,31	3,72	1,59	2,89	13	11
342	Electrical machinery	2,27	2,84	3,28	3,40	3,46	4,74	5,06	2,84	14	10
436	Knitting	1,63	1,15	1,82	1,51	0,97	2,48	2,21	2,76	15	24
313	Secondary transformation of metals	0,57	1,17	2,36	2,88	3,53	3,08	2,68	2,73	16	9
260	Man-made fibres	1,18	1,46	1,11	0,81	0,93	0,64	1,64	2,69	17	27
247	Glass and glassware	0,85	0,43	0,99	0,54	0,76	0,58	0,68	1,96	18	35
322	Machine tools	0,94	0,52	0,23	0,59	0,85	0,91	2,55	1,94	19	30
326	Transmission equipment	0,14	0,48	0,61	0,66	0,95	1,17	2,80	1,86	20	26
253	Other industrial chemicals	1,64	1,90	1,58	1,78	1,43	1,56	3,28	1,70	21	20
248	Ceramic goods	0,72	0,39	1,02	0,99	1,08	1,44	1,66	1,64	22	23
321	Agricultural machinery	0,55	0,48	1,53	0,60	0,85	1,59	1,87	1,54	23	29
492	Musical instruments	1,14	0,99	0,83	0,72	0,69	1,22	1,43	1,12	24	37
414	Processing and preservation of fruit and vegetables	0,86	0,50	0,96	1,02	1,55	1,10	2,59	1,04	25	17
Memo item on 108 products:											
Standard deviation		3,57	3,28	4,14	3,13	3,61	4,10	3,36	2,82		
Average		1,14	1,20	1,53	1,27	1,36	1,50	1,45	1,24		
Coefficient of variation		3,14	2,73	2,71	2,47	2,66	2,74	2,31	2,27		

Table 15 *(continued)*

NACE code	Industry	Bulgaria 1985	1986	1987	1988	1989	1990	1991	1992	Rank 1992	Rank 1989
455	Household textiles	4,19	3,00	7,04	8,48	9,22	9,43	15,58	21,10	1	1
451	Footwear	0,03	0,04	0,00	0,00	0,00	0,00	5,59	19,33	2	72
414	Processing and preservation of fruit and vegetables	4,46	3,36	2,51	7,26	6,51	12,13	16,45	8,90	3	3
453	Ready-made clothing	4,14	4,88	3,39	0,96	1,43	2,55	4,68	6,66	4	19
442	Leather products	0,07	0,00	0,02	0,11	0,78	4,96	2,47	6,61	5	26
481	Rubber products	0,62	0,01	0,38	1,54	3,58	5,71	5,36	4,64	6	6
464	Wooden containers	0,00	0,00	0,00	0,00	0,00	0,00	5,24	4,23	7	72
325	Machinery for mines, iron and steel industries	3,57	3,97	4,04	5,86	6,22	6,90	4,93	4,14	8	4
422	Animal and poultry food	7,15	8,11	9,36	8,13	8,05	9,39	10,58	4,00	9	2
436	Knitting	0,44	0,20	0,08	0,06	0,52	1,17	1,60	3,82	10	34
432	Woven fabrics	2,63	3,99	3,23	4,11	2,96	2,67	1,86	3,15	11	10
311	Foundries	0,00	0,00	0,00	0,76	1,01	0,48	0,16	2,57	12	20
465	Other wood manufactures	3,46	5,32	2,84	0,67	1,58	2,14	2,50	2,42	13	18
467	Wooden furniture	3,78	1,36	0,16	0,35	0,60	0,81	1,91	2,16	14	31
313	Secondary transformation of metals	1,90	3,68	2,42	0,88	2,46	0,86	0,51	2,08	15	13
441	Tanning and dressing of leather	0,00	0,00	0,03	0,04	0,75	0,26	1,02	1,97	16	28
471	Pulp, paper and board	0,00	0,00	0,01	1,11	3,17	1,52	2,42	1,95	17	8
221	Iron and steel industry	6,80	8,84	8,89	2,77	5,69	6,78	5,60	1,91	18	5
322	Machine tools	1,46	1,88	1,83	2,54	2,91	1,75	1,32	1,88	19	11
456	Furs and fur goods	0,23	0,00	0,07	0,37	0,44	0,14	0,04	1,67	20	37
462	Semi-finished wood products	0,00	0,24	1,23	0,00	0,19	0,00	0,33	1,62	21	45
431	Yarns	1,55	0,71	0,83	0,53	1,00	0,72	0,78	1,57	22	21
223	Cold rolling of steel	0,00	0,03	0,02	0,01	0,03	0,00	0,89	1,41	23	60
253	Other industrial chemicals	0,49	0,55	0,95	0,87	0,80	1,16	1,80	1,36	24	25
222	Steel tubes	0,00	0,00	0,00	1,10	3,13	3,73	3,41	1,35	25	9
463	Carpentry, joinery, parquet	0,00	0,47	0,49	0,00	0,55	1,88	2,02	1,29	26	33
231	Extraction of building materials	0,42	0,93	0,56	1,39	0,95	2,25	1,68	1,26	27	22
248	Ceramic goods	0,37	0,12	0,36	0,44	0,58	0,46	1,00	1,17	28	32
245	Working of stone and non metallic	0,00	0,00	0,55	0,62	0,25	0,24	0,63	1,10	29	40
Memo item on 108 products:											
Standard deviation		1,37	1,52	1,58	1,63	1,66	2,06	2,59	3,01		
Average		0,61	0,62	0,68	0,74	0,80	0,92	1,15	1,24		
Coefficient of variation		2,26	2,44	2,34	2,22	2,07	2,23	2,25	2,43		

Note: As for the formula, see Table 12. Only indicators higher than 1 (relative specialization) are shown in the table. The memo items are calculated on all the manufactured products and indicate the relative markedness of the specialization pattern.
Source: Calculated from EC trade files.

The top 10 values of the specialization index for Czechoslovakia pertain to the processing and manufacturing of metals (steel industry, foundries, transformation of metals), glass, footwear, wood products and musical instruments. The highest values are obtained by wooden containers and steel tubes. Except for three cases out of ten, the best indices are on the increase. Czechoslovakia is also specialized in 8 out of the 28 high-tech sectors (NACE 321-374).

Polish export performance indices are rather evenly spread. The best 10 include wood products, textiles, industrial chemicals, foundries and forging, tanning of leather, plus high-tech industries like motor vehicles and agricultural machinery. The values of most of the first 10 are on the decrease. The country is specialized in 7 high-tech industries, although for five of them the indices are decreasing.

The highest Hungarian export specialization indices include wood products, labour-intensive industries (footwear, clothing, leather), agricultural and metal products, plus glass. Other wood manufactures and, recently, footwear come first. Increasing and decreasing top indices compensate each other. Lower, but positive, specialization values are also obtained for transmission equipment, electrical appliances and electrical lamps.

Bulgaria's best performance belongs to agricultural and labour-intensive products, like household textiles (in top position), footwear (second position), leather, rubber, clothing besides

knitting, wood products and machinery for mines and iron and steel, which is the only other high-tech industry apart from machine tools where Bulgaria appears specialized.

Finally, Romania presents a very skewed specialization pattern, with very high values for the best performing sectors. Seven out of the top 10 belong to NACE 451-467: footwear and clothing ranking first, followed by various wood products, carpets, cork and straw products and steel products. Agricultural and electrical machinery, machine tools and transmission equipment are the only products in the NACE 32-37 categories where Romania shows a specialization index over unity, although decreasing for all the four industries.

Summing up, the CEECs seem to be specialized on the Italian market mostly in the metal processing and manufacturing industries, the wood industry, leather, footwear and clothing. Here lies the area of possible competition between individual CEECs on the Italian market.

Could some of these products cause a possible displacement of Italian domestic production? A measure that is most widely used to indicate the significance of foreign competition is the import penetration ratio (IPR), i.e. the share of imports in domestic apparent consumption (production+imports-exports). The estimations presented in Table 16 clearly show that the share of domestic consumption of manufactures accounted for by imports from the world shows a general ascending trend, both for Europe and for Italy, with a slight fall in 1992 in the latter case. There is however a certain difference in the absolute level: the Italian manufacturing market appears much less penetrated by imports (29,85%) than its EU average counterpart (37,83%). This is true as well for imports from different groups of countries.

The second notable feature highlighted by the same table is the rather marginal role of Italian IPR from Eastern Europe: only 0,49%, as compared to 2,26% for the developing countries, 2,83% from EFTA and 3,78% from other industrialized countries. However, the IPR from the CEECs has been growing since 1990 at a faster rate than IPR from other sources. In fact, the only other growing index was from the developing countries, while both EFTA and other industrialized countries seem to have lost ground. At first glance, then, trade liberalization with the CEECs seems to have affected their competitiveness *vis-à-vis* EFTA more than *vis-à-vis* the developing countries. Finally, although the Italian IPR by the CEECs is slightly lower than the EU one (0,49% against 0,50%), it is relatively more pronounced, if compared to the absolute level of IPR from the world.

A small IPR indicator for manufacturing as a whole may however conceal important events taking place at a more disaggregated level. Table 17 shows calculations for Italian manufacturing IPRs from the five CEECs at the 2 and 3-digit levels and their evolution over the period 1985 to 1992. Only categories having values higher than 0,5% (2-digit) and 1% (3-digit) are shown in the table.

Examining the broad (2-digit) commodity groups, only the textiles, leather, footwear and clothing and wood industries show a fast increase over the last years, although none represent more than 2,4% (footwear and clothing). Amongst 3-digit, 18 products show an IPR higher than 1%. However, 10 of them do not reach 2%. These include iron and steel, steel tubes, glass, chemicals, man-made fibres, transmission equipment, knitting, cork and straw products, toys and clothing.

For this latter category, the competitive challenge from the CEECs seems to be harsher on the EU market than on the domestic one, although Italy is still the world's third largest exporter. The upsurge of import values and import penetration ratios has in fact to be seen against the growing practice of outward processing traffic (OPT), whereby Italian producers export fabrics to the CEECs and then import the finished clothing product under a special tariff regime. OPT seems to have played a central role in stimulating Italian imports from the CEECs. At the beginning of the 1990s, OPT accounted for over one half of Italian clothing imports from Hungary, and over one quarter from Poland and Czechoslovakia. Moreover, Italian entrepreneurs seem to show a definite tendency to increase this share. Import penetration into the Italian market appears then already to be the result of some redeployment strategy applied by Italian producers, more than a new threat to displace local production. Clothing being a highly labour-intensive industry, most of its productive phases tend to be relocated where labour costs are far lower than in Italy and transport costs much less than from other distant, albeit cheap-labour regions. In this respect, growing import penetration in the Italian clothing industry from Eastern Europe should be rather considered as the pay off for increased exports of textiles, as part of 'strategic imports'.

The highest IPRs appear to be, in descending order, in footwear (5,8%), other wood manufactures (3,4%), sawing and processing of wood and household textiles (3,2% each), leather products (2,8%), carpets (2,3%), electric lamps (2,1%). Leather products, footwear, clothing, household textiles, other wood manufactures and steel tubes had the fastest increasing IPRs over the period. Due to incompatibility between production and trade data at our disposal, IPRs for textile yarn and woven fabrics could not be calculated.

Table 16

Import penetration ratios of manufactured products

(%)

From:	1985	1986	1987	1988	EC 1989	1990	1991	1992
5 CEECs	0,39	0,38	0,36	0,37	0,37	0,40	0,50	0,52
World	32,03	33,44	33,62	35,49	36,71	36,62	37,83	32,57
Extra-EC	12,89	11,99	11,88	13,12	13,52	13,17	13,88	11,82
EFTA	3,44	3,40	3,40	3,43	3,48	3,47	3,43	2,94
Other industries	6,02	5,24	5,00	5,74	5,88	5,60	5,98	4,89
LDCs	2,64	2,54	2,68	3,06	3,15	3,06	3,19	2,73
From:	1985	1986	1987	1988	Italy 1989	1990	1991	1992
5 CEECs	0,35	0,33	0,29	0,30	0,30	0,31	0,36	0,49
World	26,94	27,70	26,68	27,40	28,50	29,28	30,01	29,85
Extra-EC	10,61	9,16	8,99	9,46	10,00	9,93	10,19	10,04
EFTA	2,88	2,77	2,87	2,78	2,82	2,94	2,87	2,83
Other industries	4,71	3,75	3,45	3,76	4,01	3,93	4,06	3,78
LDCs	2,28	1,88	1,98	2,12	2,28	2,22	2,23	2,26

Note: IPR is calculated as the share of imports in domestic apparent consumption (=production+imports-exports).
Source: Own calculations from EC trade files and Eurostat estimates on production values.

Table 17

Italian manufacturing import penetration ratios from the CEECs at the 2nd and 3rd digit level

(%)

	1985	1986	1987	1988	NACE 2-digit; IPR>0,5 in 1992 1989	1990	1991	1992
Footwear & clothing	0,83	1,44	1,15	0,88	0,82	0,86	1,32	2,43
Man-made fibres	0,00	0,57	0,34	0,31	0,29	0,40	0,71	1,20
Leather & leather goods	0,10	0,16	0,15	0,14	0,17	0,41	0,64	1,16
Timber & furniture	0,63	0,88	0,95	0,99	0,84	0,80	0,88	1,03
Metal products	0,63	0,74	0,64	0,63	0,64	0,76	0,72	0,83
Chemicals	0,00	0,48	0,40	0,46	0,41	0,43	0,55	0,64
Motor vehicles & parts	0,51	0,35	0,32	0,35	0,27	0,18	0,12	0,61
Textiles	0,31	0,37	0,31	0,33	0,31	0,32	0,34	0,53
	1985	1986	1987	1988	NACE 3-digit; IPR>1 in 1992 1989	1990	1991	1992
Footwear	0,02	0,01	0,01	0,01	0,06	0,19	0,85	5,84
Other wood manufactures	0,38	1,48	1,07	1,44	1,25	1,49	2,85	3,41
Household textiles	1,21	0,99	0,97	0,94	0,87	1,41	2,61	3,24
Sawing & processing of wood	2,43	2,80	3,06	3,36	2,39	2,23	2,66	3,23
Leather products	0,44	0,34	0,27	0,21	0,19	0,39	0,42	2,76
Furs & fur goods	6,87	3,43	3,16	2,50	3,17	1,84	2,48	2,38
Carpets	4,44	3,83	3,35	2,51	2,62	3,09	3,01	2,31
Electric lamps & lighting	3,10	4,92	2,54	1,80	1,46	1,77	1,84	2,12
Clothing	1,04	1,40	1,16	0,93	0,85	0,78	1,02	1,73
Cork & straw articles	1,54	1,89	1,77	2,26	1,63	1,04	1,08	1,56
Glass & glassware	1,13	1,15	1,01	0,93	0,91	0,94	1,28	1,50
Petrochemicals	1,34	0,99	0,81	0,94	0,81	0,93	1,22	1,48
Toys & sport goods	0,30	0,35	0,32	0,26	0,24	0,34	0,44	1,26
Man-made fibres	0,00	0,57	0,34	0,31	0,29	0,40	0,71	1,20
Steel tubes	0,30	0,32	0,25	0,47	0,29	0,44	0,81	1,12
Knitting	0,08	0,20	0,13	0,12	0,12	0,26	0,49	1,12
Iron & steel	0,83	1,00	1,01	0,91	0,86	1,16	1,03	1,10
Transmission equipment	0,32	0,38	0,41	0,41	0,45	0,57	0,86	1,01

Source: Own calculations based on sources quoted in Table 16.

All in all, competition and the likely threat to Italian industry on the Italian market seems to materialize mostly in very specific traditional sectors, where Italy enjoys comparative advantages on a world level. However, the amounts involved appear to be relatively modest in the majority of cases. The analysis of IPRs tends to show that in Italy there is still considerable scope for an expansion of most manufactured imports from the CEECs. On the other hand, the CEECs do appear to put further pressure on Italian industry, already hit by an increasing competitive challenge from developing countries. Because they are strongest in the range of products where Italy is.

6. Intra-industry trade and structural adjustment

To what extent would this involve painful structural adjustments? To examine such a complicated matter in detail, one needs a thorough analysis of each of the domestic industries involved. This is beyond the scope of the present study, centered as it is mainly on trade issues. However, just considering the latter, the nature of trade flows may have relevant implications for structural adjustment to trade liberalization. As has often been argued, the degree of intra-industry trade (IIT), as opposed to inter-industry trade, may be seen as an important determinant of the costs involved in trade expansion. Adjustment costs are supposed to be lower in industries characterized by high levels of IIT and when the major part of new trade is of the IIT type, because it should cost less to transfer resources within industries than switch them from one industry to another as would be the case if inter-industry trade prevailed. In other words, resources are seen to be more mobile within industrial sectors than across sectors. If firms compete primarily on the basis of product differentiation — the realm of IIT — trade liberalization would more likely lead to the rationalization of production within domestic industries, and labour reallocation is relatively less painful.

Table 18

Italian intra-industry trade indices, 1989-92 and marginal IIT 1989-92

	NACE code	Poland 1989	1990	1991	1992	Marginal IIT 1989-92
Iron and steel industry	221	0,76	0,43	0,29	0,94	0,45
Steel tubes	222	0,24	0,44	0,75	0,97	0,45
Glass and glassware	247	0,72	0,74	0,66	0,83	0,77
Petrochemicals	252	0,74	0,77	0,72	0,84	undefined
Man-made fibres	260	0,18	0,64	0,68	0,98	undefined
Transmission equipment	326	0,8	0,65	0,62	0,6	undefined
Electric lamps and lighting	347	0,77	0,54	0,47	0,24	undefined
Knitting	436	0,13	0,29	0,32	0,52	0,95
Carpets	438	0,18	0,14	0,16	0,1	undefined
Leather products	442	0,91	0,96	0,27	0,28	0,03
Footwear	451	0,01	0,21	0,44	0,68	0,71
Ready-made clothing	453	0,85	0,88	0,87	0,71	0,45
Household textiles	455	0,05	0,21	0,16	0,17	0,13
Furs and fur goods	456	0,61	0,60	0,98	0,29	undefined
Sawing and processing of wood	461	0,00	0,01	0,00	0,00	0,00
Other wood manufactures	465	0,07	0,09	0,18	0,21	0,15
Articles of cork, straw, plaiting	466	0,00	0,58	0,21	0,08	0,04
Toys and sport goods	494	0,43	0,47	0,24	0,27	0,09

Table 18 ***(continued)***

	NACE code	1989	1990	Czechoslovakia 1991	1992	Marginal IIT 1989-92
Iron and steel industry	221	0,00	0,01	0,03	0,12	0,39
Steel tubes	222	0,47	0,93	0,05	0,21	0,10
Glass and glassware	247	0,10	0,14	0,13	0,17	0,65
Petrochemicals	252	0,74	0,57	0,35	0,30	undefined
Man-made fibres	260	0,92	0,64	0,16	0,17	undefined
Transmission equipment	326	0,67	0,85	0,41	0,29	0,04
Electric lamps and lighting	347	0,12	0,50	1,00	0,99	0,54
Knitting	436	0,15	0,30	0,70	0,87	0,48
Carpets	438	0,93	0,88	0,83	0,45	0,07
Leather products	442	0,70	0,77	0,70	0,82	0,71
Footwear	451	0,12	0,10	0,68	0,94	0,60
Ready-made clothing	453	0,69	0,57	0,71	0,54	0,33
Household textiles	455	0,04	0,02	0,04	0,19	0,19
Furs and fur goods	456	0,14	0,08	0,52	0,26	0,16
Sawing and processing of wood	461	0,00	0,01	0,01	0,01	undefined
Other wood manufactures	465	0,76	0,72	0,09	0,21	0,07
Articles of cork, straw, plaiting	466	0,70	0,78	0,95	0,70	0,53
Toys and sport goods	494	0,91	0,95	0,52	0,69	0,42

	NACE code	1989	1990	Hungary 1991	1992	Marginal IIT 1989-92
Iron and steel industry	221	0,65	0,40	0,46	0,28	undefined
Steel tubes	222	0,73	0,54	0,65	0,84	undefined
Glass and glassware	247	0,73	0,52	0,36	0,27	0,06
Petrochemicals	252	0,49	0,30	0,38	0,41	0,22
Man-made fibres	260	0,84	0,58	0,39	0,71	undefined
Transmission equipment	326	0,55	0,85	0,65	0,67	0,15
Electric lamps and lighting	347	0,37	0,35	0,61	0,58	0,80
Knitting	436	0,03	0,39	0,83	0,96	0,57
Carpets	438	0,32	0,22	0,35	0,23	undefined
Leather products	442	0,94	0,62	0,85	0,68	0,47
Footwear	451	0,49	0,28	0,77	0,93	0,74
Ready-made clothing	453	0,74	0,85	0,57	0,55	0,36
Household textiles	455	0,28	0,28	0,53	0,69	0,81
Furs and fur goods	456	0,05	0,73	0,44	0,78	undefined
Sawing and processing of wood	461	0,00	0,01	0,00	0,00	undefined
Other wood manufactures	465	0,16	0,21	0,12	0,11	0,05
Articles of cork, straw, plaiting	466	0,92	0,65	0,61	0,90	0,79
Toys and sport goods	494	0,28	0,21	0,47	0,41	0,26

Table 18 ***(continued)***

	NACE code	1989	1990	Romania 1991	1992	Marginal IIT 1989-92
Iron and steel industry	221	0,24	0,31	0,63	0,37	undefined
Steel tubes	222	0,16	0,21	0,70	0,23	0,17
Glass and glassware	247	0,08	0,29	0,44	0,33	0,30
Petrochemicals	252	0,60	0,84	0,62	0,38	undefined
Man-made fibres	260	0,14	0,84	0,26	0,10	0,04
Transmission equipment	326	0,13	0,57	0,28	0,25	0,28
Electric lamps and lighting	347	0,02	0,06	0,46	0,64	undefined
Knitting	436	0,47	0,99	0,94	0,89	0,95
Carpets	438	0,09	0,31	0,12	0,35	undefined
Leather products	442	0,96	0,75	0,63	0,71	0,20
Footwear	451	0,46	0,82	0,92	0,71	0,53
Ready-made clothing	453	0,13	0,23	0,33	0,34	1,00
Household textiles	455	0,01	0,26	0,19	0,13	0,93
Furs and fur goods	456	0,01	0,57	0,45	0,69	undefined
Sawing and processing of wood	461	0,00	0,06	0,32	0,03	undefined
Other wood manufactures	465	0,08	0,15	0,07	0,28	undefined
Articles of cork, straw, plaiting	466	0,04	0,47	0,03	0,12	undefined
Toys and sport goods	494	0,10	0,70	0,04	0,17	undefined

	NACE code	1989	1990	Bulgaria 1991	1992	Marginal IIT 1989-92
Iron and steel industry	221	0,54	0,24	0,04	0,14	undefined
Steel tubes	222	0,91	0,55	0,57	0,47	undefined
Glass and glassware	247	0,45	0,64	0,78	0,89	0,26
Petrochemicals	252	0,64	0,98	0,93	0,58	undefined
Man-made fibres	260	0,03	0,53	0,50	0,89	undefined
Transmission equipment	326	0,07	0,26	0,52	0,66	undefined
Electric lamps and lighting	347	0,93	0,81	0,45	0,71	0,36
Knitting	436	0,28	0,51	0,90	0,68	0,27
Carpets	438	0,26	0,52	0,58	0,34	undefined
Leather products	442	0,22	0,11	0,06	0,43	0,28
Footwear	451	0,00	0,00	0,93	0,80	0,45
Ready-made clothing	453	0,93	0,71	0,46	0,27	0,11
Household textiles	455	0,25	0,10	0,03	0,01	undefined
Furs and fur goods	456	0,00	0,75	0,80	0,24	0,17
Sawing and processing of wood	461	0,00	0,01	0,07	0,02	0,01
Other wood manufactures	465	0,65	0,13	0,27	0,14	undefined
Articles of cork, straw, plaiting	466	0,00	0,00	0,00	0,24	0,14
Toys and sport goods	494	0,10	0,65	0,52	0,68	0,81

Note: IIT is calculated as 1-(|X-M|/X+M). It varies between 1 (all intra-industry trade) and 0 (all inter-industry trade or no trade). MIIT is calculated as (Xt-Xt-n)/(Mt-Mt-n) for Mt-Mt-n> = Xt-Xt-n>0; (Mt-Mt-n)/(Xt-Xt-n) for Xt-Xt-n> = Mt-Mt-n>0; undefined for Xt<Xt-n or Mt<Mt-n. The index varies between 1, when new trade is purely IIT, and 0 or undefined, when it is purely inter-industry.

Source: Calculated from EC trade files.

Table 18 presents the IIT indices of all NACE 3-digit industries for Italy in its trade with the five CEECs. Although a more disaggregated level would in principle be more appropriate for measuring intra-industry trade for specific commodities, for the purpose of our study the 3-digit aggregation appears to be a reasonable approximation of 'industry'. The IIT index measures the share of two-way trade in global reciprocal trade for each of the categories involved. It varies between 0 (all inter-industry trade) and 1 (all intra-industry trade). The first general impression one gets from the table is that Italian IIT is on average lower with Eastern Europe than with the EU, as one could expect from the lesser degree of industrialization of the former. In this case too, however, indicators have rapidly grown over the last three years, and especially so in 1991-92, suggesting considerable amounts in two-way trade, including intermediate products and intra-firm transactions.

Next to the IIT indicator is the index of marginal intra-industry trade (MIIT), i.e. the share of IIT in new trade flows during the period 1989 to 1992. This index provides a more precise indication of the extent to which new export (import) flows are matched by import (export) flows of similar products. The value of MIIT will vary between 0 (when one of the two flows does not change) and 1 (when exports and imports increase by the same amount). It will remain undefined when one of the two flows is negative (Hamilton and Kniest 1991).

If we concentrate our attention on the industries where import penetration of the Italian market is relatively high, it immediately appears that some of the most penetrated also have a relatively high and often growing IIT index with at least three CEECs. Such is the case, for instance, of footwear, man-made fibres, woven fabrics, knitting, clothing, leather products, electric lamps and transmission equipment. These high IIT values would then suggest lower adjustment costs, with the possibility of switching resources within the sectors involved, specializing in different segments and quality levels. Evidence from Italian production and exports all over the world seems to suggest that Italian firms in some of these industries tend to specialize in upper stage niches, while increasing imports of lower quality or value-added products. Besides footwear, the textile and clothing sector seems to be a case in point (Graziani 1991). A comparison between Italian export and import unit values with the CEECs, taken again as imperfect proxies of quality levels, appears to confirm these remarks. On average, Italian export unit values tend to be much higher than the corresponding import unit values. The contrary is true on average for leather products, plus in some cases for transmission equipment (Czechoslovakia, Hungary and Bulgaria) and electric lamps (Czechoslovakia and Romania).

Data up to 1992 does not capture fully however a recent acceleration of redeployment taking place in some Italian industrial sectors characterized by high IITs. In footwear and clothing, for instance, large segments of the productive phases are more and more rapidly relocated in low labour cost countries, including Eastern Europe. In clothing this happens more through the 'outward processing traffic' scheme than by foreign investment. Since in the short term this will generate much greater flows of Italian imports than exports, IIT indices might soon start to fall, together with Italian production and employment. Moreover, the increasing use of contractual arrangements, such as franchising operations, in the case of commodities with a strong brand identity — the clothing company Benetton is a case in point — may also limit the extent of intra-industry (here intra-firm) trade. In the auto industry, the large FIAT investment in Poland has enhanced for the moment intra-firm trade (Italian motors against Polish cars) showing up as intra-industry trade, but the production of all components may in the not too distant future be located closer to the assembly line in Poland. It should be stressed, however, that the fast redeployment occurring in these sectors is not so much a result of trade liberalization with Eastern Europe, but a consequence of international competition and structural transformation of the industries involved.

On the other hand are Italian sectors which have high IIT values with only one or two CEECs: steel and iron, steel tubes, glass, petrochemicals, carpets, household textiles, fur goods, processing of wood, other wood manufactures, cork and straw products, toys and travel goods. Here adjustment costs may be harsher, although penetration ratios are generally lower, with the exception of household textiles, fur goods, wood processing and other wood manufactures. We should however recall that Italy is not specialized in fur goods and wood processing. In these two sectors, plus glass, carpets, fur goods and toys, Italian export unit values tend moreover to be lower than the import ones.

Summing up, analysis of the two indicators presented above tends to show that on the whole intra-industry trade as a share of total trade is on the increase between Italy and Eastern Europe. Although admittedly the time span is too short, this would suggest that it is inappropriate to think that the Europe Agreements will necessarily lead to much greater structural adjustments than has been the case for trade liberalization agreements with developing countries or for the single market. By sectors, the brunt of adjustment will likely be borne by those industries where the CEECs products compete more directly with Italian products and the level of IIT is relatively low and/or stagnant. Cases in point appear to be some steel products, glass, petrochemicals, carpets, household textiles, fur goods, some wood products, cork and straw products, toys and travel goods. In other sectors liberalization will encourage production to concentrate to an even greater extent on upmarket commodities.

However, the precise impact on Italian industrial sectors cannot be foreseen. In fact, trade diversion might occur at the expense of other competitors. To the extent that the CEECs' products replace other outside competitors, such as the developing countries, in imports of particular commodities, the problem of adjustment in Italian industry arising from trade liberalization with the CEECs may not materialize. It is for instance likely that the competitive advantage of the Mediterranean countries will be eroded by the new preferences extended to the CEECs. But the size of this type of trade diversion can only be gauged *ex post*. All in all one could safely say that the real threat to Italian production and employment would come in some sectors more from the disappearance of international protection (i.e. the elimination of the MFA for the textile and clothing industries) than from the CEECs' exports. Internal causes may also finally be at the root of the structural problems of some Italian import-competing industries.

7. The likely impact of trade liberalization on Italian exports to Eastern Europe

The likely effects on Italian manufacturing production and employment deriving from growing import penetration of the domestic market and increased competition on foreign markets, should be balanced against the possible benefits of trade liberalization for Italian exports to Eastern Europe.

As pointed out at the beginning, the CEECs are not important markets either for Italy's exports as a whole or for its manufacturing exports. As a consequence, trade liberalization should not have initially a very important impact on Italian exports. If this is true on the whole, however, analysis of the different export sectors reveals interesting insights.

Table 11 listed the major sectors in Italy's manufacturing export structure with each of the five CEECs. Some general features appear immediately. First, Italian export structure is much less concentrated than its import structure, except for of its trade with Czechoslovakia, where its concentration degree is exactly the same in the two flows. The share of the first 10 3-digit export products varies between 49% with Hungary and 60% with Romania.

Second, as expected, high-tech industries are much more important in the Italian export structure than in its import structure. The share of the NACE 32-37 groups is well over one half of exports to Czechoslovakia and Bulgaria and between 37-40% with the other three countries.

Among the 2-digit categories, mechanical engineering represents in all cases the largest, although slightly decreasing, share of manufacturing exports, varying from a low of 17% with Hungary to a peak of 41% with Czechoslovakia. As happens also at the world level, this sector shows the highest and mostly growing surplus for Italy. Machinery for the food and chemical industries and other machinery always figure among the first five 2-digit industries. Textile machinery and machinery for mines and the iron and steel industry follow suit.

Electrical engineering is also present in most cases among the top five 2-digit sectors. Although its share never reaches 10%, its surplus generally tends to grow. Different 3-digit products are represented in the structure, including domestic type electrical appliances, telecom equipment, electrical apparatus and others. However, they never figure among the top three.

Motor vehicles are very important in Polish imports — second place with 17% — and slightly less in Czechoslovakia's and Bulgaria's imports. The nature of trade is however very different in the two cases. More than half of Italian exports to Poland in this category are represented by parts of motor vehicles, with a growing surplus, while the rest is mostly motor vehicles, with a growing deficit, which more than offsets the first. This is an indirect sign of a lot of intra-firm trade going on, confirmed by the presence of local FIAT production. On the contrary, most Italian exports to Czechoslovakia and Bulgaria in this sector are motor vehicles.

Chemicals also rank among the first five 2-digit categories, except with Romania. They are relatively important with Bulgaria — 14% — but less than 10% in the other cases. While exports are spread among several chemical products, the balances reveal interesting features. Almost invariably, Italy runs a deficit in petrochemicals and other industrial chemicals, but a surplus in more value-added and refined products, like paints, pharmaceutical products, soap and detergents, and the like.

The other sector which is always among the top five is textiles. As a mostly-growing share of Italian exports, it represents 17% to Romania, 12% to Bulgaria and Hungary, 7% to Poland and 6% to Czechoslovakia. Apart from the last country, Italy runs a surplus in this category, as happens at the world level. Woven fabrics and knitting represent in that order the bulk of Italian exports. By themselves, woven fabrics are the top 3-digit product in Hungarian and Romanian imports from Italy, and the third ranking in Bulgarian ones. The reason for such importance of Italian textile exports and their surplus can only be understood in conjunction with the situation in the clothing industry. Here Italian exports to Eastern Europe are relatively less important than textiles and show considerable deficits, contrary to their world performance, where they run substantial surpluses. Apart from intra-industry trade going on among different types of the same products, much inter-industry trade is materializing between the textile and clothing sectors, mostly under the form of outward processing. A large quantity of Italian imports of clothing could be thus due to a contract relocation of production to the CEECs, where labour costs tend to be far lower than in Italy. This has implications for Italian textile exports as well, in so far as their outlets are positively correlated to production in Eastern Europe destined for re-exports. In such instance, growing import penetration ratios in the clothing industry would represent the pay-off for increased exports of textiles.

8. The export orientation of Italy's manufacturing sector

Any sizeable beneficial impact on the Italian industry derived from the opening up of Eastern Europe depends upon the particular export propensity of Italian industrial sectors towards the CEECs. This is measured by the ratio between exports to the five CEECs and domestic production as calculated in Table 19.

Table 19

Export propensity ratios of Italian manufacturing industry towards the five CEECs

2-digit NACE	1985	1986	1987	1988	1989	1990	1991	1992
21	9,24	8,01	3,50	4,90	11,97	3,31	2,60	7,15
22	0,65	0,50	0,41	0,27	0,31	0,27	0,25	0,30
23	0,65	0,19	0,28	0,19	0,39	0,27	0,22	0,24
24	0,11	0,12	0,11	0,09	0,21	0,21	0,31	0,42
25	0,57	0,55	0,51	0,51	0,49	0,37	0,37	0,50
26	1,03	1,34	1,15	1,24	0,86	0,29	0,46	0,43
31	0,28	0,23	0,16	0,14	0,17	0,20	0,33	0,43
32	1,18	1,09	0,99	1,04	1,13	1,65	1,47	1,84
33	0,18	0,08	0,07	0,13	0,07	0,18	0,32	0,44
34	0,41	0,32	0,23	0,18	0,16	0,29	0,31	0,54
35	0,26	0,16	0,15	0,16	0,16	0,19	0,35	0,93
36	0,05	0,05	0,04	0,06	0,04	0,11	0,06	0,13
37	0,05	0,05	0,04	0,04	0,04	0,06	0,09	0,13
41	0,08	0,06	0,04	0,06	0,07	0,15	0,17	0,16
43	0,52	0,45	0,38	0,36	0,43	0,42	0,56	0,87
44	0,58	0,47	0,43	0,44	0,45	0,67	0,96	1,40
45	0,26	0,22	0,22	0,18	0,20	0,42	0,57	0,79
46	0,10	0,09	0,06	0,07	0,07	0,11	0,20	0,36
47	0,15	0,13	0,13	0,11	0,13	0,15	0,26	0,27
48	0,41	0,38	0,31	0,31	0,30	0,28	0,36	0,59
49	0,13	0,17	0,11	0,15	0,26	0,42	0,79	1,34
Total	0,38	0,33	0,29	0,28	0,30	0,38	0,42	0,59

Main 3-digit NACE Products	1985	1986	1987	1988	1989	1990	1991	1992
252 + 253	0,64	0,73	0,70	0,74	0,68	0,48	0,49	0,63
321	0,25	0,25	0,19	0,13	0,12	0,42	0,41	0,37
322	1,08	1,16	1,00	1,28	0,94	2,39	1,45	1,66
323	2,74	1,70	2,05	2,12	2,92	2,44	4,23	2,93
324	1,57	1,40	1,42	1,38	2,11	1,98	2,42	2,79
325	0,55	0,55	0,70	0,57	0,47	1,30	0,84	1,17
326	0,62	0,62	0,46	0,38	0,32	0,36	0,31	0,30
327	2,01	2,07	1,77	1,98	2,52	2,31	2,16	3,68
328	1,42	1,27	0,92	1,08	1,03	1,67	1,27	1,81
341	0,25	0,28	0,19	0,18	0,15	0,27	0,27	0,42
342	1,48	0,87	0,29	0,26	0,26	0,41	0,55	0,62
343	0,44	0,36	0,75	0,33	0,18	0,36	0,46	1,00
344	0,43	0,41	0,25	0,26	0,18	0,45	0,38	0,57
345	0,21	0,17	0,09	0,09	0,13	0,19	0,15	0,35
346	0,21	0,24	0,13	0,18	0,24	0,38	0,42	0,87
347	0,47	0,28	0,23	0,19	0,18	0,22	0,58	0,91
351	0,18	0,10	0,11	0,11	0,11	0,14	0,30	0,73
352	0,59	0,25	0,13	0,12	0,28	0,26	0,32	0,53
353	0,53	0,42	0,33	0,37	0,33	0,40	0,54	1,87
436	0,46	0,31	0,21	0,19	0,41	0,38	0,49	0,68
441	0,70	0,62	0,57	0,60	0,59	0,86	1,18	1,70
442	0,16	0,07	0,04	0,04	0,08	0,11	0,30	0,53
451	0,42	0,39	0,44	0,31	0,38	0,79	1,15	1,62
453	0,18	0,13	0,11	0,13	0,12	0,26	0,30	0,42
455	0,17	0,09	0,04	0,02	0,05	0,13	0,24	0,32
467	0,07	0,06	0,02	0,04	0,05	0,09	0,23	0,47

Note: Export propensity is calculated as the ratio of exports to domestic production.
Source: Own calculations from EC trade files and Eurostat estimates for production.

For the whole manufacturing sector, the percentage figure is well under unity (0,59). The broad 2-digit sectors above this average — apart from the scarce significance of the figure for extraction and preparation of metalliferous ore, due to the minimum level of production and exports — are, in descending order: mechanical engineering (1,84), leather (1,40), miscellaneous manufactures (1,34), motor vehicles (0,93), textiles (0,87), footwear and clothing (0,79).

Even at the 3-digit level, Italian industry seems particularly oriented to Eastern Europe only in a few products. With the exception of agricultural machinery and transmission equipment, all the mechanical engineering categories exhibit increasing percentage ratios with values higher than 1, reaching 3,68 for machinery for specific industries, 2,93 for textile industries, 2,79 for food and chemical industries, 1,81 for other machinery, 1,66 for machine tools, 1,17 for mining and iron and steel industry. It should however be recalled that in some instances this is the result more of falling production than of increasing exports. Machine tools, machinery for mining and other specific industries are cases in point.

Other sectors particularly oriented to the CEECs are: motor vehicles parts (1,87, but with a decreasing production), tanning and dressing of leather (1,70), footwear (1,62) and electrical apparatus (1,00). Ratios for yarn and woven fabrics could not be calculated due to incompatibility between production and export data at our disposal.

If we put together the data from the Italian export structure, the weighted trade balances and trade propensity ratios, the products which stand to gain in a relatively substantial way are just a handful: machinery for food, chemicals, textiles, mining and steel and iron industries, plus other machinery, mechanical engineering, parts for motor vehicles, electrical apparatus, footwear, woven fabrics, and slightly less tanning and dressing of leather.

9. Possible impact on investment and expectations of Italian investors in Eastern Europe

There is a final basic concern about the possible negative effects of opening up the CEECs on Italian industry. Namely, that it might drive investment resources away from Italy and towards the new associates in the region.

As is well known, total FDI into the CEECs has increased rather quickly from a comparatively low level over the last four years in the case of the three leading CEECs. According to our estimates, in 1992 its cumulative value stood, in USD billion at 4,8 in Hungary, 1,9 in Czechoslovakia, 1,4 in Poland, 0,6 in Romania and 0,4 in Bulgaria (Table 20). Italy appears to be among the leading investors. The global value of its investment has been on the increase in recent years, especially so in the case of Hungary, Czechoslovakia and Poland (Table 21). According to official data from the Banca d'Italia, in the four years 1989-92 Hungary received investment worth LIT 136 billion, against a disinvestment of LIT 28 billion; Czechoslovakia LIT 133 billion, against LIT 63 billion of disinvestment; Poland LIT 35 billion and only LIT 1 billion of disinvestment; Romania a mere LIT 3 billion, against a massive disinvestment LIT 35 billion; and finally Bulgaria only LIT 2 billion. Poland, after the two new big deals with FIAT and Lucchini, might soon alter its position and head this ranking. All in all, however, the global value of Italy's investment in the CEECs is still a very small fraction of its world investment.

Table 20

Total foreign investment (cumulative) in East European countries, 1992

	(USD million)
Poland	1 400
Czechoslovakia	1 900
Hungary	4 800
Romania	600
Bulgaria	400

Source: Own estimates.

Table 21

Italian direct investment in Eastern Europe

(LIT billion)

	Poland	Czechoslovakia	Hungary	Romania	Bulgaria
1989	2	0	35	0	0
1990	2	13	27 (– 1)	0	1
1991	4	67 (– 63)	28 (– 11)	1	0
1992	27 (– 1)	53	46 (– 16)	2 (– 35)	1
Total net FDI	34	70	108	(– 32)	2

Note: Between parentheses values of disinvestment.
Source: Taken or calculated from Banca d'Italia.

The conclusions to be drawn from the current situation may be inferred from some personal interviews conducted with Italian firms (two of them appear in the annex) and the results of the special investment survey questionnaire submitted yearly from 1990 to 1992 to more than one thousand firms by the Istituto Nazionale per lo Studio della Congiuntura (ISCO) (ISCO 1990-92, Corsi 1993). Although these latter data should be treated with extreme caution because they are very aggregated — they consider only six main industrial sectors — and mostly include the former USSR as well, some of the results are nevertheless interesting and will be presented here.

The investment pattern clearly shown by the previous table seems also to correspond to the relative attractiveness of individual CEECs for Italian investors. According to the ISCO survey, in November 1992 Poland appeared to be the most attractive location, followed by Hungary and Czechoslovakia (Table 22). Romania and Bulgaria stood very low in Italian investors' preferences. By firm size, this was the result of the preferences of large and medium firms, while small enterprises do not seem to have particular preferences among the three leading CEECs. Our personal interviews seem to point to a rather differentiated attitude according to the firm size and the sector of activity, while confirming the preference for the three leading CEECs. More particularly, the marked preference for Poland seems to be mainly due to two large investors like FIAT, in the motor industry, and Lucchini in steel. In the first instance, moreover, historical ties seem to have played a rather important role apart from Poland's larger relative size and market profitability. Other sectors, especially labour-intensive ones such as the clothing industry, seem relatively more widespread in their preference of investment locations.

If we look further at actual investment by sectors, the ISCO survey shows that mining has only recently come to the fore, gaining first rank. However, this data is most likely biased by the weight of the former USSR and consequently is not relevant to our purpose. Mechanical industry shows the highest average propensity to realized investment, followed by basic materials and food (Table 23). Structural reasons for such a behaviour, not unearthed by the survey, could lie in the need to diversify sourcing in the latter two cases and to support the export drive in the preceding one. Inadequate firm size is alleged to be the main reason for not investing, especially for small- and medium-sized firms, while preference for domestic markets is second in most answers and for all sizes of firm. Surprisingly enough, risk aversion never comes first or second, with the exception of mining (again probably in the former USSR).

Table 22

Relative attractiveness of individual East European countries for Italian foreign investment (by firm size, percentage of replies)

Firm size	Year	Poland	Czechoslovakia	Hungary	Romania	Bulgaria
Small (5-99 employees)	1990	36	25	38	10	5
	1991	35	31	39	15	6
	1992	41	41	41	21	6
Medium (100-499 employees)	1990	34	32	47	8	4
	1991	44	40	45	12	5
	1992	52	50	50	16	6
Large (over 499 employees)	1990	42	30	43	10	2
	1991	41	44	48	13	2
	1992	57	44	48	15	3
Total	1990	36	28	42	10	5
	1991	40	35	42	14	5
	1992	47	44	46	18	6

Source: Taken from ISCO investment survey data bank.

Table 23

Italian realized investment in Eastern Europe in current year, by industrial sectors (percentage of replies, November 1992)

(%)

Industrial sectors	Yes	No	If yes, why					If no, why		
			1	2	3	4	5	6	7	8
Basic materials	16	84	67	33	17	0	19	7	35	49
Metallurgy	6	94	50	0	50	0	36	24	48	12
Mechanical	44	56	48	33	24	10	29	18	42	27
Processing	5	95	50	17	17	33	25	15	41	37
Mining	67	33	100	—	—	—	13	20	13	73
Food	10	90	33	67	17	17	23	12	40	35
Total	40	60	50	32	20	11	26	15	40	34

Note: 1=joint venture; 2=search for new markets; 3=business group strategy; 4=others; 5=insufficient demand; 6=risk aversion; 7=inadequate firm size; 8=preference for domestic market.
Source: Corsi (1993) on ISCO Investment Survey.

Personal interviews seem to show that the main reasons for investing in the CEECs may vary slightly from one sector to another and according to firm size. Labour cost appears still to be relatively important in labour-intensive sectors, for example, the clothing industry, where it stands at between one ninth and one sixth of the Italian level, while productivity reaches between 80% and 90% of the same. Naturally, when considering East European countries alongside more distant, albeit lower cost, Asian producers other factors are taken into consideration such as the quality of the labour force and, above all, proximity to the market. Hourly labour costs in the motor industry are also lower than in Italy, ranging between one eighth and one fifth (in Poland). However, it is not considered the main reason to select a certain country as an investment location. The size of the market, productivity levels, governments' incentives, and more generally the business environment, are deemed to be all part of a package that determines investment.

Looking to the future, more than half the polled firms in 1992 expected a positive impact on the overall Italian economy from economic liberalization in Eastern Europe (Table 24). It should be noted, however, that in 1990 this share was more than three quarters. On the other side, 15% of the respondents envisaged a negative impact in 1992, as against 4% two years earlier. Such greater awareness of the growing difficulties involved can be detected for most sectors, with the exception of mining and, slightly, of the food industry, and for any firm size. Some interesting differences emerge among the various industries as to the absolute level of positive answers. The largest share of the latter — and the lowest portion of negative answers — pertain to basic materials, mining and food industries. If we read this in the light of my previous findings, one possible explanation is that these are sectors in which Italy is hardly specialized at all and that, apart from some food products, firms do not feel the threat of increased competition from Eastern Europe. On the contrary, the highest number of firms expecting a negative impact can be found in the metallurgical and processing industries, where, as shown previously, competition may be harsher. Finally, one will note that the degree of concern about a possible negative impact is inversely correlated to firm size.

Table 24

Expected impact on the Italian economy from economic liberalization in Eastern Europe, by industrial sectors and firm size (percentage of replies)

(%)

Industrial sectors	Positive impact			Negative impact			No impact		
	1990	1991	1992	1990	1991	1992	1990	1991	1992
Basic materials	79	78	66	2	5	13	8	9	8
Metallurgical	63	46	37	17	25	33	3	7	10
Mechanical	71	70	57	5	8	13	7	11	17
Processing	77	66	58	6	12	18	8	13	12
Mining	72	60	73	8	14	10	12	11	5
Food	84	66	67	3	16	12	5	10	10
Firm size									
Small (5-99 employees)	76	64	53	5	10	17	8	13	12
Medium (100-499 employees)	80	71	66	4	13	13	8	11	12
Large (over 499 employees)	88	86	71	2	5	10	5	6	13
Total	79	69	59	4	10	15	8	11	12

Source: See Table 23.

Table 25

Planned investment in Eastern Europe, by industrial sectors (percentage of replies, November 1992, for following year)

(%)

Industrial sectors	Yes	No	If yes, why 1	2	3	4	5	If no, why 6	7	8
Basic materials	18	82	69	31	8	0	19	7	35	50
Metallurgical	12	88	67	33	33	0	38	23	50	15
Mechanical	62	38	44	49	20	7	30	14	42	27
Processing	8	92	56	44	26	11	23	13	43	37
Mining	71	29	50	25	0	25	7	21	21	64
Food	11	89	29	43	43	0	26	9	37	37
Total	45	55	50	44	20	8	26	12	40	35

Note: 1=joint venture; 2=search for new markets; 3=business group strategy; 4=others; 5=insufficient demand; 6=risk aversion; 7=inadequate firm size; 8=preference for domestic market.
Source: See Table 23.

Table 26

Destination of Italian planned investment for next year, by East European country and firm size (percentage of replies)

(%)

Firm size		Poland	Czechoslovakia	Hungary	Romania	Bulgaria
Small	1990	17	22	39	9	9
(5-99	1991	16	32	34	16	5
employees)	1992	29	33	33	21	10
Medium	1990	26	9	22	9	4
(100-499	1991	22	35	18	8	6
employees)	1992	31	34	34	9	6
Large	1990	36	18	64	9	9
(over 499	1991	45	42	39	10	3
employees)	1992	50	18	36	9	0
	1990	25	16	37	9	7
Total	1991	40	35	42	14	5
	1992	34	30	34	15	6

Source: Taken from ISCO Investment Survey data bank.

As for prospective economic relations with the CEECs, more than half the firms expect to widen current relations and establish new ones. Metallurgical, mining and food seem to have increased in 1992 their propensity to establish new relations. As for new investment, in November 1992 almost one half — 45% — of the polled firms had planned investment in the CEECs for the next year, mostly either to search for new markets or in the form of a joint venture (Table 25). The main reasons for not planning investment were again the preference for the domestic market and inadequate firm size (obviously not so for large firms), followed by insufficient demand. By country of destination, investment prospects seem brighter for Poland and Hungary, followed by Czechoslovakia, and, dimmest for, Romania and Bulgaria (Table 26). If one looks at firm size, such a result is due to large firms, while small and medium firms still seem to prefer Czechoslovakia and Hungary equally. Finally, Romania and Bulgaria are relatively preferred by small enterprises.

Concluding remarks and prospects

This analysis has shown that the possible impact of liberalization on Italian industry may be felt both on trade and investment flows.

As for the first, CEEC competition in the EU and Italian markets might become a danger in clothing, knitting, household textiles, footwear, glass and glassware, wood furniture, semi-

finished wood manufactures, carpentry, other wood manufactures, foundries, processing of fruit and vegetables, leather products and steel tubes. In most of these 'traditional' sectors Italy enjoys comparative advantages at a world level. They are moreover predominantly 'sensitive' sectors, where Italy already suffers from increasing competition from developing countries. If we look at direct import penetration of the same products into the domestic market and intra-industry trade indices, adjustment costs may be harsher only for steel, glass and household textiles.

On the other hand, concern that the opening up of Eastern Europe might drive investment resources away from Italy and towards the CEECs finds little empirical support so far. Although Italy appears to be amongst the leading investors in the region and its global FDI there has been on the increase in recent years, the values involved are still minor when compared to Italian world investment. Labour cost still appears to be relatively important in explaining Italian foreign investment in labour-intensive industries, such as the clothing sector, together with other factors like the quality of the labour force and proximity to market. The growing practice of 'outward processing traffic' or, more generally, of subcontracting and contractual arrangements, such as franchising, may however be seen as a valid alternative to new foreign investment.

In scale-intensive sectors, such as the motor industry, historical ties are also deemed important in explaining the choice of particular countries (Poland) within certain regions (see interview with FIAT). Labour cost is only one of various attracting factors, including the size of the market, productivity levels, government policies, and especially the general business environment. Given the recent large-scale FIAT investment expenditure in Poland, it is unlikely to expect any further major investment in the near future. The same could be said of the recent investment outlays by Lucchini in the steel sector. Finally, recall that less than half of the firms polled in the ISCO investment survey have planned new investment in the region. For reasons explained in the text, the footwear and clothing sectors might be particularly responsible for large parts of it. This is where a relocation of Italian investment may contribute to a reduction of domestic production and employment. It should be stressed, however, that the redeployment occurring in these sectors is not so much a result of trade liberalization with Eastern Europe, but a consequence of international competition and structural transformation of the industries involved.

Overall, the possible harm to Italian industrial sectors deriving from trade liberalization cannot be foreseen accurately. Nonetheless, any potential negative impact should be tempered by the following factors.

(i) The increase of imports from the CEECs both on the domestic and on the EU market might occur at the expense of other competitors. To the extent that the CEECs' products replace other outside competitors, for example, the developing countries, in Italian imports of particular commodities, the problem of adjustment in Italian industry arising from trade liberalization with the CEECs may not materialize. It is, for instance, likely that the competitive advantage of the Mediterranean countries will be eroded by the new preferences extended to the CEECs. But the size of this type of trade diversion can only be gauged *ex post*.

(ii) The likely negative effects should be balanced against the possible benefits for Italian exports to Eastern Europe. On the whole, the CEECs are not important markets for Italian exports of manufactures, compared to the rest of the world, and especially so to the EU. Some industrial sectors are however more important than the average. Given their particular export orientation, and their weight in the export structure, Italian commodity groups which stand to gain most from the opening up of Eastern Europe appear to be various types of machinery (for food, chemical, textile, mine and steel and iron industries), parts of motor vehicles, electrical apparatus, footwear, woven fabrics and tanning and dressing of leather. In at least two of these sectors (textiles and motor vehicles) this is the result of 'connected' trade, where export flows are, as it were, tied to import flows. The connection between Italian exports of textiles and imports of clothing from the CEECs — an inter-industry type of trade at this level of aggregation — is effected mostly under the 'outward processing traffic' regime, whilst ties between the exports of Italian motor vehicle parts and imports of finished motor vehicle in the most relevant case — Poland — is a typical example of intra-firm, intra-industry trade.

(iii) In some sensitive sectors the actual process of trade liberalization with the CEECs could be much slower than officially forecasted. There is already some evidence that the escape clauses included in the Europe Agreements may well be used to obtain new import quotas or anti-dumping proceedings. Cases in point are the dumping duties obtained in November 1992 on seamless steel tubes exported by Czechoslovakia, Hungary and Poland, and restrictions on the amounts of special steel products exported in 1993 by the Czech Republic and Slovakia. The abolition of tariffs and quantitative restrictions will not do away with the so called basic import price system, which has been up to now the main barrier affecting this trade (Wang and Winters 1993b). It is not unthinkable that similar 'grey measures' may be adopted in other sectors, such as footwear.

(iv) The impact on trade balances and employment may not be so drastic due to the fact that many Asian products are still cheaper and of higher quality than those from the CEECs.

Moreover, a peak might have already been reached in the rate of growth of East European exports during the first two years of the 1990s when there was a desperate necessity to reorient part of their exports previously destined for other former CMEA countries.

(v) Finally, the implied structural adjustment might be milder than expected. Restructuring in some Italian sectors involved has already been a practice over the last few years. In this respect, among the sectors more at risk, clothing and footwear seem to be further ahead in the restructuring process. The main strategy applied appears to be redeployment abroad, along with quality upgrading and, whenever possible, technical innovation. As for clothing, redeployment without investment under the OPT scheme is very likely to increase. This is due to the lifting of duties on re-imported value-added as from 1994, and to the possible relaxation of Italian OPT regulations which are currently much stricter than in other major competing EU countries, like Germany. The steel sector, on the contrary, is still characterized by excessive fragmentation of productive units and a large loss-making state-owned sector, (which is, however, just about to be privatized).

The implications in terms of appropriate policy responses by both Italy and the EU must therefore start from the perspective that the opening up of Eastern Europe is not itself creating new problems either for Italy or the EU.

The actual threat to Italian industry seems much lower than usually thought and limited to very specific sectors. Moreover, some of these imports, such as the clothing sector, are increasingly part of a redeployment strategy applied by Italian producers and, as a consequence, appear strictly connected to exports in related sectors, such as textiles. For most sectors concerned, the competitive pressure from the CEECs is only supplementary to a challenge already taking place in our markets. All in all, one could safely say that the real threat to Italian production and employment would come in some sectors more from the redeployment strategies adopted by Italian firms and by the disappearance of international protection (i.e. the elimination of the MFA over a 10-year period for the textile and clothing industries, as forecasted in the recent Uruguay Round agreement) than from the CEECs' exports.

The analysis has shown the potential benefits of trade liberalization for Italian exports, which seem to have grown more rapidly than imports from the CEECs. Any substitution of new non-tariff barriers to the lowering of tariffs in EU trade with Eastern Europe would inevitably restrict the CEECs' export access and consequently diminish the chances of economic transition in those countries. Consequently, there could be a potentially serious negative impact on future Italian export expansion towards those markets. Success in phasing out uncompetitive Italian production lines will also depend on government policies to facilitate the process of market-led structural change and the extent to which pressures from adversely affected interest groups are resisted.

Annex — Interview with FIAT (October 1993)

Q. *What do you expect will be the possible impact of trade liberalization with the CEECs on FIAT's relations with those countries?*

A. As far as automotive products are concerned, one should remember that imports into Italy and the EU are already practically free. On the other hand, lowering of the CEECs' barriers will certainly allow our sales to increase.

Q. *In this respect, how do you rate the different markets in Eastern Europe?*

A. Apart from Poland, we tend to consider them rather marginal. Poland, however, is a good and promising market, estimated at roughly 250 000 cars a year. FIAT already holds almost half that market, including exports and local production. Remember that Poland has a population of around 37 million people. Hungary and Czechoslovakia are, in this respect, rather small markets.

Q. *Does FIAT have a precise ranking of the different countries in the region, both from the trade and investment points of view?*

A. Those countries are seen by us in a differentiated way, since they are very different from each other. We tend to consider three groups of countries, ranked in order of importance.

Poland comes first. Our commercial penetration and investment are both very high because of the size and profitability of the market. The speed with which it has emerged from crisis and the fact that its per capita income exceeds what is considered to be the threshold for initial motorization make Poland for us an attractive country, more so than Argentina and on a par with countries like Turkey and Brazil. Consequently we follow this particular market with a dedicated structure.

Then comes a group represented by two small countries, slowly emerging from economic crisis: the Czech Republic and Hungary. Our strategy there is similar to the one conducted with other small countries which have good potential in terms of per capita income, such as Holland, Belgium or Austria. Of course the two CEECs are not yet at this level, so that our structure of commercial penetration cannot yet have the same degree of sophistication. We have created multiproduct sales companies through which the final products of our group are sold: passenger cars, industrial and commercial vehicles, tractors and agricultural machinery.

Finally, a third group of countries is represented by Slovakia, Romania and Bulgaria. Both the present size and the prospects of these markets are discouraging. We operate there through small local footholds and agents.

Obviously this ranking, which holds true for the FIAT group as a whole, may not be the same for individual products. For agricultural tractors, for instance, Romania is a more important market for us than the Czech Republic.

Q. *Looking at the car market in Eastern Europe, one gets the impression that the market is being shared out: amongst some of the major world producers: FIAT in Poland, Volkswagen-Audi in the former Czechoslovakia, GM and Suzuki in Hungary. Is this the result of a precise strategy, of competition or of historical reasons?*

A. We believe historical ties can explain a lot. Polish FIAT for instance was born in the 1920s. The factory was expropriated in 1948. In 1971, FSO started to produce by licence the model 125 (100 000 units per year) and in 1974 we created with FSM the first experience of global sourcing (small 126 car). In the 1980s, we conducted negotiations and reached an agreement with FSM to produce the new 'Cinquecento' following the same line as for the 126. As a consequence, in 1990, when the old regime fell apart, the Polish side could not avoid selling the FSM, while FIAT could not avoid buying it. Steps undertaken in the 1980s already foreshadowed such a result. Similar considerations could be made about Volkswagen's historical ties with Czechoslovakia and GM's with Austria, the nearest market to Hungary. In other words one could say that car makers' strategies amount to the following: given our historical ties, what are the advantages to be reaped from a changed situation? Suzuki is obviously a case apart, since it represents the only real newcomer.

Q. *As has already happened in other European countries, namely the UK, inward investment in export-oriented plants has spawned a swift parallel growth in the manufacture of components. How far do you source yourself locally?*

A. The local content ratio in Polish FIAT production already exceeds 50% and has been increasing steadily. This is a natural second stage in car production. It is a question of rationalization of the productive process. For a just-in-time process it is fundamental that components are near the producer. The same is happening at the new FIAT production site near Melfi in Basilicata (Italy) which will manufacture the Punto. Moreover, relations between car producers and suppliers of components are becoming

long-term contracts with a single source, to assure stability.

Q. *Have Italian components' makers followed car producers in investing locally? Have you done it yourself?*

A. FIAT had already invested in the Polish components' industry while launching the 126 car. Nowadays, our firms producing components are very active on the Polish front. Magneti Marelli intends to act or has already acted on at least seven product lines, both through acquisitions and joint ventures; Gilardini on three product lines through both forms; Teksid only through joint ventures.

Most components used by FSM are of FIAT origin. There are however other external sources. Some of these depend on FIAT much more than several others where FIAT is a joint owner: as an example, CEAC — a battery manufacturer owned by FIAT — sells to FIAT less than 50% of its products.

Q. *According to the specialized press, investment committed by FIAT in 1992 to the FSM factory — estimated at USD 2 billion over the years — is the biggest Polish contract with a foreign investor since the end of the old regime and one of the largest single investments by FIAT abroad. Could you tell us some more about the size and the features of such investment and how investment in the CEECs compares to FIAT's global investment abroad?*

A. The investment planned by FIAT Auto will allow continuing development of the automotive industry, the latter being of major importance for the national economy. It will also positively affect the Polish balance of payments. Production capacity at the Tychy plant, where the 'Cinquecento' is currently being produced, will rise to 240 000 units a year. The Bielsko Biala plant, in addition to the already modernized painting shop, will enjoy substantial renewal and completion of current production. Considering the size of the region, investments by FIAT in the CEECs are in line with those in major regions of the world.

Q. *Which was the main objective for setting up productive units in Poland, capture of the local market or the use of a local base for export?*

A. At present, 80% of production is commercialized all over the world, especially Western Europe, while 20% is sold in Poland. However, the share bought in Poland has already increased. From 1994 we plan to assemble there the Uno car: it is the model being produced in the EU assembled for the local market, exploiting customs conditions. But the exact date will depend on the speed at which the 126 will disappear (60 000 of them are still sold annually).

Q. *Less than one year ago Poland and the EU reached an agreement according to which Poland would import each year duty-free 30 000 cars from the EU. After a first attempt to reserve equal shares for car companies investing heavily in Poland, it was decided that sales would be free up to the filling up of the entire quota. The only condition was the request of licences. The latter being correlated to market share, don't you feel this was a more favourable solution for FIAT?*

A. We can answer through some figures. In 1992, FIAT sold 13 000 cars, although at remarkable financial efforts.

Q. *There exists some evidence that foreign investors in the CEECs have at times pressed local governments to keep or impose barriers to regulate imports competing with their local production. What is FIAT's stand on this issue?*

A. We have never intervened in that sense. We reckon that, beyond the 30 000 quota, tariff protection for cars in Poland stands at 35%, a much higher level than in the case of the Czech Republic (15%) and of Hungary (13-18%).

Q. *One of the most widespread ideas in Europe is that the comparatively low labour cost in the CEECs represents one major determinant of foreign investment there. Is it so true in the auto industry and specifically in your case?*

A. Labour cost is an important factor, although it is not the main reason to select a certain country as the site of investment. More to the point, we could say that it is only one of various factors included in a package, including the size of the market, productivity levels, governments' protection and incentives. Looking only at the hourly labour cost index in FIAT factories, the one in Poland stands roughly at one fourth of that pertaining to FIAT in the UK, one fifth in southern Italy and one eighth in northern Italy. Among the CEECs, the highest labour costs seem to pertain to Hungary, Poland and the Czech Republic, in the order. But the gap between them tends to narrow.

Q. *You just mentioned productivity as one investment determinant. Polish researchers have found that at the end of the 1980s the gap of productivity levels in Polish industry* vis-à-vis *West European industry was rather high, the more so the higher the value added in the sector concerned. Has FIAT encountered any problem on this front?*

A. Productivity and quality problems in our Polish factories are not substantially different from those characterizing our factories in the West. For example, when launching the Cinquecento, we had a programme of qualitative revision in Italy. Soon after, we decided to cancel it, since the products could be readily-controlled locally.

In fact one could say that the problems of the business environment are more serious than production problems. Property rights, management, labour and other legislation are cases in point. If, for instance, the government imposes liabilities relating to pre-existing reality — like fines for polluting river waters which are then used in the aqueducts — this might be one reason for not investing in a factory.

Q. *FIAT production abroad, particularly in Poland, is increasing, as is employment. Meanwhile, official statistics in Italy show that automotive production in 1992 decreased by 11% (now standing at a lower level than in 1986) and employment in the sector has contracted by 12 300. At the same time, over the past five years foreign makes have eroded FIAT's share of the Italian market from 60 to 45%. Is there any correlation between the two opposing trends?*

A. I do not think that there is a strong correlation between these events. The production of FIAT's cars in Poland is devoted, to a large extent, to satisfying domestic demand and serving the emerging East European markets. The decrease of FIAT's market share in Italy is largely the result of increased competition stemming from the unified EU market. The reduction in Italian production is, on the contrary, the result of falling demand for automobiles in Western Europe.

Q. *How do you view FIAT's prospects in the CEECs? Is investment going to be the preferred card or will trade take precedence?*

A. We feel that the greatest spurt will come out of commercialization in these countries more than investment in productive capital. The CEECs are seen as outsourcing sites for components, also to other producers established there. Given the great investment expenditure in Poland, we do not plan any further major effort for the time being. The level of our investment in Poland today is similar to the one in Brazil. FIAT Auto considers Poland and the CEECs a priority after Western Europe and the USA, on a par with Brazil and Turkey.

Interview with GFT SpA (November 1993)

Q. *Redeployment has been an almost constant feature of the Italian clothing industry. Until a few years ago it used to be realized mostly at a domestic level, while recently the foreign aspect seems to have become more and more important. What is the place of a group like GFT in such a process?*

A. GFT group manufactures medium-high range male and female clothing products. Labour cost is equal to roughly 35% of the final product's cost. Contrary to the textile sector, investment per worker in the productive process is very limited. Consequently, the sector tends to keep in Italy all global study, organization and commercialization phases, while relocating production to low labour-cost countries. Such a tendency has become even more pronounced, especially in a period of price tensions. Progressively, Italy will only maintain productive structures capable of manufacturing small amounts in rapid response to market demand.

Q. *Could you describe some of the international redeployment experiences of your group?*

A. Our first experience of productive relocation has been in China. Since 1987, we have had a joint venture with a Chinese firm manufacturing male clothing products. Of the final product 70% is reimported into Europe, while the remaining 30% is distributed on the Chinese market or in the Far East.

Q. *What have been the main difficulties encountered?*

A. Constraints were rather on the supply and transport side, more than on the productive one. The productive process utilizes Italian fabrics and working methods, machinery and patterns. This requires the shipment of fabrics from Italy — which takes 45 days — and the further shipment back of the final product — another 45 days.

Q. *From such a point of view, don't you think that Eastern Europe would be a better bet in terms of transport costs and delivery times?*

A. East European countries certainly offer delivery times in the order of 2-3 days by truck, while maintaining up to now relatively low labour costs. Therefore, we launched satisfactory experiences of *à façon* production in Poland and Hungary, shipping Italian fabrics and patterns there, and reimporting apparel products. Working methods adopted in those countries bear the German influence. Hungary and the Czech Republic especially had strong ties with Germany even before the collapse of the Eastern bloc. The German clothing industry started reducing domestic employment from the early 1980s, and transferring to the CEECs both production and

technologies, the latter becoming little-by-little a unifying factor.

Q. *You were saying that labour cost is relatively low in the CEECs. Exactly how low is it compared to Italy and other competitors and how does it relate to productivity?*

A. Labour cost per minute in Italian structured firms is LIT 350; subcontracting in southern Italy is LIT 280; in Poland and Hungary LIT 55; in Slovakia LIT 40; in China LIT 20.

Labour productivity does not present the same lag. In the three CEECs cited above it reaches between 80 and 90% of the Italian level, while China reaches 70-80%. Since the productive activity is effected with the same fabrics, machinery and working methods as in the Italian factories, the product quality is identical.

Q. *Is labour cost then the overriding cause for relocating abroad?*

A. There are three factors which we consider determinant: easiness of communication with the market of destination of the final product, quality of labour force and labour cost. The latter is overriding only in the case of China, if we consider the European market.

Q. *Is subcontracting or outward-processing the only possible option for Italian firms in Eastern Europe, or have you thought to take any investment decisions in those countries?*

A. After some research in various countries, we decided in 1992 to start a joint venture in Svidnik, in the north-eastern part of Slovakia. After taking part in the privatization process, our group has acquired 80% ownership of the firm Svikon in July 1993, the remaining 20% being kept by the Slovak partners, amongst which are two managers of the firm. There will be first a plant restructuring, then substitution with Italian machinery and finally, starting from February 1994, a process of personnel training. By 1995, we plan to produce 300 000 items a year. Financially, our cost is estimated at LIT 2,5 billion for privatization, LIT 1 billion for restructuring, LIT 3.5 billion for new machinery, LIT 4.5 billion for the transfer of know-how, LIT 2 billion for covering previous losses and LIT 3 billion for circulating capital. All this will be done by utilizing the practice of 'outward processing traffic' (OPT). As for this latter aspect, it would be desirable that the Italian regulation of OPT became less rigid and bureaucratic and more in line, for instance, with German regulation.

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Chapter 2

EU-CEEC trade in a sensitive sector — The case of textiles and clothing

EU-CEEC trade in textiles and clothing: market access and future prospects

N. Nagarajan[1]

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[1] European Commission, Directorate-General I. This paper was written under the supervision of Professor André Saphir and Declan Costello.

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1. Introduction

'It seems to be agreed generally that newly-developing countries will need to achieve a rapid and sustained rise in export earnings to cover their growing imports of capital goods and other essentials and to service their foreign borrowings. Failure to attain such an increase, or to receive ever larger foreign aid, would impose a foreign exchange constraint on their growth, even though the major transformation required is in their internal economic and social structures and in their capacity to save and invest.' (Lary (1968), p.1.)

This statement about developing countries applies equally well today to the transitional economies of Central and Eastern Europe. The dramatic political changes in the region during 1989-90 have been followed by the beginning of a radical process of economic reform designed to create market-based economies like those in Western Europe. The European Union (EU) has supported the reform process through assistance in the form of the PHARE programme and by offering preferential market access for imports from these countries.

Since trade is recognized as playing a key role in economic transformation, for the reasons given by Lary above, it seems natural to focus on trade relations between the Central and East European countries (CEECs: Bulgaria, the Czech Republic, Hungary, Poland, Romania and Slovakia) and the EU, now their most important trading partner. The Association or Europe Agreements (EAs) concluded between the EU and each of the CEECs contain major provisions intended to enhance East-West economic integration, particularly as far as trade in industrial goods is concerned. A central feature of these agreements is that the EU will move to free trade in industrial products with each of the CEECs over a 10-year period.

The path to be followed to achieve the objective of industrial free trade is rather asymmetric, since the EU will be dismantling its own trade barriers somewhat faster and earlier than will each of the CEECs. The EU was in a position to offer immediate abolition of all trade barriers on most industrial goods, but in some 'sensitive' sectors temporary trade barriers will remain in place. This applies, in particular, to trade in textiles and clothing, with which this paper will be concerned. The importance of textiles and clothing can be seen from the fact that in the first half of 1993, this sector accounted for one fifth of the total value of CEEC exports to the EU.[1] To put this in context, it should be noted that textiles and clothing together accounted for only 6,8% of the value of world merchandise trade in 1992.

The current study has two principal aims. The first is to arrive at a preliminary evaluation of the 'market access' package which the CEECs have negotiated with the EU in the textiles and clothing sector. It is only two years since the trade provisions of the first EAs (those for the Visegrad countries: the former Czech and Slovak Federative Republic (CSFR), Hungary and Poland) entered into effect and a more complete evaluation will only be possible from a longer time perspective. The second aim is to examine future prospects for CEEC exports of textiles and clothing to the EU market given the experience of developing country suppliers in this sector. The comparison with developing countries is particularly interesting because, over the short term at least, it seems likely that the export potential of the CEEC economies will be concentrated in labour-intensive manufactures such as textiles and clothing. These are products in which many developing countries ought to have comparative advantage.

It is clear that there are many important differences between the transitional economies and developing countries. The former already have mature industrial sectors (albeit ones which bear many distortions as a result of decades of resource misallocation under central planning) but lack the full institutional and legal infrastructure to support a functioning market economy. If economic transition involves an improvement and modernization of the CEECs' stock of physical capital, then these countries can be characterized as capital-abundant (at least relative to developing countries). It is also clear that real incomes in the CEECs are considerably above those in most of the developing world (at least when converted using realistic exchange rates) and there is evidence to suggest that the human capital endowments of the transitional economies are comparable to those of developed market economies.[2] In the long run, therefore, it seems more plausible to think of the CEECs as potentially capital-abundant (in both physical and human terms) rather than labour-abundant (again, at least relative to developing countries). Given these considerations, it is interesting to ask how the pattern of CEEC exports in textiles and clothing is likely to evolve as these countries undergo economic transition.

It is possible to summarize the conclusions of this study as follows. Firstly, despite recession in the EU and domestic structural problems in industry, textiles and clothing exports by the CEECs to the EU have played an important role in CEEC export earnings in the early years of economic transition. Secondly, as far as market access is concerned, the criticism which the EU has attracted for its treatment of textiles and clothing in the EAs may be largely unfounded.[3] The EU has granted a considerable amount of liberalization to these countries and, although there are difficulties in interpreting the various indicators of restrictiveness, there is now little evidence to suggest that the CEECs are constrained suppliers, at least in a direct sense. There has certainly been a significant

[1] *Source:* Eurostat (Comext).

[2] See, for example, Hamilton and Winters (1992).

[3] Critics of the agreements include Messerlin (1992), Winters (1992) and Rollo and Smith (1993). These studies do not limit themselves to the textiles and clothing sector.

improvement in the relative treatment of the CEECs. The CEECs have been able to expand trade with the EU significantly in this sector, particularly as regards outward processing subcontracting for clothing products. However, the differential tariff treatment for direct and outward processing imports from the CEECs may give rise to indirect restrictiveness, which may be relatively more important. Thirdly, the comparison with developing countries suggests that over time the share of textiles and clothing in CEEC exports to the EU should decline considerably, as comparative advantage in these products tends to lie more with the lower income developing countries.

This paper is structured as follows. Section 2 presents a brief overview of international trade in textiles and clothing. Section 3 looks at the market for textiles and clothing in the EU. In Section 4, an overview of the textiles and clothing sector in the CEECs is presented, while Section 5 looks at EU-CEEC trade patterns. The liberalization offered by the EU for CEEC imports of textiles and clothing is then discussed in Section 6. Section 7 attempts to assess the restrictiveness or otherwise of this liberalization. In Section 8 a comparison is made between the CEEC export pattern in textiles and clothing and that of a group of developing countries. The aim is to draw out some implications for the future evolution of EU-CEEC trade in textiles and clothing. Finally, Section 9 presents the overall conclusions of this study.

2. International trade in textiles and clothing

It is perhaps not surprising that the textiles and clothing sector should be regarded as 'sensitive' as far as the EAs are concerned. International trade in this sector is subject to numerous distortions, and non-tariff barriers are commonplace. Western nations, in particular, have a long history of imposing restrictions on imports in order to protect domestic producers from low-cost foreign competition, principally from the developing countries.

Since 1974, trade in textiles and clothing between the developed countries on the one hand, and developing and state-trading countries on the other, has normally taken place within the framework of the Multifibre Arrangement (MFA). In 1991, textiles and clothing exports from the members of the MFA to all destinations amounted to an estimated USD147 billion (accounting for about 80% of world trade in this sector, excluding intra-EU trade).[1] The MFA has been renewed and extended several times, with product coverage growing wider over time.[2]

The stated aims of the MFA are to achieve the progressive liberalization of trade in the textiles and clothing sector, the orderly development of such trade and the avoidance of disruption in individual products and markets. At the same time, the MFA has sought to encourage the growth of the textiles and clothing industries of developing countries. Developed countries are required to pursue adjustment strategies to encourage domestic firms which are not competitive to move into more viable lines of production.

The MFA has historically operated as an exception to the multilateral discipline of the General Agreement on Tariffs and Trade (GATT).[3] Under the MFA, countries bilaterally negotiate quotas in narrowly-defined product categories. Exporting (developing) countries negotiate annual quotas for individual products with individual importing (developed) countries. These quotas are administered by the exporting countries themselves, subject to some form of administrative control by the importing countries. Hence, they function as a form of voluntary export restraint (VER). As a result of the conclusion of the Uruguay GATT Round, textiles and clothing products are to be gradually phased in to the overall discipline of the GATT and the system of bilateral quotas is to be phased out through a progressive increase in quota growth rates (see Annex).

Opinion is divided as to what the effects of the MFA on suppliers actually are. Critics of the protocol include, for example, Erzan and Holmes (1990), who accuse it of being 'one of the most comprehensive and discriminatory deformations of the international trading system'. They argue that 'it discriminates against developing countries' most important manufactures in a selective manner, and it prescribes managed trade'.[4] Other commentators have been more cautious in their appraisals of the MFA. Trela and Whalley (1990), for example, argue that it 'is not exactly clear how restrictive of trade these measures are, how permanent they have become, nor how far they retard growth'.[5] Faini, de Melo and Takacs (1992) point to the 'intentional complexity and non-transparency of the formulation and implementation of the MFA, which makes its impact difficult to estimate and evaluate'.[6] On the one hand, it can be argued that the MFA has restricted the relocation of production to developing countries in line with global patterns of comparative advantage. On the other hand, it must be recognized that product differentiation in the textiles and clothing sector may be quite high, and that developing countries' exports may not be competitive with

[1] GATT (1993a) p. 99.

[2] See, for example, Trela and Whalley (1990) p. 14.

[3] The MFA has its own multilateral discipline in the form of the Textiles Surveillance Body, which meets under the auspices of the GATT Committee on Textiles.

[4] Erzan and Holmes (1990), p. 191.

[5] Trela and Whalley (1990), p. 12. They nevertheless construct a computable general equilibrium model of international textiles and clothing trade in which virtually every developing country supplier gains from the dismantling of the MFA.

[6] Faini, de Melo and Takacs (1992), p. 527.

high quality, high fashion goods produced in developed countries.[1]

Perhaps the final word on the MFA should go to the Textiles Surveillance Body (TSB) of the GATT Committee on Textiles. The TSB is charged with the overall management of the MFA. At the December 1992 meeting of the Textiles Committee, the TSB presented a report of its activities covering six full years of MFA IV (from 1 August 1986 to 31 July 1992). Its main conclusions on the operation of the MFA were that:

(i) it has led to deep and widespread distortions in production and international trade flows and practices;

(ii) it has spawned vested interests in both exporting and importing countries which have strong roots and can influence policies;

(iii) the administration of the MFA in both importing and exporting countries has become more difficult and complex; and,

(iv) foreign policy or domestic political considerations (such as improvements limited to certain geographical areas) have, in several cases, taken precedence over economic considerations, in the application of the MFA.[2]

Turning to the distinction between different types of trade barriers in textiles and clothing, economists tend to agree that quotas need not have equivalent effects to tariffs (Bhagwati 1965). Starting from the presumption that free trade is optimal, tariffs are generally considered to be less distortive of trade than quotas since they grant less market power to domestic producers (a domestic monopolist protected by a tariff has an incentive not to raise its price above the tariff-inclusive price of imports) and allow the price system to ration imports. Tariffs also represent a more transparent means of protection than do quotas (and so are easier to liberalize). MFA countries use both tariffs and quotas to protect their domestic producers, but quotas are usually the main trade barrier. An important point to bear in mind is that since MFA quotas are bilateral (or source-specific) rather than global (or non-discriminatory), the scarcity rent (which arises from artificially raising the price to the consumer of the imported good) is potentially appropriated by exporters, or shared between exporters and domestic importers (depending on the distribution of market power). Of course, the co-existence of tariffs and quotas implies that the government in the importing country effectively appropriates some of the rent in the form of tariff revenue.

From the point of view of the exporting country, the important question is whether the welfare gain from the scarcity rent exceeds the welfare loss from foregone exports in restricted markets (i.e. lost producer surplus) and lower prices received in unrestricted markets (as sales are diverted from restricted markets). There is evidence to suggest that for developing countries, the loss from foregone exports can substantially outweigh the gain from scarcity rents.[3] An important additional consideration is that distributing rents to exporters can encourage the export of commodities which would not otherwise be competitive.[4] It should also be pointed out that less competitive exporters can benefit from a guaranteed minimum market share because the bilateral quotas allocated to more competitive suppliers ensure that their exports are kept within certain bounds.[5] These considerations suggest that some developing countries may benefit in certain ways from managed trade in textiles and clothing. However, before a firm conclusion is reached on this matter, account should also be taken of the distortive effects of MFA VERs in exporting countries. VERs tend to have a contractionary effect on the exporting industry under consideration and may force factors of production away from their most productive uses (de Melo and Winters 1993). In addition, there is also increasing evidence that exporters do not appropriate all of the scarcity rent but instead share rents with domestic importers (Erzan, Krishna and Tan 1991).

One previously neglected aspect of international trade in this sector, and one which has considerable relevance as far as Central and Eastern Europe is concerned, is the increasing importance of international subcontracting, especially in clothing. Outward processing trade (OPT) occurs when firms export semi-finished products and other materials for further processing in another country and subsequent re-import. This practice essentially allows producers in developed countries to benefit from low cost production elsewhere. Since OPT operations are essentially labour-intensive, they can be thought of as allowing labour-abundant countries to indirectly export their labour to firms in other countries.

3. The EU market for textiles and clothing

The EU represents the most important OECD market for non-OECD exports of textiles and clothing. In 1992, the EU accounted for nearly 40% of the world's imports of textiles and around 50% of the world's imports of clothing.[6] The EU's textiles and clothing industry has a turnover of approximately ECU 180 billion, a value-added of ECU 65 billion

[1] See Erzan, Goto and Holmes (1990), who argue the former line, and Cline (1990), who argues the latter.
[2] See GATT (1993a), p. 100.
[3] Balassa and Michalopoulos (1985).
[4] This is argued by Erzan and Holmes (1992).
[5] Cable (1990) suggests that Malaysia and Singapore might be examples of countries which have benefited in such ways.
[6] GATT (1993b).

(approximately 5,3 per cent of total value-added in the EU) and a workforce of around 2,7 million (approximately 9% of EU industrial employment).[1] The recent recession in the industrial countries has, however, taken a particularly heavy toll on this sector:

(i) between 1988 and 1992, production fell by 4,7% in the textiles sector and by 6,4% in clothing. The decline in production in these two sectors was more severe than in the rest of the EU's manufacturing sector.

(ii) over this same period, textiles and clothing employment fell by 14%.

(iii) investment in both the textiles and clothing sectors was 32% and 25% lower respectively, at constant prices, in 1992 than in 1988.

(iv) consumption was relatively robust until 1990 in the textiles sector and until 1991 in clothing. However, consumer spending on textiles and clothing fell by 1,6% between 1991 and 1992, while retail sales of clothing were down by 5,3%.

Table 1

EC textiles and clothing sector basic data for 1992 (million ECU)

Textiles		
Production[1]		93 604
Imports[2]	11 630	
Exports[2]	13 712	
Net imports		(2 082)
Apparent consumption		91 522
Clothing		
Production[1]		57 514
Imports[2]	26 511	
Exports[2]	10 912	
Net imports		15 599
Apparent consumption		73 113

[1] Production for textiles is based on NACE 43. Production for clothing is based on NACE 453 + NACE 454.

[2] Exports and imports are based on SITC 65 (textiles) and SITC 84 (clothing). Both refer to extra-EU.

Source: L'Observatoire Européen du Textile et de l'Habillement and Eurostat (Comext).

Imports from outside the EU grew by an annual average of 8% (in volume terms) between 1988 and 1992, although this growth slowed somewhat in 1992 as a result of the depressed state of domestic demand. The annual average growth rate of exports by EU firms to third countries was only 4,6% over this period, although export growth was stronger in non-OECD export markets (9,6% a year in volume terms for textiles and 16% for clothing). Table 1 shows production, net imports and apparent consumption in the EU textiles and clothing sector in 1992.

Over the period 1988 to 1992, intra-EU trade was quite dynamic, growing by an average of about 5% a year. Instead, the main problem for EU firms seems to have been the loss in market share in non-EU developed country markets. Between 1988 and 1992, the market share of textiles and clothing products from the EU fell from 12,4% to 8,8% in the USA and from 67,2% to 66,5% in the EFTA countries. In Japan, the EU's market share has been falling steadily since 1990 (from 24% to 16,2%). These trends reflect the loss in international competitiveness by EU firms, with the developing countries gaining the most from the EU's lost export market share. There are a number of factors which could help to explain this loss in competitiveness. A major explanation is undoubtedly the growing labour cost gap between EU firms and their rivals in the developing world. For example, labour costs in spinning and weaving in countries such as China, India and Pakistan are a fraction of those in the EU.[2] These countries can be thought of as labour-abundant and so it is perhaps not surprising, given the Heckscher-Ohlin theorem, that EU firms may be conceding relative strength to them in the export of labour-intensive textiles and clothing products.

However, a complicating factor is that the quality of textiles and clothing exports by some developing countries may be considerably below those of developed countries. It is therefore likely that developed countries mainly compete amongst themselves (and perhaps the newly-industrializing countries) in producing higher quality textiles and clothing products. In these goods, it may be difficult for EU firms to compensate for lost market share in developed country markets by increasing exports to developing countries (since the pattern of demand is different). Although EU exports to developing countries have grown in recent years, EU firms have also been following restructuring strategies designed to de-localize production to countries where labour costs are lower. This effort to regain lost competitiveness is probably motivated by a desire to win back lost market share in OECD export markets (and to counter further rises in EU imports of high quality products from other developed countries). OPT provides an important route through which restructuring strategies can be pursued because it allows labour-intensive activities to be performed in countries where labour costs are low. This is particularly true of the CEEC economies.

[1] This section draws on European Commission 'Report on the competitiveness of the European textile and clothing industry (Communication from the Commission to the Council and the European Parliament)', (COM(93) 525 Final, 27.10.1993).

[2] European Commission (1993) op. cit. Annex 21.

4. Textiles and clothing in the CEEC economies

Prior to the beginning of economic transition in Central and Eastern Europe in 1989-90 and the collapse of the Council for Mutual Economic Assistance (CMEA) in early 1991, trade between the countries of the former Eastern Bloc did not reflect economic fundamentals to the same extent as trade between Western market economies. Trade links between CMEA economies were based to a large extent on the decisions of central planners using prices which bore little relation to scarcity, and reflected an increasing tendency to use barter. The role of the CEECs in the CMEA's international division of labour was essentially to export capital goods to the former Soviet Union (and to each other) in exchange for imports of Soviet energy and raw materials. Although textiles and clothing were significant in intra-CMEA trade, they were relatively unimportant compared to trade in capital goods.

Taking the former CSFR as an example,[1] the share of textiles and clothing in exports to the other CEECs and the USSR between 1985 and 1989 was 7,3%. However, the combined trade share of machinery was 38,5%, while road vehicles and other transport equipment accounted for a further 18,6%. When examining CEEC exports to the OECD countries over the same period, however, capital goods emerged as relatively unimportant (perhaps because the quality of capital goods traded with Eastern partners was significantly lower than that which could be successfully traded with the West), but exports of textiles and clothing accounted for larger trade shares. Trade shares for exports of textiles and clothing to OECD countries ranged from 10% (Hungary) to 17,1% (Romania). For the former CSFR, the trade share of textiles and clothing in its exports to the OECD was 12,8%.[2]

The relative importance of textiles and clothing in the economies of the CEECs prior to economic transition is in line with what one might expect from the share of this sector in intra-CMEA trade. The share of the textile industry in gross industrial output ranged from 4,3% for the former CSFR to 6,8% for Romania. For the clothing industry, with the exception of Romania, the share in gross industrial output was significantly less important than for textiles (ranging from 1,3% for the former CSFR to 2,1% for Bulgaria and Poland). In Romania, this figure was 5%.[3] This disparity is perhaps explained by the rapid growth in investment in the Romanian clothing industry during the 1980s, reflected in a reported annual average growth rate in clothing production of 28,8% between 1980 and 1987.[4]

[1] The former CSFR was, admittedly, the most specialized of the former CMEA countries in its pattern of exports.

[2] Messerlin (1992), Table 6.2.

[3] Data for Bulgaria, the former Czechoslovakia and Hungary are for 1988. Data for Poland and Romania are for 1987. *Source: CMEA Statistical Yearbook, 1988.*

[4] ECHO (1991), pp 164-165.

The textiles and clothing sectors of the CEEC economies were not immune to the difficulties which plagued industry in Central and Eastern Europe in the early years of transition to a market economy. Indeed, in the case of the former CSFR in 1991, production in textiles and clothing fell by more than industrial production as a whole. Whereas the fall in total Czechoslovak industrial production in 1991 was around 25%, production in the textiles sector fell by around 35% and that in the clothing sector by around 40%. Figures on industrial sales in Poland also show that the decline in textiles and clothing in 1991 (and in textiles in 1992) exceeded the decline for industry as a whole. Thus, the increase in exports to the EU (documented in Section 5 below) was an important positive stimulus for CEEC textiles and clothing producers at a time of severe domestic recession. The CEEC clothing industries, in particular, tend to have a high degree of international exposure. For example, in the case of the former CSFR, the value of exports in 1988 amounted to around 70% of domestic demand.[5] It should be stressed that current and future structural adjustment problems in the CEECs' textiles and clothing industries can be an important constraint on future increases in exports. This last point is particularly important given the likely time span of economic transition in Central and Eastern Europe.

Three important aspects of the CEECs' textiles and clothing sectors which deserve special attention are the level of technology, production costs and non-price factors which influence competitiveness. These are now discussed in turn.

4.1. The level of technology

Although CEECs have an outdated stock of physical capital, their level of technology is generally superior to that of the developing countries. The system of Soviet-type central planning is thought to have played a major role in retarding industrial development in the region, and the textiles and clothing sector is no exception to this:

(i) The textiles industry of the former CSFR emerged from the industrial revolution of the 19th century and was thought to have achieved a high level of technology by international standards by the time of the Second World War. However, under post-war central planning, the textiles industry declined in relative importance and the standard of technology was thought to have fallen to only about the world average.

(ii) The development of the Hungarian and Polish textiles industries is somewhat similar, although the emergence of textiles manufacturing occurred slightly later than was the case in the former CSFR.

[5] The sources are CSFR Federal Statistical Office and Sachs (1993), Table 2.8. Figures on the decline in industrial production in Central and Eastern Europe in this period need to be interpreted with some care, for example because of problems with negative value-added in industry.

(iii) In Bulgaria and Romania, textiles manufacturing was relatively insignificant prior to the Second World War and was thought to be poorly developed under central planning. The level of technology was reported to be lower than in the other CEECs.

(iv) The clothing industry in the CEEC economies was largely developed under post-war central planning, and hence was thought to bear many of the traits of Soviet-type industry. However, following increased development in the 1980s, standards were considered to be close to the international average (except in Bulgaria).

(v) A policy of import-substitution throughout Central and Eastern Europe was important in promoting the growth of the textiles and clothing sector.

(vi) Some OPT operations involve the leasing of equipment by Western firms. This has led to a temporary improvement in the physical capital stock in the CEECs. There is presumably some potential for technological spill-over, so that there could also be a more permanent improvement.

Table 2

Factory production costs in the clothing industry 1990 (USD/standard minute of work)

Country	USD/minute 1990
Bulgaria	0,1303
Former CSFR	0,127
Egypt	0,131
France	0,276
Germany (Western)	0,357
Greece	0,179
Hong Kong	0,147
Hungary	0,157
India	0,110
Ireland	0,241
Italy (Northern)	0,380
Italy (Southern)	0,324
Morocco	0,121
Netherlands	0,350
Poland	0,136
Portugal	0,138
Romania	n.a.
Spain	0,214
Taiwan	0,136
Tunisia	0,113
Turkey	0,126
UK	0,220
USA	0,211
Former USSR	0,091

Note: Data for the CEECs and the former USSR are averages in factories used for outward processing by Western companies.
Source: Kurt Salmon Associates, ECHO (1992), Table 12.6

4.2. Production costs

Table 2 shows 1990 data on production costs in the clothing industry for selected countries. These show the CEECs to be extremely competitive relative to developed market economies.

To a large extent, the CEECs' competitive advantage is explained by the low labour costs in these countries. In 1993, estimated hourly wage costs in the manufacturing sector ranged from around USD 1 per hour for Bulgaria to around USD 2.5 per hour for Hungary. Hourly wages in the Visegrad countries were between one tenth and one twentieth of levels in Western Germany.[1] It is, of course, necessary to check for differences in productivity. Productivity data (particularly sectoral data) are less readily available. One source gives labour productivity in Eastern Europe as between one third and less than one half of that in the most developed European countries.[2] This would still give the CEEC economies a significant competitive advantage in terms of unit labour costs, and this is confirmed by figures which show that in the Hungarian clothing and spinning and weaving industries, unit labour costs are around one-fifth of those in Germany.[3] As the CEECs gradually replace their outdated stocks of physical capital, some improvement in labour productivity can also be expected but this depends very much on the pace of economic reform and industrial restructuring.

4.3. Non-price competitiveness

Finally, a consideration of so-called 'complex factors'[4] which affect non-price competitiveness is also useful. In the textiles and clothing sector, the following factors are thought to be important influences on non-price competitiveness:

(i) the sophistication and quality of the product;

(ii) the reliability of the supplier;

(iii) the ability to accept small orders ('short circuiting');

(iv) the local availability of high-quality yarn or fabric;

(v) technical know-how;

(vi) flexibility of production;

(vii) delivery time; and,

(viii) the possibility to repeat small orders.

[1] *Financial Times*, 7.6.1993, p. 13. Source: DRI McGraw-Hill, Morgan Stanley Research.
[2] ECHO, op. cit., p. 212.
[3] European Commission, op. cit., Annex 32.
[4] European Commission, op. cit., pp. 31-32.

CEEC producers are thought to score relatively well on all of the above indicators (with the exception of yarn or fabric availability),[1] compared to EU producers and producers in developing countries. It is particularly interesting to note that the CEECs score relatively well on the product quality indicator. This implies that there are at least some products for which producers in these countries do not have a quality disadvantage. As for the other indicators, it may be that part of the explanation for the increasing importance of CEEC OPT exports to the EU (see below) may lie in factors such as reliability, flexibility of production, short delivery time and the possibility of short circuiting.

5. EU-CEEC trade patterns

This section presents an analysis of recent trade patterns between the EU and the CEECs in the textiles and clothing sector. Since EU trade liberalization is a relatively recent event, it is too early for a full assessment of the consequences of improved market access for trade patterns. Nevertheless, from the preliminary analysis undertaken below, a number of interesting observations emerge. Amongst the most important are the following:

(i) Textiles and clothing products are now the most important export category in CEEC exports to the EU. In the first half of 1993, this sector accounted for one fifth of total CEEC exports to the EU (in value terms).

(ii) Since 1988, trade in textiles and clothing between the EU and the CEECs has grown extremely dynamically. Between 1988 and 1992, EU exports of textiles to the CEECs grew by an annual average rate of 22% (in volume terms), while EU exports of clothing grew by 41%. CEEC exports to the EU grew by an annual average rate of 12% in textiles and 20% in clothing over the same period.[2]

(iii) Despite this rapid growth of trade and the importance of textiles and clothing products in the CEEC exports to the EU, the EU market share for CEEC exports in 1992 was less than 1% in textiles and less than 4% in clothing.

(iv) The CEECs now account for about half of all extra-EU OPT operations in MFA product categories. In the case of Poland, OPT accounts for around three-quarters of total MFA exports to the EU (by value). In the case of Hungary and Romania, OPT accounts for over half of total MFA exports to the EU (again, by value).

It is likely that this last factor also helps to explain the growth in EU exports of fabrics to the CEECs, a large proportion of which are intended for local making-up operations and subsequent re-importation into the EU. Hence, the picture that emerges is one of significant two-way trade in textiles and clothing between the EU and the CEECs, with much of this trade resulting from the growing internationalization of the location of production.

5.1. The growth in total textiles and clothing trade

One of the first main achievements of the transitional economies after the political changes of 1989-90 and the subsequent collapse of trade between the member countries of the CMEA was to re-orientate their trade substantially towards the OECD area, and towards the EU in particular. The growth in EU-CEEC trade in textiles and clothing partly reflects this trade re-orientation. Graph 1 shows the percentage increase in volume terms in EU imports from the CEECs, as well as from all third countries, in textiles (defined as SITC 65), clothing (SITC 84) and total trade (defined as SITC 0-9) over the period 1988 to 1992. It is clear that, for each of the CEECs, EU imports of clothing increased by proportionately more than for all trade (in the case of Romania, total EU imports fell over this period). As far as EU imports of textiles are concerned, with the exception of Bulgaria (and in contrast to trade with all third countries), EU imports did not increase by as much as total imports over this period.

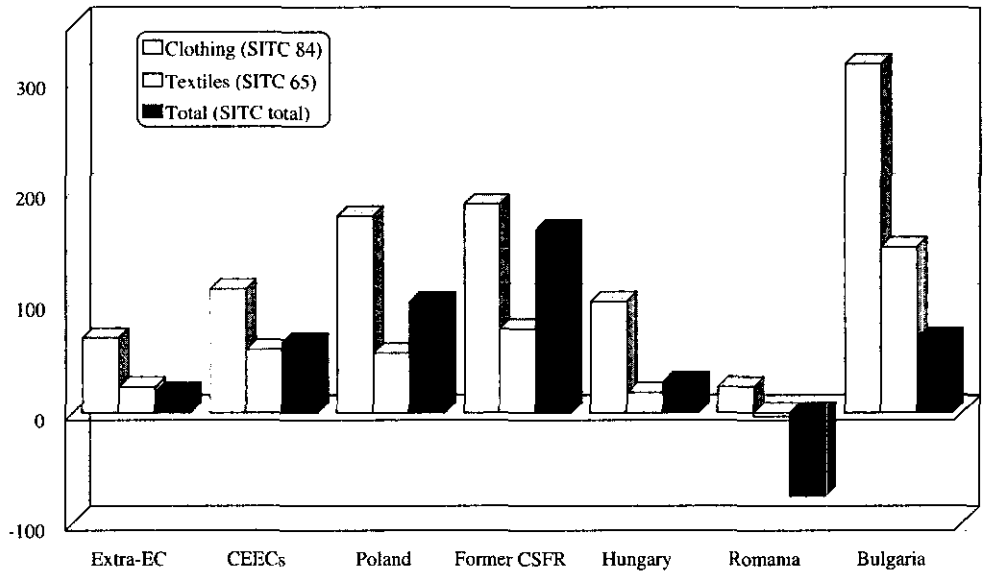
Graph 2 shows the comparable figures for EU exports to the same group of countries. For the CEECs as a whole, but not for the individual cases of Poland and Romania, EU exports of clothing grew faster than total EU exports to these countries over this period. Turning to EU exports of textiles, a similar pattern emerges to that related for EU imports. Again with the exception of Bulgaria (and, again, in contrast to trade with all third countries), EU exports of textiles did not increase by as much as total EU exports over this period.

The evolution of the EU-CEEC trade balance in terms of MFA product groups is also worth drawing attention to. In 1988, the EU had a trade deficit with the CEECs of over 3 000 tonnes in textiles and a trade deficit of nearly 50 000 tonnes in terms of clothing. By 1992, the EU recorded a trade surplus of 45 000 tonnes in textiles and a trade deficit of 93 000 tonnes in clothing. Thus, in overall terms, the EU's trade deficit in MFA product groups with the CEECs fell from 53 000 tonnes in 1988 to 48 000 tonnes. In value terms, the movement of the balance of MFA trade in the EU's favour can be seen by dividing EU exports by EU imports. In textiles, this ratio rose from 2,34 in 1988 to 3,47 in 1992. In clothing, the same measure rose from 0,13 to 0,18 over this period.

[1] Institut Français de la Mode (1992), 'A competitive analysis of finished textile and clothing products: imported versus European manufactured items', in European Commission, op. cit., Annex 35. A recent OECD study suggests that quality differences may be relatively unimportant in explaining poor CEEC export performance in OECD export markets, compared to factors such as poor domestic infrastructure (OECD 1994).

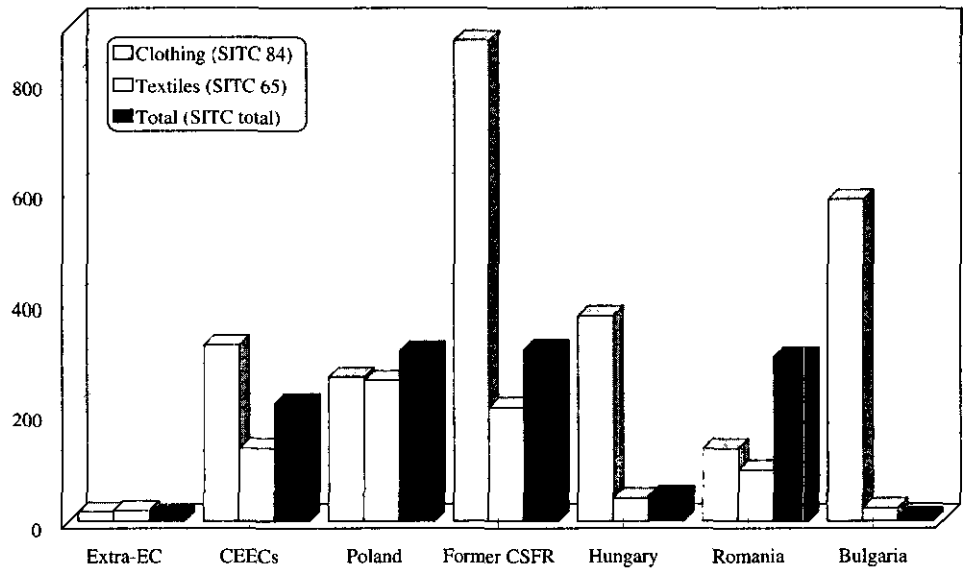
[2] These figures refer to exports and imports classified under MFA product groups and include OPT. *Source:* Commission services, DG III.

GRAPH 1: **Imports by the EC (percentage increase 1988-92)**



Source: Eurostat (Comext) - Statistical regime 4

GRAPH 2: **Exports by the EC (percentage increase 1988-92)**



Source: Eurostat (Comext) - Statistical regime 4

It should be noted that despite this dramatic growth in EU-CEEC trade in textiles and clothing, CEEC exporters generally have a small EU market share. In 1992, the estimated EU market share for CEEC textiles products was 0,6%, while that for clothing was 3,5%. This last figure may significantly overstate the CEEC market share in clothing since it includes OPT. Given the importance of OPT in imports from the CEECs, it is likely that the actual EU market share in clothing for products of genuine CEEC origin is less than 2%.

EU MFA imports from the CEECs grew by an average annual rate of 15,3% in volume terms over the period 1988 to 1992. The performance of individual countries differed considerably, however. Imports from Romania fell between 1988 and 1990, and over the period as a whole only grew by an average annual rate of 2,1%, while imports from Bulgaria grew by 33,5% per year on average. In value terms, Poland is the most important CEEC supplier of MFA products to the EU, accounting for 36% of EU imports from the CEECs in 1992. However, the former CSFR is the most important CEEC supplier of MFA textiles products to the EU, accounting for 46% of the value of EU imports from the CEECs in 1992.

5.2. OPT activities

Although the market share of CEEC exports of textiles and clothing products to the EU is small, they have a dominant share of OPT operations by non-EU firms which involve re-export to the EU.[1] This is shown in Table 3 below, from which it can be seen that in 1992, the CEECs' combined share in EU MFA OPT imports from third countries was 53,2% in value terms (and 56% in volume terms).

In the case of countries such as Poland, and to a lesser extent Hungary and Romania, there is an extreme dependence on OPT. In the case of Poland, OPT accounts for around three-quarters of total MFA exports to the EU (by value). In the case of Hungary and Romania, OPT accounts for over half of total MFA exports to the EU (again, by value). It is important to ask whether this extreme dependence on OPT is beneficial for the CEECs. Given the importance of export diversification for this group of countries and their likely future endowments of human and physical capital, a long term dependence on OPT is unlikely to represent an optimal use of resources.

If some of the re-imports from subcontractors enter the EU in the form of direct imports, then the above figures may even understate the importance of OPT in EU textiles and clothing imports from the CEECs. When it is also remembered that some of the textile fabric exported by EU firms to the CEECs is probably intended for local making-up and re-export by CEEC firms as finished textiles and clothing products intended for sale on the EU market, then the extent of EU-CEEC two-way trade in textiles and clothing products appears to be even more significant.

As most OPT operations involve transformation of clothing products and centre on labour-intensive operations, it is clear that low wage costs in Central and Eastern Europe together with preferential access to the EU market by CEEC firms are driving this growth in trade. Very little data is available on foreign investment flows in the CEEC textiles and clothing sectors. However, it seems likely that EU-CEEC trade in textiles and clothing does not at present involve significant equity flows. This does not preclude the possibility that CEEC

[1] Foreign trade organizations are thought to have played an important role in negotiating OPT contracts with EU firms.

Table 3

The importance of EC OPT trade to the CEECs in 1992

Share of OPT in MFA imports from the CEECs	Bulgaria	Czechoslovakia	Hungary	Poland	Romania
- by value	42,3%	34,2%	67,7%	74,9%	64,8%
- by volume	16,4%	12,4%	40,5%	50,1%	41,7%
CEEC share in total EU MFA imports					
- by value	0,6%	1,9%	1,8%	3,0%	1,4%
- by volume	0,6%	2,5%	1,3%	2,0%	1,0%
CEEC share in total EU MFA OPT imports					
- by value	2,3%	6,8%	12,2%	23,0%	8,8%
- by volume	2,6%	7,9%	12,2%	23,5%	9,7%

Source: Eurostat (Comext), DIW calculations, Commission services calculations.

textiles and clothing sectors may benefit from future foreign investment flows either from EU producers or from traditional MFA suppliers eager to exploit low labour costs, proximity to the EU and preferential market access.

For EU firms, the ability to exploit low labour costs in Central and Eastern Europe may be of crucial importance in their efforts to restore lost international competitiveness. If, as has been previously suggested, developed countries mainly compete amongst themselves in producing a subset of higher quality textiles and clothing products, then relocating labour-intensive activities (referred to as 'de-localization') to regions where labour is relatively abundant may be a possible route by which EU producers can restore lost price competitiveness. US textiles and clothing firms engage in OPT activities with firms in countries such as Mexico and the Dominican Republic.

6. EU market access for CEEC textiles and clothing products

The EAs are bilateral agreements between the EU and each of the CEECs which contain *inter alia* mutual preferential trade concessions which will establish a free trade area in industrial goods (defined in Article XXIV of the GATT). EAs with the Visegrad countries were signed in December 1991. Pending full parliamentary ratification of the formal agreements (now secured for the Hungarian and Polish EAs), the trade provisions of the EAs entered into force in March 1992 in the form of Interim Agreements. EAs were subsequently signed with Romania and Bulgaria and Interim Agreements embodying the relevant trade provisions entered into force at the beginning of May 1993 and at the end of December 1993, respectively.

The provisions on textiles and clothing are contained in Protocol 1 of the EAs and the Interim Agreements.[1] These grant the tariff concessions. They are supplemented by additional protocols on trade in textiles and clothing products (negotiated separately) which form part of the EAs and which deal with quantitative aspects (for technical reasons, it is also necessary to consult the bilateral MFA textiles agreements for the Visegrad countries' quantitative concessions for the year 1992). The provisions on textiles and clothing products constitute restraints under non-MFA agreements (but the additional protocols follow the normal structure of MFA-type bilateral agreements, and they use the standard EU product categorization system). As part of the final agreement on textiles and clothing in the Uruguay Round settlement, such restraints are to be progressively phased out before 2005 (see Annex). The Protocols of the EAs provide for the elimination of EU quotas in, at most, half the time period agreed in the Uruguay Round for the phasing-out of the MFA, but in not less than five years starting from January 1993 (for the Visegrad countries). Quotas will in fact be eliminated on 1 January 1998 for the Visegrad countries and a year later for Bulgaria and Romania. Therefore, the quota liberalization which the EU has offered the CEECs is generous relative to the minimum which the EU is obliged to offer to MFA producers under the Uruguay Round settlement.

It should be noted that increases in EU quotas pre-date the EAs. Over the course of 1990-91, the EU raised its quotas for the Visegrad countries, and similar provisions for Bulgaria and Romania were made over the course of 1991-92. These increases were aimed at encouraging economic recovery in the region and supporting the transition towards a market economy (they are often referred to as the 'PHARE increases' although they were not directly related to the EU's assistance programme). Quotas specifically for OPT were improved early in 1991. The CEECs also benefited, as did all third countries, from higher quotas which reflected the increased size of the EU market as a result of German unification. The improvement in market access from quota increases should be stressed. For example, over the period 1991-93, there was a doubling in market access for the Visegrad countries as a result of increases in direct and OPT quotas.

As far as tariffs are concerned, the EU will gradually remove tariffs on direct imports over a period of five years (shortened from the original six years by a decision of the Copenhagen European Council in June 1993). Upon the entry into force of the Interim Agreements, EU tariffs were reduced to five sevenths of the basic duty (the tariff which applied on the day before the Interim Agreements came into effect). At the start of the third year, EU tariffs will then be reduced to four sevenths of the basic duty. At the start of the fourth and fifth years, EU tariffs will then be reduced by one seventh of the basic duty before they are completely eliminated at the start of the sixth year. EU tariffs on certain OPT imports from the CEECs were abolished immediately upon the entry into force of the Interim Agreements.[2]

A comparison of the textiles and clothing provisions of the EAs with the EU's minimum obligations under the Uruguay Round indicates that the CEECs' preferential access to the EU market after 2005 (when all quotas must disappear) will be based only on tariff concessions (they will face zero tariffs unlike MFA suppliers). The extent to which MFA suppliers lose from these arrangements partly depends on how generously the EU interprets the agreed Uruguay Round timetable for the dismantling of the MFA.

[1] Note that some previously non-MFA textiles and clothing products are included in Annex III on sensitive products.

[2] In fact, only tariffs in respect of OPT imports under quotas (so-called 'economic OPT') were abolished immediately (see Council Regulation (EEC) No 636/82).

7. Assessing the restrictiveness of EU market access

The focus of the current section will be to assess the market access provisions in the textiles and clothing sector by asking to what extent the CEECs can be thought of as constrained suppliers. The starting point for this analysis is a previous study by Erzan and Holmes (1992), which looked at data for both the EU and the US markets for the period 1985 to 1989. Erzan and Holmes concluded that the CEECs were about as restricted as other MFA suppliers. They noted that in the US market, the main constraint on CEEC textiles and clothing exports were the high non-MFN tariffs applied, whereas in the EU market quotas were more important. They also speculated that as the CEECs negotiated preferential access to the main Western markets, this situation would improve. To assess whether this has indeed been the case for the EU market, recent data is now used to compile a number of measures of restrictiveness. The problems involved in the interpretation of each measure are also discussed. It should also be pointed out that since liberalization with respect to Visegrad countries pre-dates that with respect to Bulgaria and Romania, some care is required when comparing the different measures of restrictiveness across countries.

The measures of restrictiveness discussed below are all concerned with quotas. Before turning to them, it is helpful to briefly discuss tariffs. The scheduled tariff reductions for direct imports are based on the basic duty applied on the day before the Interim Agreements entered into effect. Weighted average tariffs in 1992 on EU imports from the CEECs of textiles and clothing products covered by Protocol 1, ranged from 12,1% in the case of the former CSFR to 13,3% in the case of Poland and Romania.[1] These tariff rates were considerably above those applied to imports of other industrial products, which are in general to be eliminated sooner than tariffs applied to imports of textiles and clothing. Hence, the phased tariff concessions for textiles and clothing products are not as generous as the tariff concessions offered for industrial goods in the EAs (even after the additional market access provisions agreed at Copenhagen in June 1993 are taken into account). Messerlin (1992) has argued that EU tariff reductions will have no effect on the quantities exported by the CEECs because the system of import quotas is maintained for the present. This argument rests on the assumption that quotas are fully utilized (or are, in some sense 'binding' when not fully utilized). As will be shown below, this assumption can be challenged. Also, the immediate abolition of EU tariffs on certain OPT imports from the CEECs may have played a significant role in increasing the relative attractiveness of CEEC firms for this type of processing.

[1] *Source:* DIW and Commission services calculations.

7.1. The number of restrictions (NR)

The most basic measure of market access in textiles and clothing is the number of different MFA product categories which are subject to quotas. This is a rather crude measure of restrictiveness since a country may face a large number of quotas but on products which are relatively unimportant in its exports (or a small number of quotas but on products which are of key importance). The change in NR since 1986 is shown in Table 4.

Table 4

Number of product categories[1] facing EC quotas (in parentheses, number of binding[2] quotas)

	1986	1989	1992
CEECs[3]	71	54	44
	(47)	(37)	(5)
Bulgaria	25	11	15
	(8)	(1)	(2)
Former CSFR	55	40	25
	(37)	(26)	(1)
Hungary	37	29	19
	(22)	(17)	(0)
Poland	37	31	20
	(21)	(20)	(0)
Romania	42	35	35
	(25)	(20)	(2)

[1] This table refers only to direct quotas and excludes sub-categories, group limits and aggregate limits.
[2] A binding category is defined as one with a quota utilization rate of 90% or more.
[3] A quota category is counted if it was applied to (was binding on) at least one country.
Source: Erzan and Holmes (1992), Table 1, Commission services.

These figures reveal that, for the CEECs as a whole, there has already been a not insignificant degree of liberalization. The number of quotas faced by CEEC exporters has fallen from 71 in 1986 to 44 in 1992. EU bilateral textiles and clothing agreements normally cover between 123 and 161 product categories. Table 4 shows that, in terms of the NR measure, Romania and to a lesser extent the former CSFR appear to be more constrained than the other CEECs. Nevertheless, the gap between the most restricted and the least restricted CEEC suppliers (in terms of NR) has also fallen. In 1986, the most restricted supplier (CSFR) faced 30 more quotas than the least restricted supplier (Bulgaria). By 1992, the difference in NR between the most restricted supplier (Romania) and the least restricted (Bulgaria) had fallen to 20.

7.2. The number of binding restrictions (NBR)

As a supplement to NR, it is also possible to calculate the number of quotas which are 'binding' in the sense that they

represent a real constraint on a country's exports of a given product category. As a measure of restrictiveness, NBR suffers from the same general problems as NR (it does not say anything about the relative importance of individual product categories in a country's total exports). In addition, there is no generally accepted standard for assessing when a quota is binding (see below for a further discussion). Erzan and Holmes chose 90% quota utilization as their benchmark. In effect, because of 'swing' mechanisms (which allow unfilled quotas to be transferred across product categories) a quota for an individual product category can be utilised up to 117%, at least in principle. Nevertheless, a 90% utilization serves as a useful definition of 'binding' in order to facilitate comparisons with the Erzan and Holmes study. Table 4 also gives data for NBR. The NBR measure suggests that there has been a considerable improvement in market access. This is what one would expect given the considerable improvement in the relative treatment of the CEECs. Here the EU market access package looks even more liberal. In 1986, quotas on 47 different MFA product categories were binding on at least one CEEC supplier. By 1992 (full-year figures for 1993 are not yet available), this figure had fallen to only 5. Hungary and Poland appear not to be constrained under any product categories, while Bulgaria and Romania appear only to be constrained under two, and in the case of the former CSFR only one product category was 'binding'.

7.3. Average quota utilization rates (AQUR)

Quota utilization rates are without doubt the most problematic measure of restrictiveness. Some have argued that they do not provide an accurate means of assessing how restricted an individual supplier may be. Messerlin (1992), for example, believes that large quotas contain incentives not to fill them because firms can exploit the monopolistic power attached to the situation (he also raises the possibility of collusion with EU producers), while small quotas may not be filled either because of transactions costs. This deserves some comment.

As far as monopolistic power is concerned, it can be argued that a firm which is exploiting such power is not really constrained in the same sense as suppliers with little market power. In any event, a supplier with market power may find that the losses from reduced prices involved in diverting products to non-restricted markets (and to domestic consumption) more than offset any gain from the exploitation of its monopolistic situation in the restricted market. However, the general point about the influence of market structure in the exporting country on quota utilization needs to be noted. Turning to transactions costs, these are likely to differ according to the way in which quotas are administered by exporting countries. Where quotas are at least partly auctioned or sold on a secondary market (Hong Kong is the obvious example) then the price which a firm bids for a quota will presumably take into account the estimated transactions costs in filling it. Nevertheless, it is quite possible that quota size is one factor in determining whether a given level of quota utilization should be considered binding. Taking this one step further, it seems at least possible that if a given quota can be considered binding over some range of utilization, this range need not be continuous nor concentrated in the upper end of the degree of utilization. Low quota utilization rates can also reflect inefficiencies in the way quotas are administered in exporting countries and distortions resulting from the tariff structure in importing countries.

It is clear that the above considerations render the interpretation of AQUR highly problematic. Another important point to be taken into account is that it is difficult to assess what the relative importance of different product categories would be to different suppliers in the absence of quotas. A country's export profile under free trade need not coincide with what it actually exports when trade is distorted. This creates a problem in identifying potentially important product categories. In their study on the effects of the MFA on India, Kumar and Khanna argued that certain product categories in the EU market were 'of little interest to Indian exporters'.[1] Alternatively, it may be that, as Hamilton and Kim (1990) argue for South Korea, diversification into non-restricted product categories is itself an indication that a country is a constrained supplier. Finally, it should be remembered that imports which are not covered by quotas are subject to the so-called 'basket exit mechanism' which allows mutually agreed limitations on imports when certain 'trigger levels' are reached. In fact the safeguards mechanism for imports from the CEECs is, in principle, considerably more generous (it is less automatic) than the basket exit mechanism. This is also an improvement relative to MFA exporters.

These considerations notwithstanding, AQUR has been widely used by researchers as an indicator of restrictiveness. Erzan and Holmes report AQURs for the CEECs in the EU market ranging from 92% (former CSFR) to 57% (Hungary) in 1985 and from 63% (Poland) to 39% (Romania) in 1989. For the CEECs as a group, they report AQURs ranging from 68% in 1985 to 49% in 1989.[2] Table 5 below gives figures for AQURs for the CEECs in 1992. Although some care is required in the interpretation of these figures, they appear to confirm further liberalization of market access. It is difficult to argue on the basis of these figures that the CEECs are seriously constrained exporters.

7.4 . The import coverage ratio (REST/TOT)

This measure is used by Erzan and Homes (and other researchers) to give a picture of how comprehensive quotas are

[1] Kumar and Khanna (1990), p. 194.
[2] Erzan and Holmes (1992), Table 2A.

for a particular supplier in a particular market. The numerator (REST) is the value of imports covered by quotas. The denominator (TOT) is total imports of textiles and quotas from that supplier (broadly defined as SITC categories 65 and 84). Like some of the other measures discussed, REST/TOT can give a misleading picture of restrictiveness. For example, it is possible for a supplier to face restrictions on all products categories but for none of the quotas to be binding. Alternatively, a supplier may face only a small number of quotas but each of these may be binding. It is also desirable to have some standard for assessing when REST/TOT is relatively binding for a particular supplier in a particular market. In this respect, it is helpful to note that calculations by the UNCTAD secretariat suggest that REST/TOT for world imports from the developing countries under all bilateral agreements is around 60%.[1]

Table 6 below gives figures for how REST/TOT has changed since 1986. These figures appear to show a considerable improvement in EU market access for CEEC textiles and clothing products over this period. The proportion of imports covered by quotas (including OPT quotas) fell from around 63% in 1986 to under 50% in 1992 for the CEECs as a whole. However, for Romania, REST/TOT rose from just under 70% in 1986 to nearly 83% in 1992.

Since REST/TOT can be a misleading indicator of restrictiveness when used on its own, it would be premature to conclude that Romania was necessarily more restricted in 1992 than in 1986. For example, an increased dependency on OPT can tend to distort this measure. REST/TOT is likely to give a better picture of restrictiveness when used in conjunction with other indices. Graph 3 combines information from REST/TOT (the horizontal axis) and AQUR (the vertical axis) in 1986 and 1992. Thus, the more restricted a supplier is, the more it is likely to lie in the north-east quadrant of this graph. For Bulgaria, the former CSFR, Hungary and Poland, this graphical representation shows a clear improvement in the market access conditions over this period. For Romania the picture is ambiguous, since the AQUR index shows an improvement whereas the REST/TOT index moves in the opposite direction.

[1] UNCTAD (1993) p. 48.

Table 6

Import coverage ratios (imports under quotas as a percentage of total imports)

(%)

	1986	1989	1992
CEECs	62,52	53,28	49,97
Bulgaria	51,22	42,11	19,39
Former CSFR	68,62	63,60	57,22
Hungary	54,97	48,18	49,78
Poland	57,77	44,39	44,50
Romania	69,16	60,75	82,83

Note: Based on value. Includes OPT.
Source: Erzan and Holmes (1992), Table 2A, DIW calculations, Commission services calculations.

Table 5

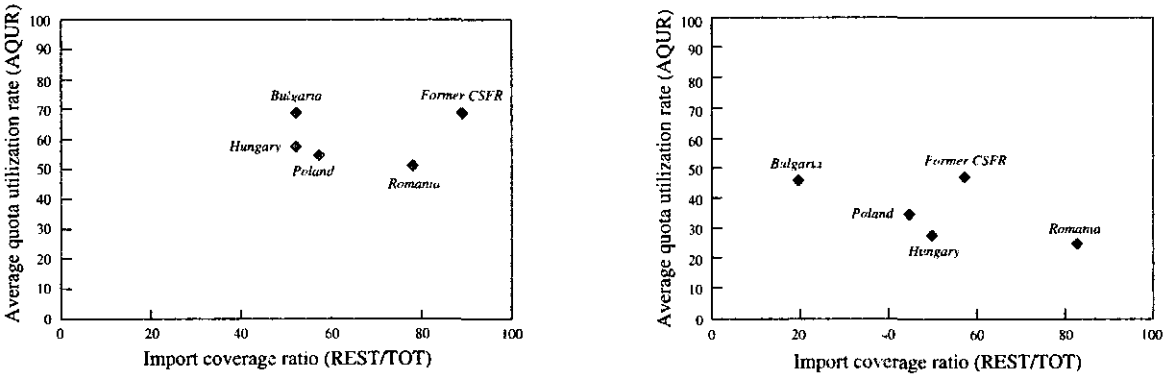
Average EC quota utilization rates for CEEC textiles and clothing products 1992

(%)

	Bulgaria	Former CSFR	Hungary	Poland	Romania	CEECs
Direct imports						
AQUR	47	50	24	33	19	33
OPT imports						
AQUR	44	36	32	38	54	39
Direct + OPT						
AQUR	46	47	28	35	25	35

Note: By volume of shipments (unweighted).
Source: CITH-OSCE.

GRAPH 3: **Graphical representation of restrictiveness (1986 and 1992)**



7.5. The adjusted import coverage ratio (BIND/TOT)

As an alternative to the REST/TOT index, Erzan and Holmes propose the BIND/TOT measure, which shows the share of imports from a supplier which are subject to 'binding' restrictions (again, defined in terms of a quota utilization rate of at least 90%). This measure appears to show a considerable relaxation of restrictions on EU market access for CEEC textiles and clothing products. Table 7 below shows that the value of this index for the CEECs as a whole fell from nearly 46% in 1986 to only around 2% in 1992. Of course, the interpretation of this measure is rendered problematic because of the problems involved in categorizing a given quota as binding (see above).

7.6. The restrictiveness of quotas (BIND/REST)

As a final indicator of restrictiveness, Erzan and Holmes calculated the BIND/REST measure which is an index of imports under quotas subject to 'binding' restrictions (again, defined in terms of a quota utilization rate of at least 90%). This measure is, of course, simply the ratio of the BIND/TOT and REST/TOT indices. As such, it is subject to the same problems of interpretation as the BIND/TOT measure. The BIND/REST measure nevertheless appears to show a considerable relaxation of restrictions on EU market access for CEEC textiles and clothing products. Table 8 below shows that the value of this index for the CEECs as a whole fell from over 73% in 1986 to only around 4% in 1992.

The BIND/REST measure also shows a considerable relaxation of restrictions on imports from Romania. This result is also in contrast with that obtained from the REST/TOT measure (since

Table 7

Adjusted import coverage ratios (imports under binding[1] quotas as a percentage of total imports)[2]

	1986	1989	1992
CEECs	45,87	36,71	2,14
Bulgaria	41,74	15,40	5,56
Former CSFR	52,01	41,01	0,49
Hungary	40,59	40,00	0,00
Poland	43,38	32,28	0,00
Romania	48,07	38,01	8,84

[1] A binding category is defined as one with a quota utilization rate of 90% or more.

[2] Based on value. Includes OPT.

Note: The BIND/TOT measure shows a considerable relaxation of restrictions on Romania's access to the EC textiles and clothing market, and this is in contrast with the result obtained from the REST/TOT index.

Source: Erzan and Holmes (1992), Table 2A, DIW calculations, Commission services calculations.

BIND/REST is the ratio of two other indices, it can fall if the denominator, REST/TOT, increases).

Table 8

Imports under quotas subject to binding restrictions (imports under binding[1] quotas as a percentage of imports under quotas)[2]

	1986	1989	1992
CEECs	73,36	68,90	4,29
Bulgaria	81,49	36,56	28,66
Former CSFR	75,79	64,48	0,86
Hungary	73,85	83,01	0,00
Poland	75,10	72,71	0,00
Romania	69,50	62,58	10,67

[1] A binding category is defined as one with a quota utilization rate of 90% or more.
[2] Based on value. Includes OPT.
Source: Erzan and Holmes (1992), Table 2A, DIW calculations, Commission services calculations.

7.7. Other measures of restrictiveness

The measures of restrictiveness calculated above are intended to provide some comparisons with the earlier results obtained from the Erzan and Holmes study. These measures are not exhaustive. Hamilton and Kim (1990) propose other measures such as the change over time in the spread of quota utilization rates, and the development over time of unit values of exports. The latter measure is intended to capture the effect of quotas (which are set in volume terms) on prices. This measure is potentially problematic since it says nothing about how quality upgrading can influence unit values independently of whether or not a supplier is restricted nor does it take into account the different market power of suppliers. The unit value of EU imports from the CEECs in all MFA product categories (measured in terms of ECU/KG) fell from 0,105 in 1988 to 0,08 in 1992. This is in contrast with what one might expect if the CEECs were indeed constrained suppliers (over the same period, the unit value of EU imports from MFA countries was roughly constant). A final possible measure of restrictiveness is the import tariff equivalent (MTE) of quotas, proposed by Hamilton (1986, 1988). Unfortunately, the computational cost of this measure is rather high and it was not possible to calculate it. This implies that it is also not possible to measure the extent of losses of scarcity rents by CEEC exporters from quota liberalization. It seems reasonable to assume that rent appropriation by CEEC exporters has been small, given their small market share and likely minimal market power.[1] Hence, any losses in private rents are likely to have been more than offset by the general welfare gains from the rise in export earnings in the early years of economic transition (for the reasons mentioned by Lary (1968) at the very beginning of this paper).

7.8. Indirect restrictiveness

Before finishing the discussion on the restrictiveness of CEEC access to the EU market, it is important to discuss briefly indirect restrictiveness. Firstly, it should be recalled that direct and OPT exports from the CEECs are treated differently in terms of tariffs (and, to some extent, quotas) in the EAs. It is important to recognize that EU trade liberalization has so far benefited EU producers relatively more than CEEC producers. This is because EU producers can benefit from the zero tariffs on certain CEEC OPT exports, whereas CEEC producers themselves face positive tariffs (for the present) on their direct exports. This implies that, for these product categories, EU producers are currently better able to exploit the cost advantage of labour in the CEECs than are CEEC producers themselves. Secondly, and because of this, it may be that the EAs distort incentives for CEEC producers by favouring low value-added OPT operations at the expense of activities such as design and marketing (activities which are intensive in the use of human capital) which are more important in direct exports (there is, of course, some knowledge transfer benefit from OPT which may tend to offset this). To the extent that poor design and marketing are a barrier to a further expansion of CEEC exports in textiles and clothing, it may be that this distorted incentive structure constrains the future growth of direct CEEC exports to the EU. Thirdly, it may be that the existence of quotas and the differential tariff treatment for direct and OPT exports to the EU has limited foreign direct investment (FDI) into the CEECs from more constrained MFA countries. FDI has played an important role in shifting the location of production between exporting countries.[2] Nevertheless, the significant improvement in treatment for the CEECs compared to MFA suppliers suggests the potential for a relative improvement in the attractiveness of Central and Eastern Europe for potential investors. Finally, the possible use of contingent protection measures in this sector can introduce uncertainty about the prospects for trade and investment.[3] In general, it is difficult to measure the extent of indirect restrictiveness, but indirect restrictiveness may be more important than direct restrictiveness. Indirect restrictiveness is, of course, time-limited since tariffs on direct CEEC exports as well as quotas are to be progressively phased out over the medium term.

[1] It is possible to interpret excessive dependence on OPT as an indication that a country's exporters have minimal market power.

[2] See, for example, Hamilton and Kim (1990) in relation to South Korea.
[3] This point is made by, for example, Messerlin (1992) and Rollo and Smith (1993).

8. Future prospects for CEEC exports of textiles and clothing

The aim of this section is to draw some general implications for the future evolution of CEEC exports of textiles and clothing from standard trade theory and given the experience of developing country suppliers. The first task is to present a brief overview of the factor-proportions theory of comparative advantage. This is then qualified somewhat by an examination of intra-industry trade in textiles and clothing between the EU and the CEECs. Given this background, CEEC exports to the EU are examined in terms of their concentration, specialization and factor-intensity. Finally, a comparison is made between the CEECs and developing country suppliers of textiles and clothing.

A helpful starting point for the analysis in this section is Krueger's (1977) characterization of the Heckscher-Ohlin theorem, which depicts chains of comparative advantage. Essentially, this states that countries tend to specialize in a segment of the product spectrum which corresponds, in terms of factor-intensity, to their relative factor endowments. A recognized 'stylized fact' of international trade is that most textiles and clothing products tend to be intensive in the use of unskilled labour, which implies that many of these products should tend to lie in the specialization area of labour-abundant developing countries. This is what would be expected from the conventional factor-proportions theory of comparative advantage. Trade based on comparative advantage is also recognized as having consequences for the distribution of income, and this can create an adjustment burden for certain countries.

Researchers have generally considered that the Heckscher-Ohlin framework is of considerable importance in explaining the rapid advances made by exports of textiles and clothing from developing countries in developed country markets (Lary 1968, Tuong and Yeats 1980, Anderson 1990, Erzan and Holmes 1992). Of course, it is universally recognized that the factor-proportions framework is an extremely simplistic representation of international trade.

8.1. Intra-industry trade

Although comparative advantage occupies a central role in the explanation of changing patterns of world trade, there are important aspects of trade which tend not to be explained by the theory. It should be recognized that much of world trade is trade between the industrial countries (i.e. between countries with similar factor endowments) and is intra-industry in character. Intra-industry trade is defined as the mutual exchange of goods within the same product category and is generally thought to involve product differentiation. Product differentiation is likely to be important for textiles and clothing goods, and particularly so for high fashion goods. To the extent that such trade does not influence the distribution of income, it may not involve adjustment consequences for countries in contrast to what might be expected from trade based on differences in factor endowments.

A further complication arises when OPT is introduced into the picture, since this is a special type of intra-industry trade (it is trade between firms in the same industry in products differentiated by stage of completion). OPT operations are comparable with assembly-line production based on imported components which is becoming increasingly important in other manufacturing industries. The difference is that OPT essentially involves indirect intra-industry, inter-firm trade in labour-intensive value-added.

To examine whether intra-industry considerations are important in explaining EU-CEEC trade in textiles and clothing products, intra-industry trade indices[1] were calculated at 3-digit SITC level (generally regarded as a suitable level of statistical disaggregation for the purposes of defining an 'industry'). The results are shown in Table 9 below and include OPT. This shows evidence of significant intra-industry trade between the EU and the CEECs for various textiles and clothing industries. Some of this is undoubtedly explained by OPT, for example, SITC categories 846 (clothing accessories) and 848 (headgear, non-textile clothing) which generally involve some labour-intensive processing at a particular stage of the production process. However, product differentiation amongst finished goods is also likely to be important. Product differentiation may also play a role in explaining the significant two-way trade between the EU and the CEECs in SITC categories 651 (textile yarn) and 652 (woven cotton fabrics). Note, in particular, the high values for trade with the former CSFR across almost all textiles industries.

The important point about OPT operations is that although they are a particular form of intra-industry trade (trade between firms in products differentiated by stage of completion), they can be explained quite easily within the Heckscher-Ohlin framework. Countries can specialize in a particular stage of an internationalized production process which corresponds, in terms of factor-intensity, to their relative factor endowments. OPT operations are important for CEEC firms since they mainly involve labour-intensive processing. Firms in labour-abundant countries can use OPT to export their labour indirectly to firms in the same industry in other countries. This type of trade can therefore influence the distribution of income (by influencing relative factor prices) in the same way that ordinary Heckscher-Ohlin trade can.

[1] The index is defined as $1 - |X_i - M_i|/(X_i + M_i)$, where X_i and M_i represent exports and imports in industry i respectively. Values closer to unity generally indicate a higher degree of intra-industry trade. For the present study, this index was found to be more revealing than the Grubel-Lloyd 'summary' index (see Grubel and Lloyd 1975).

Table 9

Intra-industry trade indices for EC-CEEC trade in textiles and clothing (SITC 3-digit level), 1992

SITC category[1]	Bulgaria	Czechoslovakia	Hungary	Poland	Romania
65 - Textile yarn, fabrics, etc.					
651 - Textile yarn	0,62	0,78	0,80	0,55	0,86
652 - Woven cotton fabrics	0,50	0,85	0,28	0,22	0,09
653 - Woven man-made fabrics	0,36	0,69	0,20	0,08	0,04
654 - Other textile fabrics, woven	0,53	0,81	0,07	0,22	0,03
655 - Knitted/crocheted fabrics	0,02	0,60	0,16	0,26	0,01
656 - Tulles, lace, embroidery, etc.	0,09	0,79	0,06	0,14	0,03
657 - Special yarns and textile fabrics	0,07	0,57	0,41	0,15	0,03
658 - Made-up articles, textiles, n.e.s.	0,08	0,20	0,35	0,44	0,49
659 - Floor coverings, etc.	0,95	0,74	0,64	0,27	0,48
84 - Clothing and accessories					
841 - Mens'/Boys' coats, etc. not knitted/crocheted	0,16	0,17	0,26	0,12	0,09
842 - Womens'/Girls' coats, etc. not knitted/crocheted	0,20	0,31	0,15	0,11	0,04
843 - Mens'/Boys' coats, etc. knitted/crocheted	0,57	0,42	0,75	0,27	0,66
844 - Womens'/Girls' coats, etc. knitted/crocheted	0,73	0,54	0,62	0,47	0,38
845 - Articles of apparel n.e.s.	0,36	0,57	0,67	0,43	0,42
846 - Clothing accessories	0,85	0,76	0,83	0,45	0,94
848 - Headgear, non-textile clothing	0,79	0,81	0,48	0,91	0,99

[1] Approximate SITC (Rev.3) descriptions.
Source: Eurostat (Comext), Commission services calculations.

8.2. The degree of concentration

Using data for 1985 to 1989, Erzan and Holmes (1992) argued that the CEECs textiles and clothing exports to the EU were too diversified given the assumed labour-abundance of the countries of the region. They compared per capita income in the CEECs with that in East Asian countries, and argued that the former were relatively labour-abundant. It has already been suggested that the description of the CEECs as relatively labour-abundant countries is potentially problematic, at least over the longer term. Since most textiles and clothing products are labour-intensive, it should be expected from the Heckscher-Ohlin framework that relatively capital-abundant countries would tend to have a higher degree of export concentration (i.e. would tend to export fewer products).

Instead of evaluating CEEC export concentration in textiles and clothing in terms of a prior assumption about relative labour-abundance, the approach adopted here is to ask whether CEEC exports to the EU are more diversified than the exports of all third countries. To do this, a concentration index (similar to that employed by Erzan and Holmes) was constructed as follows. Firstly, each country's direct MFA exports to the EU in 1992 were ranked by descending order of value at the level of MFA product categories. Then the number of different product categories which accounted for 50% of each country's total direct MFA exports to the EU was counted, and used for the index number.

The value of this index for all third countries' exports to the EU was 11. For the CEECs as a whole, the value of this index was 12. This suggests that CEEC textiles and clothing exports to the EU were not significantly more diversified than the exports of all third countries. For individual CEECs, the value of this index ranged from 5 for Romania (the country with the lowest per capita income among the CEECs) to 12 for the former CSFR and Hungary. This result is rather perverse and tends to suggest that as economic transformation in Central and Eastern Europe progresses, there will be some tendency for Romania to diversify its textiles and clothing exports to the EU.

The next important question concerns export specialization.

8.3. Specialization and factor-intensity

The Heckscher-Ohlin framework predicts that since most textiles and clothing products belong to the lower end of the product spectrum in terms of their capital-intensity, a larger number of such products should tend to correspond to the specialization segments of the relatively more labour-abundant countries. Given a high degree of product differentiation in many textiles and clothing products, however, there are likely to be significant gains from specialization. On the assumption that the CEECs were labour-abundant, Erzan and Holmes (1992) argued that CEEC textiles and clothing exports to the EU were too capital-intensive. They suggested that the CEECs'

expansion of relatively labour-intensive products had probably been inhibited by MFA quotas and by the weak adjustment mechanism inherent in a centrally-planned economic system.

Since it has been argued above that the characterization of the CEECs as labour-abundant is potentially problematic, the approach followed below differs slightly from that of Erzan and Holmes. Instead of classifying all CEEC MFA exports in terms of their capital-intensity, it was decided to focus on revealed specialization. For each country, the five MFA product categories with the highest degrees of export specialization were selected and then examined in terms of their capital-intensity. Firstly, a specialization index was constructed by taking the ratio of the share of each product category in a country's total MFA direct exports to the EU to the share of that product category in all third countries' total MFA direct exports to the EU. These revealed specialization indices should be interpreted with some care since the quota regime may inhibit specialization in areas where there is a genuine comparative advantage (although, for each of the CEECs, quotas either do not apply to the top five product categories in terms of specialization or else are not 'binding' in the sense referred to above).

Secondly, it was necessary to compare product specialization with a measure of capital-intensity. Given that the relative factor-intensity of production for goods does not vary significantly across countries (Lary 1968), and assuming no factor-intensity reversals, it is possible to proxy the capital-intensity of the EU's MFA product categories by using value added per production worker in the US (this is identical to the methodology of Erzan and Holmes, since value-added per worker is generally considered a good measure of human and physical capital-intensity). The actual index chosen was the 1982 NBER measure given in Yeats (1990).[1] The index numbers are relative to US manufacturing as a whole. Thus, the index number for railway vehicles (SITC 731) was 100, which implies that this product is as capital-intensive as the average for US manufacturing. On the other hand, photographic equipment (SITC 861.6) had an index number of 210, whereas footwear (SITC 851) had an index number of 50. This implies that photographic equipment is more capital-intensive than the average, whereas footwear is less capital-intensive. The range for median values of textiles products is 49-62, while that for clothing products is 50-90.[2]

Table 10 below shows that CEEC specialization seems to lie in low value-added textiles products and relatively unsophisticated clothing products. The textiles products in which the CEEC have a high specialization tend to have a relatively high degree of capital-intensity. However, the clothing products in which the CEEC have a high specialization tend to have a relatively low degree of capital-intensity. As far as clothing is concerned, it should be remembered that the figures in Table 10 refer only to direct exports from the CEEC. Since, however, OPT operations are of key importance to the CEECs in trade with the EU, the figures in Table 10 will tend to understate the labour-intensity of CEEC clothing exports to the EU. The result that emerges here is that CEEC specialization in textiles exports tends to be concentrated in more capital-intensive products, but CEEC specialization in clothing exports tends to be concentrated in more labour-intensive products. As far as textiles are concerned, specialization in more capital-intensive goods may be beneficial for the CEECs over the longer term. As far as clothing is concerned, however, specialization in more labour-intensive products (and dependence on labour-intensive OPT operations) is beneficial from a short-term perspective but probably does not reflect the CEECs' underlying comparative advantage. As economic reform in Central and Eastern Europe progresses, it would be expected that specialization would shift towards higher value-added, more capital-intensive products.

8.4. A comparison with developing countries

Since it is to be expected that most textiles and clothing products tend to lie in the specialization areas of labour-abundant developing countries, a comparison between the CEECs and developing countries would seem to be very useful. In 1992, developing countries (including the former Yugoslavia) accounted for around 74% of the total volume of EU imports in all MFA product categories. In 1988, their share of EU MFA imports was around 68% (again in volume terms). However, within this group there have been significant changes. Some developing countries have managed to achieve spectacular increases in their exports to the EU, whereas others have seen a fall in their exports to this market. The most prominent members of the former group are Bangladesh (MFA exports to the EU rose by more than 42% in volume terms over this period), Indonesia (36,5%), and Sri Lanka (22%). In the latter group are countries such as Taiwan (-3,5%), Hong Kong (-3,7%) and South Korea (-6,6%). These changes suggest that within the group of developing countries, comparative advantage is shifting away from countries where wages have now risen to close to the EU minimum.

Table 11 below presents some indicators of comparative advantage for a sub-group of developing countries and CEECs. The sub-group is divided into dominant Asian suppliers (this group also includes Taiwan, for which data are not available), the ASEAN countries (this group also includes Malaysia, for which data are not available), and emerging Asian suppliers.

[1] See Yeats (1990), Annex, Table 1.

[2] These figures tend to confirm Lary's (1968) finding that textiles production is highly labour-intensive relative to the average for manufacturing as a whole. A comparison of indices of revealed comparative advantage between developed and developing countries also provides further support for this view. For evidence that textiles production has become relatively more labour-intensive over time see Tuong and Yeats (1980).

The indicators shown are the trade coverage ratio, TCR, (defined here as the ratio of the share of textiles or clothing in a country's exports to the rest of the world to the share of that good in its imports from the rest of the world, and the index of revealed comparative advantage, RCA, suggested by Balassa (1965)). RCA is a normalized measure of comparative advantage, in that it shows the ratio of the share of a good in a country's exports to the world to the share of that good in total

Table 10

Specialization and capital-intensity of CEEC direct MFA textiles and clothing exports to the EC in 1992

Bulgaria			
MFA category	Description	Specialization index[1]	Capital-intensity[2]
47	Woollen yarn (non-retail)	10,78	49
118	Flax or ramie linen	7,47	62
39	Cotton linen (various)	6,31	62
33	Synthetic fabrics or sacks	6,01	62
85	Ties, bow-ties, cravats	5,39	50
Former CSFR			
MFA category	Description	Specialization index[1]	Capital-intensity[2]
117	Flax or ramie fabrics	11,35	62
66	Travelling rugs and blankets	10,66	60
32	Woven pile fabrics	10,32	62
19	Handkerchiefs	9,56	50
118	Flax or ramie linen	7,77	62
Hungary			
MFA category	Description	Specialization index[1]	Capital-intensity[2]
115	Flax or ramie yarn	22,33	49
101	Non-synthetic twine, ropes	13,56	60
90	Synthetic twine, ropes, etc.	10,31	62
43	Yarn of man-made filament	8,18	49
86	Corsets, etc.	6,94	50
Poland			
MFA category	Description	Specialization index[1]	Capital-intensity[2]
50	Woven woollen fabrics	9,01	62
90	Synthetic twine, ropes, etc.	8,32	62
117	Flax or ramie fabrics	7,75	62
69	Womens'/Girls' slips, petticoats	6,45	50
17	Mens'/Boys' jackets, blazers	6,43	50
Romania			
MFA category	Description	Specialization index[1]	Capital-intensity[2]
55	Synthetic staple fibres	14,52	62
69	W/G slips, petticoats	10,82	50
16	M/B suits	4,51	50
77	Ski suits	4,47	50
14	M/B woven overcoats	4,44	50

[1] For definition see text.

[2] Relative to US manufacturing in 1982 (US manufacturing = 100).

Source: Eurostat (Comext), Yeats (1990) Annex Table 1, DIW calculations, Commission services calculations.

world trade. For both measures, a value greater than unity suggests that a country has a comparative advantage in the export of that good.

These figures partly reflect the extent to which suppliers are constrained in the main world markets, and should therefore be interpreted with some care. It would appear as though comparative advantage within this group of countries tends to lie heavily with the emerging Asian suppliers (particularly India, Pakistan and Bangladesh), China and the dominant Asian suppliers (with the possible exception of South Korea), Indonesia and Thailand. CEEC revealed comparative advantage is quite low compared to the developing countries shown here.

It is interesting to examine the degree of similarity between the export profiles of the CEECs and the sub-group of developing countries. An obvious measure for the purposes of making this comparison is the export similarity index, (ESI) proposed by Finger and Kreinin (1979).[1] Table 12 below gives the three developing countries with the highest ESI values (computed for exports to the EU at SITC 3-digit level) for each CEEC in textiles and clothing. It is interesting to note the degree of export similarity between the CEECs and countries with considerably lower income levels (India, China, Pakistan, Sri Lanka, Indonesia), as well as between the CEECs themselves in terms of similar countries. Of course, it is not possible to control for quality when calculating this index. Qualitative differences may be important for certain categories of textiles and clothing exports and there may therefore be significant differences in the exports of the CEECs and the developing countries referred to here. There also appears to be a high

[1] The index is defined as $\{\Sigma_i \min[X_{i,a}, X_{i,b}]\}*100$, where $X_{i,a}$, and $X_{i,b}$ *represent exports of good i to a given market by countries a and b* respectively. A value of 100 indicates perfect similarity of export profiles. A value of zero indicates perfect dissimilarity.

Table 11

Indicators of comparative advantage in textiles and clothing for selected developing countries in 1992

	Textiles[1]		Clothing[1]	
	TCR[2]	RCA[3]	TCR[2]	RCA[3]
Dominant Asian suppliers				
China	1,1	3,2	36,1	5,5
Hong Kong	0,7	2,3	4,1	9,2
South Korea	3,2	3,4	27,0	2,5
Macao	0,3	2,9	11,6	18,5
ASEAN				
Singapore	0,6	0,5	1,7	0,8
Philippines	0,3	0,4	56,7	2,4
Indonesia	2,1	2,6	91,6	2,7
Thailand	1,3	1,2	105,1	3,2
Emerging Asian suppliers				
India	20,9	4,4	974,9	4,2
Pakistan	37,2	15,4	2 752,8	5,5
Bangladesh	2,3	5,3	25,3	13,4
Sri Lanka	0,2	1,0	64,9	13,4
CEECs				
Hungary	0,4	0,8	3,9	3,1
Poland	1,1	0,6	4,0	1,4
Romania	0,5	1,0	4,7	2,0

[1] Textiles and clothing are defined as SITC 65 and SITC 84, respectively. These figures are based on exports to the world market.
[2] TCR = trade coverage ratio. For definition see text.
[3] RCA = revealed comparative advantage. For definition see text.
Source: UN Comtrade, GATT (1993b), Commission services calculations.

degree of export similarity between the CEECs and higher income developing countries, such as Hong Kong.

A high degree of similarity between CEEC and developing country export profiles can be interpreted as suggesting a potential for trade diversion to the detriment of the latter, especially since the EU's minimum obligations for trade liberalization with respect to imports from MFA developing countries are significantly less generous than the liberalization offered to the CEECs in the EAs. However, arriving at a realistic assessment of potential trade diversion in the textiles and clothing sector is quite problematic. Not only is it necessary to control for differences in product quality but it is also important to be able to assess the extent to which different suppliers are constrained. Given the difficulties of calculating the latter, no attempt is made here to assess potential trade diversion.

One issue which can be satisfactorily addressed is the potential for future diversification in the pattern of CEEC exports to the EU. Here, the comparison with the so-called dynamic Asian economies (DAEs)[1] is a particularly interesting one. The DAEs have managed to transform themselves into largely industrialized societies by achieving unprecedented economic growth based, to a greater or lesser extent, on increasingly outward-oriented trade policies. Per capita income levels in the more advanced DAEs (Hong Kong and Singapore) now exceed those in many developed countries. Industrialization in these countries has involved a diversification and upgrading of manufacturing exports away from largely unskilled labour-intensive production towards more capital-intensive production (including production which is intensive in human capital) and towards high technology industries. This has important parallels with the type of export diversification which one might expect to accompany economic transformation in Central and Eastern Europe.

Graph 4 shows that the share of textiles and clothing in CEEC manufactured exports to the world is similar to that of the DAEs and lower income developed market economies and considerably below that in lower income developing countries. This suggests that there is considerable potential for diversification in the future pattern of CEEC manufactured exports to the EU. This potential appears even greater when it is remembered that using more realistic exchange rates would show real incomes in the CEECs to be much higher than

[1] The DAEs are Hong Kong, Korea, Malaysia, Singapore, Taiwan and Thailand.

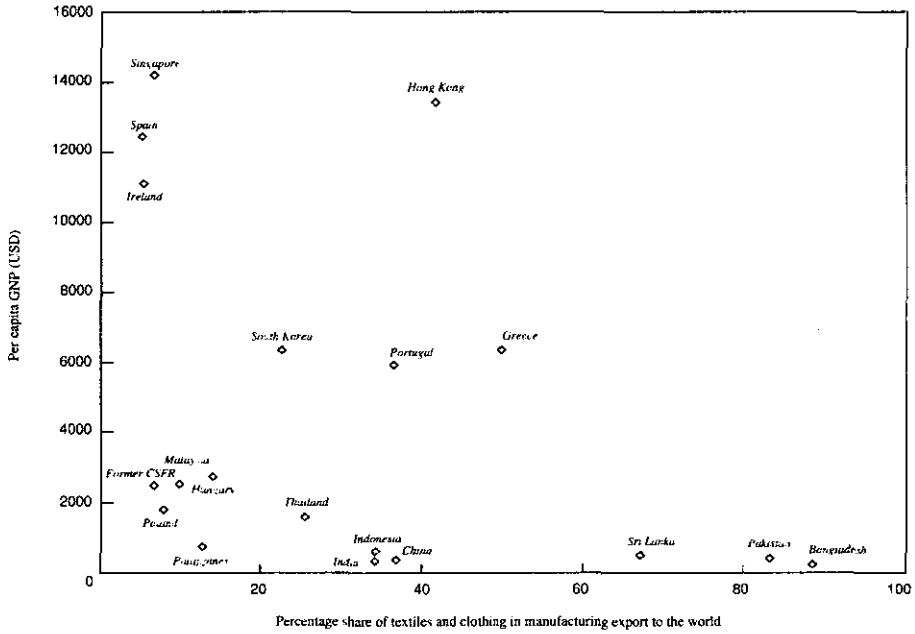
Table 12

Similarity between CEEC and developing country export profiles[1] (highest three export similarity index (ESI) values[2])

	Textiles	ESI	Clothing	ESI
Bulgaria	Pakistan	80,57	Indonesia	86,30
	China	73,16	Sri Lanka	85,17
	Thailand	68,92	Hong Kong	84,57
Former CSFR	Thailand	86,33	Indonesia	87,72
	India	74,27	Hong Kong	85,52
	Malaysia	68,60	China	82,69
Hungary	Thailand	74,15	Sri Lanka	87,95
	Pakistan	73,77	China	83,43
	Philippines	65,81	India	82,60
Poland	China	75,64	Sri Lanka	75,34
	Pakistan	70,86	Indonesia	74,43
	India	66,90	Hong Kong	73,18
Romania	India	77,01	Sri Lanka	79,38
	Sri Lanka	68,07	Indonesia	77,41
	Thailand	66,75	Hong Kong	73,86

[1] Calculated at SITC 3-digit level, where textiles and clothing are defined as SITC 65 and SITC 84, respectively. Includes OPT.
[2] For definition see text.
Source: Eurostat (Comext), Commission services calculations.

GRAPH 4: **Per capita GNP and share of textiles and clothing in manufacturing exports to the world**



Source: World Bank (1993). Data refer to 1991.

suggested here. Focusing on the DAEs is helpful because it serves as a reminder of the extent to which rising real incomes can increase a country's potential for export diversification. In the mid-1950s, the share of textiles and clothing in manufactured exports was around 50% for countries such as South Korea and Hong Kong.[1] Today, this share has fallen to less than 25% for South Korea and to around 40% for Hong Kong. Given Hong Kong's relatively high per capita income, this last figure is still quite high. A large part of the explanation lies in the fact that Hong Kong firms are in fact re-exporting textiles and clothing products which have undergone some processing in Southern China (where labour is considerably more abundant). Scarcity rents under the MFA may also encourage the export of labour-intensive products, the production of which would not otherwise be competitive in more capital-abundant countries (Erzan and Holmes 1992).

Graph 4 also shows that textiles and clothing products occupy a relatively high share in the manufacturing exports of Greece and Portugal. It is interesting to ask whether these high shares reflect trade diversion away from developing countries (an assertion which, as noted above, is potentially difficult to establish empirically), or whether other factors are at work. Jacquemin and Sapir (1991) note that over the period 1965 to 1985, this share rose from 21 to 46% in Greece, and fell only slightly from 39 to 37% in Portugal. They describe this trend as 'less favourable', compared to the falling share of textiles and clothing in the manufacturing exports of countries such as Hong Kong, South Korea and Singapore. Given increasing competition from developing countries in labour-intensive industries such as textiles and clothing, they suggest that some southern European countries may face a structural adjustment problem:

'Under these conditions, the countries in the south of the Community are faced with two possibilities: that of maintaining their positions in the traditional sectors or of transforming their industrial structures. The first option holds little attraction. It would entail fierce competition from developing countries on their terms, i.e. those of low wages. Alternatively, that option could be exercised by maintaining or even reinforcing protective measures ... However, such a policy would be disastrous not only for developing countries but also, ultimately, for the southern Community countries themselves, whose inadequate openness would lead to inefficient industrial specialization. This therefore leaves the second option — one which, moreover, has already been adapted by the [DAEs], which are demonstrating great capacity to adjust.'[2]

[1] *Source:* Anderson (1990), Table 6-1.

[2] Jacquemin and Sapir (1991), p. 43. These authors suggest that the EU's structural funds be used to pursue structural adjustment in traditional sectors, such as textiles and clothing. They also contrast the situation of Greece and Portugal with that of Italy, where restructuring has taken place through the selection of specific growth areas, namely, clothing manufacturers moving from mass production to up-market batch production.

Two points need to be made here. Firstly, any structural adjustment problems which southern European countries may face in the textiles and clothing sector would appear not to be a specific result of the expansion of trade with the CEECs. In particular, it should be noted that the long-term comparative advantage of the CEECs probably does not lie in labour-intensive industries. Secondly, a possible future scenario for regional economic integration between the EU and the CEECs could involve the latter increasing their specialization in traditional sectors, such as textiles and clothing (as a result of trade diversion from new patterns of tariff preferences and the differential impact of non-tariff measures). The analysis presented above suggests that such a scenario would not be appropriate for the CEECs given likely global patterns of comparative advantage.

Overall, then, it seems reasonable to assume that the share of textiles and clothing in CEEC exports to the EU will decline considerably to reflect the fact that comparative advantage seems to lie more with the lower income developing countries. Over time, CEEC exports to the EU should diversify into higher value-added products and products which are more intensive in the use of physical and human capital.

9. Conclusions

The three main conclusions to emerge from the work undertaken here are as follows:

(i) That despite recession in the EU and domestic structural problems in industry, textiles and clothing exports by the CEECs to the EU have played an important role in raising CEEC export earnings in the early years of economic transition. However, given the importance of OPT in CEEC exports to the EU, much of this really involves CEEC firms indirectly exporting their labour to their EU counterparts.

(ii) That the EU has granted a considerable amount of liberalization to the CEECs and, although there are difficulties in interpreting the various indicators of restrictiveness, there is now little evidence to suggest that the CEECs are constrained suppliers, at least in a direct sense. The significant improvements in market access (for example, through large increases in quotas) relative to MFA suppliers (whose bilateral agreements have been rolled-over on the same terms and conditions, for example, existing growth rates for quotas) should be emphasized. However, it may be that the phased liberalization scheduled in the Europe Agreements results in the CEECs being indirectly constrained over the medium term.

(iii) That the comparison with developing countries suggests that over time the share of textiles and clothing in CEEC exports to the EU should decline considerably, as comparative advantage in these products tends to lie more with the lower income developing countries. An increasing specialization in higher value-added products is also to be expected.

The trade liberalization which the EU has offered the CEECs in the textiles and clothing sector is clearly superior to that offered to MFA suppliers. Firstly, quota liberalization in the EAs proceeds according to a much faster timetable than the schedule for integrating textiles and clothing products into the GATT agreed in the Uruguay Round. Secondly, imports from MFA suppliers will continue to face tariffs for many years after CEEC suppliers have secured tariff-free access to the EU market. This difference in treatment partly reflects the fact that the CEECs are potential future members of the EU whereas MFA suppliers are not.

EU firms clearly benefit from this liberalization since they are allowed immediate tariff-free access to cheaper labour in the CEECs (through OPT), and this may be of crucial significance to their industrial restructuring strategies. Structural adjustment is a high priority for EU producers given their apparent poor competitiveness on major world markets, and given the growth in EU imports from the more labour-abundant developing countries. EU producers will also benefit from preferential access to CEEC markets, where the demand for high quality products will presumably increase over time as real incomes grow. CEEC firms benefit from the trade liberalization in the EAs, since they can no longer be described as constrained suppliers (at least in a direct sense). EU consumers will benefit from cheaper imports, but the real benefits will occur after the MFA has been fully dismantled. An important final question is how developing countries will be affected by EU-CEEC trade liberalization in the textiles and clothing sector. The answer could depend crucially on how quickly the EU implements the Uruguay Round timetable for integrating textiles and clothing products into the GATT. As shifting patterns of comparative advantage increasingly favour developing country suppliers, a fast dismantling of the MFA could contribute to a rapid and sustained rise in their export earnings.

Annex: Textiles and clothing in the Uruguay Round

One of the main achievements of the Uruguay Round of multinational trade negotiations (launched in Punta del Este, Uruguay in September 1986 and finally signed in Marrakesh, Morocco in April 1994) will be to secure the eventual integration of the textiles and clothing sector into the GATT. This will mean that trade in these products will become subject to the general rules of the GATT, such as non-discrimination.

The absence of full GATT discipline in textiles and clothing has been one of the main deficiencies of the international trading system. The Multifibre Arrangement (MFA) dating from 1974, and the Short- and Long-Term Agreements of the early 1960s which it replaced, have aimed at providing 'temporary' protection for producers in developed countries from competition by exporters in developing countries. The former were to be given time to adjust to foreign competition while the latter were to be given 'orderly' access to developed country markets. In practice, however, this protection became semi-permanent.

The agreement on textiles and clothing in the Final Act of the Uruguay Round allows importing countries considerable discretion in the timetable for the integration of these products into the GATT. At the latest, full integration must be achieved within 10 years starting, in principle, from 1 January 1995. Existing MFA restrictions are to be carried over into the new agreement and maintained until the restrictions are removed or the products are integrated into the GATT (through the removal of all quantitative restraints). The integration of these products is to happen in three stages.

In Stage 1, each party is to integrate into the GATT products from an agreed list which accounted for not less than 16% of its total volume of imports in 1990. At the beginning of Stage 2, on 1 January 1998, products which accounted for not less than 17% of 1990 imports (by volume) would be integrated. On 1 January 2002, when Stage 3 begins, products which accounted for not less than 18% of each party's 1990 volume of imports would then be integrated. All remaining products would then be integrated on 1 January 2005, the end of the transition period. In each of the first three stages, products are to be chosen from each of the following categories: tops and yarns, made-up textiles products and clothing.

For products remaining under quantitative restraints, at whatever stage of the transition period, the agreement lays down a formula for increasing the growth rate of such restraints. During Stage 1 (1995 to 1997 inclusive), for each restriction previously under MFA bilateral agreements in force for 1994, annual growth should be at least 16% higher than the growth rate established for the previous MFA restriction. During Stage 2 (1998 to 2001 inclusive), annual growth rates should be 25% higher than the Stage 1 rates. During Stage 3 (2002 to 2004 inclusive), annual growth rates should be 27% higher than the Stage 2 rates. Restraints under non-MFA agreements are to be progressively phased out before the end of the transition period (unless the products under such agreements are brought into conformity with the GATT within one year).

During the transition period, for products not integrated into the GATT at any stage, importing countries have recourse to a safeguard mechanism. Action can be taken against individual exporting countries if an importing country can demonstrate (i) that overall imports were entering the country in such increased quantities that serious damage (or the threat thereof) was being caused to its domestic industry; and (ii) that there was a sharp and substantial increase of imports from the individual country concerned. Safeguard action can be taken unilaterally, but it will be subject to review by the Textiles Monitoring Body of the GATT Committee on Textiles. When such action is taken, the level of restraints must be fixed at a level not lower than the actual level of imports from the country concerned during the previous year.

Many developing countries fear that they may face discrimination in the way that these safeguard measures are to be applied. They also regard the long transition time span for the integration of textiles and clothing products into GATT with some concern. It is feared that this could lead to the continuation, with regard to important exports, of the restrictive MFA system for another decade.[1]

[1] See Unctad (1993), p. 48.

Box: The textiles and clothing sectors: A comparison of the EU and the CEECs[1]

Introduction

EU trade policy towards the CEECs, as manifest in the Europe Agreements, is often particularly criticized for its slow opening up of trade access in the so-called 'sensitive' sectors, amongst which are textiles and clothing. The argument is that these are sectors in which the CEECs have comparative advantages and could therefore expand exports much more if EU barriers were removed. However, there are other reasons why these sectors are described as sensitive by policy-makers, not just in the EU but also in the CEECs. In general, these sectors are fairly large in both the EU's and the CEECs' economies. They also tend to be undergoing significant restructuring which entails rapid contraction, putting pressure on jobs and social cohesion. Often, they tend to be more important for relatively poor countries such as the CEECs, and some of the EU's poorer Member States. They are also sectors which face significant competition from third countries — especially from south-east Asia in the case of textiles and clothing.

The importance of textiles and clothing inside the EU and the CEECs

On average, Table 1 shows that between 1990 and 1992, the two sectors provided nearly 5% of EU manufacturing value-added and over 8% of manufacturing employment (nearly 2 million jobs). Moreover, they are especially important for the poorer Member States of the EU. About 25% of Greek manufacturing employment is concentrated in just these two sectors, while in Portugal the proportion is approaching 30%.

On the other hand, in 1992, 70,9% of the total number employed in these two sectors within the EU were working in Italy, Germany, the UK and France (see Table 2).

Meanwhile, Table 2 also shows that in the CEECs, the two sectors employ around 1,5 million workers (about 16% of manufacturing employment) and are most important for Romania, Poland and Bulgaria (although never exceeding 20% of manufacturing employment anywhere, so that in no CEEC country is employment as concentrated in the two sectors as it is in Greece or Portugal). It is particularly striking to notice that the textiles and clothing sectors are larger in Romania in terms of numbers employed than any Member State of the EC. In general, most European countries have a preponderance of employment in textiles, although possibly not in Bulgaria.

The evolution of the textile and clothing sectors in the EU and the CEECs

The textiles and clothing sectors have been shrinking rather rapidly throughout the European continent for some time. Inside the EU, the contraction of the two sectors has outpaced that of manufacturing as a whole — both sectors have seen employment declines of over 20 percentage points since 1987 while manufacturing employment has declined less dramatically by almost 9 points. Furthermore, employment contraction in the EC's textile and clothing sectors accelerated in 1992 and, as a result, almost 20% of all jobs lost in manufacturing that year were in those two sectors alone. Two significant reasons for these results were, firstly, decreasing international competitivity (some evidence of this is presented below) and the process of introducing new technology. However, the experience of employment change has been very different across the Member States — the UK, France and Germany tend to have had the worst contractions of employment while Portugal, Spain, Ireland, and the Netherlands have all enjoyed relatively stable employment situations. Meanwhile, while manufacturing industry increased its volume of

Table 1

Weight of textiles and clothing in EC manufacturing (average 1990-92)

	Employment		Value-added	
	Textiles	Clothing	Textiles	Clothing
Belgium/Luxembourg	7,4	3,7	5,3	2,2
Denmark	2,6	1,8	1,9	1,0
Germany	2,7	1,9	2,1	1,1
Greece	14,6	10,2	—	—
Spain	4,6	4,6	—	—
France	4,6	3,4	2,8	1,8
Ireland	5,8	—	1,9	—
Italy	7,7	5,1	5,7	2,8
Netherlands	2,4	—	2,1	—
Portugal	20,3	9,5	13,8	4,5
United Kingdom	4,2	3,8	2,5	1,6
EUR 12	4,8	3,5	3,1	1,7

Source: VISA (Eurostat database).

[1] Box prepared on the basis of two reports — 'The European textile and clothing industry: EEC — PECO relations' by C. Huttin and 'The European textile and clothing industry: EEC — CEEC relations' by E. Mikelka — and written by J. Sheehy.

Table 2

Total employment in the textile and clothing industries inside the EC and the CEECs (in thousands)

	Textiles					Clothing				
	1985	1989	1990	1991	1992	1985	1989	1990	1991	1992
EUR 12	1 363	1 283	1 217	1 165	1 081	882	849	831	789	740
Belgium/Luxembourg	56	55	53	51	49	27	25	25	23	21
Denmark	14	12	11	11	10	10	6	6	6	5
Germany	244	229	223	218	204	174	152	149	145	131
Greece	53	50	44	39	35	25	31	30	26	NA
Spain	127	117	111	109	92	84	94	99	95	89
France	221	182	166	163	153	154	124	120	118	114
Ireland	11	11	11	11	11	11	9	10	9	9
Italy	242	242	233	222	212	157	162	157	150	144
Netherlands	22	21	22	22	21	NA	8	7	7	7
Portugal	137	137	133	124	107	41	56	58	56	52
UK	236	229	210	195	188	193	184	172	154	145
Bulgaria				*61*					*103*	
Czechoslovakia[1]		206	200				90	87		
Czech Republic[1]			117	115				42	27	
Hungary[2]	106		75	54	46	64		62	56	52
Poland				*284*					*297*	
Romania			*367*					*210*		
Slovakia[1]			40	37				28	19	

Sources: [1] Benacek (1992).
[2] Farkas (1993).
VISA for EU.
Estimations based on expert studies made for interpenetration project (in italic).

output in the EC by nearly 20 points between 1985 and 1992, textiles fell slightly and clothing slumped by nearly 15 points.

In the CEECs, the fall in production at constant prices has been even sharper than this — between 1989 and 1992 textile production shrank by at least 40 percentage points in at least three of the CEECs (Hungary, the Czech Republic and Slovakia) and by 30 or more points in clothing. This contraction has exceeded the average for manufacturing as a whole and is in marked contrast with the situation up to 1989 when the CEECs' textile and clothing sectors actually grew, and at a rate at least as fast as overall manufacturing output growth. Factors explaining the results are dominated by the collapse of ex-CMEA markets in the early 1990s, and the collapse of domestic demand as incomes fell after transition started.

Relative competitiveness of the textile and clothing sectors inside the EC and the CEECs

The poor performance of the EC's textile and clothing sectors took place against a background of relatively strong EC consumption in the textiles sector up to 1990 and up to 1991 in clothing. Given this, and the fact that the EC's textile and clothing sectors penetration of world markets shrank in the same period, it is clear (as Nagarajan says) that the problem has been one of increasing uncompetitivity compared to producers from other countries, even on domestic markets. To what extent, then, do the CEECs countries have textiles and clothing industries which are more competitive than the EU's?

Table 3

Wages in spinnning and weaving, 1991 (USD/hour)

Country	USD/hour
(former) CSFR	0,31-0,71
Hungary	0,80-1,50
Poland	0,40-0,60
Belgium	17,40
Denmark	18,30
Germany (western)	17,00
Germany (eastern)	9,10
Greece	5,70
Spain	7,70
France	12,60
Ireland	8,80
Italy	17,30
Netherlands	18,10
Portugal	3,20
UK	10,20

Source: Werner International.

Certainly, the CEECs' labour costs are extremely low relative to the EU (see Table 3). It is therefore likely that the CEECs are competitive in relatively labour intensive production. In general, clothing manufacturing is considered labour intensive while textiles production is held to be capital intensive. Table 19 in the statistical annex which gives the factor intensity of production certainly suggests this to be the case (although see Nagarajan for dissent). On the other hand, because non-labour costs are higher in the CEECs, the competitive total production cost margin over some of the southern European Member States is not so large, especially by comparison with Portugal (see Nagarajan, Table 2). As a result, the overall cost advantages of producing clothing in the CEECs rather than in some of the southern Member States may be small.

The relative competitiveness of southern Member States versus the CEECs therefore depends on other non-price factors such as quality of output or output flexibility (or other non-price competitiveness factors as discussed in Nagarajan). For instance, geographically, all other factors being equal, the Czech Republic or Poland may be more competitive than Portugal for supplying the German market. Market reforms in the CEECs together with increasing trade access do therefore make the market environment facing the poorer Member States of the EU more competitive, both in attracting relocating producers or selling on EU markets.

However, if southern Member States face more competition, it is the wealthier Member States which are squeezed most. It seems very hard to see how high labour cost Member States could possibly remain competitive against the CEECs' clothing industries, although clothing production may offer scope for strategic behaviour by manufacturers to develop differentiated products and exploit specialized, high quality, high value-added market niches. If so, this could reduce the competitive pressure coming from low labour cost countries. On the other hand, if high quality EU clothing producers believe that they can achieve comparable levels of production quality in low labour-cost countries such as Portugal or the CEECs, then it may may make sense to relocate production in order to enjoy wider profit margins.

Conversely, in the case of textiles manufacturing it is not at all clear that CEEC producers have a competitive cost advantage over EU producers based in even the most high wage cost Member States. Indeed, to the extent that the Member States are capital rich and textile production is capital intensive, then the EU may well be very competitive by comparison with the CEECs, where capital is obsolete and highly depreciated. The low cost of labour in the CEECs will not have the same impact as it does in the clothing industry. Table 4 below offers some evidence, giving an international comparison of typical spinning costs in some of the key textile producers worldwide.

From Table 4 it appears that, in 1991, high wage Germany certainly was cost competitive with some very low wage economies indeed, at least in total production costs. Indeed, Germany was a relatively cheap place to produce textiles, with only Korea achieving lower overall production costs. Of course, labour costs were a significantly more important component of total costs for companies in Germany than in India, Brazil or Korea as one would expect, but thanks especially to competitive financial costs (in particular, interest rates and depreciation costs) the higher cost of labour could be compensated for.

Unfortunately, we do not have comparable figures for typical manufacturing costs in a CEEC, but the picture is likely to be similar, especially given the well-known financing difficulties companies face in the CEECs. EU textiles producers may therefore well be competitive *vis-à-vis* CEEC producers despite the much cheaper cost of labour in the CEECs. Certainly, the relatively more stable record of textiles output in the EU over clothing output discussed at the beginning of this box supports the view that textiles production in the EU is at least more internationally competitive than clothing production.

Trade between the EU and the CEECs

As Nagarajan says, textiles and clothing have become the most important export sectors from the CEECs to the EU. At the NACE 2-digit level, Table 4 of the statistical annex shows that textiles, clothing (and footwear) constituted 24,1% of the CEECs' manufacturing exports to the EU by value, up from 19,1% in 1988. Given that total CEEC manufacturing exports in 1993 were over

Table 4

Comparison of typical spinning costs amongst major textile producing competitors in 1991 (as a percentage of total manufacturing costs)

(%)

	Brazil	Germany	India	Japan	Korea	USA
Costs						
Labour	8	25	6	29	9	29
Energy	8	16	10	13	11	7
Depreciation	30	23	27	25	33	33
Interest	35	18	40	18	21	16
Total manufacturing costs (Germany = 100)	118	100	100	133	79	117

Source: Abstract from a study by Werner International.

double the value in current prices of 1988's exports, it is clear that CEEC textile and clothing exports have grown even faster, both in value and volume terms. Nor have these developments been one way; Table 5 of the statistical annex shows that the EU has seen the importance of textiles, clothing (and footwear) grow from 10,0% of manufacturing exports to the CEECs to 13,7% in 1993. Again, since EU manufacturing exports to the CEECs have grown nearly three times in current price values since 1988, the growth in value of EU exports of textiles and clothing to the CEECs must have been yet more impressive.

More interesting still is the sectoral split in this export growth by each partner. Whereas the share of CEEC manufacturing exports to the EU taken by textiles has grown from 5,5% to 5,7% between 1988 and 1993, the share of clothing and footwear has grown from 13,6% to 18,4%. Partly as a result, as we can see in Table 6 of the statistical annex that the CEECs' specialization index has declined for textiles, but increased for clothing and footwear. To some extent, the opposite seems to have been happening in the EU; the share of textiles in manufacturing exports to the CEECs has grown 2,4 percentage points between 1988 and 1993, but only 1,3 percentage points in footwear and clothing. As a result of these trends in the CEECs and the EU, the EU now enjoys growing trade surpluses in textiles trade with the CEECs while, at the same time, a widening trade deficit in clothing.

Of course, since textiles and clothing are sensitive sectors, they are subject to apparently more restrictions by the EU against CEEC imports. This may be limiting the CEECs' sales on EU markets, and therefore their important potential export earnings. However, Nagarajan shows that there is little evidence to support this argument. Furthermore, the CEECs now have better trade access to the EU market than that available to any other exporter to the EU (see Möbius and Schumacher), and this is equally true for the textiles and clothing sectors. Therefore, there is an incentive for the EU to import relatively more from the CEECs than from other parts of the world.

If it is true then that EU trade barriers against the CEECs are not having strong effects, the implication is that the growing sectoral specialization taking place over the last few years may actually reflect developing comparative advantages. In the section on EU competitivity above, it was argued that the CEECs' low labour costs and poor capital stock implied that the CEECs would have a comparative advantage towards the EU in clothing. At the same time, the EU would have a comparative advantage towards the CEECs in textiles. The use of trade figures to produce indicators of revealed comparative advantage so far suggests that this may well be so.

Foreign involvement in the CEECs (including foreign direct investment)

There is very little detailed, systematic information about FDI inside the CEECs directed specifically at the textiles and clothing sectors. Foreign investment and cooperation has been wanted by the CEECs in order to update the technology of their capital stock, improve design, provide market openings to Western markets and learn more flexible, market-oriented, customer-driven management methods. What does seem clear however, is that foreign capital invested in these sectors has been limited and certainly less than hoped for by the CEECs. In Slovakia, for example, the volume of FDI received by the textiles and clothing sectors only amounted to 0,002% of the total stock of FDI in the country by the end of the first six months of 1993. The situation is rather similar in Hungary, where the flow of FDI into the two sectors in 1992 only contributed 0,8% to the country's stock of accumulated FDI (and Hungary is probably the leading CEEC in terms of the number of joint ventures with foreign partners extant in the textile and clothing industries). Some critics of EU policy argue that the CEECs would receive much more FDI in their textiles and clothing sectors if the EU stopped treating these sectors as sensitive and lowered its trade barriers more rapidly. However, it is also likely, judging from the experience of Portugal, that FDI to these sectors will always be rather small.[1]

Outward processing trade (OPT) activities in the CEECs have been the prime vehicle for foreign involvement in the CEECs. About two thirds of the value of clothing exports to the EU is currently emanating from OPT operations (see Nagarajan, Table 3). Western firms have an incentive to engage in OPT trade with a CEEC partner rather than through FDI because current EU trade regulations favour the former over the latter (however, EU regulations adopted in 1993 covering OPT activity are tighter than they used to be and so could adversely affect future developments).[2] The other attraction in setting up an OPT operation is to exploit the comparatively low labour costs of the CEECs. Indeed, according to a survey carried out by OETH of 165 clothing and 53 textile firms in the EU, the most important reason for delocating to the CEECs were labour cost differences. Furthermore, to the extent that clothing production is more labour intensive than textiles production, it is not surprising that OPT activities in the CEECs are concentrated in clothing. However, such a bias towards OPT activity in clothing rather than textiles is reinforced by EU trade regulations which currently favour OPT in clothing over textiles.[2]

On top of labour cost advantages, the CEECs' improving macroeconomic situation, their ongoing marketization process and the opening-up of EU markets through the Europe Agreements have also all reduced many of the significant drawbacks that used to accompany foreign activities inside the CEECs. Relocation of production is therefore an increasingly attractive proposition compared with pre-1989. All these factors go a long way in explaining the growth of OPT trade between the CEECs and high wage Member States. As we can see in Table 5, there has been a significant increase in OPT operations in the CEECs involving partners from the wealthier (i.e., higher wage cost) Member States. At the same time, the southern Member States (apart from Italy) have had virtually no OPT activity with the CEECs. This makes sense, because unit production costs are more similar, and so there is not the same strong cost-saving incentive.

Conclusions

The process of opening up EU markets to CEEC products under the Europe Agreements has attracted criticism for isolating some so-called 'sensitive' sectors in which trade access is much slower than for the bulk of industrial sectors and in which, it is argued, the CEECs have comparative advantages over the EU. These sectors, which include textiles and clothing, are sensitive because they are

[1] According to C. Corado (May 1994), 'Trade with Central and Eastern Europe: its impact on Members of the EC — textiles and clothing'.

[2] Corado, *op cit.*

Table 5

The development of outward processing trade between Member States and the CEECs

	OPT imports as % of imports 1992	Change of OPT 1989/92
Importer		
EUR 12 (as a % of extra-EU imports)	10	+ 18%
(as a % of total imports)		
Germany	11	+ 18%
Denmark	10	+ 57%
Benelux	5	+ 17%
France	5	+ 2%
Italy	4	+ 121%

Source: OETH.

significant for both the EU and the CEECs, because they have been contracting rather sharply (at least as fast as overall manufacturing output) raising unemployment problems, because demand growth tends to be rather slow, and because there is substantial competition on EU markets from third countries. Given the need to help the CEECs make a success of their market reforms, the argument is that opening up of EU markets will help slow the contraction of these sectors in the CEECs by providing extra demand for the CEECs' output. Consequently, the pressure on employment will be reduced and so, therefore, will the build up of social tensions.

However, evidence presented by Nagarajan suggests that the CEECs' textile and clothing sectors are not subject to binding constraints — EU trade barriers in these sectors are more apparent than real. Concerning the CEECs' comparative advantages, provided that the cheap cost of CEEC labour is not matched by equally low productivity or other discouraging factors,[1] then it may well be that a labour-intensive activity such as clothing manufacture is one in which the CEECs have a comparative advantage relative to the EU as a whole. The phenomenal growth of CEEC exports of clothing to the EU, the consequent growing trade surpluses and the increasing specialization indices in the sector certainly support this view. However, it is not clear the CEECs are more competitive that southern Member States in terms of unit production costs. Furthermore, unless labour costs remain low in the CEECs, their comparative advantage in clothing production may decline in the future.

Conversely, textiles production is a relatively capital-intensive activity. Labour costs therefore play a smaller role. As the CEECs' capital stock is generally rather obsolete, while the EU is rather capital rich, it is consequently much less likely that the CEECs have a comparative advantage in this activity. This sector's growing trade deficits with the EU and declining specialization index are therefore not surprising.

The Europe Agreements may reduce flows of FDI, which could be used to enhance CEEC competitivity *vis-à-vis* the EU. However, Portuguese experience suggests that significantly increased FDI flows are unlikely, even if EU markets are completely open to CEEC textiles and clothing exports. Consequently, as FDI is more likely to implicate the relatively capital-intensive textiles sector, it is therefore difficult to imagine how the CEECs can reverse, at least in the short run, the trend of growing comparative disadvantage in textiles *vis-à-vis* the EU.

[1] A study entitled the 'Czechoslovak textile and clothing industry' by M. Mejstrík and V. Benácek, Charles University (November 1992), gives grounds for believing that productivity may be up 17 times less in the two CEECs which are the focus of their study than in Western Europe!

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Chapter 3

Modelling the effect of Central and East European trade on the European Community

Modelling the effect of Central and East European trade on the European Community

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1. Introduction

The objective of this paper is to model the economic effects on the economies of the European Community (EC) of an expansion of trade with the economies of Central and Eastern Europe (CEE). The model is based on one already developed to analyse the impact of the '1992' liberalization of intra-EC trade. A partial equilibrium version of that model is presented in Smith and Venables (1987) and some partial equilibrium modelling of the effects of CEE-EC trade on the EC is presented in Rollo and Smith (1993), while the general equilibrium version on which the present work is based is described by Gasiorek, Smith and Venables (1991, 1992).

We have developed a general equilibrium model in which production uses intermediate goods and five primary factors of production. The model contains a perfectly competitive composite sector, and a number of imperfectly competitive sectors which include all manufacturing industry. These industries operate under increasing returns to scale and support an equilibrium with intra-industry trade. We consider the effects in this model of expansion of EC-CEE trade in the imperfectly competitive manufactured goods.

It should be noted at the outset first that the effects of expanded trade in primary products, including agricultural products, and in services are not modelled; secondly that our definition of the CEE countries excludes the countries which formerly constituted the Soviet Union; and thirdly that we analyse the effects of changed EC-CEE trade only on the EC, as our model does not have a structure that allows sensible analysis of the effects on the CEE economies.

Section 2 provides a non-technical description of the model (with more technical detail given in a box; see also Gasiorek, Smith and Venables, 1992). Section 3 discusses the data used and the calibration of the model to the base dataset. Section 4 describes the derivation of exogenous changes in trade cost changes in the model which produce external trade changes corresponding to expanded EC-CEE trade, and the effects of these changes on factor prices and on welfare.

Box: The model

The model uses eight countries (see Section 2), 14 imperfectly competitive sectors and one perfectly competitive sector (see Table 1), and five primary factors of production (capital, and labour disaggregated into four skill types).

The perfectly competitive sector is assumed to be tradeable and is taken to be the *numéraire*. Each of the manufacturing industries is assumed to be imperfectly competitive containing a number of symmetric firms in each country. Using superscripts to denote industries and subscripts for countries, the number of firms in industry k located in country i is n_i^k. Each of these firms, within each country and industry, has the same production and sales patterns and produces a number of varieties of differentiated products which we denote m_i^k. The output of each industry is used both in final demand and as an intermediate.

Consider first final demand. p_{ij}^k and x_{ij}^k denote the price and quantity of a single product variety of industry k produced in country i and used (as a final demand) in country j. (There are n_i^k m_i^k such varieties, and, because of symmetry, we do not need to introduce a notation for individual varieties). We follow Dixit and Stiglitz (1977), so consumer preferences are such that the following aggregation procedure is possible. First, varieties within an industry and country of sale are aggregated into a quantity index X_j^k with associated price index P_j^k. This is done by a constant elasticity of substitution aggregator with elasticity of substitution (common to all countries) denoted ε^k. It is important to note that at this level we aggregate over products from all sources of production; so we do not use the Armington assumption of separate nesting of products by geographical source. Second, the price indices, P_j^k enter the expenditure function of a single representative consumer with homothetic preferences in each country. If u_j is utility, E_j is the unit expenditure function, and M_j is income, then the budget constraint of the country j consumer is:

$$(1) \qquad \mathbf{M_j = u_j E_j(...,P_j^k,...)}$$

E_j is assumed to be Cobb-Douglas. Consumer demands both for the aggregate quantity indices and for individual varieties are derived by partial differentiation of the expenditure function.

The quantity of a single product variety of industry k produced in i and used as an intermediate good in j is denoted y_{ij}^k with price q_{ij}^k. Technology is such that the following aggregation procedure is possible. First, varieties within an industry and country of sale are aggregated into a quantity index Y_j^k with associated price index Q_j^k. (Once again, they are not separately nested by geographical source.) Second, in each country the quantity indices are aggregated into a composite intermediate commodity whose price index in country j is F_j. This implies that there is a single composite intermediate commodity, so that the proportions in which each industry uses the products of other industries are assumed to be the same.

The costs of a firm in industry k of country i are given by a cost function:

$$(2) \qquad c_i^k = m_i^k [h^k(z_i^k) G_i^k(w_i^1, w_i^2, w_i^3, w_i^4, w_i^5)]$$

where

$$(3) \qquad z_i^k = \sum_j [x_{ij}^k + y_{ij}^k]$$

z_i^k being the total output per variety of a country i firm in industry k; and where w_i^l represents the price of factor l in country i. Capital is assumed to be perfectly mobile internationally, and available at a constant price. Labour is assumed to be internationally immobile, so the price of each labour type adjusts to equate demand to endowments.

The function h^k describes the returns to scale in industry k. Increasing returns to scale means that $h^k(z_i^k)/z_i^k$ is decreasing in z_i^k, and we employ a functional form for h^k that permits decreasing marginal cost as well as decreasing average cost. Notice that this function is not country specific. Furthermore, there are no economies of scope, since c_i^k is linear in m_i^k, and returns to scale are associated with output per variety, z_i^k. The function G_i^k aggregates input prices into cost per unit h. Its arguments are the intermediate price index, F_j, and factor prices, w_i^l. The functions G_i^k differ by country, but only by a scalar, implying Hicks neutral technical differences. Input demands, which in equilibrium equal factor supplies, v_i^l, are partial derivatives of these cost functions so we have

$$(4) \qquad v_i^l = \sum_k n_i^k m_i^k h^k(z_i^k) \frac{\partial G_i^k(F_j, w_i^1, w_i^2, w_i^3, w_i^4, w_i^5)}{\partial w_i^l} \qquad (l = 1,...,5)$$

The profits of firms are given by

$$(5) \qquad \pi_i^k = m_i^k \sum \left[p_{ij}^k x_{ij}^k + q_{ij}^k y_{ij}^k \right] \left[1 - \tau_{ij}^k \right] - t_{ij}^k \left[x_{ij}^k + y_{ij}^k \right] - c_i^k$$

where τ_{ij}^k and t_{ij}^k are respectively the *ad valorem* tariff and transaction costs of shipping a unit of industry k output from economy i to economy j. The tariff is non-zero only where j is in the EC and i is the rest of the world. We assume that all external trade barriers are tariffs, not quantity restrictions.

We assume that firms act as quantity competitors in segmented markets. Each firm in industry k and country i then chooses sales in market j, x_{ij}^k, taking as constant the sales of all its rivals in each market. Optimization requires the equation of marginal revenue to marginal cost in each market, where the slope of each firm's perceived demand curve depends on the extent of product differentiation, and on the share of the firm in that market. Firms' choice of intermediate sales quantities, y_{ij}^k, is less straightforward. It is possible that purchasers of inputs have some monopsony power, to be combined with the monopoly power of sellers. Further, and perhaps more importantly, even if purchasers of intermediates are input price takers, the demand for intermediates is a derived demand, and establishing the elasticity of the derived demand curve is not straightforward. For these reasons we assume that the price of a good sold as an intermediate equals the price of the same good sold to final demand. Furthermore, the number of varieties of intermediate goods entering the price indices Q_j^k is held constant, so abstracting from any variety effects on the users of intermediate goods.

As has been noted above, each firm produces a number of varieties of product, m_i^k. It is assumed throughout this paper that these numbers are constant. Furthermore, it is assumed that, at the base, output per variety, z_i^k, is the same for all firms m_i^k should therefore be thought of as a scaling device; with different firm sizes in the base dataset attributed to differences in the number of varieties firms produce, not differences in output per variety. The effect of this assumption is to ensure that all firms have the same degree of unexploited economies of scale.

All that remains to complete the description of the model is the determination of income. Income accruing to factor l in economy i is $w_i^l v_i^l$. National income is factor income accruing to the five factors, plus the profits of firms and CET revenue.

Several different projections of CEE-EC trade are used in the model. The overall growth of CEE-EC trade, its distribution across EC countries and its distribution across sectors all have to be predicted. Hamilton and Winters (1992) present a set of projections based on a gravity model of the overall growth of CEE-EC trade and of its distribution across countries; while Comext data on the growth of trade since 1985 gives information on the distribution of trade growth both across countries and across sectors. Information from these different sources is combined in different ways in the different projections presented in the paper. We have not in our projections attempted to attribute the growth of trade to different sources such as trade barrier reduction, macroeconomic change, or supply changes in Eastern Europe.

2. The model

We work with eight countries. Seven represent the EC: France, Germany, Italy, the United Kingdom, other EC North (Benelux and Denmark), Greece/Ireland, and Iberia (Spain and Portugal). (The anomalous linking of Ireland and Greece reflects a judgment about the quality of the data available on these countries rather than geographical ignorance.) The eighth country is a rather simple representation of the rest of the world (including the EFTA and CEE countries). Alternative disaggregations are possible, but the present level seems optimal given the data available. Less than 15% of intra-EC trade is classified as intra-country rather than inter-country as a result of the grouping of EC countries and such a misclassification is likely to be of little significance in the analysis of the effects of a change in extra-EC trade.

Each country is endowed with five primary factors of production: capital, two types of non-manual labour and two types of manual labour. Capital is assumed to be perfectly mobile internationally and available at a constant price. The four types of labour are: (i) professional, scientific and related; (ii) managerial, clerical and other non-manual; (iii) skilled manual; and (iv) unskilled manual. Each type of labour is assumed to be internationally immobile, so its price has to adjust to equilibrate supply and demand in each country. National income is the factor income accruing to the five factors, plus the profits of imperfectly competitive firms, and tariff revenue.

The commodity structure of the model comprises 13 manufacturing industries (listed in Table 1 of Section 3) and one financial services sector, all of which are assumed to be imperfectly competitive, and which are modelled in some detail. The remainder of each economy is aggregated into a

single perfectly competitive composite, which is tradeable and which we take as the *numéraire*. Within each country, each imperfectly competitive sector consists of a number of firms each of which produces a number of varieties of a differentiated product used both in final demand and as an intermediate good.

Consumer preferences for differentiated products are assumed to have a structure which permits a two-stage description of consumer behaviour, in which demand for an aggregate product type depends only on price indices for aggregate products, while the allocation of demand to each individual product variety within an aggregate depends on the relative prices only of varieties of that product type. We assume that the 'upper-tier'preferences are such that a constant share of expenditure is allocated to each aggregate product type; so the demand elasticity with respect to the price index is 1. An analogous two-stage structure is assumed for intermediate goods, with the aggregate indices of intermediate sales in turn aggregated into a composite intermediate commodity. Since there is a demand function for each product variety and since firm are identified by nationality, there is an identifiable demand in each country for products from each country.

Firms' costs depend on factor prices, on the number of varieties the firm produces, and on the scale of production of each variety. We suppose that there are no economies of scope, so that costs are proportional to the number of varieties; but that there are economies of scale, so that average cost, and possibly marginal cost too, decreases with output per variety. Cross-border sales of goods incur trade costs (including, in the case of extra-EC trade, tariffs).

Firms are assumed to act as Cournot competitors in segmented markets; that is to say, each firm in an industry chooses its sales level in each country, taking as given the sales of all its rivals in each market. Marginal cost is thus equated to marginal revenue in each market, with the firm's perceived demand depending on the extent of product differentiation and on the share of the firm in that market. To avoid the complications arising from the fact that demand for intermediates is a derived demand, we assume that the price of a good sold as an intermediate is equal to the price of the same good sold to final demand, so that pricing of goods is entirely determined by the conditions of final demand.

We assume that the number of product varieties produced by each firm is constant and that, in the initial equilibrium, output per variety is the same for all firms in an industry, whatever their nationality. Thus, different firm sizes in the base dataset are attributed to differences in the number of varieties firms produce, not differences in output per variety. The effect of this assumption is to ensure that all firms start with the same degree of unexploited economies of scale.

In the structure outlined above, the CEE countries are described simply as a part of the 'country' called 'the rest of the world', and that country is formally modelled in the same way as the countries constituting the EC. It should be clear that, leaving aside any questions about the appropriateness of this model as a description of enterprise behaviour in the CEE economies, the aggregation structure of the model makes it inappropriate for any analysis of the impact of trade changes on the CEE. We therefore analyse only the impact on the EC.

3. Data and calibration

The modelling exercise requires calibrating the model to a a set of data on trade and domestic sales broken down by industry and by country. Some industry-specific parameters also have to be obtained, and numerical specification of the model is then completed by calculating the values of remaining parameters and endogenous variables so that the base year dataset is an equilibrium of the model.

The overall structure of the model is one of eight economic areas or 'countries' (listed in the previous section), 14 imperfectly competitive industries (listed in Table 1), and one perfectly competitive sector which comprises the rest of the economy.

The industrial structure used is based on the R25 subdivision of the European Community NACE-CLIO classification scheme. The R25 subdivision distinguishes between 13 manufacturing and 12 non-manufacturing sectors. Here the non-manufacturing sectors are aggregated into two sectors, financial services, assumed to be imperfectly competitive, and all of the rest treated as a single perfectly competitive sector; while each of the 13 manufacturing industries is treated as a separate sector.

The base year taken for the calibration is 1985, the latest year for which an almost complete set of trade and production data was available to us from the EC's databases; and also the base year for the Hamilton-Winters projections. Where the data was incomplete the dataset was supplemented from published Eurostat data and adjusted as appropriate.

3.1. Trade and production

Both trade and production data were obtained from the European Commission: trade data comes from the Volimex database, and production data from the BDS database. In each case the database derives from the same source as comparable published Eurostat data, but has been adjusted to improve the degree of compatibility both between different country returns and between the two databases themselves. Despite the Commission's attempts to reconcile trade and production data,

problems of incompatibility remain. There is the fundamental difficulty that trade data are collected on a commodity basis, while production data are collected on an activity basis. Further the trade date include re-exports, and therefore tend to exaggerate trade flows. Detailed data on trade flows by commodity for all years from 1985 from the Comext database were used in the projections. There were some substantial discrepancies between the trade figures in the two databases. These cause no technical problems as the Volimex data is used only to calibrate the model, while growth rates based on Comext data are used only in the projections, but obviously it would have been preferable to have the same data used in the calibration of the model and the projections.

Production statistics for 1985 for some countries were not available on the BDS database for Greece, and, in the case of one industry, for Portugal. Comparable data were therefore obtained from Eurostat's *Structure and activity of industry, 1985, Main results,* and scaled as appropriate. For Greece, the latest available figures from SAI were for 1983; so these were rescaled to account for Greek growth between 1983 and 1985.

3.2. Industrial data

The industry specific data required includes the share of value-added in production; the share of each factor in value-added; the elasticity of substitution between different factors of production; the share of final demand in the output of each industry; the degree of returns to scale in each industry; a measure of the number of symmetric firms competing in each industry and each country, this based on the numbers of firms in each of the aggregate industries, and the number of sub-industries represented by each of these industries. Some of the key features of this data are presented in Table 1.

Table 1

Industry data

Industry	Factor shares in value-added (%) K	L1	L2	L3	L4
Metalliferous products	0,424	0,111	0,119	0,086	0,258
Non-metallic mineral products	0,304	0,127	0,153	0,101	0,314
Chemical products	0,322	0,226	0,167	0,072	0,212
Metal products	0,192	0,156	0,158	0,198	0,295
Agricultural and industrial machinery	0,161	0,222	0,156	0,268	0,193
Office machinery & precision instruments	0,158	0,330	0,209	0,133	0,170
Electrical goods	0,151	0,253	0,162	0,162	0,271
Transport production	0,227	0,166	0,138	0,207	0,260
Food products	0,287	0,149	0,162	0,080	0,321
Textiles, clothing, leather	0,189	0,139	0,162	0,108	0,401
Paper & printing products	0,236	0,183	0,153	0,178	0,249
Rubber & plastic products	0,164	0,156	0,169	0,217	0,295
Timber & other n.e.s	0,231	0,166	0,149	0,079	0,375
Financial services	0,176	0,202	0,621	0,000	0,000
Perfectly competitive sector	0,406	0,094	0,172	0,093	0,233

	Conc	Sub-ind	IRS	FES	ϵ
Metalliferous products	0,021	1	6	0,09	17,79
Non-metallic mineral products	0,025	4	8	0,18	14,33
Chemical products	0,032	3	15	0,28	8,16
Metal products	0,009	5	7	0,35	16,52
Agricultural and industrial machinery	0,012	5	7	0,64	12,88
Office machinery & precision instruments	0,078	3	15	0,64	13,42
Electrical goods	0,037	6	10	0,54	11,15
Transport production	0,057	1	7	0,68	26,12
Food products	0,008	3	4	0,65	28,50
Textiles, clothing, leather	0,003	4	3	0,62	31,25
Paper & printing products	0,005	3	13	0,21	6,94
Rubber & plastic products	0,005	3	5	0,20	17,47
Timber & other n.e.s	0,013	2	5	0,54	21,22
Financial services	0,008	2	5	0,21	21,88

The model distinguishes five factors of production: capital and four types of labour, professional, scientific and related non-manual (L1); managerial, clerical and other non-manual (L2); skilled manual (L3); unskilled manual (L4). Capital is treated as being internationally mobile, whereas labour is only mobile between firms and industries within each country. Both the share of value-added in production, and the share of capital in value-added were calculated from the BDS database. The shares of the three different types of labour were calculated on the basis of United Kingdom earnings data, and the UK Census of Production. UK shares were taken to apply to all countries. The factor shares in value-added are listed in Table 1. The table shows that the most capital intensive sectors are metalliferous products and chemical products, and the least capital intensive are electrical goods, agricultural and industrial machinery, and office machinery and precision instruments. The industries most intensive in professional and highly-skilled workers are the electrical goods industry, office machinery and precision instruments, and financial services (which are assumed to employ no manual labour). The most non-manual labour intensive industries are the metal products, rubber and plastic and textile industries.

Production cost is specified in the model to depend on factor prices and on the scale of production. The elasticity of substitution between capital and labour is derived from a review of the available literature and is largely based on the estimates in Piggott and Whalley (1985). In the version of the model presented in this paper the same measure of elasticity is then also assumed between the different types of labour.

Central to the model is the interaction between the degree of scale returns and the extent of concentration in each industry. We measure the degree of concentration by computing Herfindahl indices. For details of the calculation, see Gasiorek, Smith and Venables (1992). It is not reasonable to suppose that at the level of industry aggregation in this model, each firm in a sector is competing with each other firm. We have therefore assumed that each sector is divided into subsectors, with firms competing only at subsectors level, and each firm represented only in one subsectors. The number of subsectors in each sector was based on a Herfindahl calculation of the number of equal-sized 3-digit industries in each of the 13 manufacturing sectors (using output weights from a sample of EC countries), with judgmental modifications for two sectors (metalliferous products, food products) where the procedure generated an implausible number of subsectors. The financial services sector was assumed to consist of two subsectors. The number of subsectors in each sector is reported in Table 1 below. When an industry is divided into sub-industries, the relevant measure of concentration is now not the Herfindahl index for the industry, but that for the sub-industry, which is the original index multiplied by the number of sub-industries. The concentration measure reported in Table 1 is the Herfindahl index for sub-industries, adjusted to take account of import penetration. The six industries with the highest degree of concentration are (in order) office machinery, transport equipment, electrical goods, chemicals, non-metallic minerals, and metalliferous products. The three industries with the lowest degree of concentration are rubber and plastics, paper, and textiles.

Table 1 also lists the degree of assumed returns to scale. In each case the percentage figure refers to the increase in costs as a result of a 50% reduction in output. These estimates are engineering estimates and the primary source for this data was Pratten (1988), supplemented by an extensive literature review.

The 'FES' column in Table 1 lists the proportion, obtained from Eurostat, *National Accounts, Input-output tables, 1985,* of the output of each industry that is devoted to final expenditure as opposed to being used as an intermediate good.

3.3. Demand and calibration

The price elasticities of demand for the industry aggregate demands with respect to the associated price indices are unity, by the Cobb-Douglas assumption. The price elasticities of demand for individual varieties depend on the elasticities of substitution between varieties. For intermediate products we assume that this elasticity of substitution is the same for all industries, and equal to 10.

For final products we assume that the base dataset represents a long run equilibrium in which profits are zero. Technology and firm scale imply a relationship between average cost and marginal cost, and, with the assumption of long run equilibrium, this also gives a relationship between price and marginal cost. This price cost margin is supported at equilibrium by two sources of market power: product differentiation and concentration. The greater the degree of product differentiation within a product type (that is, the lower the elasticity of substitution between product types), or the greater the firm's market share, the greater is the individual firm's ability to set price above marginal cost. We assume that the base case is a segmented market Cournot equilibrium. The price cost margin taken together with information about concentration then implies a measure of product differentiation, from which we obtain a value of the elasticity of substitution, ϵ. The calibrated values of ϵ are reported in Table 1. They are to be interpreted as the price elasticity of demand for an individual product variety, holding prices of other varieties and the overall industry price index constant. These elasticities are very high (products are relatively undifferentiated) in food and textiles, and are relatively low (so products are quite highly differentiated) in industries such as paper and chemicals.

The final stage of calibration involves positioning demand curves for varieties of different national origin so that

consumption of products in each country is consistent with the market data on production and trade.

4. Changes in CEEC-EC trade

We then have to analyse a change in CEEC-EC trade in manufactures in a model in which the CEECs are treated simply as part of the rest of the world. Given data on how each EC country's extra-EC imports and exports in each sector divide between the CEECs and the rest of the rest of the world, an exogenously specified set of percentage changes in CEEC-EC trade is translated into a set of percentage changes in EC external trade. General equilibrium adjustments both through intermediate goods and factor markets take place in response to the trade shock. (The model can also permit entry and exit of firms to restore a zero-profit initial equilibrium after a shock, but the results of these experiments are not reported here, partly because the outcome is not very different from the outcome with only factor markets adjusting, and partly because it is easier to understand welfare effects on producers in terms of changes in profit rather than in terms of entry and exit.) The growth of EC-CEEC trade would in reality be generated by the removal of tariffs between the EC and the CEECs, by the reduction of non-tariff barriers, and by changes in supply conditions in the CEECs; but in the model the growth of trade is generated simply by a reduction in external trade costs, with the separate factors not distinguished, except that the elimination of tariffs on imports from the CEEC generates a loss of tariff revenue to the EC.

Table 2 shows the actual trade flows by manufacturing sector and by EC country in 1985 and 1992, derived from the Comext database. The most notable feature of CEEC exports to the EC is the fact that well over half of exports in both years are accounted for by four sectors: ores and metals (largely iron and steel), chemicals, food, beverages and tobacco, and textiles, clothing and leather. It is also notable that Germany accounts for over half of EC-CEEC trade, both imports and exports. (The data are in current ecus, so growth rates include inflation and therefore overstate real growth rates; but only slightly since growth rates so much exceed ecu inflation rates.)

Table 2

EC-CEEC trade in manufactures, 1985-92

	Export shares 1985	CEE exports to EC 1985 Million ECU	1992 Million ECU	Growth	CEE imports from EC 1985 Million ECU	1992 Million ECU	Growth
Ores and metals	0,15	1 101	2 150	0,95	790	593	– 0,25
Non-metallic minerals	0,04	269	921	2,42	205	385	0,88
Chemical products	0,16	1 211	1 653	0,36	2 072	2 397	0,16
Metal products	0,02	180	988	4,49	218	720	2,31
Agricultural and industrial machinery	0,05	371	1 030	1,78	2 018	3 649	0,81
Office machines	0,00	37	124	2,31	233	858	2,68
Electrical goods	0,04	280	1 015	2,63	758	2 147	1,83
Transport equipment	0,04	337	955	1,83	298	1 874	5,29
Food, beverages, tobacco	0,13	972	1 429	0,47	512	1 367	1,67
Textiles, clothing, leather	0,21	1 567	3 817	1,44	880	2 716	2,08
Paper products	0,02	187	362	0,94	163	561	2,43
Rubber and plastic products	0,02	129	388	2,02	272	731	1,69
Timber and other n.e.s.	0,12	891	1 904	1,14	230	875	2,81
Total		7 532	16 736	1,22	8 648	18 875	1,18
France	0,13	962	1 263	0,31	987	1 833	0,86
Germany	0,45	3 378	9 866	1,92	4 419	10 656	1,41
Italy	0,13	1 000	2 016	1,02	1 154	2 531	1,19
UK	0,11	863	926	0,07	760	1 047	0,38
RoECN	0,13	987	1 928	0,95	967	2 306	1,38
Greece/Ireland	0,03	212	365	0,73	147	239	0,62
Iberia	0,02	129	372	1,89	213	263	0,23
Total		7 532	16 736	1,22	8 648	18 875	1,18

The 1989 to 1992 period accounts for the larger part of the growth in EC-CEEC trade shown in Table 2, but 1985 is the year which provides the base dataset for our model calibration and is also the base year for the Hamilton and Winters projections. Total CEEC exports of manufactures to the EC have grown by 122%, while the growth of CEEC imports of manufactures from the EC is 118%. There is, however, a great deal of variation in growth across countries and across sectors. The largest numbers reflect growth in trade flows that were initially very small, notably in CEEC trade with Iberia; but leaving such cases aside, some of the variations are quite significant. Among the inter-sectoral variations, perhaps the most striking is that CEEC exports of textiles, clothing and leather which were large in 1985 grew at an above-average rate; the other three sectors which accounted for a large share of CEEC exports to the EC in 1985 all grew at a below-average rate. Among the inter-country variations, it is worth observing that the UK, where the rhetoric about opening markets to Eastern Europe has been strongest, displays stagnant imports from CEEC and very slow growth of exports to CEEC; while Germany which in 1985 accounted for around half of all EC trade with CEEC has also experienced the fastest growth of trade.

4.1. Experiment 1

Table 3 shows the first experiment, based on Hamilton and Winters projections of aggregate CEEC-EC trade growth. CEEC exports to the EC are assumed to grow uniformly across countries and sectors by 408% (compared with the actual 1985 to 1992 growth of 122%) while CEEC imports from the EC grow at a uniform 492% (compared with 118%). Since the EC is modelled as a set of seven countries each of which has a demand for goods from the rest of the world, and because the CEEC share of external trade varies across countries and sectors, the result is the non-uniform increase in the EC's external trade shown in the first two panels of Table 3. Note, for example, that Germany's external trade generally grows faster than other EC countries' trade, reflecting the higher share of the CEECs in Germany's external trade; while external imports of textiles grow faster than most other EC import categories, reflecting the high share of the CEECs in the EC's imports of textiles.

The top panel of the second part of Table 3 shows the output effects by country and by sector. (Note that while the first part

Table 3

Uniform growth of CEEC-EC trade at aggregate Hamilton-Winters projected rates

Growth of external imports	By country						
	France	Germany	Italy	UK	RoECN	Greece/Ireland	Iberia
Ores and metals	0,20	0,27	0,25	0,15	0,18	0,43	0,15
Non-metallic minerals	0,19	0,38	0,29	0,58	0,29	0,63	0,05
Chemical products	0,19	0,26	0,29	0,12	0,17	0,27	0,14
Metal products	0,27	0,23	0,05	0,08	0,19	0,21	0,08
Agricultural and industrial machinery	0,08	0,10	0,10	0,04	0,09	0,37	0,16
Office machines	0,01	0,01	0,01	0,01	0,01	0,01	0,02
Electrical goods	0,09	0,04	0,09	0,02	0,07	0,16	0,05
Transport equipment	0,22	0,05	0,18	0,04	0,04	0,17	0,06
Food, beverages, tobacco	0,15	0,45	0,29	0,06	0,13	0,20	0,13
Textiles, clothing, leather	0,32	0,37	0,21	0,16	0,34	0,22	0,06
Paper products	0,06	0,08	0,03	0,03	0,09	0,11	0,08
Timber and other n.e.s.	0,32	0,42	0,20	0,14	0,14	0,30	0,09
Rubber and plastic products	0,13	0,12	0,08	0,22	0,21	0,23	0,20
Growth of external exports	By country						
	France	Germany	Italy	UK	RoECN	Greece/Ireland	Iberia
Ores and metals	0,11	0,21	0,19	0,10	0,11	0,25	0,15
Non-metallic minerals	0,17	0,25	0,05	0,13	0,18	0,14	0,02
Chemical products	0,22	0,31	0,25	0,17	0,19	0,15	0,21
Metal products	0,06	0,12	0,16	0,05	0,06	0,15	0,03
Agricultural and industrial machinery	0,15	0,26	0,19	0,08	0,15	0,12	0,07
Office machines	0,06	0,11	0,06	0,08	0,10	0,01	0,02
Electrical goods	0,09	0,17	0,14	0,07	0,06	0,09	0,07
Transport equipment	0,04	0,04	0,06	0,02	0,06	0,02	0,15
Food, beverages, tobacco	0,04	0,37	0,10	0,05	0,07	0,23	0,08
Textiles, clothing, leather	0,19	0,38	0,12	0,10	0,23	0,28	0,04
Paper products	0,08	0,16	0,16	0,05	0,07	0,04	0,03
Timber and other n.e.s.	0,02	0,06	0,02	0,01	0,01	0,00	0,10
Rubber and plastic products	0,15	0,23	0,19	0,12	0,12	0,17	0,07

Table 3

Uniform growth of CEEC-EC trade at aggregate Hamilton-Winters projected rates (continued)

% Output change	France	Germany	Italy	UK	RoECN	Greece/Ireland	Iberia
Ores and metals	- 0,7	- 0,3	- 0,5	- 0,4	- 0,5	2,2	2,2
Non-metallic minerals	1,3	0,9	- 0,4	- 1,1	- 0,6	1,6	- 0,0
Chemical products	3,1	7,3	2,3	3,1	7,2	1,7	2,2
Metal products	- 0,0	0,5	1,4	0,3	- 0,0	1,3	0,2
Agricultural and industrial machinery	4,1	10,5	5,5	2,0	5,9	2,6	- 0,4
Office machines	1,2	2,5	1,3	1,8	3,0	0,5	0,1
Electrical goods	1,4	3,7	1,4	1,4	1,7	- 1,3	- 0,3
Transport equipment	- 0,2	0,4	0,3	- 0,1	1,5	- 2,1	1,2
Food, beverages, tobacco	- 0,8	- 1,2	- 1,0	- 0,2	0,7	4,2	- 0,2
Textiles, clothing, leather	- 2,3	- 2,7	- 1,4	- 1,8	- 0,9	- 1,0	- 0,7
Paper products	- 0,2	0,5	0,4	- 0,2	- 0,9	- 1,6	- 0,1
Timber and other n.e.s.	- 4,1	- 7,2	- 2,0	- 5,9	- 4,2	- 10,0	- 0,0
Rubber and plastic products	1,2	1,9	1,5	- 0,3	0,5	0,3	0,4

% EC output and trade changes	EC output	Imports from RoW	Exports to RoW
Ores and metals	- 0,1	27,0	19,4
Non-metallic minerals	0,1	38,2	16,5
Chemical products	4,2	24,5	29,8
Metal products	0,5	17,8	11,0
Agricultural and industrial machinery	5,4	9,6	19,8
Office machines	1,5	1,2	8,3
Electrical goods	1,9	5,9	12,1
Transport equipment	0,2	8,1	4,3
Food, beverages, tobacco	- 0,4	21,2	11,7
Textiles, clothing, leather	- 1,7	29,6	19,5
Paper products	0,0	7,7	12,4
Timber and other n.e.s.	- 4,3	23,1	2,6
Rubber and plastic products	1,1	18,3	19,3

Welfare change	Total	% EC cons	Dcsp	Dis	Dgr	Dpr	GE
Ores and metals	1 525	1,0	259	2 142	- 75	- 525	- 276
Non-metallic minerals	285	0,3	108	412	- 17	- 175	- 44
Chemical products	3 189	1,6	669	1 631	- 126	1 264	- 249
Metal products	128	0,1	51	84	- 11	24	- 20
Agricultural and industrial machinery	1 158	0,9	502	270	-26	364	48
Office machines	135	0,3	41	23	-4	78	-3
Electrical goods	629	0,5	338	280	-32	-7	50
Transport equipment	128	0,1	252	117	-26	-145	-70
Food, beverages, tobacco	29	0,0	550	276	-170	-116	-512
Textiles, clothing, leather	254	0,2	435	228	-216	-94	-99
Paper products	253	0,2	75	266	-18	-19	-51
Timber and other n.e.s.	336	0,5	314	228	-53	-132	-21
Rubber and plastic products	110	0,2	36	133	-13	-5	-41

of the table shows trade growth as a proportion of base, the output change is shown in percentage terms.) These output effects are firstly the result of trade changes, but are also influenced by the effects on marginal cost of scale changes and of factor price changes. All output effects are in the range of ±11% with most effects being clustered in the middle of the range. The strongest effects are naturally for Germany, but the case of Germany shows how trade changes feed into output changes in a quite variable way: large changes in both imports and exports of ores and metals, of non-metallic minerals and of metal products feed into small percentage changes in the corresponding outputs, but increases in both imports and exports of chemicals and of food products translate respectively into a large output increase and a modest output decrease. The largest single output change predicted is for German agricultural and industrial machinery, generated by a greater expansion of exports than of imports, and this then feeds through to the largest sectoral increase in EC output, the effects on aggregate EC output and external trade in different sectors being shown in the next panel of Table 3. The order of magnitude of the output effects seems fairly uniform across countries other than Germany — apart from Germany all countries seem to have roughly the same degree of exposure to trade with Central and Eastern Europe. Factor price changes for each of the types of labour in each EC country are derived by the model, but all changes are of less than 1% in either direction and are not reported. (In later projections also, almost all factor price changes are very small, with the only substantial changes being where a combination of assumptions in the projection produces some implausibly large sectoral output changes in some particular EC countries.)

Welfare effects by sector are shown in the last panel of the table, which shows the total effect on EC welfare in million ecu in the first column, while the second column shows the total effect as a percentage of the value of EC consumption of the product. The remaining columns of the panel decompose the effects into five components. The gains from price reductions are labelled Dcsp and Dis, the former being the consumer surplus gains to consumers while the latter are the gains to producers from reductions in the prices of intermediate goods. Dgr is the change in external tariff revenue, and Dpr is the change in profits. Generally, the profit effect is positive where the output change is positive, but this is not invariably so, because there are country aggregation effects, marginal cost changes and factor price changes. The final effect, GE, arises from the change in industry costs due to input price changes — where profits have risen solely because of a fall in input prices this is a transfer not a net gain, and the GE column reports the changes which have to be offset against Dgr to obtain the net welfare effect on producers. The results show, naturally, losses to producers of goods whose output has contracted substantially, but the losses are much smaller than the gains to consumers of the goods. There are net gains to aggregate profits, taking all sectors together. There are net welfare gains in all sectors. The sectors where the effects, both absolutely and in proportion to base EC consumption are greatest, are ores and metals, chemicals, agricultural and industrial machinery, and electrical goods, and they include both expanding and contracting sectors.

The fact that the Hamilton and Winters projection of overall growth of CEE exports to the EC is significantly less than their projection of growth of CEE imports from the EC will have the effect of making the outcome for EC producers of the Table 3 projections more favourable than the outcome of a balanced growth in trade. We have therefore run an alternative projection in which both imports and exports grow by 450%. The results are not reported in detail here, as the differences with Table 3 are not very substantial, and the projections in Table 3 are more readily comparable with later projections.

4.2. Experiment 2

Table 4 projects future EC-CEE trade growth on the basis of 1985 to 1992 actual growth. The growth factors by country and by sector in the data summarized in Table 2 are proportionately increased so that the aggregate increases in EC exports to and imports from the CEE are the same as in Table 3. However, both the sectoral and national distribution of the trade increase are quite different, so we see in Table 4 a still stronger tendency than in Table 3 for the biggest effects to be concentrated on Germany's external trade, while the effects on UK trade are minuscule.

Table 4

Growth of CEEC-EC trade by sector and country in proportion to 1985-92 rates, aggregate trade growth at Hamilton-Winters projected rates

Growth of external imports	By country						
	France	Germany	Italy	UK	RoECN	Greece/Ireland	Iberia
Ores and metals	-0,01	0,28	0,16	0,12	0,07	0,34	0,16
Non-metallic minerals	0,09	1,30	0,32	0,01	0,25	0,68	0,48
Chemical products	-0,01	0,13	0,08	-0,02	0,09	0,14	0,09
Metal products	0,25	1,36	0,15	0,03	0,42	0,17	0,53
Agricultural and industrial machinery	0,01	0,27	0,20	-0,00	0,09	0,01	0,07
Office machines	0,00	0,03	0,10	0,00	0,01	0,00	0,03
Electrical goods	0,07	0,19	0,06	0,01	0,12	0,13	0,09
Transport equipment	-0,00	0,24	0,24	0,00	0,04	0,22	0,47
Food, beverages, tobacco	0,08	0,26	-0,02	-0,01	0,07	0,00	0,17
Textiles, clothing, leather	0,15	0,54	0,38	0,04	0,32	0,11	0,45
Paper products	0,01	0,09	0,13	0,01	0,02	0,04	0,01
Timber and other n.e.s.	0,07	0,71	0,20	-0,06	0,14	0,21	0,05
Rubber and plastic products	0,04	0,36	0,25	0,21	0,19	0,27	0,23
Growth of external exports	To country						
	France	Germany	Italy	UK	RoECN	Greece/Ireland	Iberia
Ores and metals	-0,06	-0,01	-0,07	0,00	-0,01	-0,11	-0,09
Non-metallic minerals	0,05	0,15	0,14	-0,02	0,35	-0,03	0,04
Chemical products	0,02	0,06	-0,01	0,06	-0,00	-0,00	-0,01
Metal products	*0,10*	*0,33*	*0,17*	*0,01*	*0,18*	*0,00*	*0,02*
Agricultural and industrial machinery	0,05	0,17	0,19	0,00	0,15	0,17	0,16
Office machines	0,14	0,32	0,14	0,06	0,18	0,10	0,01
Electrical goods	0,07	0,36	0,14	0,01	0,09	0,21	0,12
Transport equipment	0,23	0,14	0,22	0,02	0,43	0,09	3,68
Food, beverages, tobacco	0,08	0,58	0,17	0,05	0,13	0,13	-0,01
Textiles, clothing, leather	0,14	0,85	0,19	0,04	0,47	0,28	-0,00
Paper products	0,11	0,37	0,27	0,06	0,25	0,23	0,03
Timber and other n.e.s.	0,01	0,42	0,10	0,00	0,03	0,00	0,03
Rubber and plastic products	0,01	0,49	0,20	0,08	0,25	0,45	0,03

Table 4 (continued)

% Output change	France	Germany	Italy	UK	RoECN	Greece/Ireland	Iberia
Ores and metals	-2,5	-4,0	-2,9	-2,3	-2,6	-6,8	-2,3
Non-metallic minerals	-0,3	-5,3	0,7	-0,5	2,6	-2,9	-1,5
Chemical products	-0,1	0,8	-1,0	1,1	-1,0	-1,3	-0,4
Metal products	0,3	-1,1	1,0	-0,0	-0,1	-0,7	0,0
Agricultural and industrial machinery	0,8	5,2	5,2	-0,2	5,7	8,6	3,7
Office machines	3,1	7,9	3,0	1,1	5,6	2,0	-0,3
Electrical goods	0,5	6,9	1,1	-0,7	2,8	2,1	-0,6
Transport equipment	2,9	2,8	2,3	-1,6	12,9	-3,4	48,2
Food, beverages, tobacco	-0,4	1,1	0,5	0,0	1,8	2,7	-0,2
Textiles, clothing, leather	-1,9	3,9	-1,9	-1,1	5,4	-2,3	-3,0
Paper products	0,3	2,1	0,0	0,1	2,0	0,5	0,7
Timber and other n.e.s.	-1,3	-5,6	0,2	1,0	-2,1	-5,7	-0,1
Rubber and plastic products	-0,4	3,5	1,2	-0,7	3,0	1,7	0,6

% EC output and trade changes	EC output	Imports from RoW	Exports to RoW
Ores and metals	-3,2	20,1	-3,9
Non-metallic minerals	-1,3	58,3	13,1
Chemical products	0,0	8,1	3,6
Metal products	-0,1	61,8	19,6
Agricultural and industrial machinery	2,9	12,0	13,5
Office machines	3,4	2,2	19,0
Electrical goods	2,4	11,0	18,4
Transport equipment	5,0	12,2	27,0
Food, beverages, tobacco	0,5	9,1	16,7
Textiles, clothing, leather	-0,4	34,6	33,5
Paper products	0,9	5,5	25,5
Timber and other n.e.s.	-1,5	18,1	10,0
Rubber and plastic products	1,5	26,4	27,6

Welfare change	Total	% EC cons	Dcsp	Dis	Dgr	Dpr	GE
Ores and metals	774	0,5	172	1 391	-75	-468	-247
Non-metallic minerals	341	0,4	156	458	-17	-222	-34
Chemical products	484	0,2	258	644	-126	-87	-203
Metal products	285	0,2	172	205	-11	-72	-9
Agricultural and industrial machinery	847	0,6	427	223	-26	178	45
Office machines	295	0,5	87	47	-4	166	-2
Electrical goods	1 011	0,7	572	465	-32	-43	50
Transport equipment	835	0,5	721	331	-26	-140	-52
Food, beverages, tobacco	27	0,0	404	209	-170	-15	-401
Textiles, clothing, leather	464	0,3	539	266	-216	-48	-76
Paper products	371	0,3	81	288	-18	55	-35
Timber and other n.e.s.	319	0,4	258	163	-53	-39	-10
Rubber and plastic products	155	0,2	47	164	-13	-9	-34

Naturally the sectoral effects are rather different from in Table 3. For example, the large increase in iron and steel imports from the CEE countries is in this projection matched by a much smaller increase in exports and leads to a significant output reduction in ores and metals. The output reduction is greater than in sectors in which imports grow more, but this could reflect general equilibrium effects through the use of iron and steel as an intermediate or it could reflect the openness of this sector to imports. The changes in both exports and imports of chemicals are, on this projection, much less than in Table 3, reflecting the fact that trade growth in chemicals was relatively slow in 1985 to 1992, and EC output of chemicals is projected to remain static rather than to increase as in Table 3. However, in the other two areas defined by Rollo and Smith (1993) as sensitive, textiles and food, the output effects are less unfavourable than in Table 3. The case of textiles is particularly striking: large increases in both imports and exports result in a tiny output reduction. In looking at the effects in 'sensitive' sectors of an experiment based on actual 1985 to 1992 growth, we have to note that the numbers on which the projection is based include the restrictive effects of EC policy towards CEE imports in these sectors. The welfare effects are mostly smaller than in Table 3, but with the same general pattern.

Unlike in Table 3, there are net losses to aggregate profits, taking all sectors together; but there are net welfare gains in all sectors. Again sectors in which there are large gains include declining as well as expanding sectors.

4.3. Experiment 3

Table 5 is, like Table 3, based on increases in CEEC-EC trade which are uniform across sectors, but, unlike Table 3, has growth rates of trade differing across countries. The growth rates assumed for France, Germany, Italy and the UK are those predicted by Hamilton and Winters, while the (common) growth rates assumed for the other EC countries are those implied by the difference between the national projections and the Hamilton-Winters projections for the whole EC. Unsurprisingly, the main difference compared with Table 3 is a redistribution of output effects between EC countries, with larger effects in France and smaller effects in Germany for example; but the effects on total EC output, trade and welfare are very similar to those shown in Table 3.

Table 5

Growth of CEEC-EC trade uniform across sectors varying by country at Hamilton-Winters projected rates

	France	Germany	Italy	UK	RoECN	Greece/Ireland	Iberia
CEE export growth	5,9	2,7	3,0	5,3	7,2	7,2	7,2
CEE import growth	7,3	2,8	6,9	4,7	8,5	8,5	8,5
Growth of external imports			By country				
	France	Germany	Italy	UK	RoECN	Greece/Ireland	Iberia
Ores and metals	0,29	0,18	0,18	0,19	0,31	0,75	0,26
Non-metallic minerals	0,28	0,25	0,21	0,75	0,50	1,10	0,09
Chemical products	0,27	0,17	0,21	0,15	0,31	0,46	0,24
Metal products	0,39	0,15	0,04	0,10	0,33	0,38	0,14
Agricultural and industrial machinery	0,11	0,07	0,08	0,06	0,16	0,65	0,28
Office machines	0,02	0,01	0,01	0,01	0,03	0,01	0,04
Electrical goods	0,13	0,03	0,06	0,03	0,13	0,28	0,09
Transport equipment	0,32	0,04	0,13	0,05	0,07	0,30	0,10
Food, beverages, tobacco	0,21	0,30	0,21	0,08	0,23	0,35	0,23
Textiles, clothing, leather	0,45	0,25	0,15	0,21	0,60	0,39	0,11
Paper products	0,09	0,06	0,03	0,04	0,15	0,19	0,14
Timber and other n.e.s	0,47	0,28	0,15	0,18	0,25	0,53	0,15
Rubber and plastic products	0,18	0,08	0,06	0,29	0,36	0,39	0,34
Growth of external exports			To country				
	France	Germany	Italy	UK	RoECN	Greece/Ireland	Iberia
Ores and metals	0,17	0,12	0,26	0,09	0,19	0,43	0,27
Non-metallic minerals	0,26	0,14	0,07	0,13	0,31	0,24	0,04
Chemical products	0,32	0,18	0,35	0,16	0,33	0,27	0,36
Metal products	0,09	0,07	0,23	0,04	0,11	0,26	0,06
Agricultural and industrial machinery	0,22	0,15	0,26	0,07	0,27	0,21	0,13
Office machines	0,08	0,06	0,08	0,08	0,17	0,01	0,04
Electrical goods	0,14	0,10	0,20	0,06	0,10	0,16	0,12
Transport equipment	0,05	0,02	0,08	0,02	0,10	0,03	0,26
Food, beverages, tobacco	0,06	0,21	0,15	0,05	0,13	0,39	0,15
Textiles, clothing, leather	0,28	0,22	0,16	0,09	0,40	0,49	0,07
Paper products	0,12	0,09	0,22	0,05	0,13	0,07	0,05
Timber and other n.e.s.	0,03	0,04	0,02	0,01	0,02	0,01	0,18
Rubber and plastic products	0,22	0,13	0,27	0,11	0,21	0,29	0,12

Table 5 (continued)

% Output change	France	Germany	Italy	UK	RoECN	Greece/Ireland	Iberia
Ores and metals	-0,3	-1,7	1,3	-1,5	1,3	4,9	4,1
Non-metallic minerals	2,1	-0,4	0,4	-2,2	-0,2	3,1	0,0
Chemical products	4,8	3,1	4,6	2,2	13,4	3,2	4,0
Metal products	-0,0	-0,0	2,2	0,0	0,1	2,4	0,5
Agricultural and industrial machinery	6,4	5,3	8,1	1,4	11,2	5,5	0,1
Office machines	1,7	1,2	1,7	1,6	5,2	0,9	0,2
Electrical goods	2,3	1,4	2,7	1,0	3,4	-1,3	-0,1
Transport equipment	-0,0	-0,6	0,8	-0,4	3,8	-3,6	2,6
Food, beverages, tobacco	-1,1	-1,8	-0,6	-0,6	2,4	7,9	-0,2
Textiles, clothing, leather	-2,7	-4,9	-0,2	-3,1	2,5	2,6	-0,5
Paper products	-0,2	-0,2	1,0	-0,5	-1,2	-2,6	-0,2
Timber and other n.e.s	-5,8	-6,1	-1,4	-8,5	-6,1	-16,1	0,3
Rubber and plastic products	1,9	0,5	2,5	-1,0	1,4	0,8	0,8

% EC output and trade changes	EC output	Imports from RoW	Exports to RoW
Ores and metals	0,0	29,1	21,3
Non-metallic minerals	-0,0	44,5	18,0
Chemical products	4,3	29,3	32,1
Metal products	0,5	20,0	11,9
Agricultural and industrial machinery	4,7	11,8	18,5
Office machines	1,3	1,4	7,8
Electrical goods	1,5	7,4	11,8
Transport equipment	0,1	9,8	4,6
Food, beverages, tobacco	-0,3	21,6	13,5
Textiles, clothing, leather	-1,6	30,7	21,0
Paper products	-0,2	9,4	11,8
Timber and other n.e.s	-4,8	26,4	2,9
Rubber and plastic products	1,0	23,9	20,3

Welfare change	Total	% EC cons	Dcsp	Dis	Dgr	Dpr	GE
Ores and metals	1 719	1,1	295	2 394	-75	-595	-300
Non-metallic minerals	329	0,4	131	479	-17	-214	-50
Chemical products	3 570	1,7	813	1 961	-126	1 222	-300
Metal products	140	0,1	63	101	-11	19	-32
Agricultural and industrial machinery	1 135	0,8	551	292	-26	310	8
Office machines	142	0,3	64	35	-4	66	-19
Electrical goods	663	0,5	395	324	-32	-52	28
Transport equipment	156	0,1	311	143	-26	-174	-99
Food, beverages, tobacco	43	0,0	657	334	-170	-133	-646
Textiles, clothing, leather	264	0,2	461	239	-216	-109	-111
Paper products	267	0,2	87	309	-18	-41	-71
Timber and other n.e.s	458	0,6	403	290	-53	-154	-28
Rubber and plastic products	130	0,2	44	154	-13	-10	-44

4.4. Regional effects

Finally, Tables 6 and 7 presents the results of an estimate of the regional effects of the output changes shown in Tables 3 and 4. Data on the regional distribution of output and employment have been used to calculate changes in regional outputs, on the assumption that a particular sector expands or contracts at the same rate in all regions in a country. Small sectoral output changes of course generate small aggregate output changes. The most striking feature of both tables is that there are not substantial intra-regional differences within countries: the higher overall growth rate for Germany in both cases feeds through to regional growth rates that are almost universally higher for the German regions than for regions in France, Italy and the UK. The negative output effect for the UK in Table 7 appears almost uniformly across the UK regions. The general message from Tables 6 and 7 is that the regional effects of growth with Eastern Europe seem more influenced by the openness of the country to which the region belongs than by the sectoral composition of regional output.

Table 6

Regional percentage output effects of EC-CEEC trade changes in Table 3

		(%)			(%)
GERMANY			BELGIUM		
	Schleswig-Holstein	1,9		Vlaams Gewest	1,1
	Hamburg	2,1		Wallonia	1,3
	Niedersachsen	1,2		Brussels	1,8
	Bremen	0,8			
	North Rhine-Westphalia	2,4	LUXEMBOURG		0,9
	Hesse	2,7			
	Rhineland-Palatinate	2,5	UNITED KINGDOM		
	Baden-Württemberg	2,2		North	0,6
	Bayern	1,6		Yorkshire and Humberside	0,0
	Saarland	1,2		East Midlands	0,1
	Berlin (West)	1,9		East Anglia	0,3
				South-East	0,4
FRANCE				South-West	0,2
	Ile-de-France	0,7		West Midlands	0,2
	Paris basin	0,3		North-West	0,4
	Nord/Pas-de-Calais	– 0,1		Wales	0,2
	East	– 0,0		Scotland	0,2
	West	– 0,1		Northern Ireland	– 0,2
	South-West	– 0,0			
	Centre-East	0,6	SPAIN		
	Mediterranean	0,3		North-West	0,5
				North-East	0,5
ITALY				Madrid	0,6
	North-West	0,7		Centre	0,3
	Lombardy	0,8		East	0,6
	North-East	0,5		South	0,3
	Emilia-Romagna	1,0		Canary Islands	0,1
	Centre	0,2			
	Lazio	0,5	PORTUGAL		
	Campania	– 0,1		North	0,2
	Abruzzi-Molise	– 0,1		South	0,2
	South	– 0,1			
	Sicily	0,0	DENMARK		1,3
	Sardinia	0,3			
			IRELAND		1,3
NETHERLANDS					
	North Netherlands	1,7	GREECE		1,1
	East Netherlands	1,3			
	West Netherlands	2,1			
	South Netherlands	1,7			

Table 7

Regional percentage output effects of EC-CEEC trade growth in Table 4

		(%)			(%)
GERMANY			BELGIUM		
	Schleswig-Holstein	1,6		*Vlaams Gewest*	2,2
	Hamburg	1,5		Wallonia	2,3
	Niedersachsen	1,5		Brussels	2,1
	Bremen	1,8			
	North-Rhine-Westphalia	1,2	LUXEMBOURG		2,8
	Hesse	1,6			
	Rhineland-Palatinate	0,8	UNITED KINGDOM		
	Baden-Württemberg	2,2		North	-0,2
	Bayern	1,7		Yorkshire and Humberside	-0,3
	Saarland	0,8		East Midlands	-0,3
	Berlin (West)	1,9		East Anglia	-0,0
				South-East	-0,1
FRANCE				*South-West*	-0,3
	Ile-de-France	0,5		West Midlands	-0,5
	Paris basin	-0,0		North-West	-0,2
	Nord/Pas-de-Calais	-0,4		Wales	-0,5
	East	-0,2		Scotland	-0,2
	West	0,2		Northern Ireland	-0,3
	South-West	0,0			
	Centre-East	0,2	SPAIN		
	Mediterranean	0,0		North-West	6,2
				North-East	5,0
ITALY				Madrid	5,0
	North-West	0,6		Centre	4,9
	Lombardy	0,6		*East*	3,5
	North-East	0,4		South	3,9
	Emilia-Romagna	1,0		Canary Islands	0,1
	Centre	-0,1			
	Lazio	0,3	PORTUGAL		
	Campania	0,1		North	1,5
	Abruzzi-Molise	-0,1		South	1,5
	South	-0,4			
	Sicily	-0,2	DENMARK		2,5
	Sardinia	-0,7			
			IRELAND		0,9
NETHERLANDS					
	North Netherlands	2,1	GREECE		-0,8
	East Netherlands	1,8			
	West Netherlands	2,1			
	South Netherlands	2,1			

5. Conclusions

We have looked at three scenarios for the development of EC-CEE trade. The overall growth of trade was the same in each of the three scenarios, so as to make it easier to compare the effects of the assumptions made in the different cases. We see some significant differences between the results derived, but also some important common features.

The important dimension of difference between the different experiments is in the commodity composition of trade growth. Tables 4 and 6 are based on the composition of trade in 1985, Table 5 on the composition of trade growth between 1985 and 1992. Because CEE export growth in products which the EC may regard as 'sensitive' has been a little less than export growth in general in the 1985 to 1992 period, Table 5 shows less impact on EC output in the sensitive sectors; and because German trade with the Central and East European countries has grown particularly rapidly, the impacts on the German economy are particularly strong in the scenario based on trade growth.

The results derived are, of course, dependent on these different assumptions, and the model could easily be used to derive further projections, based on less mechanical and possibly more speculative views of the future of EC-CEE trade. Some studies of future EC-CEE trade patterns, notably CEPR (1990) and Hamilton and Winters (1992) have suggested that the present pattern of trade may be a poor predictor, and that the rich human resources of the Central and East European countries should push them up the ladder of technological sophistication reasonably rapidly, and it would be interesting to investigate the implications of this kind of scenario. The expectation would be that such a development would involve even more intra-industry trade than the cases shown in this paper, and that the impacts on the EC economy would be even easier to absorb than the impacts of the experiments reported above.

An important caveat to all of our results, however, is that our analysis is conducted at the high level of sectoral aggregation shown in Tables 1 and 2, and the results are influenced by the very high degree of intra-industry trade displayed in Table 2. There is a real phenomenon here: trade is a two-way process, creating opportunities for EC producers as well as competitive challenges. Even in the most sensitive sectors, notably textiles, clothing, and leather, EC exports to Eastern Europe have grown faster than Eastern exports to the EC. Hidden within the trade aggregates, however, there may be some adjustment problems: if EC exports of expensive leather shoes, designer clothes and high-tech textiles are matched by imports of mass-market shoes and cheap clothing, there will be an increase in the demand for highly-skilled labour and a loss of jobs or wages for the less-skilled. Wood (1994) has argued that we may seriously understate the labour market adjustment problems associated with international trade if we do not take adequate account of product diversity.

With that caveat, our results are easily summarized. Although it is assumed that trade will grow at a considerable rate, the base level of EC-CEE trade is small relative to the size of the EC economy, so almost all of the output and welfare effects on the EC are quite small. Even though the Central and East European economies are quite different economically from the EC economies, there is (at least at the level of aggregation adopted in this paper) a high degree of intra-industry trade, so even quite large changes in trade lead to relatively modest changes in EC countries' outputs. The projected output changes may be modest but they are not insignificant. However, many of the projected output changes are positive, indeed the largest output changes tend to be positive rather than negative; and even the negative changes are of an order of magnitude which are should be relatively easy for EC economies to absorb, given that the kind of projections we have been analysing are best thought of as changes that might occur over a 10 to 20-year period. There are concerns about adverse impacts on particular sectors feeding through as adverse impacts on particular regions, but the (admittedly mechanical) method that we have adopted for translating national output changes into regional output changes gives no ground for supposing that the regional impact of sectoral effects will be strong. Finally, even where sectoral trade changes are sufficiently one-sided for EC producers to lose, the gains to consumers invariably outweigh the losses to producers. In short, our analysis helps us understand why there are strong sectoral pressures to limit the liberalization of EC-CEE trade, but it gives little support to the proposition that it is in the real interest of the EC economies to restrain the liberalization of intra-European trade.

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Statistical Annex

Statistical Annex

Maarten van de Stadt

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Notes concerning the Statistical Annex

1. Trade data

(i) The source for the trade data is the Comext database.

(ii) All data refer to 'Special Trade' which include:
import for/export after inward processing, and
import after/export for outward processing.

(iii) Export data are fob value; import data are cif value.

(iv) Comext only holds trade data from the European Union point of view. As a result, if the Annex mentions 'exports to EU' the actual data given are 'EU's imports from ...'.

(v) The trade data in Comext is broken down according to the Combined Nomenclature (CN), which is in fact a product nomenclature. The trade data in this annex are broken down according to the NACE nomenclature, which is an activity nomenclature.
Although Eurostat has built correspondence tables between CN and NACE which have been used in transcoding the data, the user should bear in mind that a clear link between the two is not always possible.

(vi) The descriptions of the 2 and 3-digit sectors in the table are a shortened and often incomplete approximation of the official NACE description. They should therefore be used with due care.

2. Factor intensities

Capital intensity: Investment per employee (in 1 000 ECU)
Countries: UK, FR, D, IT
Employees: average for 1984-90
Investment: average for 1984-90

Ratio: Average of the four countries, weighted by the average number of employees

Labour intensity: Number of employees per million ECU of production
Countries: UK, FR, D, IT
Employees: average for 1988-90
Production: average for 1988-90

Ratio: Average of the four countries, weighted by the average production

R&D intensity: R&D expenditure as a percentage of production
Countries: UK, FR, D, IT
R&D expenditure: average for 1987-90
Production: average for 1987-90

Ratio: Average of the four countries, weighted by the average production
N.B.: R&D data is only available at a higher aggregation level; all underlying sectors have been given the same ratio
Skill intensity: Non manual labour as a percentage of total labour
Countries: UK, FR, D, IT
Non manual labour: 1990
Total labour: 1990

Ratio: Average of the four countries, weighted by total labour
NB: Skill data is only available at the NACE 2-digit level, all underlying 3-digits have been given the 2-digit ratio

Energy intensity: Energy costs as a percentage of production

An internal study estimated this ratio for UK and D for 1988. The weighted average has been taken.

3. Table 16 on the degree of EC protection facing CEECs by 3-digit NACE sectors, 1991

The table gives the following information for the individual CEECs:

Column	Contents
(1)	EC imports in 1 000 ECU
(2)	Commodity structure of EC imports
(3)	Share of the supplier country in total EC imports
(4)	MFN duty rate, weighted by 8-digit CN imports within each NACE sector
(5)	Imports subject to QR as percentage of the respective total imports
(6)	Imports subject to other NTB as percentage of the respective total imports
(7) to (10)	Classification of the NACE sector into four categories[1] according to – the MFN duty rate (D); – the import coverage ratio of QR (QR);

[1] 0 = none, 1 = weak, 2 = average, 3 = high; for definition of classes with regard to D, QR, ONTB and duty relief see text.

- the import coverage ratio of other NTB (ONTB);
- the relevance of public procurement and technical standards (PT) according to the report of the EC: *European Economy/Social Europe*, Special edition 1990, Table 2.1 on p. 24 (high = 3, moderate = 2, all other NACE sectors = 0)

(11) Total score, i.e. sum of scores according to D, QR, ONTB and PT

(12) Duty relief provided by the GSP as percentage of the MFN duty

(13) Classification[1] according to the extent of the GSP duty relief.

At the individual NACE sector level, the difference in the value of protection indicators for each year only reflects different subsectoral commodity structures in terms of 8-digit CN items. At the total level they also reflect changing shares of the NACE sectors in total industrial imports from the respective country.

Table	EC trade barriers facing
16a.	Bulgaria 1991
16b.	CSFR 1991
16c.	Hungary 1991
16d.	Poland 1991
16e.	Romania 1991

Sources: Eurostat, Common Customs Tariff, magnetic taps; Eurostat, GSP imports, magnetic tape; Eurostat, correspondence table Combined Nomenclature – NACE, magnetic tape; Eurostat, external trade of the EC (Combined Nomenclature), magnetic tape; Unctad, Databank on trade measures, 1990.

4. Table 16 on the degree of EC protection facing CEECs by 3-digit NACE sectors, 1992 or 1993

The table gives the following information for the individual CEECs

Column	Contents
(1)	EC imports in 1 000 ECU
(2)	Commodity structure of EC imports
(3)	Share of the country in EC imports
(4)	MFN duty rate, weighted by 8-digit CN imports within each NACE sector
(5)	Duty rate of the first year the Agreement entered into force (1992 CSFR, Hungary, Poland, 1993 Bulgaria, Romania), weighted by the 8-digit CN imports 1992 within each NACE sector
(6)	Imports subject to QR as percentage of the respective total imports
(7)	Imports subject to anti-dumping measures still existing in December 1992 as a percentage of the respective total imports
(8) to (11)	Classification of the NACE sector into four categories as in Annex 1 D Duty rate of the Agreement QR Import coverage ratio of QR ONTB Import coverage ratio of anti-dumping measures PT Relevance of public procurement and technical standards (the same as in Annex 1)
(12)	Total score, i.e. sum of columns (8) to (11)

Table	EC trade barriers facing
16f.	CSFR 1992
16g.	Hungary 1992
16h.	Poland 1992
16i.	Bulgaria 1993
16j.	Romania 1993

Sources: Appendix 3 and European Commission, COM(93) 516 Final; 11th annual report of the Commission to the European Parliament concerning the Community's anti-dumping and anti-subsidy measures (1992); OJ L 157 and 180/1993, Tariff quotas and export restraint of certain steel products from the Czech and Slovak Republics.

[1] 0 = none, 1 = weak, 2 = average, 3 = high; for definition of classes with regard to D, QR, ONTB and duty relief see text.

Table 1

European Community (EC) manufacturing imports from the CEECs[1]

Year	Million ECU	Total CEEC-5 market share	Million ECU	Bulgaria market share	Million ECU	CSFR market share	Million ECU	Hungary market share	Million ECU	Poland market share	Million ECU	Romania market share	Total extra-EU Million ECU
1980	5 146	3,56	242	0,17	1 139	0,79	1 131	0,78	1 709	1,18	924	0,64	144 658
1985	7 532	3,23	362	0,16	1 875	0,80	1 616	0,69	2 149	0,92	1 530	0,66	233 265
1988	8 222	2,80	350	0,12	1 950	0,66	1 816	0,62	2 552	0,87	1 555	0,53	293 960
1989	9 303	2,76	398	0,12	2 228	0,66	2 182	0,65	2 842	0,85	1 654	0,49	336 526
1990	10 525	3,06	441	0,13	2 401	0,70	2 547	0,74	3 962	1,15	1 174	0,34	343 911
1991	13 598	3,63	600	0,16	3 678	0,98	3 138	0,84	4 973	1,33	1 209	0,32	374 620
1992	16 736	4,43	762	0,20	5 102	1,35	3 554	0,94	5 984	1,58	1 334	0,35	377 763
1993	17 964	4,60	788	0,20	5 507	1,41	3 521	0,90	6 564	1,68	1 583	0,41	390 469

[1] Market share: e.g. manufacturing imports from Bulgaria represented in 1980 0,17 % of total manufacturing imports from extra-EC.

Table 2

EC manufacturing exports to the CEECs[1]

Year	Million ECU	Total CEEC-5 market share	Million ECU	Bulgaria market share	Million ECU	CSFR market share	Million ECU	Hungary market share	Million ECU	Poland market share	Million ECU	Romania market share	Total extra-EU Million ECU
1980	6 808	3,53	681	0,35	1 126	0,58	1 424	0,74	2 206	1,14	1 371	0,71	192 800
1985	8 648	2,63	1 378	0,42	1 730	0,53	2 254	0,69	2 324	0,71	963	0,29	328 796
1988	8 412	2,58	1 300	0,40	1 969	0,60	2 123	0,65	2 460	0,75	559	0,17	326 704
1989	10 079	2,73	1 323	0,36	2 142	0,58	2 673	0,72	3 299	0,89	642	0,17	368 956
1990	10 522	2,84	818	0,22	2 343	0,63	2 624	0,71	3 717	1,00	1 021	0,28	370 081
1991	15 213	3,99	895	0,24	3 428	0,90	3 136	0,82	6 663	1,75	1 091	0,29	380 934
1992	18 875	4,79	977	0,25	5 628	1,43	3 745	0,95	6 967	1,77	1 557	0,40	394 371
1993	22 954	5,13	1 159	0,26	6 684	1,49	4 576	1,02	8 587	1,92	1 949	0,44	447 439

[1] Market share: e.g. manufacturing exports to Bulgaria represented in 1980 0,35 % of total manufacturing exports to extra-EC.

Table 3

EC trade balance with the CEECs

(million ECU)

Year	Total CEEC -5	Bulgaria	CSFR	Hungary	Poland	Romania	Total Extra-EC
1980	1 662	439	-14	293	497	447	48 142
1985	1 117	1 017	-145	638	175	-568	95 530
1988	190	950	20	308	-93	-995	32 745
1989	776	925	-86	491	457	-1 012	32 429
1990	-3	377	-58	77	-245	-153	26 170
1991	1 615	295	-250	-2	1 689	-118	6 315
1992	2 139	215	526	191	983	223	16 608
1993	4 991	371	1 177	1 055	2 022	366	56 970

Table 4

Sectoral breakdown of EC manufacturing imports from the CEECs at the NACE 2-digit level

Sector	Total CEEC-5		Bulgaria		CSFR		Hungary		Poland		Romania		Total extra-EU	
	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993
21 Metalliferrous ores	0,5	0,2	0,0	0,6	0,2	0,1	0,0	0,0	1,4	0,3	0,0	0,1	1,9	1,1
22 Metals	14,7	9,1	14,7	13,0	14,1	10,6	10,7	5,2	17,1	10,1	16,3	7,0	10,6	7,0
23 Mineral extraction	0,4	0,7	0,3	0,6	1,5	1,0	0,1	0,1	0,1	0,9	0,0	0,1	0,8	0,8
24 Mineral products	4,0	5,0	2,0	3,3	7,1	8,2	2,6	2,8	2,8	3,8	4,1	4,3	0,9	1,1
25 Chemical industry	11,6	7,5	22,5	12,7	14,4	8,5	12,2	9,5	9,9	5,8	7,6	4,1	8,9	8,9
26 Man-made fibres	0,7	0,5	0,7	0,6	1,0	0,8	0,5	0,3	0,2	0,3	1,4	0,6	0,5	0,3
31 Metal articles	2,9	6,2	0,8	1,5	2,4	8,1	3,3	5,2	3,3	6,6	3,1	3,0	2,1	2,5
32 Mechanical engineering	5,6	5,9	8,4	5,5	8,5	8,2	5,8	6,8	4,4	4,1	3,0	3,4	8,3	7,9
33 Office machinery	0,1	0,5	0,9	0,4	0,1	0,9	0,2	0,8	0,1	0,1	0,0	0,1	6,5	6,5
34 Electrical engineering	4,8	7,7	3,9	5,7	3,8	7,8	7,7	14,1	4,4	5,4	3,3	3,6	13,1	13,8
35 Motor vehicles	3,4	5,8	0,3	0,3	3,7	6,8	1,0	4,7	5,4	7,5	3,0	0,7	5,7	5,6
36 Other means of transport	1,3	2,2	0,2	0,7	0,5	1,5	0,0	0,6	3,7	4,0	0,2	1,6	4,1	5,3
37 Instrument engineering	0,4	0,5	0,5	0,4	0,4	0,7	0,5	0,8	0,3	0,3	0,2	0,3	2,9	3,3
41 Food, drink and tobacco	12,1	7,1	13,9	9,6	5,0	2,5	21,7	13,3	15,3	8,3	4,3	2,4	6,5	5,6
43 Textiles	5,5	5,7	6,4	9,2	6,5	6,2	5,8	6,2	3,4	3,9	7,1	8,6	4,7	5,0
44 Leather goods	0,8	1,1	1,0	2,3	0,9	1,1	1,3	1,1	0,5	1,0	0,5	0,6	1,1	1,0
45 Clothing and footwear	13,6	18,4	8,2	24,0	6,8	10,2	16,2	18,6	13,2	19,0	20,9	40,7	4,9	6,4
46 Timber, wooden furniture	10,6	9,0	3,9	3,1	10,0	6,5	4,6	4,0	9,4	12,7	22,0	16,2	3,6	3,5
47 Paper products	2,5	1,8	2,8	1,4	6,5	3,3	1,0	1,1	1,1	1,4	1,3	0,3	5,7	4,5
48 Rubber and plastics	2,0	2,5	1,7	2,1	3,1	3,6	2,6	2,7	1,4	1,9	1,3	1,2	2,1	2,4
49 Other	2,5	2,7	6,9	2,7	3,7	3,4	2,2	2,1	2,4	2,7	0,6	1,3	5,3	7,6
Total manufacturing	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Table 5

Sectoral breakdown of EC manufacturing exports to the CEECs at the NACE 2-digit level

Sector	Total CEEC-5		Bulgaria		CSFR		Hungary		Poland		Romania		Total extra-EU	
	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993
21 Metalliferrous ores	0,3	0,1	0,3	0,1	0,3	0,0	0,2	0,0	0,1	0,0	2,0	0,4	0,1	0,1
22 Metals	5,6	3,1	8,7	2,0	3,1	3,9	5,0	2,9	6,0	3,0	7,3	1,9	7,0	5,0
23 Mineral extraction	0,2	0,2	0,1	0,2	0,2	0,2	0,1	0,2	0,4	0,2	0,4	0,2	0,3	0,2
24 Mineral products	1,7	2,0	2,1	1,7	1,4	2,0	1,6	2,1	1,5	2,2	3,1	1,3	2,3	2,1
25 Chemical industry	21,7	12,4	20,5	12,6	21,1	10,7	21,3	13,5	23,6	14,1	20,6	8,3	12,7	13,0
26 Man-made fibres	1,0	0,3	1,1	0,7	0,7	0,3	1,5	0,3	1,0	0,3	0,2	0,3	0,4	0,3
31 Metal articles	2,4	4,3	2,7	2,8	2,4	4,8	2,7	4,9	2,0	4,1	2,5	3,3	3,5	3,4
32 Mechanical engineering	24,9	17,5	28,2	13,8	32,6	22,3	21,4	14,8	24,7	15,2	4,5	19,9	16,9	16,8
33 Office machinery	1,5	2,8	0,9	1,9	3,0	3,8	1,4	2,8	1,0	2,3	0,4	2,2	2,5	2,7
34 Electrical engineering	8,8	12,0	8,8	9,5	11,0	14,5	10,2	12,6	6,9	10,6	4,3	9,1	10,3	11,2
35 Motor vehicles	2,8	8,1	4,1	6,7	1,8	6,4	3,2	9,4	2,8	9,7	1,6	5,1	9,5	8,2
36 Other means of transport	0,4	0,8	0,3	0,8	0,3	0,9	0,2	0,4	0,2	0,4	2,7	2,8	4,2	5,5
37 Instrument engineering	1,9	2,1	1,8	1,9	2,2	2,6	2,1	2,3	1,7	1,9	0,7	1,4	2,1	2,4
41 Food, drink and tobacco	6,9	6,8	7,4	15,5	7,2	5,0	3,8	5,3	9,6	7,8	5,3	6,4	6,6	6,9
43 Textiles	8,5	10,9	3,4	10,5	4,1	6,9	10,8	10,3	8,6	12,3	27,5	20,2	4,1	3,8
44 Leather goods	1,0	1,3	0,1	0,9	0,3	0,9	2,5	2,2	0,4	0,8	2,7	2,8	0,8	0,8
45 Clothing and footwear	1,5	2,8	0,8	4,4	1,0	2,4	2,1	3,9	1,3	1,8	3,0	5,1	2,9	2,8
46 Timber, wooden furniture	0,5	1,3	0,6	1,4	0,6	1,6	0,5	1,5	0,2	1,0	0,8	0,7	1,5	1,3
47 Paper products	2,0	3,0	2,5	2,2	1,4	2,6	2,6	3,0	1,8	3,8	1,4	1,5	2,5	2,4
48 Rubber and plastics	3,2	4,4	2,9	3,5	2,3	4,1	3,7	3,9	3,4	5,3	4,7	3,1	2,9	2,8
49 Other	3,1	3,8	3,0	6,9	2,9	4,0	3,2	3,5	3,1	3,2	4,5	4,0	7,0	8,4
Total manufacturing	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Table 6

Specialization index[1] of the CEECs' exports to EC (relative to total extra-EC exports to EC) at the NACE 2-digit level

Sector	Total CEEC-5		Bulgaria		CSFR		Hungary		Poland		Romania	
	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993
21 Metalliferrous ores	0,2	0,1	0,0	0,6	0,1	0,1	0,0	0,0	0,7	0,3	0,0	0,1
22 Metals	1,4	1,3	1,4	1,9	1,3	1,5	1,0	0,7	1,6	1,4	1,5	1,0
23 Mineral extraction	0,6	0,9	0,4	0,8	2,0	1,3	0,2	0,1	0,2	1,2	0,0	0,2
24 Mineral products	4,2	4,4	2,1	2,9	7,6	7,2	2,7	2,5	3,0	3,3	4,4	3,8
25 Chemical industry	1,3	0,8	2,5	1,4	1,6	0,9	1,4	1,1	1,1	0,7	0,9	0,5
26 Man-made fibres	1,5	1,5	1,5	1,7	2,1	2,4	1,0	0,9	0,5	0,8	3,1	2,0
31 Metal articles	1,4	2,5	0,4	0,6	1,2	3,2	1,6	2,1	1,6	2,6	1,5	1,2
32 Mechanical engineering	0,7	0,7	1,0	0,7	1,0	1,0	0,7	0,9	0,5	0,5	0,4	0,4
33 Office machinery	0,0	0,1	0,1	0,1	0,0	0,1	0,0	0,1	0,0	0,0	0,0	0,0
34 Electrical engineering	0,4	0,6	0,3	0,4	0,3	0,6	0,6	1,0	0,3	0,4	0,3	0,3
35 Motor vehicles	0,6	1,0	0,1	0,1	0,6	1,2	0,2	0,8	1,0	1,3	0,5	0,1
36 Other means of transport	0,3	0,4	0,0	0,1	0,1	0,3	0,0	0,1	0,9	0,8	0,0	0,3
37 Instrument engineering	0,1	0,2	0,2	0,1	0,1	0,2	0,2	0,2	0,1	0,1	0,1	0,1
41 Food, drink and tobacco	1,9	1,3	2,1	1,7	0,8	0,5	3,3	2,4	2,4	1,5	0,7	0,4
43 Textiles	1,2	1,1	1,4	1,8	1,4	1,2	1,2	1,2	0,7	0,8	1,5	1,7
44 Leather goods	0,8	1,1	1,0	2,4	0,9	1,1	1,3	1,2	0,5	1,0	0,5	0,7
45 Clothing and footwear	2,8	2,9	1,7	3,8	1,4	1,6	3,3	2,9	2,7	3,0	4,2	6,4
46 Timber, wooden furniture	3,0	2,6	1,1	0,9	2,8	1,9	1,3	1,2	2,6	3,7	6,2	4,7
47 Paper products	0,4	0,4	0,5	0,3	1,1	0,7	0,2	0,2	0,2	0,3	0,2	0,1
48 Rubber and plastics	1,0	1,1	0,9	0,9	1,5	1,5	1,3	1,1	0,7	0,8	0,6	0,5
49 Other	0,5	0,4	1,3	0,4	0,7	0,5	0,4	0,3	0,5	0,4	0,1	0,2

[1] E.g. the specialization index for CSFR, sector 22 for 1993 (1,5) is calculated as follows:
share of sector 22 in CSFR export to EC (= EC's imports from CSFR; see Table 4) / share of sector 22 in extra-EC exports to EC (= EC's imports from extra-EC; see Table 4).
===> 10,6 / 7,0 = 1,5.

Table 7

Specialization index[1] of the CEECs' exports to the EC (relative to EC exports to extra-EC) at the NACE 2-digit level

Sector	Total CEEC-5		Bulgaria		CSFR		Hungary		Poland		Romania	
	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993
21 Metalliferrous ores	8,9	2,6	0,1	10,5	3,1	1,0	0,5	0,3	25,8	4,6	0,0	1,3
22 Metals	2,1	1,8	2,1	2,6	2,0	2,1	1,5	1,0	2,5	2,0	2,3	1,4
23 Mineral extraction	1,8	3,2	1,1	2,6	6,2	4,5	0,5	0,4	0,4	4,3	0,0	0,6
24 Mineral products	1,7	2,4	0,9	1,6	3,1	3,9	1,1	1,4	1,2	1,8	1,8	2,1
25 Chemical industry	0,9	0,6	1,8	1,0	1,1	0,7	1,0	0,7	0,8	0,4	0,6	0,3
26 Man-made fibres	1,6	1,8	1,6	2,2	2,2	3,0	1,1	1,1	0,6	1,0	3,3	2,5
31 Metal articles	0,8	1,8	0,2	0,4	0,7	2,4	0,9	1,5	1,0	1,9	0,9	0,9
32 Mechanical engineering	0,3	0,3	0,5	0,3	0,5	0,5	0,3	0,4	0,3	0,2	0,2	0,2
33 Office machinery	0,1	0,2	0,4	0,2	0,1	0,3	0,1	0,3	0,0	0,0	0,0	0,0
34 Electrical engineering	0,5	0,7	0,4	0,5	0,4	0,7	0,8	1,3	0,4	0,5	0,3	0,3
35 Motor vehicles	0,4	0,7	0,0	0,0	0,4	0,8	0,1	0,6	0,6	0,9	0,3	0,1
36 Other means of transport	0,3	0,4	0,0	0,1	0,1	0,3	0,0	0,1	0,9	0,7	0,0	0,3
37 Instrument engineering	0,2	0,2	0,2	0,2	0,2	0,3	0,2	0,3	0,2	0,1	0,1	0,1
41 Food, drink and tobacco	1,8	1,0	2,1	1,4	0,8	0,4	3,3	1,9	2,3	1,2	0,7	0,3
43 textiles	1,3	1,5	1,6	2,4	1,6	1,6	1,4	1,6	0,8	1,0	1,7	2,2
44 Leather goods	1,0	1,4	1,3	3,0	1,1	1,4	1,6	1,4	0,6	1,2	0,6	0,8
45 Clothing and footwear	4,7	6,5	2,8	8,5	2,4	3,6	5,6	6,6	4,6	6,7	7,2	14,4
46 Timber, wooden furniture	7,1	6,7	2,6	2,3	6,7	4,9	3,1	3,0	6,3	9,5	14,7	12,1
47 Paper products	1,0	0,7	1,2	0,6	2,6	1,4	0,4	0,4	0,5	0,6	0,5	0,1
48 Rubber and plastics	0,7	0,9	0,6	0,8	1,1	1,3	0,9	1,0	0,5	0,7	0,4	0,4
49 Other	0,4	0,3	1,0	0,3	0,5	0,4	0,3	0,2	0,4	0,3	0,1	0,2

[1] E.g. the specialization index for CSFR, sector 22 for 1993 (2.1) is calculated as follows:
share of sector 22 in CSFR export to EC (= EC's imports from CSFR; see Table 4) / share of sector 22 in EC's exports to Extra-EC (see Table 5).
===> 10,6 / 5,0 = 2,1.

Table 8

EC sectoral trade balance with the CEECs (in million ECU) at the NACE 2-digit level

Sector	Total CEEC-5 1988	Total CEEC-5 1993	Bulgaria 1988	Bulgaria 1993	CSFR 1988	CSFR 1993	Hungary 1988	Hungary 1993	Poland 1988	Poland 1993	Romania 1988	Romania 1993	Total Extra-EU 1988	Total Extra-EU 1993
21 Metalliferrous ores	- 12	- 15	4	- 4	3	- 2	3	1	- 32	- 16	11	6	-5 523	- 4 075
22 Metals	- 744	- 920	62	- 79	- 215	- 319	- 89	- 49	- 290	- 401	- 212	- 72	- 8 321	- 4 840
23 Mineral extraction	- 17	- 84	1	- 2	- 27	- 43	1	6	6	- 45	2	1	- 1 397	- 1 981
24 Mineral products	- 185	- 432	20	- 7	- 111	- 317	- 12	- 4	- 35	- 61	- 46	- 43	4 824	4 891
25 Chemical industry	877	1 506	187	46	135	250	230	282	328	831	- 3	96	15 215	23 158
26 Man-made fibres	26	- 10	11	3	- 6	- 20	24	5	18	6	- 22	- 5	68	- 109
31 Metal articles	- 38	- 128	33	20	1	- 127	- 2	40	- 37	- 79	- 34	18	5 491	5 377
32 Mechanical engineering	1 636	2 970	337	116	477	1 036	349	441	495	1 041	- 21	335	30 594	44 325
33 Office machinery	117	556	8	18	57	207	27	101	23	189	2	42	-10 756	-13 313
34 Electrical engineering	351	1 365	100	66	143	543	77	83	58	551	- 28	121	- 4 681	- 3 785
35 Motor vehicles	- 43	819	52	75	- 36	50	49	267	- 70	339	- 38	88	14 352	14 797
36 Other means of transport	- 75	- 213	3	4	- 3	- 18	4	0	- 92	- 228	12	29	1 493	3 900
37 Instrument engineering	126	389	21	19	36	134	35	75	33	139	1	23	- 1 586	- 2 144
41 Food, drink and tobacco	- 412	284	47	105	45	194	- 313	- 226	- 154	123	- 37	88	2 423	8 886
43 textiles	267	1 478	22	50	- 46	118	124	253	124	799	44	259	- 568	- 2 556
44 Leather goods	17	100	- 2	- 8	- 12	- 1	29	62	- 4	3	8	44	- 384	- 216
45 Clothing and footwear	- 996	- 2 655	- 18	- 138	- 113	- 401	- 251	- 477	- 306	- 1 092	- 308	- 546	- 5 007	- 12 235
46 Timber, wooden furniture	- 834	- 1 331	- 7	- 9	- 181	- 255	- 73	- 75	- 236	- 749	- 337	- 243	- 5 583	- 7 485
47 Paper products	- 34	368	23	15	- 98	- 5	38	98	16	237	- 12	24	- 8 755	- 6 795
48 Rubber and plastics	104	557	32	23	- 14	77	31	83	49	331	7	42	3 422	3 033
49 Other	57	385	14	59	- 16	76	28	89	14	104	16	58	7 423	8 138
Total manufacturing	190	4 991	950	371	20	1 177	308	1 055	- 93	2 022	- 995	366	32 745	56 970

Table 9

Sectoral share[1] of EC's manufacturing imports from the CEECs at the NACE 3-digit level

Sector[2]	Total CEEC-5 1988	Total CEEC-5 1993	Bulgaria 1988	Bulgaria 1993	CSFR 1988	CSFR 1993	Hungary 1988	Hungary 1993	Poland 1988	Poland 1993	Romania 1988	Romania 1993	Total extra-EU 1988	Total extra-EU 1993
453 Ready-made clothing	10,2	13,9	6,6	15,4	3,9	6,7	11,7	12,8	10,1	16,2	17,1	31,6	3,5	4,6
467 Wooden furniture	5,5	4,9	2,4	1,4	2,1	2,7	2,0	2,2	3,7	6,5	17,2	14,1	0,6	0,8
351 Motor vehicles & engines	2,8	4,6	0,1	0,0	3,2	5,4	0,3	2,6	4,9	6,6	2,2	0,4	4,8	4,6
224 Non-ferrous metals	6,8	4,5	5,9	10,8	1,0	2,5	4,4	3,0	11,7	6,8	9,0	1,7	8,4	5,3
252 Bodies of motor vehicles	7,1	4,4	15,0	3,7	11,1	5,4	8,3	7,2	3,7	2,6	4,4	2,2	3,7	3,4
436 Knitted goods	2,7	3,7	2,9	5,8	1,7	2,8	2,8	4,7	1,8	2,8	5,4	7,3	1,9	2,8
451 Mass-produced footwear	2,3	3,3	0,4	6,6	1,3	2,5	3,2	4,7	2,2	1,5	3,0	8,5	0,9	1,2
412 Meat	6,3	3,1	3,6	3,5	3,0	0,7	15,3	9,2	4,9	2,2	2,7	1,5	1,4	1,0
221 Iron & steel (ECSC)	6,3	3,1	7,6	1,3	10,8	5,5	5,0	1,3	3,9	2,2	5,9	3,8	1,5	1,0
316 Finished metal goods	1,7	2,8	0,3	0,6	1,4	3,7	2,1	3,1	1,2	2,5	2,4	1,9	1,3	1,6
342 Electrical machinery	1,3	2,3	1,6	1,8	1,6	3,7	1,6	3,0	0,7	1,0	1,4	1,4	2,1	2,4
253 Other basic industrial chemicals	3,4	2,0	3,8	6,0	2,1	2,0	2,5	0,8	5,3	2,2	2,7	1,4	1,7	1,4
247 Glass	2,5	1,9	1,1	1,3	5,4	3,3	1,5	1,7	1,5	1,0	1,9	1,9	0,4	0,5
414 Fruit and vegetables	2,5	1,8	3,6	2,5	0,7	0,2	3,5	2,1	4,4	3,3	0,4	0,5	1,0	0,8
495 Other manufacturing products	1,6	1,7	5,6	1,1	1,8	1,9	1,5	1,3	1,8	2,1	0,2	0,7	2,0	3,1
341 Insulated wires & cables	0,5	1,7	0,1	0,7	0,3	1,3	0,2	4,2	1,1	1,1	0,1	0,5	0,3	0,5
314 Structural metal products	0,4	1,6	0,1	0,2	0,2	2,1	0,3	1,2	1,0	2,0	0,1	0,2	0,2	0,3
328 Other machinery	1,1	1,5	0,6	1,0	1,1	1,5	1,6	2,2	1,2	1,3	0,2	0,7	3,3	3,7
242 Cement, lime, plaster	0,5	1,4	0,0	0,0	0,2	2,2	0,2	0,0	0,8	1,7	1,0	1,3	0,0	0,1
461 Wood sawing & processing	3,1	1,4	0,4	0,6	5,8	1,3	0,9	0,6	3,8	2,3	1,6	0,4	1,9	1,4
481 Rubber goods	1,2	1,3	0,6	1,3	1,7	2,0	1,5	1,3	0,8	1,0	0,9	0,7	0,7	0,8
325 Plant	1,0	1,3	5,1	2,1	0,9	2,0	1,1	1,6	0,7	0,8	0,7	0,3	1,2	1,0
361 Shipbuilding	1,0	1,2	0,0	0,1	0,0	0,5	0,0	0,4	3,1	2,6	0,0	0,8	0,5	0,8
483 Processing of plastics	0,8	1,2	1,1	0,9	1,3	1,6	1,0	1,4	0,5	0,9	0,3	0,5	1,3	1,6
471 Pulp, paper, board	1,9	1,2	2,5	1,2	4,9	2,2	0,2	0,2	1,0	1,0	1,2	0,3	4,5	3,3
465 Other wood products	0,7	1,1	0,2	0,2	0,9	0,7	0,9	0,3	0,5	2,2	0,5	0,4	0,1	0,2
43B Woven materials	1,8	1,1	2,1	2,4	3,8	2,2	1,3	0,6	1,0	0,6	1,0	0,4	1,2	1,0
346 Domestic electric goods	1,0	1,0	0,3	0,8	0,7	0,9	2,0	1,8	0,8	0,9	0,8	0,6	0,6	0,7
455 Household textiles	0,8	1,0	1,0	2,0	1,3	1,0	0,7	1,0	0,7	1,1	0,6	0,4	0,4	0,5

[1] Sectoral share is the percentage of EC's total manufacturing imports from the country concerned.
[2] Only those sectors for which the CEECs' sectoral share in 1993=> 1%.

Table 10

Share of the EC's extra-EC manufacturing imports held by the CEECs at the NACE 3-digit level

Sector [1]	Total CEEC-5		Bulgaria		CSFR		Hungary		Poland		Romania		Total extra-EC	
	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993
242 Cement, lime, plaster	33,8	68,7	0,1	0,0	3,6	32,7	2,1	0,0	16,2	30,4	11,9	5,5	100	100
241 Clay products	10,2	42,8	2,5	1,4	1,3	39,1	1,9	1,3	4,4	0,8	0,1	0,1	100	100
464 Wooden containers	13,0	33,3	1,1	1,3	0,8	11,8	1,1	2,1	1,2	13,6	8,9	4,5	100	100
243 Concrete, cement & plaster prod.	9,1	32,8	0,1	0,2	7,1	20,1	1,2	2,1	0,5	10,4	0,3	0,0	100	100
467 Wooden furniture	27,0	28,0	0,5	0,3	2,5	4,7	2,2	2,4	5,7	13,5	16,0	7,0	100	100
427 Beer	30,6	27,4	0,9	0,0	28,6	27,2	0,5	0,0	0,6	0,1	0,0	0,0	100	100
315 Boilers, tanks etc.	6,2	27,2	0,0	0,1	1,4	11,8	1,4	2,2	2,3	12,5	1,1	0,5	100	100
314 Structural metal products	7,4	26,1	0,1	0,1	0,7	10,1	1,3	3,7	5,2	11,9	0,2	0,3	100	100
465 Other wood products	13,7	25,2	0,2	0,2	4,4	4,8	3,9	1,5	3,1	17,9	2,2	0,8	100	100
352 Bodies of motor vehicles	1,7	21,9	0,1	0,1	0,2	5,2	0,1	9,8	1,4	6,1	0,0	0,6	100	100
247 Glass	16,7	19,5	0,3	0,6	8,6	10,3	2,2	3,3	3,1	3,7	2,5	1,7	100	100
341 Insulated wires & cables	4,5	17,0	0,0	0,3	0,6	4,2	0,4	8,2	3,2	3,9	0,2	0,4	100	100
311 Foundries	5,4	16,4	0,1	0,5	0,8	5,8	1,9	2,8	2,2	6,6	0,4	0,7	100	100
362 Rolling-stock	9,3	15,0	0,4	0,2	0,5	6,8	0,2	1,0	7,7	4,5	0,6	2,5	100	100
482 Remould tyres	10,2	14,9	0,3	0,0	0,6	9,1	3,9	1,1	5,3	4,6	0,2	0,0	100	100
412 Meat	12,9	14,0	0,3	0,7	1,5	1,0	6,9	8,1	3,1	3,6	1,1	0,6	100	100
453 Ready-made clothing	8,0	13,9	0,2	0,7	0,7	2,0	2,0	2,5	2,5	5,9	2,6	2,8	100	100
221 Iron & steel (ECSC)	12,0	13,6	0,6	0,3	4,9	7,4	2,1	1,1	2,3	3,5	2,1	1,5	100	100
347 Electric lamps etc.	8,5	13,3	0,1	0,1	1,2	1,6	5,0	6,3	1,4	4,6	0,8	0,6	100	100
248 Ceramic goods	7,5	12,8	0,2	1,0	2,4	5,5	1,7	2,3	1,1	2,7	2,0	1,3	100	100
451 Mass-produced footwear	6,9	12,3	0,1	1,1	1,0	2,8	2,1	3,4	2,1	2,1	1,7	2,8	100	100
223 Steel drawing, cold rolling & folding	7,3	12,0	0,3	0,3	3,1	7,6	0,9	0,8	2,5	3,0	0,6	0,3	100	100
312 Forging etc.	6,8	11,8	0,1	0,0	1,2	5,1	1,6	0,6	3,5	5,7	0,4	0,4	100	100
222 Steel tubes	*5,7*	*11,8*	*0,1*	*0,3*	*1,5*	*4,8*	*1,5*	*1,9*	*1,2*	*3,1*	*1,4*	*1,7*	*100*	*100*
231 Extrac. of building materials	4,8	11,3	0,1	0,4	4,3	5,0	0,1	0,1	0,2	5,6	0,0	0,2	100	100
244 Asbestos articles	1,2	10,6	0,0	0,1	0,5	2,8	0,6	7,3	0,1	0,4	0,0	0,0	100	100
414 Fruit and vegetables	7,3	10,0	0,4	0,6	0,5	0,3	2,2	2,3	4,0	6,6	0,2	0,2	100	100
463 Carpentry	2,5	9,9	0,0	0,0	0,2	4,6	1,3	1,5	0,5	3,6	0,5	0,3	100	100
455 Household textiles	6,7	9,8	0,4	0,8	2,4	3,0	1,3	1,8	1,7	3,8	1,0	0,4	100	100
245 Stone	3,1	9,8	0,3	0,4	1,2	4,6	0,3	0,9	0,8	3,7	0,5	0,3	100	100
321 Agricultural machinery	7,6	9,3	0,0	0,1	4,1	4,2	1,8	2,8	1,3	2,0	0,4	0,2	100	100
233 Salt	2,3	8,9	0,0	0,0	0,2	0,3	0,0	0,1	2,1	8,6	0,0	0,0	100	100
456 Furs	7,3	8,7	0,2	0,3	1,6	2,0	3,3	2,1	1,6	3,7	0,6	0,6	100	100
316 Finished metal goods	3,5	8,1	0,0	0,1	0,7	3,3	1,0	1,7	0,8	2,6	1,0	0,5	100	100
413 Dairy products	9,7	8,0	1,3	1,3	0,3	1,7	0,9	1,0	5,2	3,8	2,0	0,2	100	100
481 Rubber goods	4,5	7,8	0,1	0,3	1,5	3,5	1,3	1,5	0,9	2,2	0,7	0,3	100	100
346 Domestic electric goods	4,6	7,3	0,1	0,2	0,7	1,9	2,0	2,5	1,1	2,2	0,7	0,3	100	100
365 Other transport equipment	1,5	7,1	0,0	0,0	0,7	2,2	0,0	0,9	0,6	3,9	0,2	0,2	100	100
441 Tanning & dressing of leather	0,7	6,8	0,0	0,5	0,0	1,8	0,5	1,2	0,1	3,0	0,1	0,3	100	100
260 Artificial fibres	4,3	6,7	0,2	0,4	1,4	3,4	0,6	0,8	0,5	1,4	1,7	0,8	100	100
361 Shipbuilding	5,1	6,7	0,0	0,0	0,0	0,8	0,0	0,4	5,1	5,1	0,0	0,4	100	100
466 Cork, straw etc.	6,1	6,6	0,1	0,1	0,5	1,2	0,9	1,1	1,2	2,5	3,3	1,6	100	100
253 Other basic industrial chemicals	5,7	6,4	0,3	0,9	0,9	2,0	1,0	0,5	2,8	2,6	0,9	0,4	100	100
436 Knitted goods	4,1	6,2	0,2	0,4	0,6	1,4	0,9	1,5	0,8	1,7	1,5	1,1	100	100
326 Transmission equipment	4,3	6,0	0,0	0,2	0,8	2,1	0,8	0,9	1,2	1,6	1,4	1,2	100	100
325 Plant	2,5	5,9	0,5	0,4	0,5	2,7	0,6	1,4	0,5	1,3	0,3	0,1	100	100
252 Bodies of motor vehicles	5,3	5,9	0,5	0,2	2,0	2,2	1,4	1,9	0,9	1,3	0,6	0,3	100	100
313 Secondary treatment of metals	2,7	5,7	0,1	0,2	0,8	2,2	0,3	0,4	1,1	2,4	0,5	0,5	100	100
43B Woven materials	4,0	5,3	0,2	0,5	2,0	3,2	0,6	0,5	0,7	1,0	0,4	0,2	100	100
322 Machine tools	3,0	5,3	0,2	0,4	1,5	3,0	0,4	0,7	0,6	0,9	0,2	0,3	100	100
439 Miscellaneous textiles	2,5	4,7	0,1	0,0	1,0	3,2	0,7	0,7	0,7	0,6	0,0	0,1	100	100
351 Motor vehicles & engines	1,6	4,6	0,0	0,0	0,4	1,7	0,0	0,5	0,9	2,4	0,2	0,0	100	100

[1] Only those sectors for which the CEEC-5 share in 1993 is larger than the share for total manufacturing (=4,60% see Table 1).

Table 11

Sectoral share[1] of EC's manufacturing exports to the CEECs at the NACE 3-digit level

Sector [1]	Total CEEC-5		Bulgaria		CSFR		Hungary		Poland		Romania		Total extra-EC	
	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993
43B Woven materials	4,8	6,4	1,3	6,1	1,8	3,1	5,9	5,5	5,3	7,7	17,4	14,5	1,5	1,6
351 Motor vehicles & engines	1,7	6,3	2,2	5,6	1,1	5,0	1,9	7,9	1,7	7,2	1,2	3,9	7,7	6,7
328 Other machinery	7,4	5,8	7,9	4,7	8,4	7,4	6,9	5,4	7,8	5,1	2,4	4,4	6,1	6,4
324 Machinery for food & chemical industries	3,9	4,0	5,1	3,1	4,9	4,4	3,8	3,0	3,2	4,0	0,4	5,2	2,1	2,5
483 Processing of plastics	2,0	3,5	1,6	2,6	1,5	3,1	2,4	2,9	2,0	4,4	2,7	2,2	1,8	1,9
344 Telecommunications	3,3	3,4	3,0	2,4	5,3	3,6	2,5	3,1	2,8	3,4	2,1	3,7	3,1	3,1
252 Bodies of motor vehicles	9,4	3,1	8,9	2,4	10,1	2,7	9,5	4,1	9,0	3,2	8,7	2,0	4,8	4,3
342 Electrical machinery	1,8	2,9	1,9	1,7	1,6	4,5	3,0	3,0	1,3	2,1	0,5	1,5	2,6	2,9
330 Office machinery	1,5	2,8	0,9	1,9	3,0	3,8	1,4	2,9	1,0	2,3	0,4	2,2	2,5	2,7
495 Other manufacturing products	2,6	2,7	2,6	3,3	2,3	2,7	2,7	2,4	2,7	2,6	2,7	3,1	3,5	5,0
257 Pharmaceutical products	1,9	2,6	1,5	2,2	0,9	1,9	1,8	3,0	3,3	3,3	0,9	0,9	2,1	2,8
256 Other chemicals for industrial use	5,1	2,6	5,8	3,3	4,8	2,3	4,4	2,8	5,7	2,6	4,8	2,5	2,2	2,2
316 Finished metal goods	1,3	2,5	0,9	1,8	1,3	2,7	1,6	2,9	1,0	2,4	1,8	1,9	1,9	1,9
325 Plant	2,9	2,4	2,6	2,1	4,4	3,2	2,5	1,6	2,9	2,2	0,3	2,4	2,4	2,4
345 Radio, TV etc.	1,2	2,0	1,1	1,3	0,9	1,7	2,3	2,6	0,6	2,1	0,6	1,3	2,0	2,4
436 Knitted goods	1,2	2,0	0,4	2,0	0,4	1,6	1,6	2,6	1,0	1,9	4,9	2,1	1,2	1,0
327 Machinery for specific branches	2,5	1,7	1,9	1,2	3,6	2,1	2,1	1,3	2,8	1,4	0,2	2,9	1,5	1,5
322 Machine tools	3,8	1,5	6,1	0,7	5,5	2,3	1,9	1,7	3,6	1,0	0,4	1,4	1,8	1,3
472 Processing of paper & board	1,1	1,5	1,5	1,0	0,6	1,1	1,3	1,6	0,9	2,0	1,1	0,7	0,8	0,8
258 Soap, perfume etc.	0,6	1,4	0,5	2,0	0,4	1,0	0,5	1,3	0,9	1,9	0,1	0,8	0,8	1,0
453 Ready-made clothing	0,8	1,4	0,3	1,3	0,5	1,2	1,1	2,0	0,8	1,1	1,9	2,5	1,6	1,6
353 Parts for motor vehicles	0,7	1,3	0,5	0,5	0,5	0,9	0,9	1,0	0,9	2,0	0,3	0,3	1,7	1,3
343 Electrical equipment for industrial use	1,7	1,2	2,1	1,4	2,3	1,5	1,6	0,9	1,3	1,2	0,8	1,0	1,2	1,0
224 Non-ferrous metals	1,5	1,2	2,0	0,9	1,9	2,1	1,3	0,9	0,7	0,8	2,6	0,4	2,5	1,6
423 Other food	0,7	1,2	0,4	1,4	0,5	0,8	0,2	0,9	1,4	1,5	0,1	1,3	0,6	0,7
323 *Textiles machinery*	2,5	1,1	2,6	1,1	4,0	1,4	1,7	0,7	2,4	0,9	0,4	2,2	1,3	1,4
346 Domestic electric goods	0,3	1,1	0,2	2,1	0,5	1,3	0,2	1,0	0,2	1,0	0,1	0,6	0,7	0,8
441 Tanning & dressing of leather	0,9	1,1	0,1	0,7	0,2	0,7	2,4	2,0	0,3	0,7	2,4	2,6	0,4	0,4
451 Mass produced footwear	0,5	1,1	0,4	2,6	0,4	0,9	0,7	1,6	0,3	0,5	0,6	2,3	1,0	1,0
255 Paint	1,0	1,1	1,0	1,2	0,9	1,1	1,0	0,7	1,0	1,2	1,0	1,0	0,5	0,5

[1] Sectoral share is the percentage of EC's total manufacturing exports to the country concerned.
[2] Only those sectors for which the CEECs' sectoral share in 1993 => 1%.

Table 12

Sectoral share of the EC's extra-EC manufacturing exports accounted for by the CEECs at the NACE 3-digit level

Sector [1]	Total CEEC-5		Bulgaria		CSFR		Hungary		Poland		Romania		Total extra-EC	
	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993
43B Woven materials	8,4	20,4	0,4	1,0	0,7	2,8	2,6	3,5	2,7	9,2	2,0	3,9	100	100
211 Iron ore	0,5	19,4	0,0	0,0	0,0	0,5	0,5	1,9	0,0	0,3	0,0	16,6	100	100
352 Bodies of motor vehicles	7,6	14,0	3,8	0,8	1,0	3,7	1,7	3,0	1,1	4,5	0,0	2,0	100	100
441 Tanning & dressing of leather	5,6	13,4	0,1	0,4	0,3	2,3	3,7	5,0	0,6	3,0	1,0	2,7	100	100
411 Oils & fats	3,8	13,1	0,3	0,5	0,7	3,2	0,1	1,0	2,7	7,8	0,0	0,7	100	100
438 Floor coverings	2,7	12,1	0,3	0,6	0,3	3,3	0,8	2,1	0,8	5,3	0,5	0,9	100	100
341 Insulated wires & cables	2,7	12,0	0,4	0,3	0,6	4,9	0,8	4,0	0,9	1,8	0,1	0,9	100	100
255 Paint	5,5	11,2	0,9	0,6	1,2	3,2	1,4	1,5	1,7	4,9	0,4	0,9	100	100
422 Animal feedstuff	11,8	11,0	1,3	0,2	3,2	3,4	4,0	2,1	3,2	4,2	0,0	1,0	100	100
43A Processed textiles	4,9	10,9	0,4	0,8	1,2	3,5	1,7	1,7	1,0	3,7	0,6	1,2	100	100
436 Knitted goods	2,6	10,2	0,1	0,5	0,2	2,4	0,9	2,7	0,6	3,7	0,7	0,9	100	100
483 Processing of plastics	2,8	9,5	0,4	0,4	0,5	2,5	0,9	1,6	0,8	4,5	0,3	0,5	100	100
472 Processing of paper & board	3,5	9,5	0,8	0,3	0,5	2,1	1,1	2,0	0,9	4,7	0,2	0,4	100	100
494 Toys & sports goods	1,2	9,4	0,1	2,0	0,4	2,9	0,3	1,9	0,3	1,9	0,0	0,8	100	100
439 Miscellaneous textiles	5,2	9,4	0,5	0,3	0,7	1,9	1,6	1,7	1,6	3,8	0,7	1,6	100	100
421 Chocolate & sugar confectionery	2,3	8,7	0,3	1,0	0,8	1,7	0,2	1,9	0,9	3,4	0,2	0,7	100	100
363 (motor) Cycles	1,0	8,4	0,1	0,2	0,3	5,2	0,3	1,6	0,3	1,4	0,0	0,0	100	100
423 Other food	2,7	8,4	0,2	0,5	0,5	1,7	0,2	1,3	1,7	4,1	0,0	0,8	100	100
244 Asbestos articles	5,3	8,3	0,3	0,3	1,2	3,9	1,8	1,1	1,8	2,4	0,2	0,6	100	100
324 Machinery for food & chemical industries	4,6	8,2	0,9	0,3	1,4	2,6	1,1	1,3	1,1	3,1	0,0	0,9	100	100
233 Salt	0,4	7,3	0,3	0,9	0,0	6,1	0,0	0,2	0,0	0,1	0,0	0,0	100	100
362 Rolling-stock	0,8	7,1	0,2	0,2	0,1	1,5	0,2	0,3	0,1	1,0	0,2	4,2	100	100
258 Soap, perfume etc.	1,9	7,1	0,3	0,5	0,3	1,4	0,4	1,3	0,8	3,6	0,0	0,3	100	100
315 Boilers, tanks etc.	3,9	7,1	1,5	0,1	1,1	2,3	0,6	1,0	0,7	3,1	0,0	0,6	100	100
316 Finished metal goods	1,7	7,0	0,2	0,2	0,4	2,2	0,5	1,6	0,4	2,5	0,2	0,5	100	100
346 Domestic electric goods	1,0	6,9	0,1	0,6	0,4	2,3	0,2	1,2	0,2	2,4	0,0	0,3	100	100
456 Furs	2,1	6,7	0,2	1,0	0,4	2,4	1,1	0,9	0,4	1,5	0,1	0,9	100	100
365 Other transport equipment	1,7	6,6	0,0	0,2	0,2	1,7	1,0	1,5	0,5	3,0	0,1	0,1	100	100
428 Soft drinks	0,8	6,6	0,0	2,5	0,1	1,8	0,0	0,3	0,6	1,6	0,0	0,4	100	100
260 Artificial fibres	5,9	6,5	1,0	0,7	0,9	2,0	2,3	1,4	1,7	2,0	0,1	0,4	100	100
415 Seafood	3,1	6,3	0,0	0,3	2,0	1,8	0,1	0,3	1,0	3,8	0,0	0,1	100	100
243 Concrete, cement & plaster products	0,7	6,3	0,1	0,1	0,0	1,6	0,1	0,7	0,5	3,5	0,0	0,4	100	100
462 Semi-finished wood products	1,6	6,2	0,2	0,1	0,8	2,7	0,4	0,9	0,0	2,0	0,2	0,5	100	100
256 Other chemicals for industrial use	6,0	6,1	1,0	0,4	1,3	1,6	1,3	1,3	2,0	2,3	0,4	0,5	100	100
314 Structural metal products	0,9	6,0	0,1	0,2	0,2	2,0	0,2	1,6	0,3	1,9	0,1	0,4	100	100
327 Machinery for specific branches	4,4	6,0	0,5	0,2	1,5	2,1	0,9	0,9	1,5	1,9	0,0	0,8	100	100
466 Cork, straw etc.	3,5	5,9	1,3	0,8	0,8	1,6	0,8	1,4	0,3	1,7	0,3	0,4	100	100
343 Electrical equipment for industrial use	3,8	5,9	0,7	0,3	1,2	2,1	0,9	0,9	0,9	2,1	0,1	0,4	100	100
322 Machine tools	5,4	5,9	1,4	0,1	1,8	2,6	0,7	1,3	1,5	1,4	0,0	0,4	100	100
451 Mass-produced footwear	1,2	5,7	0,2	0,7	0,3	1,4	0,4	1,7	0,3	0,9	0,1	1,0	100	100
371 Metrology equipment	3,0	5,7	0,4	0,2	0,9	2,4	0,9	1,1	0,8	1,7	0,1	0,4	100	100
465 Other wood products	0,7	5,7	0,0	0,1	0,2	1,8	0,2	1,1	0,2	2,4	0,1	0,3	100	100
248 Ceramic goods	2,5	5,7	0,6	0,3	0,5	1,8	0,5	1,2	0,5	2,1	0,5	0,4	100	100
311 Foundries	1,3	5,6	0,2	0,2	0,2	1,7	0,6	1,4	0,3	1,9	0,0	0,4	100	100
246 Grindstones	7,1	5,6	0,9	0,2	1,9	2,0	1,9	1,1	1,9	1,8	0,5	0,5	100	100
344 Telecommunications	2,7	5,6	0,4	0,2	1,0	1,7	0,5	1,0	0,7	2,1	0,1	0,5	100	100
482 Remould tyres	3,3	5,6	0,0	0,3	0,1	1,1	1,5	1,4	1,6	1,2	0,0	1,6	100	100
481 Rubber goods	3,0	5,5	0,5	0,3	0,5	1,7	0,7	1,1	1,0	2,0	0,3	0,4	100	100
259 Other chemicals for home use	3,8	5,4	0,4	0,3	1,0	1,8	1,4	1,1	0,8	1,9	0,2	0,3	100	100
330 Office machinery	1,6	5,4	0,1	0,2	0,7	2,1	0,4	1,1	0,3	1,6	0,0	0,4	100	100
347 Electric lamps etc.	0,9	5,3	0,2	0,2	0,2	1,9	0,3	1,1	0,3	1,8	0,0	0,2	100	100
463 Carpentry	1,1	5,2	0,1	0,1	0,4	2,2	0,5	1,4	0,1	1,3	0,0	0,2	100	100
313 Secondary treatment of metals	2,2	5,2	0,4	0,1	0,3	1,9	0,6	1,2	0,8	1,9	0,1	0,1	100	100
414 Fruit and vegetables	1,5	5,2	0,3	0,8	0,5	1,4	0,3	0,5	0,4	2,2	0,0	0,3	100	100

[1] Only those sectors for which the CEEC-5 share in 1993 is larger than the share for total manufacturing (=5,13% see Table 2).

Table 13

Coverage ratio[1] of CEECs' exports to the EC at the NACE 3-digit level

Sector [1]	Total CEEC-5		Bulgaria		CSFR		Hungary		Poland		Romania		Total extra-EC	
	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993
361 Shipbuilding	21,52	50,56	0,00	1,25	0,19	40,23	1,14	11,58	80,86	101,92	0,08	31,67	0,54	0,60
461 Wood sawing & processing	87,75	26,45	28,98	27,48	408,81	22,10	7,62	12,59	304,53	42,41	435,90	6,26	20,50	19,59
242 Cement, lime, plaster	*40,76*	*25,01*	*0,80*	*0,03*	*9,39*	*45,12*	*13,86*	*0,03*	78,87	*29,66*	*478,44*	*216,16*	*0,36*	*0,96*
464 Wooden containers	7,99	11,66	2,25	24,85	2,52	17,20	10,86	1,85	2,13	14,76	47,78	99,35	0,41	0,72
465 Other wood products	25,23	10,45	14,67	3,53	29,45	6,32	32,14	3,25	17,06	17,45	26,82	6,96	1,36	2,36
453 Ready-made clothing	12,54	7,62	5,24	7,89	8,64	4,60	9,15	4,88	13,27	11,52	24,77	10,30	2,04	2,54
463 Carpentry	2,69	6,31	0,22	1,01	0,63	7,02	3,24	3,48	3,97	8,97	137,93	4,12	1,16	3,32
467 Wooden furniture	44,32	5,16	7,37	1,11	11,69	2,40	17,76	1,74	87,36	8,58	119,14	36,01	0,54	0,83
231 Extraction of building materials	3,13	4,64	1,35	5,95	40,86	17,53	0,48	0,14	0,22	4,51	0,00	1,00	1,23	1,57
455 Household textiles	10,91	4,51	13,59	10,10	29,13	4,01	7,64	3,93	10,80	4,86	5,31	3,66	1,42	2,21
414 Fruit and vegetables	10,17	3,77	3,26	1,54	2,07	0,42	15,53	8,18	21,77	5,87	14,41	1,47	2,08	1,94
224 Non-ferrous metals	4,55	2,96	0,79	7,90	0,53	0,98	2,96	2,49	16,43	6,47	9,62	3,77	3,06	2,88
241 Clay products	0,95	2,78	2,44	3,19	4,22	18,52	1,06	1,61	0,59	0,07	1,17	0,16	0,07	0,21
247 Glass	6,96	2,75	0,69	2,66	26,63	6,17	2,68	1,97	4,70	1,12	17,66	7,13	0,54	0,66
221 Iron & steel (ECSC)	3,26	2,64	0,59	2,06	57,24	6,08	2,11	0,93	1,99	1,56	5,51	3,37	0,49	0,40
412 Meat	3,17	2,63	0,62	1,46	1,06	1,83	9,78	6,36	2,55	1,27	4,31	2,72	1,26	0,94
243 Concrete, cement & plaster products	2,19	2,55	0,17	1,60	25,75	6,23	2,37	1,40	0,17	1,44	9,41	0,03	0,17	0,49
462 Semi-finished wood products	11,86	2,54	3,71	8,75	5,46	1,64	3,06	1,61	297,29	3,92	29,88	2,35	4,58	3,45
492 Musical instruments	3,29	2,47	0,35	1,72	5,94	6,02	0,54	0,13	2,14	0,96	4,23	6,32	2,67	2,05
364 Aerospace equipment	0,15	2,42	0,00	0,73	0,11	0,42	0,54	0,17	1,77	10,38	0,12	0,47	0,97	0,80
451 Mass-produced footwear	4,72	2,36	0,28	1,70	3,01	2,28	4,18	2,20	6,66	2,51	13,35	3,04	0,86	1,10
442 Leather products	8,92	2,33	10,72	4,18	12,73	2,34	8,68	2,37	12,24	1,98	3,83	1,80	1,11	1,40
415 Seafood	2,79	2,19	8,89	1,83	0,00	0,01	0,00	0,00	8,63	3,49	45,10	0,03	3,17	3,81
212 Non-ferrous metal ore	1,44	2,15	0,01	5,01	0,53	2,62	0,12	0,49	12,10	6,59	0,00	0,18	16,55	8,25
314 Structural metal products	2,01	2,02	0,15	0,27	0,71	2,38	1,52	1,06	4,77	2,98	0,57	0,41	0,26	0,46
253 Other basic industrial chemicals	1,30	1,95	0,57	6,59	0,85	2,03	0,91	0,95	2,01	1,82	1,77	2,13	0,99	0,93
347 Electric lamps etc.	5,68	1,73	0,48	0,51	4,14	0,57	10,94	3,87	2,92	1,71	30,69	2,18	0,63	0,68
311 Foundries	1,79	1,68	0,26	1,28	1,58	1,99	1,43	1,19	3,08	1,94	6,67	1,03	0,42	0,58
312 Forging etc.	1,58	1,55	0,08	0,14	3,30	1,99	0,95	0,40	5,68	2,31	0,52	0,46	0,44	0,64
471 Pulp, paper, board	3,09	1,50	0,92	0,98	11,34	2,91	0,23	0,23	2,19	1,28	57,53	0,57	5,84	4,47
436 Knitted goods	2,25	1,47	1,82	2,01	4,18	1,46	1,49	1,36	1,88	1,15	3,07	2,75	1,45	2,42
341 Insulated wires & cables	1,30	1,36	0,04	0,98	0,91	0,81	0,45	1,95	2,71	2,03	1,31	0,45	0,79	0,96
427 Beer	3,66	1,34	1,19	0,01	188,78	21,94	0,37	0,01	0,11	0,02	0,03	0,00	0,06	0,09
223 Steel drawing, cold rolling & folding	0,68	1,23	0,11	0,90	2,76	3,01	0,41	0,42	0,57	0,69	0,78	0,51	0,44	0,51
466 Cork, straw etc.	1,87	1,14	0,07	0,10	0,72	0,80	1,32	0,77	4,32	1,52	11,63	4,38	1,09	1,03
260 Artificial fibres	0,69	1,14	0,17	0,59	1,45	1,86	0,26	0,66	0,25	0,75	25,37	1,96	0,95	1,09
481 Rubber goods	0,96	1,13	0,14	0,99	2,14	1,62	1,09	1,05	0,60	0,86	1,29	0,68	0,64	0,79
222 Steel tubes	0,77	1,12	0,08	0,93	1,69	1,35	1,08	1,06	0,38	0,72	5,19	3,15	0,30	0,44
482 Remould tyres	1,37	1,11	2,89	0,00	3,04	3,36	1,12	0,35	1,47	1,66	1,73	0,00	0,44	0,42
252 Bodies of motor vehicles	0,74	1,10	0,45	1,05	1,09	1,65	0,75	1,35	0,42	0,61	1,40	0,89	0,70	0,69
239 Other minerals	0,56	1,09	0,13	0,41	0,91	1,57	0,81	0,91	0,52	1,11	0,00	0,15	4,18	6,68
365 Other transport equipment	0,41	1,01	0,00	0,05	1,85	1,16	0,01	0,55	0,57	1,20	1,90	1,56	0,46	0,94
313 Secondary treatment of metals	1,05	0,97	0,20	1,49	2,15	1,05	0,36	0,26	1,12	1,16	7,04	3,33	0,85	0,89
326 Transmission equipment	0,65	0,95	0,04	0,78	0,55	0,95	0,53	0,59	0,58	0,84	7,50	2,63	0,56	0,55
315 Boilers, tanks etc.	0,30	0,93	0,00	0,15	0,25	1,27	0,44	0,54	0,64	0,99	24,26	0,21	0,19	0,24
316 Finished metal goods	1,29	0,88	0,08	0,24	1,06	1,13	1,15	0,83	1,28	0,79	3,77	0,81	0,62	0,76
321 Agricultural machinery	1,17	0,83	0,02	0,24	2,59	0,84	0,61	1,45	0,86	0,99	21,28	0,10	0,39	0,45
456 Furs	2,38	0,81	0,85	0,20	3,14	0,53	2,05	1,48	2,96	1,48	4,34	0,42	0,70	0,62
248 Ceramic goods	0,89	0,81	0,12	1,14	1,49	1,12	1,13	0,68	0,60	0,47	1,32	1,29	0,30	0,36
420 Sugar	8,21	0,78	6,00	0,34	5,03	0,99	105,70	0,23	7,67	2,09	30,33	0,09	1,13	0,86
245 Stone	1,03	0,77	0,96	1,02	1,43	1,04	0,42	0,37	0,97	0,76	1,45	0,35	0,23	0,29
413 Dairy products	0,77	0,74	0,27	1,30	0,71	0,74	7,89	0,59	0,98	0,83	1,02	0,16	0,21	0,20
346 Domestic electric goods	*3,54*	*0,73*	*0,36*	*0,26*	*1,39*	*0,58*	*7,31*	*1,43*	*3,68*	*0,65*	*34,41*	*0,79*	*0,80*	*0,69*
363 (motor) Cycles	2,34	0,69	0,00	0,06	5,39	0,71	0,05	0,13	2,74	1,32	7,55	0,41	2,43	4,86
352 Bodies of motor vehicles	0,09	0,69	0,01	0,08	0,07	0,61	0,01	1,43	0,51	0,60	0,62	0,14	0,41	0,44
362 Rolling-stock	2,36	0,67	0,34	0,36	0,79	1,45	0,17	0,87	23,04	1,49	0,65	0,19	0,22	0,32
491 Jewellery	1,07	0,63	0,59	1,02	3,90	0,84	1,38	0,31	0,79	0,49	0,10	0,24	0,60	0,80

Table 13 (continued)

Coverage ratio[1] of CEECs' exports to the EC at the NACE 3-digit level

Sector [1]	Total CEEC-5		Bulgaria		CSFR		Hungary		Poland		Romania		Total extra-EC	
	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993	1988	1993
342 Electrical machinery	0,68	0,62	0,22	0,71	1,00	0,66	0,46	0,77	0,56	0,39	8,04	0,75	0,70	0,72
494 Toys & sports goods	2,58	0,60	1,84	0,16	2,58	0,84	1,53	0,67	3,17	0,68	15,51	0,45	2,60	3,39
351 Motor vehicles & engines	1,64	0,57	0,01	0,00	2,84	0,90	0,14	0,25	3,02	0,71	5,07	0,07	0,56	0,60
374 Clocks & watches	1,23	0,57	0,03	0,52	3,61	0,89	0,55	0,68	0,66	0,08	7,66	0,58	2,36	2,58
495 Other manufacturing products	0,59	0,50	0,58	0,23	0,76	0,57	0,47	0,40	0,68	0,62	0,22	0,19	0,51	0,54
244 Asbestos articles	0,08	0,46	0,00	0,11	0,14	0,26	0,12	2,37	0,02	0,06	0,02	0,00	0,36	0,36
353 Parts for motor vehicles	0,75	0,45	0,08	0,32	0,88	0,93	0,65	0,88	0,48	0,18	6,38	0,44	0,44	0,59
322 Machine tools	0,28	0,44	0,09	1,35	0,43	0,56	0,28	0,27	0,21	0,32	3,44	0,37	0,52	0,49
325 Plant	0,34	0,44	0,52	0,69	0,21	0,51	0,39	0,75	0,25	0,29	6,91	0,10	0,43	0,37
43A Processed textiles	0,31	0,42	0,21	0,54	0,17	0,40	0,54	0,57	0,15	0,36	0,29	0,40	1,42	1,32
441 Tanning & dressing of leather	0,14	0,39	0,40	0,96	0,07	0,57	0,14	0,18	0,24	0,77	0,09	0,08	1,18	0,77
345 Radio, TV etc.	0,53	0,35	0,07	0,13	0,35	0,31	0,41	0,48	1,17	0,33	2,27	0,23	2,54	2,08
493 Film developing etc.	0,58	0,33	0,24	0,87	0,36	0,28	0,98	0,47	0,46	0,20	0,89	0,06	0,96	1,20
343 Electrical equipment for industrial use	0,17	0,32	0,13	0,64	0,06	0,27	0,21	0,63	0,28	0,22	0,49	0,17	0,85	1,03
473 Printing etc.	1,12	0,28	0,19	0,07	2,79	0,66	1,31	0,46	0,14	0,04	0,55	0,05	0,42	0,45
439 Miscellaneous textiles	0,28	0,27	0,10	0,07	0,86	0,91	0,23	0,23	0,26	0,09	0,03	0,02	0,59	0,54
483 Processing of plastics	0,40	0,27	0,18	0,23	0,86	0,43	0,36	0,37	0,28	0,15	0,34	0,18	0,64	0,74
411 Oils & fats	0,41	0,24	0,01	0,19	0,09	0,42	4,75	0,35	0,38	0,16	32,91	0,19	3,38	2,67
233 Salt	1,36	0,24	0,00	0,00	3,25	0,01	0,00	0,11	115,50	17,50	0,00	0,00	0,22	0,20
246 Grindstones	0,10	0,22	0,01	0,20	0,17	0,42	0,02	0,04	0,16	0,15	0,01	0,03	0,57	0,69
259 Other chemicals for home use	0,08	0,20	0,12	0,45	0,09	0,16	0,03	0,28	0,08	0,18	0,22	0,06	1,16	0,91
328 Other machinery	0,14	0,20	0,02	0,14	0,13	0,17	0,19	0,31	0,17	0,19	0,24	0,13	0,49	0,50
373 Optical instruments	0,14	0,20	0,04	0,19	0,10	0,25	0,11	0,29	0,26	0,08	0,68	0,16	1,46	1,32
371 Metrology equipment	0,23	0,19	0,16	0,29	0,19	0,22	0,14	0,14	0,32	0,16	0,93	0,16	0,65	0,77
323 Textiles machinery	0,08	0,18	0,01	0,03	0,15	0,33	0,06	0,13	0,06	0,12	0,14	0,04	0,35	0,18
422 Animal feedstuff	0,31	0,17	1,26	3,03	0,02	0,14	0,43	0,34	0,07	0,01	0,87	0,01	0,79	0,58
472 Processing of paper & board	0,16	0,17	0,03	0,11	0,85	0,26	0,07	0,22	0,05	0,13	0,06	0,02	0,83	0,79
256 Other chemicals for industrial use	0,13	0,17	0,10	0,13	0,15	0,20	0,14	0,20	0,13	0,15	0,12	0,08	0,49	0,50
372 Medical equipment	0,13	0,16	0,03	0,01	0,03	0,12	0,33	0,36	0,07	0,13	0,12	0,08	0,90	1,05
423 Other food	0,37	0,16	0,04	0,12	0,23	0,10	3,20	0,74	0,04	0,03	0,68	0,03	0,48	0,43
43B Woven materials	0,35	0,14	0,41	0,27	2,05	0,60	0,18	0,08	0,19	0,06	0,16	0,02	0,74	0,54
330 Office machinery	0,08	0,14	0,29	0,15	0,04	0,19	0,11	0,23	0,05	0,03	0,19	0,03	2,31	2,11
438 Floor coverings	0,96	0,13	0,62	0,10	2,17	0,11	0,83	0,24	0,65	0,06	1,21	0,36	1,07	1,09
327 Machinery for specific branches	0,10	0,12	0,05	0,08	0,16	0,17	0,13	0,11	0,03	0,11	0,45	0,02	0,47	0,36
421 Chocolate & sugar confectionery	0,80	0,11	0,00	0,00	0,26	0,12	1,08	0,23	1,67	0,08	0,01	0,02	0,41	0,31
257 Pharmaceutical products	0,14	0,10	0,19	0,50	0,23	0,11	0,23	0,11	0,04	0,05	0,61	0,16	0,42	0,50
424 Alcohol & spirits	0,22	0,10	0,01	0,00	0,08	0,05	0,72	0,08	0,29	0,59	0,11	0,03	0,08	0,10
324 Machinery for food & chemical industries	0,05	0,09	0,01	0,06	0,04	0,10	0,07	0,18	0,08	0,08	0,02	0,02	0,31	0,28
344 Telecommunications	0,07	0,08	0,04	0,21	0,05	0,09	0,12	0,10	0,08	0,07	0,03	0,02	0,88	0,82
425 Wine etc.	0,04	0,08	0,65	0,43	0,01	0,02	0,26	0,40	0,00	0,00	0,19	0,03	0,02	0,06
419 Bread & flour	0,18	0,08	0,00	0,00	0,00	0,07	0,18	0,32	1,70	0,04	0,00	0,00	0,32	0,26
416 Grain	0,70	0,04	0,27	0,00	0,00	0,49	1,73	0,34	0,10	0,04	2,22	0,00	0,43	0,06
258 Soap, perfume etc.	0,09	0,04	0,04	0,05	0,20	0,04	0,20	0,03	0,01	0,04	0,08	0,02	0,18	0,20
418 Starch etc.	1,82	0,02	0,12	0,03	0,54	0,00	6,31	0,13	0,29	0,00	0,29	0,00	6,16	2,62
428 Soft drinks	0,04	0,01	0,02	0,00	0,00	0,01	0,84	0,16	0,00	0,01	0,18	0,00	0,18	0,20
429 Tobacco products	0,00	0,01	0,00	0,00	0,00	0,01	0,00	0,01	0,00	0,07	0,00	0,01	0,46	0,62
255 Paint	0,02	0,01	0,01	0,00	0,02	0,02	0,03	0,01	0,01	0,01	0,01	0,00	0,27	0,29
211 Iron ore	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,43	0,00	0,00	534,97	905,77
426 Cider etc.	0,03	0,01	0,00	0,00	0,00	0,00	1,00	0,00	0,00	0,01	0,00	0,00	0,48	0,56
417 Pasta	0,14	0,01	0,00	0,00	0,00	0,01	4,00	0,01	0,00	0,00	4,67	0,00	0,15	0,14
232 Potassium salt	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	415,35	61,23
Total manufacturing	0,98	0,78	0,27	0,68	0,99	0,82	0,86	0,77	1,04	0,77	2,78	0,81	0,90	0,87

[1] Coverage ratio: Exports to EC / imports from EC.

Table 14

CEECs' industrial structure at the NACE 2-digit level (approximately): employment

Sector NACE code	Description	Bulgaria 1989	ex-CSFR 1989	ex-CSFR 1992	Hungary 1988	Hungary 1991	Poland 1988	Poland 1991	Poland 1992	Romania 1988	Romania 1990
21	Extraction, preparation of metal ores	2,1					0,9	0,8	1,4		
22	Production, preliminary processing of ferrous/non-ferrous metals	3,6					5,6	6,0	5,1		
211,221,222,223	Iron metallurgy		7,2							4,2	4,1
212,224	Non-ferrous metallurgy		2,3							2,5	2,5
23	Extraction of non-metal/energy minerals	1,0					1,5	1,7	1,1		
24	Manu of non-metallic mineral prods	4,6		6,0	4,6	4,8	5,9	6,1	5,8		
25	Chemical industry	3,5					4,5	4,9	7,4		
26	Artificial fibres	0,6					0,9	0,8	0,6		
31	Metal products	7,3	6,4				7,1	7,2	7,0		
32	Mechanical engineering	11,8			10,0	12,0	9,7	9,1	11,2		
21,22	Ferrous & non-ferrous metallurgy and mining	5,7	9,5				6,5	6,8	6,5	6,7	6,6
21,23	Extraction of metal/non-metal minerals	3,1		1,2	1,7	1,2	2,4	2,5	2,5		
22,31	Metallurgy & metal products	10,9		13,9	10,3	9,3	12,7	13,2	12,1		
23,24	Extraction & processing of non-metal/energy minerals	5,6	7,4				7,4	7,8	6,9	5,3	5,3
231,241-46	Building materials		4,0							3,1	3,1
25,26	Chemicals & artificial fibres	4,0	6,7	5,6	6,4	7,4	5,3	5,7	8,0	7,4	7,7
31,32	Metal products, including machinery	19,1					16,9	16,3	18,2		
21,22,23,24,31	Metals/non-metals - extraction, production, processing & manufacturing	18,6	23,3	21,1	16,6	15,3	21,0	21,7	20,4		
21,22,23,24,31,32	Minerals, metals & mechanical engineering total	30,4			26,6	27,3	30,7	30,8	31,6		
33	Office machinery, data processing equipment	2,9					0,4	0,3	0,9		
34	Electrical engineering	12,1			11,5	9,1	9,4	8,9	5,6		
35	Motor vehicles, parts & accessories	2,0					3,5	3,6	3,0		
36	Other means of transport	1,4					3,4	2,9	5,1		
37	Instrument engineering	0,2					2,0	1,7	0,9		
32,35,36,37	Mechanical & instrument engineering & transport equipment	15,4	30,0	26,9			18,6	17,3	20,1		
32,33,34,35,36,37	All types of engineering	30,3	38,2	35,7	31,8	30,3	28,4	26,5	26,6		
31,32,33,34,35,36,37	Engineering & metal working	37,6	44,6				35,5	33,7	33,6	38,9	38,4
32,37	Mechanical & instrument engineering	12,0		17,9			11,7	10,8	12,0		
33,34	Office machinery, data-processing equipment & electrical engineering	14,9	8,2	8,2			9,8	9,2	6,5		
33,37	Office machinery & instrument engineering	3,1			4,0	3,4	2,3	2,0	1,7		
35,36	Transport equipment	3,4		9,0	6,4	5,8	6,9	6,5	8,0		
32,35,36	Mechanical engineering & transport equipment	15,2			16,4	17,8	16,6	15,6	19,2		
41,42	Food, drink, tobacco	12,1	8,3	9,4	15,9	18,3	13,0	15,8	16,6	6,3	7,2
43	Textiles	5,7	8,2	9,7	7,5	5,9	10,3	8,5	6,6	11,7	11,5
453,456	Ready-made clothing		3,5	2,8						6,8	6,6
44	Leather & leather goods, (excluding shoes & clothing)	0,6					1,2	1,1	0,7		
45	Footwear & clothing	9,7					8,8	8,9	9,2		
44,45	Leather goods & clothing	10,3	7,6	6,5	8,9	9,5	10,0	10,0	9,9	10,8	10,5
44, 45 (excl. 453,456)	All types of leather goods (excluding clothing)		4,1	3,7						3,8	3,6
46	Furniture & wooden products	4,7	4,7		3,2	4,0	5,3	5,5	6,2	9,5	9,4
47	Paper, paper products, printing & publishing	1,9	2,9	3,5	2,6	3,2	2,9	2,8	2,6	1,7	1,3
48	Rubber & plastic products	2,7		2,2	2,0	2,5	2,6	2,8	2,3		
49	Other manufactured goods	9,6	0,1	6,3	5,2	3,7	1,3	0,8	0,6	1,7	2,1

Sources: Bulgaria: R. Dobrinsky, based on National Statistical Institute; Former-CSFR: Commission services from M. Landesmann and E. Mikelka, based on national statistics; Hungary: J. Gacs, based on national statistics; Poland: D. Rosati, based on GUS data; Romania: Commission services, based on M. Jackson and national statistics.

Table 15

CEECs' industrial structure at the NACE 2-digit level (approximately): output

Sector NACE Code	Description	Bulgaria 1988	Former CSFR 1991	Former CSFR 1989	Hungary 1988	Hungary 1991	Poland 1988	Poland 1992	Romania 1990	Romania 1991
21	Extraction, preparation of metal ores	0,8	1,4				0,9	2,1	0,3	0,5
22	Production, preliminary processing of metals	6,8	14,0				12,0	8,3	11,8	12,2
211,221,222,223	Iron metallurgy			9,9						
212,224	Non-ferrous metallurgy			2,9						
23	Extraction of non-metal/energy minerals	0,8	0,7				1,3	1,4	0,5	0,6
24	Manufacture of non-metallic mineral prods	3,5	3,4		3,5	3,6	3,9	4,6	4,6	4,6
25	Chemical industry	6,6	10,3				7,5	10,8		
26	Artificial fibres	0,2	0,2				0,8	0,5		
31	Metal products	4,6	4,1	5,6			4,8	5,0	4,3	4,2
32	Mechanical engineering	10,1	4,6		7,1	7,4	8,0	6,5	11,9	10,0
21,22	Ferrous & non-ferrous metallurgy and mining	7,6	15,4	12,8			12,9	10,4	12,0	12,8
21,23	Extraction of metal/non-metal minerals	1,5	2,1		0,8	0,7	2,2	3,5	0,8	1,2
22,31	Metallurgy & metal products	11,4	18,0		13,3	11,5	16,8	13,3	16,0	16,5
23,24	Extraction and processing of non-metal/energy minerals	4,3	4,0	4,8			5,3	6,0	5,1	5,2
231,241-46	Building materials			3,2						
25,26	Chemicals & artificial fibres	6,8	10,5	13,5	19,2	22,3	8,3	11,4	8,4	10,0
31,32	Metal products, including machinery	14,6	8,6				12,8	11,5	16,1	14,2
21,22,23,24,31	Metals/non-metals - extraction, production, processing & manufacture	16,4	23,5	23,2	17,6	15,8	22,9	21,4	21,4	22,2
21,22,23,24,31,32	Minerals, metals & mechanical engineering total	26,5	28,0		24,8	23,2	30,9	27,9	33,3	32,1
33	Office machinery, data-processing equipment	7,9	1,2				0,5	0,4	0,5	0,1
34	Electrical engineering	9,1	7,8		9,0	6,3	7,5	4,4	3,8	4,0
35	Motor vehicles, parts & accessories	1,0	1,0				4,2	3,2	4,4	4,5
36	Other means of transport	1,3	1,0				2,5	3,5	2,9	2,7
37	Instrument engineering	0,1	0,8				1,1	0,47	1,4	1,2
32,35,36,37	Mechanical & instrument engineering & transport equipment	12,4	7,3	23,0			15,8	13,7	20,5	18,2
32,33,34,35,36,37	All types of engineering	29,4	16,3	33,9	25,8	21,1	23,9	18,5	24,8	22,3
31,32,33,34,35,36,37	Engineering & metal working	34,0	20,4	39,5			28,7	23,5	29,0	26,5
32,37	Mechanical & instrument engineering	10,1	5,3				9,2	6,9	13,3	11,1
33,34	Office machinery, data-processing, equipment & electrical engineering	17,0	9,0	10,9			8,1	4,8	4,3	4,1
33,37	Office machinery & instrument engineering	8,0	1,9		2,9	2,5	1,6	0,9	1,9	1,3
35,36	Transport equipment	2,3	2,0		6,8	4,9	6,7	6,7	7,3	7,1
32,35,36	Mechanical engineering & transport equipment	12,4	6,6		13,9	12,3	14,7	13,2	19,2	17,1
41,42	Food, drink, tobacco	24,0	33,5	15,1	19,2	24,0	22,5	31,5	18,0	19,5
43	Textiles	5,1	3,5	4,7	5,0	3,5	7,8	3,7	8,6	8,6
453,456	Ready-made clothing			1,5					4,1	3,4
44	Leather & leather goods, (excluding shoes & clothing)	0,5	0,4				1,3	0,4		
45	Footwear & clothing	4,4	3,1				4,5	3,4		
44,45	Leather goods & clothing	4,9	3,5	3,8	4,0	3,5	5,8	3,8	6,8	5,9
44, 45 (excluding 453,456)	All types of leather goods (excluding clothing)			2,3					2,6	2,4
46	Furniture & wooden products	3,4	3,1	2,9	2,1	2,5	3,4	4,8	3,0	5,2
47	Paper, paper products, printing & publishing	2,3	2,5	2,8	3,0	3,6	2,4	2,6	1,6	1,9
48	Rubber & plastic products	4,0	3,3		2,5	2,7	2,4	2,5	2,8	3,3
49	Other manufactured goods	3,6	0,3	0,1	1,6	1,1	0,7	0,3	4,6	1,1

Sources: Bulgaria: R. Dobrinsky, based on National Statistical Institute; Former CSFR: Commission services from M. Landesmann and E. Mikelka, based on national statistics; Hungary: J. Gacs, based on national statistics; Poland: D. Rosati, based on GUS data; Romania: Commission services, based on M. Jackson and national statistics.

Table 16a

EC trade barriers facing Bulgaria 1991

NACE No Category	Imports 1 000 ECU	Product % share	Country % share	MFN duty %	Non-tariff barriers QR %	Non-tariff barriers others %	Classification D	Classification QR	Classification ONTB	Classification PT	Duty relief Total	Duty relief %	Duty relief Class.
111 Hard-coal mining	678	0,1	0,0	2,9	0,0	0,0	1	0	0	0	1	0,0	0
112 Lignite mining	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
120 Coke ovens	15	0,0	0,0	0,4	0,0	0,0	1	0	0	0	1	0,0	0
130 Gas-, petroleum extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140 Oil refining	16 552	3,1	0,1	5,1	0,0	0,0	2	0	0	0	2	1,6	-1
151 Fissile ore extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152 Fissile materials	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
161 Electric power	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162 Gasworks	259	0,0	0,0	1,5	0,0	0,0	1	0	0	0	1	0,0	0
163 District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211 Iron ore extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212 Non-ferrous metals extraction	2 269	0,4	0,1	0,0	0,0	0,0	0	0	0	0	0	0,0	0
221 Iron & steel industries	53 131	9,8	1,2	4,5	99,9	99,9	2	3	3	0	8	0,0	0
222 Steel tubes	2 818	0,5	0,2	9,4	0,0	23,7	3	0	3	0	6	34,5	-2
223 Steel drawing	3 428	0,6	0,3	5,6	0,0	2,5	2	0	1	0	3	3,4	-1
224 Non-ferrous metals	41 070	7,6	0,2	1,2	4,3	4,3	1	1	2	0	4	25,8	-2
231 Building materials extraction	1 805	0,3	0,2	0,0	0,0	0,0	1	0	0	0	1	0,0	0
232 Potassium extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233 Salt extraction	18	0,0	0,2	0,0	0,0	0,0	0	0	0	0	0	0,0	0
239 Other mineral extractions	363	0,1	0,0	0,0	0,0	0,0	1	0	0	0	1	0,0	0
241 Clay products	22	0,0	0,1	8,0	0,0	0,0	3	0	0	0	3	31,8	-2
242 Cement, lime	1 674	0,3	0,6	3,2	0,0	0,0	1	0	0	0	1	2,5	-1
243 Cement products	344	0,1	0,3	3,2	0,0	0,0	1	0	0	0	1	2,0	-1
244 Asbestos products	24	0,0	0,1	5,3	0,0	0,0	2	0	0	0	2	100,0	-3
245 Stone working	1 192	0,2	0,3	3,5	0,0	0,0	1	0	0	0	1	13,7	-1
246 Abrasive products	109	0,0	0,0	2,0	0,0	0,0	1	0	0	0	1	3,4	-1
247 Glass, -ware	*4 056*	*0,8*	*0,2*	*9,2*	*0,0*	*0,1*	*3*	*0*	*1*	*2*	*6*	*9,4*	-1
248 Ceramics	2 927	0,5	0,3	9,3	0,0	0,0	3	0	0	2	5	57,2	-3
252 Petrochemical industry	23 561	4,4	0,2	8,0	0,0	1,1	3	0	1	0	4	26,5	-2
253 Other chemical basic industries	46 502	8,6	0,9	8,5	0,0	12,5	3	0	3	0	6	12,3	-1
255 Paints,varnishes	65	0,0	0,0	4,3	0,0	0,0	2	0	0	0	2	10,6	-1
256 Chemicals for industry	4 202	0,8	0,1	2,4	0,0	1,0	1	0	1	2	4	19,2	-1
257 Pharmaceutical products	6 493	1,2	0,1	5,6	0,0	0,0	2	0	0	3	5	32,4	-2
258 Soap, detergents	381	0,1	0,1	6,6	0,0	0,0	2	0	0	0	2	3,4	-1
259 Chemicals for the home	4 752	0,9	0,1	4,9	0,0	0,0	2	0	0	0	2	62,9	-3
260 Artificial fibres	1 321	0,2	0,1	8,5	48,4	0,0	3	3	0	0	6	8,7	-1
311 Foundries	1 340	0,2	0,2	5,0	0,0	0,0	2	0	0	0	2	14,6	-1
312 Forging	371	0,1	0,1	5,1	0,0	0,0	2	0	0	0	2	58,7	-3
313 Metal treatment	627	0,1	0,1	6,0	0,0	0,0	2	0	0	0	2	60,3	-3
314 Metal structures	2 011	0,4	0,2	4,2	0,0	0,0	2	0	0	0	2	8,8	-1
315 Boiler, tanks	1 003	0,2	0,3	4,0	0,0	0,0	2	0	0	3	5	28,7	-2
316 Tools, metal products	5 908	1,1	0,1	5,6	0,0	0,7	2	0	1	0	3	49,3	-3
321 Machinery for agriculture	885	0,2	0,1	4,2	0,0	0,0	2	0	0	2	4	14,6	-1
322 Machine tools	11 391	2,1	0,3	4,2	0,0	0,0	2	0	0	2	4	52,3	-3
323 Textile machinery	235	0,0	0,0	4,0	0,0	0,0	2	0	0	2	4	10,4	-1
324 Machinery: food industry	2 466	0,5	0,1	4,0	0,0	0,0	1	0	0	2	3	15,9	-1
325 Plant for mines	21 387	4,0	0,5	4,6	0,0	0,0	2	0	0	2	4	31,5	-2
326 Transmission equipment	951	0,2	0,0	6,8	0,0	0,0	2	0	0	2	4	23,3	-1
327 Other specific equipment	456	0,1	0,0	4,7	0,0	0,0	2	0	0	2	4	17,8	-1
328 Other machinery	5 054	0,9	0,0	4,7	0,0	0,0	2	0	0	0	2	33,4	-2
330 Office machinery	3 705	0,7	0,0	4,5	0,0	0,0	2	0	0	3	5	40,1	-3
341 Electrical wires	1 803	0,3	0,1	6,5	0,0	0,0	2	0	0	3	5	90,6	-3

Table 16a (continued)

EC trade barriers facing Bulgaria 1991

NACE No	Category	Imports 1 000 ECU	Product % share	Country % share	MFN duty %	Non-tariff barriers QR %	Non-tariff barriers others %	Classification D	Classification QR	Classification ONTB	Classification PT	Duty relief Total	Duty relief %	Duty relief Class.
342	Electrical motors	12 511	2,3	0,1	5,1	0,0	14,8	2	0	3	3	8	34,4	-2
343	Industrial electrical equipment	4 786	0,9	0,1	4,9	0,0	0,0	2	0	0	0	2	26,9	-2
344	Telecommunication equipment	1 567	0,3	0,0	6,1	0,0	0,0	2	0	0	3	5	7,1	-1
345	Radio-, TV sets	3 901	0,7	0,0	2,6	0,0	0,0	1	0	0	2	3	10,6	-1
346	Domestic electrical equipment	5 869	1,1	0,3	4,3	0,0	0,0	2	0	0	2	4	27,8	-2
347	Electrical lighting equipment	1 898	0,4	0,2	6,1	0,0	0,0	2	0	0	2	4	39,7	-2
351	Motor vehicles	356	0,1	0,0	12,1	0,0	0,0	3	0	0	2	5	7,8	-1
352	Bodies for motor vehicles	581	0,1	0,2	6,6	0,0	0,0	2	0	0	0	2	19,0	-1
353	Parts for motor vehicles	736	0,1	0,0	6,9	0,0	0,0	2	0	0	0	2	43,1	-3
361	Shipbuilding	22 083	4,1	0,9	0,0	0,0	0,0	1	0	0	3	4	0,0	0
362	Railway equipment	287	0,1	0,1	4,9	0,0	0,0	2	0	0	3	5	0,0	0
363	Cycles, motor cycles	10	0,0	0,0	8,0	0,0	0,0	3	0	0	0	3	0,0	0
364	Aerospace equipment	20	0,0	0,0	0,0	0,0	0,0	0	0	0	2	2	0,0	0
365	Other transport means	83	0,0	0,1	4,1	0,0	0,0	2	0	0	0	2	25,3	-2
371	Precision instruments	1 086	0,2	0,1	5,1	0,0	0,0	2	0	0	0	2	26,5	-2
372	Medico-surgical equipment	257	0,0	0,0	5,3	0,0	0,0	2	0	0	3	5	0,0	0
373	Optical instruments	439	0,1	0,0	6,1	0,0	9,3	2	0	3	0	5	6,3	-1
374	Clocks, parts	24	0,0	0,0	4,7	0,0	0,0	2	0	0	0	2	0,0	0
43A	Yarns	2 096	0,4	0,1	3,1	32,3	0,0	1	3	0	2	6	7,1	-1
43B	Woven fabrics	8 242	1,5	0,2	10,6	96,6	0,0	3	3	0	2	8	29,5	-2
436	Knitting industry	26 731	4,9	0,3	13,8	99,1	0,0	3	3	0	0	6	26,5	-2
438	*Carpets, floor coverings*	996	0,2	0,1	6,6	100,0	0,0	2	3	0	2	7	16,4	-1
439	Other textile industries	671	0,1	0,1	6,8	91,4	0,0	2	3	0	0	5	30,4	-2
441	Tanning	964	0,2	0,1	2,5	0,0	100,0	1	0	3	0	4	14,8	-1
442	Leather products	8 392	1,6	0,4	6,8	0,0	21,9	2	0	3	0	5	42,4	-3
451	Footwear	15 467	2,9	0,4	8,2	0,0	100,0	3	0	3	2	8	23,2	-1
453	Clothings	63 777	11,8	0,4	13,6	98,1	1,2	3	3	1	2	9	11,8	-1
455	Household textiles	9 399	1,7	0,6	12,4	89,6	0,0	3	3	0	2	8	19,0	-1
456	Furs, fur goods	613	0,1	0,3	5,7	0,0	99,7	2	0	3	0	5	35,1	-2
461	Sawing of wood	5 864	1,1	0,1	0,1	0,0	0,0	1	0	0	0	1	44,6	-3
462	Semi-finished wood products	6 931	1,3	0,3	10,0	0,0	0,0	3	0	0	0	3	4,3	-1
463	Carpentry parts	484	0,1	0,1	5,6	0,0	0,0	2	0	0	0	2	41,2	-3
464	Wooden containers	776	0,1	1,2	7,0	0,0	0,0	3	0	0	0	3	4,3	-1
465	Other wooden products	1 969	0,4	0,3	1,8	0,0	0,5	1	0	1	0	2	62,6	-3
466	Cork-, straw products	269	0,0	0,1	5,4	0,0	0,7	2	0	1	0	3	32,2	-2
467	Wooden furniture	9 990	1,8	0,4	5,6	0,0	1,2	2	0	1	0	3	44,0	-3
471	Pulp, paper, board	10 102	1,9	0,1	0,8	0,0	0,0	1	0	0	0	1	6,9	-1
472	Paper processing	662	0,1	0,0	7,6	0,0	0,0	3	0	0	0	3	74,8	-3
473	Printing industry	369	0,1	0,0	0,6	0,0	0,0	1	0	0	0	1	11,3	-1
481	Rubber products	8 186	1,5	0,3	7,9	0,2	0,0	3	1	0	2	6	37,6	-2
482	Tyre retreading	11	0,0	0,0	5,8	0,0	0,0	2	0	0	0	2	0,0	0
483	Plastics processing	4 636	0,9	0,1	10,4	0,0	0,2	3	0	1	0	4	54,9	-3
491	Jewellery	6 741	1,2	0,1	0,1	0,0	1,9	1	0	1	2	4	7,0	-1
492	Musical instruments	279	0,1	0,0	6,2	0,0	6,1	2	0	2	0	4	61,5	-3
493	Photographic labs	48	0,0	0,1	6,2	0,0	0,0	2	0	0	2	4	0,0	0
494	Toys, sports goods	2 426	0,4	0,0	7,8	0,0	3,2	3	0	1	2	6	77,0	-3
495	Miscellaneous, manufacturing industries	1 593	0,3	0,2	7,1	0,0	6,4	3	0	2	0	5	74,2	-3
620	Waste-, scrap trade	5 424	1,0	0,2	1,4	0,0	0,4	1	0	1	0	2	0,0	0
Total		540 226	100,0	0,1	6,6	29,9	16,1	2	3	3			20,9	-1

Table 16b

EC trade barriers facing CSFR 1991

NACE No Category	Imports 1 000 ECU	Product % share	Country % share	MFN duty %	Non-tariff barriers QR %	Non-tariff barriers others %	Classification D	Classification QR	Classification ONTB	Classification PT	Duty relief Total	Duty relief %	Duty relief Class.
111 Hard-coal mining	38 817	1,0	0,7	3,6	0,0	0,0	1	0	0	0	1	0,0	0
112 Lignite mining	59 839	1,6	69,1	0,0	0,0	0,0	1	0	0	0	1	0,0	0
120 Coke ovens	15 598	0,4	6,8	0,4	0,0	0,0	1	0	0	0	1	0,7	-1
130 Gas-, petroleum extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140 Oil refining	31 190	0,8	0,2	4,6	0,0	0,0	2	0	0	0	2	15,4	-1
151 Fissile ore extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152 Fissile materials	6 881	0,2	0,7	5,8	0,0	0,0	2	0	0	0	2	0,0	0
161 Electric power	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162 Gasworks	7 963	0,2	0,1	1,5	0,0	0,0	1	0	0	0	1	14,5	-1
163 District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211 Iron ore extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212 Non-ferrous metals extraction	4 348	0,1	0,2	0,0	0,0	0,0	0	0	0	0	0	0,0	0
221 Iron & steel industries	268 255	7,3	5,8	4,6	98,1	98,5	2	3	3	0	8	0,1	-1
222 Steel tubes	55 998	1,5	3,8	9,5	0,0	18,9	3	0	3	0	6	17,9	-1
223 Steel drawing	56 746	1,5	5,0	5,4	0,0	25,9	2	0	3	0	5	43,6	-3
224 Non-ferrous metals	99 104	2,7	0,5	3,5	26,0	26,0	1	3	3	0	7	22,9	-1
231 Building materials extraction	40 995	1,1	4,8	0,0	0,0	0,0	1	0	0	0	1	0,0	0
232 Potassium extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233 Salt extraction	40	0,0	0,4	11,9	0,0	0,0	3	0	0	0	3	0,0	0
239 Other mineral extractions	4 096	0,1	0,4	0,0	0,0	0,0	1	0	0	0	1	0,0	0
241 Clay products	2 382	0,1	9,0	4,7	0,0	0,0	2	0	0	0	2	55,6	-3
242 Cement, lime	64 738	1,7	21,6	3,2	0,0	0,0	1	0	0	0	1	82,4	-3
243 Cement products	9 169	0,2	9,1	3,3	0,0	0,0	1	0	0	0	1	49,4	-3
244 Asbestos products	419	0,0	0,9	6,5	0,0	0,0	2	0	0	0	2	43,4	-3
245 Stone working	9 200	0,2	2,3	2,5	0,0	0,0	1	0	0	0	1	56,7	-3
246 Abrasive products	1 036	0,0	0,4	2,9	0,0	0,0	1	0	0	0	1	58,0	-3
247 Glass, -ware	160 974	4,4	9,4	8,6	0,0	10,5	3	0	3	2	8	26,6	-2
248 Ceramics	35 402	1,0	3,0	9,4	0,0	0,0	3	0	0	2	5	28,5	-2
252 Petrochemical industry	319 886	8,6	2,3	8,8	0,0	0,2	3	0	1	0	4	60,2	-3
253 Other chemical basic industries	92 142	2,5	1,7	8,0	0,0	14,6	3	0	3	0	6	50,8	-3
255 Paints,varnishes	1 892	0,1	0,3	9,4	0,0	0,0	3	0	0	0	3	81,9	-3
256 Chemicals for industry	22 394	0,6	0,5	4,9	0,0	0,0	2	0	0	2	4	48,1	-3
257 Pharmaceutical products	8 949	0,2	0,2	6,5	0,0	0,0	2	0	0	3	5	58,8	-3
258 Soap, detergents	2 196	0,1	0,3	6,8	0,0	0,0	2	0	0	0	2	17,9	-1
259 Chemicals for the home	4 376	0,1	0,1	5,5	0,0	0,0	2	0	0	0	2	51,2	-3
260 Artificial fibres	36 540	1,0	2,5	8,7	57,0	0,0	3	3	0	0	6	26,4	-2
311 Foundries	11 079	0,3	1,9	4,4	0,0	0,0	2	0	0	0	2	52,6	-3
312 Forging	10 422	0,3	3,1	5,4	0,0	0,0	2	0	0	0	2	49,7	-3
313 Metal treatment	13 345	0,4	1,2	6,0	0,0	0,0	2	0	0	0	2	56,7	-3
314 Metal structures	40 559	1,1	4,7	4,8	0,0	0,0	2	0	0	0	2	54,2	-3
315 Boiler, tanks	21 700	0,6	5,6	4,5	0,0	0,0	2	0	0	3	5	57,4	-3
316 Tools, metal products	92 169	2,5	1,6	5,5	0,0	2,8	2	0	1	0	3	59,0	-3
321 Machinery for agriculture	53 387	1,4	4,6	7,3	0,0	0,0	3	0	0	2	5	27,3	-2
322 Machine tools	85 619	2,3	2,1	4,1	0,0	0,0	2	0	0	2	4	42,6	-3
323 Textile machinery	22 125	0,6	1,7	4,9	0,0	0,0	2	0	0	2	4	16,5	-1
324 Machinery: food industry	10 491	0,3	0,3	3,9	0,0	0,0	1	0	0	2	3	27,4	-2
325 Plant for mines	67 014	1,8	1,4	4,8	0,0	0,0	2	0	0	2	4	29,5	-2
326 Transmission equipment	15 740	0,4	0,8	7,1	0,0	0,0	3	0	0	2	5	48,0	-3
327 Other specific equipment	12 654	0,3	0,4	3,6	0,0	0,0	1	0	0	2	3	34,9	-2
328 Other machinery	63 490	1,7	0,5	5,0	0,0	0,2	2	0	1	0	3	29,7	-2
330 Office machinery	5 597	0,2	0,0	4,3	0,0	0,0	2	0	0	3	5	7,7	-1
341 Electrical wires	19 964	0,5	1,3	6,5	0,0	0,0	2	0	0	3	5	24,5	-1

Table 16b (continued)

EC trade barriers facing CSFR 1991

NACE No Category	Imports 1 000 ECU	Product % share	Country % share	MFN duty %	Non-tariff barriers QR %	Non-tariff barriers others %	Classification D	Classification QR	Classification ONTB	Classification PT	Duty relief Total	Duty relief %	Duty relief Class.
342 Electrical motors	74 977	2,0	0,9	5,2	0,0	16,4	2	0	3	3	8	24,3	-1
343 Industrial electrical equipment	6 217	0,2	0,1	5,1	0,0	0,0	2	0	0	0	2	34,4	-2
344 Telecommunication equipment	11 642	0,3	0,1	6,5	0,0	0,0	2	0	0	3	5	13,7	-1
345 Radio-, TV sets	18 337	0,5	0,1	9,6	0,0	0,0	3	0	0	2	5	40,1	-3
346 Domestic electrical equipment	32 401	0,9	1,4	4,3	0,0	0,0	2	0	0	2	4	41,5	-3
347 Electrical lighting equipment	10 733	0,3	1,1	5,8	0,0	0,0	2	0	0	2	4	23,7	-1
351 Motor vehicles	214 163	5,8	1,2	11,4	0,0	0,0	3	0	0	2	5	54,2	-3
352 Bodies for motor vehicles	9 301	0,3	2,4	5,0	0,0	0,0	2	0	0	0	2	66,0	-3
353 Parts for motor vehicles	24 606	0,7	0,8	6,9	0,0	0,0	2	0	0	0	2	33,7	-2
361 Shipbuilding	691	0,0	0,0	3,5	0,0	0,0	1	0	0	3	4	51,2	-3
362 Railway equipment	60 479	1,6	15,9	4,8	0,0	0,0	2	0	0	3	5	76,7	-3
363 Cycles, motor cycles	10 978	0,3	0,4	11,6	0,0	0,0	3	0	0	0	3	66,4	-3
364 Aerospace equipment	1 326	0,0	0,0	3,1	0,0	0,0	1	0	0	2	3	80,7	-3
365 Other transport means	2 479	0,1	2,4	4,2	0,0	0,0	2	0	0	0	2	62,5	-3
371 Precision instruments	6 180	0,2	0,4	5,4	0,0	0,0	2	0	0	0	2	33,0	-2
372 Medico-surgical equipment	1 686	0,0	0,1	5,3	0,0	0,0	2	0	0	3	5	12,1	-1
373 Optical instruments	4 605	0,1	0,1	6,4	0,0	2,5	2	0	1	0	3	31,0	-2
374 Clocks, parts	4 004	0,1	0,2	5,9	0,0	0,0	2	0	0	0	2	47,8	-3
43A Yarns	7 225	0,2	0,3	5,5	70,2	0,0	2	3	0	2	7	60,9	-3
43B Woven fabrics	97 389	2,6	2,3	11,1	95,0	0,0	3	3	0	2	8	11,1	-1
436 Knitting industry	79 912	2,2	0,9	13,2	98,2	0,0	3	3	0	0	6	16,9	-1
438 Carpets, floor coverings	9 297	0,3	0,6	9,7	99,4	0,0	3	3	0	2	8	59,7	-3
439 Other textile industries	20 977	0,6	1,6	8,8	62,0	0,0	3	3	0	0	6	49,2	-3
441 Tanning	9 250	0,3	0,6	2,2	0,0	99,9	1	0	3	0	4	58,9	-3
442 Leather products	27 357	0,7	1,2	6,3	0,0	64,4	2	0	3	0	5	61,8	-3
451 Footwear	71 700	1,9	1,6	9,0	0,0	100,0	3	0	3	2	8	6,8	-1
453 Clothings	204 373	5,5	1,2	13,2	95,0	1,6	3	3	1	2	9	7,5	-1
455 Household textiles	42 829	1,2	2,7	11,2	83,2	0,0	3	3	0	2	8	11,9	-1
456 Furs, fur goods	3 883	0,1	1,6	4,9	0,0	84,0	2	0	3	0	5	11,7	-1
461 Sawing of wood	79 364	2,1	1,4	0,0	0,0	0,0	1	0	0	0	1	50,7	-3
462 Semi-finished wood products	23 325	0,6	1,1	9,4	0,0	1,8	3	0	1	0	4	80,6	-3
463 Carpentry parts	7 852	0,2	1,0	5,9	0,0	0,0	2	0	0	0	2	60,2	-3
464 Wooden containers	1 917	0,1	3,1	7,5	0,0	0,0	3	0	0	0	3	67,6	-3
465 Other wooden products	43 603	1,2	6,5	3,9	0,0	1,9	1	0	1	0	2	64,5	-3
466 Cork-, straw products	4 310	0,1	0,9	6,9	0,0	14,3	2	0	3	0	5	66,0	-3
467 Wooden furniture	78 477	2,1	3,2	5,6	0,0	1,3	2	0	1	0	3	70,6	-3
471 Pulp, paper, board	109 074	2,9	0,7	5,2	0,0	0,0	2	0	0	0	2	63,6	-3
472 Paper processing	12 989	0,4	0,4	10,7	0,0	0,0	3	0	0	0	3	71,2	-3
473 Printing industry	32 110	0,9	1,7	0,9	0,0	0,0	1	0	0	0	1	3,5	-1
481 Rubber products	57 538	1,6	2,1	7,2	5,7	9,5	3	2	3	2	10	26,2	-3
482 Tyre retreading	819	0,0	3,2	5,8	0,0	0,0	2	0	0	0	2	0,0	0
483 Plastics processing	47 964	1,3	0,9	9,6	0,0	0,6	3	0	1	0	4	71,1	-3
491 Jewellery	22 720	0,6	0,4	2,9	0,0	4,8	1	0	2	2	5	64,4	-3
492 Musical instruments	18 448	0,5	2,8	5,8	0,0	70,4	2	0	3	0	5	45,6	-3
493 Photographic labs	195	0,0	0,2	6,1	0,0	0,0	2	0	0	2	4	0,0	0
494 Toys, sports goods	21 139	0,6	0,4	7,1	0,0	2,1	3	0	1	2	6	63,1	-3
495 Miscellaneous, manufacturing industries	2 757	0,1	0,3	7,1	0,0	2,0	3	0	1	0	4	45,0	-3
620 Waste-, scrap trade	59 125	1,6	1,8	0,9	0,0	0,3	1	0	1	0	2	13,2	-1
Total	3 699 643	100,0	0,9	6,8	19,9	13,6	2	3	3			36,1	-2

Table 16c

EC trade barriers facing Hungary 1991

NACE No Category	Imports 1 000 ECU	Product % share	Country % share	MFN duty %	Non-tariff barriers QR %	Non-tariff barriers others %	Classification D	Classification QR	Classification ONTB	Classification PT	Duty relief Total	Duty relief %	Duty relief Class.
111 Hard-coal mining	3	0,0	0,0	2,9	0,0	0,0	1	0	0	0	1	0,0	0
112 Lignite mining	22	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
120 Coke ovens	2 741	0,1	1,2	0,4	0,0	0,0	1	0	0	0	1	0,0	0
130 Gas-, petroleum extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140 Oil refining	74 683	2,9	0,6	5,1	0,0	0,0	2	0	0	0	2	43,4	-3
151 Fissile ore extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152 Fissile materials	50	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
161 Electric power	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162 Gasworks	2 993	0,1	0,1	1,5	0,0	0,0	1	0	0	0	1	14,9	-1
163 District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211 Iron ore extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212 Non-ferrous metals extraction	701	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
221 Iron & steel industries	75 977	2,9	1,6	4,5	99,4	99,9	2	3	3	0	8	0,0	-1
222 Steel tubes	28 030	1,1	1,9	9,4	0,0	21,4	3	0	3	0	6	37,2	-2
223 Steel drawing	20 657	0,8	1,8	5,1	0,0	46,0	2	0	3	0	5	80,0	-3
224 Non-ferrous metals	96 753	3,7	0,5	5,3	1,7	1,9	2	1	1	0	4	57,9	-3
231 Building materials extraction	745	0,0	0,1	0,0	0,0	0,0	0	0	0	0	0	0,0	0
232 Potassium extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233 Salt extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
239 Other mineral extractions	1 920	0,1	0,2	0,0	0,0	0,0	1	0	0	0	1	0,0	0
241 Clay products	478	0,0	1,8	4,8	0,0	0,0	2	0	0	0	2	96,0	-3
242 Cement, lime	289	0,0	0,1	3,0	0,0	0,0	1	0	0	0	1	83,3	-3
243 Cement products	1 833	0,1	1,8	4,2	0,0	0,0	2	0	0	0	2	62,2	-3
244 Asbestos products	770	0,0	1,7	5,3	0,0	0,0	2	0	0	0	2	66,4	-3
245 Stone working	3 154	0,1	0,8	3,0	0,0	0,0	1	0	0	0	1	72,9	-3
246 Abrasive products	91	0,0	0,0	2,5	0,0	0,0	1	0	0	0	1	6,2	-1
247 Glass, -ware	55 730	2,1	3,3	7,6	0,0	10,7	3	0	3	2	8	55,2	-3
248 Ceramics	24 137	0,9	2,1	8,8	0,0	0,0	3	0	0	2	5	54,2	-3
252 Petrochemical industry	252 359	9,7	1,8	8,3	0,0	0,0	3	0	0	0	3	64,9	-3
253 Other chemical basic industries	54 568	2,1	1,0	7,3	0,0	8,3	3	0	2	0	5	67,4	-3
255 Paints,varnishes	315	0,0	0,1	8,5	0,0	0,0	3	0	0	0	3	27,9	-2
256 Chemicals for industry	14 873	0,6	0,3	5,8	0,0	0,0	2	0	0	2	4	71,6	-3
257 Pharmaceutical products	17 626	0,7	0,4	6,5	0,0	0,0	2	0	0	3	5	58,7	-3
258 Soap, detergents	2 333	0,1	0,3	6,8	0,0	0,0	2	0	0	0	2	12,4	-1
259 Chemicals for the home	10 229	0,4	0,3	10,6	0,0	0,0	3	0	0	0	3	40,3	-3
260 Artificial fibres	14 819	0,6	1,0	7,9	25,1	0,0	3	3	0	0	6	43,5	-3
311 Foundries	13 060	0,5	2,2	5,7	0,0	0,0	2	0	0	0	2	87,9	-3
312 Forging	6 487	0,2	1,9	5,4	0,0	0,0	2	0	0	0	2	78,5	-3
313 Metal treatment	5 781	0,2	0,5	5,7	0,0	0,0	2	0	0	0	2	59,7	-3
314 Metal structures	26 340	1,0	3,0	5,4	0,0	0,0	2	0	0	0	2	70,4	-3
315 Boiler, tanks	*15 612*	*0,6*	*4,0*	*4,7*	*0,0*	*0,0*	2	0	0	3	5	*68,4*	-3
316 Tools, metal products	80 163	3,1	1,4	5,5	0,0	0,1	2	0	1	0	3	79,4	-3
321 Machinery for agriculture	50 795	2,0	4,3	3,6	0,0	0,0	1	0	0	2	3	53,2	-3
322 Machine tools	40 181	1,5	1,0	4,2	0,0	0,0	2	0	0	2	4	50,7	-3
323 Textile machinery	2 218	0,1	0,2	4,3	0,0	0,0	2	0	0	2	4	34,3	-2
324 Machinery: food industry	18 198	0,7	0,6	4,0	0,0	0,0	1	0	0	2	3	57,8	-3
325 Plant for mines	61 641	2,4	1,3	4,7	0,0	0,0	2	0	0	2	4	74,9	-3
326 Transmission equipment	24 953	1,0	1,3	7,7	0,0	0,0	3	0	0	2	5	76,7	-3
327 Other specific equipment	8 915	0,3	0,3	3,8	0,0	0,0	1	0	0	2	3	54,4	-3
328 Other machinery	61 389	2,4	0,4	4,4	0,0	4,2	2	0	2	0	4	67,9	-3
330 Office machinery	6 836	0,3	0,0	4,2	0,0	0,0	2	0	0	3	5	56,4	-3
341 Electrical wires	56 655	2,2	3,8	6,5	0,0	0,0	2	0	0	3	5	20,8	-1

Table 16c (continued)

EC trade barriers facing Hungary 1991

NACE No Category	Imports 1 000 ECU	Product % share	Country % share	MFN duty %	Non-tariff barriers QR %	Non-tariff barriers others %	Classification D	Classification QR	Classification ONTB	Classification PT	Duty relief Total	Duty relief %	Duty relief Class.
342 Electrical motors	65 035	2,5	0,8	5,0	0,0	3,8	2	0	1	3	6	37,5	-2
343 Industrial electrical equipment	19 041	0,7	0,4	5,4	0,0	0,0	2	0	0	0	2	55,4	-3
344 Telecommunication equipment	12 568	0,5	0,1	6,9	0,0	0,0	2	0	0	3	5	35,0	-2
345 Radio-, TV sets	29 282	1,1	0,1	8,7	0,0	0,0	3	0	0	2	5	51,4	-3
346 Domestic electrical equipment	61 058	2,3	2,7	4,2	0,0	0,0	2	0	0	2	4	89,9	-3
347 Electrical lighting equipment	48 718	1,9	5,0	5,6	0,0	0,0	2	0	0	2	4	25,2	-2
351 Motor vehicles	8 578	0,3	0,0	11,0	0,0	0,0	3	0	0	2	5	43,6	-3
352 Bodies for motor vehicles	18 666	0,7	4,8	4,6	0,0	0,0	2	0	0	0	2	69,4	-3
353 Parts for motor vehicles	23 919	0,9	0,7	6,9	0,0	0,0	2	0	0	0	2	58,3	-3
361 Shipbuilding	3 271	0,1	0,1	3,2	0,0	0,0	1	0	0	3	4	96,8	-3
362 Railway equipment	9 173	0,4	2,4	4,2	0,0	0,0	2	0	0	3	5	75,7	-3
363 Cycles, motor cycles	1 007	0,0	0,0	10,0	0,0	0,0	3	0	0	0	3	13,2	-1
364 Aerospace equipment	321	0,0	0,0	3,6	0,0	0,0	1	0	0	2	3	6,4	-1
365 Other transport means	2 008	0,1	2,0	4,2	0,0	0,0	2	0	0	0	2	78,6	-3
371 Precision instruments	4 152	0,2	0,3	5,0	0,0	0,0	2	0	0	0	2	64,1	-3
372 Medico-surgical equipment	8 274	0,3	0,3	5,2	0,0	0,0	2	0	0	3	5	51,0	-3
373 Optical instruments	2 272	0,1	0,0	7,1	0,0	2,3	3	0	1	0	4	55,2	-3
374 Clocks, parts	2 935	0,1	0,1	6,1	0,0	0,0	2	0	0	0	2	9,7	-1
43A Yarns	19 029	0,7	0,8	4,6	56,6	0,0	2	3	0	2	7	39,0	-2
43B Woven fabrics	26 970	1,0	0,6	10,9	93,6	0,0	3	3	0	2	8	44,8	-3
436 Knitting industry	111 887	4,3	1,2	13,3	99,4	0,0	3	3	0	0	6	14,9	-1
438 Carpets, floor coverings	13 312	0,5	0,8	9,5	99,7	0,0	3	3	0	2	8	57,1	-3
439 Other textile industries	7 262	0,3	0,6	8,6	85,8	0,0	3	3	0	0	6	52,4	-3
441 Tanning	16 645	0,6	1,1	3,5	0,0	99,6	1	0	3	0	4	48,9	-3
442 Leather products	28 402	1,1	1,3	6,5	0,0	36,9	2	0	3	0	5	49,3	-3
451 Footwear	131 482	5,1	3,0	6,7	0,0	100,0	2	0	3	2	7	7,1	-1
453 Clothings	344 005	13,2	2,1	13,1	93,4	3,4	3	3	1	2	9	3,6	-1
455 Household textiles	30 176	1,2	*1,9*	*9,5*	*76,1*	*0,0*	*3*	*3*	*0*	*2*	*8*	*23,2*	*-1*
456 Furs, fur goods	7 574	0,3	3,2	4,9	0,0	97,5	2	0	3	0	5	46,8	-3
461 Sawing of wood	23 551	0,9	0,4	0,0	0,0	0,0	1	0	0	0	1	53,8	-3
462 Semi-finished wood products	5 255	0,2	0,3	8,9	0,0	0,0	3	0	0	0	3	70,5	-3
463 Carpentry parts	13 094	0,5	1,7	5,6	0,0	0,0	2	0	0	0	2	85,9	-3
464 Wooden containers	2 812	0,1	4,5	6,2	0,0	0,0	2	0	0	0	2	87,2	-3
465 Other wooden products	22 566	0,9	3,4	3,3	0,0	0,3	1	0	1	0	2	78,2	-3
466 Cork-, straw products	4 656	0,2	1,0	4,9	0,0	3,0	2	0	1	0	3	78,3	-3
467 Wooden furniture	68 165	2,6	2,8	5,6	0,0	1,8	2	0	1	0	3	78,4	-3
471 Pulp, paper, board	13 030	0,5	0,1	8,5	0,0	0,0	3	0	0	0	3	68,2	-3
472 Paper processing	5 212	0,2	0,2	10,4	0,0	0,0	3	0	0	0	3	65,4	-3
473 Printing industry	16 451	0,6	0,9	3,1	0,0	0,0	1	0	0	0	1	5,8	-1
481 Rubber products	39 502	1,5	1,5	6,1	5,8	0,5	2	2	1	2	7	69,5	-3
482 Tyre retreading	674	0,0	2,6	5,8	0,0	0,0	2	0	0	0	2	74,6	-3
483 Plastics processing	45 680	1,8	0,8	10,0	0,0	0,1	3	0	1	0	4	69,2	-3
491 Jewellery	6 613	0,3	0,1	1,1	0,0	8,5	1	0	2	2	5	50,5	-3
492 Musical instruments	692	0,0	0,1	5,8	0,0	9,8	2	0	3	0	5	47,9	-3
493 Photographic labs	323	0,0	0,3	5,9	0,0	0,0	2	0	0	2	4	15,4	-1
494 Toys, sports goods	10 598	0,4	0,2	6,9	0,0	19,7	2	0	3	2	7	48,2	-3
495 Miscellaneous, manufacturing industries	646	0,0	0,1	7,4	0,0	1,9	3	0	1	0	4	2,6	-1
620 Waste-, scrap trade	27 892	1,1	0,9	0,5	0,0	0,2	1	0	1	0	2	0,2	-1
Total	2 602 537	100,0	0,6	7,2	22,4	12,0	3	3	3			38,5	-2

Table 16d

EC trade barriers facing Poland 1991

NACE No Category	Imports 1 000 ECU	Product % share	Country % share	MFN duty %	Non-tariff barriers QR %	Non-tariff barriers others %	Classification D	Classification QR	Classification ONTB	Classification PT	Duty relief Total	Duty relief %	Duty relief Class.
111 Hard-coal mining	348 749	7,2	6,6	4,1	0,0	0,0	2	0	0	0	2	0,0	0
112 Lignite mining	21 420	0,4	24,7	0,0	0,0	0,0	1	0	0	0	1	0,0	0
120 Coke ovens	75 190	1,6	33,0	0,4	0,0	0,0	1	0	0	0	1	0,0	0
130 Gas-, petroleum extraction	28	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140 Oil refining	97 230	2,0	0,7	4,9	0,0	0,0	2	0	0	0	2	33,1	-2
151 Fissile ore extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152 Fissile materials	31	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
161 Electric power	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162 Gasworks	5 407	0,1	0,1	1,5	0,0	0,0	1	0	0	0	1	0,0	0
163 District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211 Iron ore extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212 Non-ferrous metals extraction	12 431	0,3	0,5	0,0	0,0	0,0	0	0	0	0	0	0,0	0
221 Iron & steel industries	169 702	3,5	3,7	4,2	99,1	99,2	2	3	3	0	8	0,0	0
222 Steel tubes	44 569	0,9	3,1	8,1	0,0	20,2	3	0	3	0	6	42,3	-3
223 Steel drawing	39 712	0,8	3,5	5,3	0,0	51,8	2	0	3	0	5	83,2	-3
224 Non-ferrous metals	541 264	11,2	2,5	1,1	1,3	1,3	1	1	1	0	3	48,8	-3
231 Building materials extraction	20 293	0,4	2,4	0,0	0,0	0,0	1	0	0	0	1	0,0	0
232 Potassium extraction	21	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233 Salt extraction	1 343	0,0	12,8	12,8	0,0	0,0	3	0	0	0	3	0,0	0
239 Other mineral extractions	4 552	0,1	0,5	0,0	0,0	0,0	1	0	0	0	1	0,0	0
241 Clay products	821	0,0	3,1	4,7	0,0	0,0	2	0	0	0	2	72,7	-3
242 Cement, lime	60 036	1,2	20,1	3,2	0,0	0,0	1	0	0	0	1	76,0	-3
243 Cement products	3 027	0,1	3,0	3,4	0,0	0,0	1	0	0	0	1	61,0	-3
244 Asbestos products	347	0,0	0,8	6,7	0,0	0,0	2	0	0	0	2	74,5	-3
245 Stone working	6 359	0,1	1,6	2,4	0,0	0,0	1	0	0	0	1	49,3	-3
246 Abrasive products	1 518	0,0	0,6	3,3	0,0	0,0	1	0	0	0	1	88,3	-3
247 Glass, -ware	89 474	1,8	5,2	9,1	0,0	0,0	3	0	0	2	5	64,4	-3
248 Ceramics	25 306	0,5	2,2	10,4	0,0	0,0	3	0	0	2	5	19,9	-1
252 Petrochemical industry	260 131	5,4	1,9	9,0	0,0	0,1	3	0	1	0	4	63,0	-3
253 Other chemical basic industries	247 721	5,1	4,5	6,2	0,0	5,4	2	0	2	0	4	51,9	-3
255 Paints,varnishes	278	0,0	0,1	9,0	0,0	0,0	3	0	0	0	3	18,0	-1
256 Chemicals for industry	35 696	0,7	0,8	5,0	0,0	1,3	2	0	1	2	5	49,3	-3
257 Pharmaceutical products	4 871	0,1	0,1	4,5	0,0	0,0	2	0	0	3	5	55,2	-3
258 Soap, detergents	1 507	0,0	0,2	6,7	0,0	0,0	2	0	0	0	2	33,8	-2
259 Chemicals for the home	7 634	0,2	0,2	9,8	0,0	0,0	3	0	0	0	3	92,5	-3
260 Artificial fibres	16 031	0,3	1,1	8,1	10,4	0,0	3	3	0	0	6	69,7	-3
311 Foundries	27 195	0,6	4,6	4,6	0,0	0,0	2	0	0	0	2	63,4	-3
312 Forging	25 124	0,5	7,4	4,9	0,0	0,0	2	0	0	0	2	69,1	-3
313 Metal treatment	22 716	0,5	2,1	6,0	0,0	0,0	2	0	0	0	2	83,1	-3
314 Metal structures	72 269	1,5	8,3	4,2	0,0	0,0	2	0	0	0	2	55,5	-3
315 Boiler, tanks	38 181	0,8	9,8	4,6	0,0	0,0	2	0	0	3	5	70,1	-3
316 Tools, metal products	110 847	2,3	2,0	5,4	0,0	0,0	2	0	0	0	2	78,1	-3
321 Machinery for agriculture	24 354	0,5	2,1	6,0	0,0	0,0	2	0	0	2	4	55,6	-3
322 Machine tools	34 697	0,7	0,9	4,1	0,0	0,0	2	0	0	2	4	71,6	-3
323 Textile machinery	11 838	0,2	0,9	7,2	0,0	0,0	3	0	0	2	5	67,3	-3
324 Machinery: food industry	21 683	0,4	0,7	4,0	0,0	0,0	2	0	0	2	4	54,0	-3
325 Plant for mines	35 038	0,7	0,8	4,5	0,0	0,0	2	0	0	2	4	61,2	-3
326 Transmission equipment	29 261	0,6	1,5	7,4	0,0	0,0	3	0	0	2	5	66,3	-3
327 Other specific equipment	12 785	0,3	0,5	3,8	0,0	0,0	1	0	0	2	3	45,2	-3
328 Other machinery	95 999	2,0	0,7	4,8	0,0	0,1	2	0	1	0	3	32,2	-2
330 Office machinery	2 788	0,1	0,0	4,6	0,0	0,0	2	0	0	3	5	8,7	-1
341 Electrical wires	35 353	0,7	2,4	6,5	0,0	0,0	2	0	0	3	5	78,1	-3

Table 16d (continued)

EC trade barriers facing Poland 1991

NACE No Category	Imports 1 000 ECU	Product % share	Country % share	MFN duty %	Non-tariff barriers QR %	Non-tariff barriers others %	Classification D	Classification QR	Classification ONTB	Classification PT	Duty relief Total	Duty relief %	Duty relief Class.
342 Electrical motors	45 857	0,9	0,5	4,9	0,0	16,4	2	0	3	3	8	51,8	-3
343 Industrial electrical equipment	13 895	0,3	0,3	5,4	0,0	0,0	2	0	0	0	2	44,9	-3
344 Telecommunication equipment	10 579	0,2	0,1	6,7	0,0	0,0	2	0	0	3	5	45,9	-3
345 Radio-, TV sets	21 987	0,5	0,1	9,0	0,0	0,0	3	0	0	2	5	47,8	-3
346 Domestic electrical equipment	45 853	0,9	2,0	4,5	0,0	0,0	2	0	0	2	4	86,7	-3
347 Electrical lighting equipment	21 824	0,5	2,2	5,6	0,0	0,0	2	0	0	2	4	81,4	-3
351 Motor vehicles	36 748	0,8	0,2	10,2	0,0	0,0	3	0	0	2	5	48,9	-3
352 Bodies for motor vehicles	18 860	0,4	4,9	5,0	0,0	0,0	2	0	0	0	2	64,9	-3
353 Parts for motor vehicles	22 989	0,5	0,7	6,9	0,0	0,0	2	0	0	0	2	52,6	-3
361 Shipbuilding	32 908	0,7	1,3	0,9	0,0	0,0	1	0	0	3	4	69,3	-3
362 Railway equipment	14 604	0,3	3,8	4,7	0,0	0,0	2	0	0	3	5	13,7	-1
363 Cycles, motor cycles	13 256	0,3	0,5	16,2	0,0	0,0	3	0	0	0	3	87,4	-3
364 Aerospace equipment	5 403	0,1	0,0	0,6	0,0	0,0	1	0	0	2	3	14,4	-1
365 Other transport means	1 249	0,0	1,2	4,1	0,0	0,0	2	0	0	0	2	61,4	-3
371 Precision instruments	10 835	0,2	0,8	5,5	0,0	0,0	2	0	0	0	2	58,9	-3
372 Medico-surgical equipment	4 325	0,1	0,2	5,2	0,0	0,0	2	0	0	3	5	59,8	-3
373 Optical instruments	2 930	0,1	0,1	8,3	0,0	0,1	3	0	1	0	4	50,9	-3
374 Clocks, parts	366	0,0	0,0	6,1	0,0	0,0	2	0	0	0	2	74,5	-3
43A Yarns	6 268	0,1	0,3	4,5	62,9	0,0	2	3	0	2	7	59,2	-3
43B Woven fabrics	36 742	0,8	0,9	11,3	91,3	0,0	3	3	0	2	8	34,7	-2
436 Knitting industry	109 785	2,3	1,2	13,4	98,9	0,0	3	3	0	0	6	15,7	-1
438 Carpets, floor coverings	6 872	0,1	0,4	9,1	100,0	0,0	3	3	0	2	8	79,5	-3
439 Other textile industries	7 190	0,1	0,6	9,0	91,2	0,0	3	3	0	0	6	39,5	-3
441 Tanning	24 085	0,5	1,6	2,5	0,0	100,0	1	0	3	0	4	74,5	-3
442 Leather products	21 660	0,4	1,0	5,6	0,0	66,8	2	0	3	0	5	67,2	-3
451 Footwear	107 351	2,2	2,4	6,9	0,0	100,0	2	0	3	2	7	8,6	-1
453 Clothings	651 636	13,4	3,9	13,7	96,4	1,0	3	3	1	2	9	4,8	-1
455 Household textiles	44 519	0,9	2,8	11,7	83,8	0,0	3	3	0	2	8	32,6	-2
456 Furs, fur goods	3 442	0,1	1,4	5,2	0,0	94,3	2	0	3	0	5	53,9	-3
461 Sawing of wood	98 813	2,0	1,7	0,2	0,0	0,0	1	0	0	0	1	68,0	-3
462 Semi-finished wood products	50 502	1,0	2,5	9,8	0,0	0,0	3	0	0	0	3	63,3	-3
463 Carpentry parts	15 382	0,3	2,0	5,6	0,0	0,0	2	0	0	0	2	68,2	-3
464 Wooden containers	5 167	0,1	8,3	7,5	0,0	0,0	3	0	0	0	3	75,3	-3
465 Other wooden products	97 752	2,0	14,5	3,3	0,0	0,3	1	0	1	0	2	85,4	-3
466 Cork-, straw products	9 637	0,2	2,1	5,3	0,0	4,9	2	0	2	0	4	82,8	-3
467 Wooden furniture	253 739	5,2	10,2	5,6	0,0	1,9	2	0	1	0	3	66,9	-3
471 Pulp, paper, board	56 628	1,2	0,4	6,7	0,0	0,0	2	0	0	0	2	92,2	-3
472 Paper processing	7 911	0,2	0,3	9,9	0,0	0,0	3	0	0	0	3	79,8	-3
473 Printing industry	2 955	0,1	0,2	2,0	0,0	0,0	1	0	0	0	1	2,0	-1
481 Rubber products	36 357	0,8	1,3	5,8	1,0	3,2	2	1	1	2	6	71,8	-3
482 Tyre retreading	1 358	0,0	5,3	5,8	0,0	0,0	2	0	0	0	2	68,0	-3
483 Plastics processing	27 209	0,6	0,5	9,2	0,0	1,5	3	0	1	0	4	66,5	-3
491 Jewellery	7 568	0,2	0,1	1,7	0,0	27,7	1	0	3	2	6	39,3	-2
492 Musical instruments	3 560	0,1	0,5	5,8	0,0	90,7	2	0	3	0	5	69,1	-3
493 Photographic labs	156	0,0	0,2	7,1	0,0	0,0	3	0	0	2	5	1,9	-1
494 Toys, sports goods	16 416	0,3	0,3	7,1	0,0	1,9	3	0	1	2	6	78,1	-3
495 Miscellaneous, manufacturing industries	5 240	0,1	0,6	5,8	0,0	2,8	2	0	1	0	3	12,0	-1
620 Waste-, scrap trade	63 539	1,3	1,9	1,3	0,0	0,1	1	0	1	0	2	1,1	-1
Total	4 846 734	100,0	1,2	6,3	20,3	8,6	2	3	2			35,9	-2

Table 16e

EC trade barriers facing Romania 1991

NACE No Category	Imports 1 000 ECU	Product % share	Country % share	MFN duty %	Non-tariff barriers QR %	Non-tariff barriers others %	Classification D	Classification QR	Classification ONTB	Classification PT	Duty relief Total	Duty relief %	Duty relief Class.
111 Hard-coal mining	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
112 Lignite mining	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
120 Coke ovens	39	0,0	0,0	0,4	0,0	0,0	1	0	0	0	1	0,0	0
130 Gas-, petroleum extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
140 Oil refining	203 575	14,9	1,5	5,3	0,0	0,0	2	0	0	0	2	35,3	-2
151 Fissile ore extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
152 Fissile materials	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
161 Electric power	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
162 Gasworks	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
163 District heating	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
211 Iron ore extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
212 Non-ferrous metals extraction	5 950	0,4	0,2	0,0	0,0	0,0	0	0	0	0	0	0,0	0
221 Iron & steel industries	53 429	3,9	1,2	4,7	99,4	99,4	2	3	3	0	8	0,0	-1
222 Steel tubes	14 864	1,1	1,0	8,1	0,0	14,2	3	0	3	0	6	33,9	-2
223 Steel drawing	3 605	0,3	0,3	5,7	0,0	18,5	2	0	3	0	5	73,2	-3
224 Non-ferrous metals	35 485	2,6	0,2	5,2	0,0	0,0	2	0	0	0	2	2,4	-1
231 Building materials extraction	109	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
232 Potassium extraction	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
233 Salt extraction	9	0,0	0,1	11,9	0,0	0,0	3	0	0	0	3	0,0	0
239 Other mineral extractions	76	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
241 Clay products	8	0,0	0,0	7,5	0,0	0,0	3	0	0	0	3	0,0	0
242 Cement, lime	48 359	3,5	16,2	3,2	0,0	0,0	1	0	0	0	1	92,8	-3
243 Cement products	9	0,0	0,0	3,2	0,0	0,0	1	0	0	0	1	33,3	-2
244 Asbestos products	0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	0,0	0
245 Stone working	725	0,1	0,2	3,1	0,0	0,0	1	0	0	0	1	69,0	-3
246 Abrasive products	1	0,0	0,0	3,2	0,0	0,0	1	0	0	0	1	0,0	0
247 Glass, -ware	24 206	1,8	1,4	11,0	0,0	0,7	3	0	1	2	6	22,8	-1
248 Ceramics	13 588	1,0	1,2	10,3	0,0	0,0	3	0	0	2	5	52,9	-3
252 Petrochemical industry	43 349	3,2	0,3	10,0	0,0	0,4	3	0	1	0	4	53,0	-3
253 Other chemical basic industries	25 350	1,9	0,5	8,0	0,0	15,8	3	0	3	0	6	47,7	-3
255 Paints,varnishes	47	0,0	0,0	5,3	0,0	0,0	2	0	0	0	2	0,0	0
256 Chemicals for industry	1 805	0,1	0,0	3,1	0,0	2,4	1	0	1	2	4	58,5	-3
257 Pharmaceutical products	1 322	0,1	0,0	5,5	0,0	0,0	2	0	0	3	5	67,5	-3
258 Soap, detergents	429	0,0	0,1	6,7	0,0	0,0	2	0	0	0	2	0,5	-1
259 Chemicals for the home	663	0,0	0,0	6,0	0,0	0,0	2	0	0	0	2	45,4	-3
260 Artificial fibres	10 735	0,8	0,7	8,1	14,3	10,9	3	3	3	0	9	44,1	-3
311 Foundries	1 833	0,1	0,3	4,4	0,0	0,0	2	0	0	0	2	74,8	-3
312 Forging	1 474	0,1	0,4	5,7	0,0	0,0	2	0	0	0	2	57,4	-3
313 Metal treatment	2 022	0,1	0,2	6,2	0,0	0,0	2	0	0	0	2	53,7	-3
314 Metal structures	1 890	0,1	0,2	4,4	0,0	0,0	2	0	0	0	2	59,6	-3
315 Boiler, tanks	2 684	0,2	0,7	4,5	0,0	0,0	2	0	0	3	5	35,5	-2
316 Tools, metal products	30 063	2,2	0,5	5,3	0,0	0,4	2	0	1	0	3	55,4	-3
321 Machinery for agriculture	3 523	0,3	0,3	8,5	0,0	0,0	3	0	0	2	5	80,9	-3
322 Machine tools	11 499	0,8	0,3	4,0	0,0	0,0	2	0	0	2	4	54,3	-3
323 Textile machinery	1 916	0,1	0,2	5,3	0,0	0,0	2	0	0	2	4	53,6	-3
324 Machinery: food industry	644	0,0	0,0	4,2	0,0	0,0	2	0	0	2	4	3,8	-1
325 Plant for mines	7 146	0,5	0,2	4,2	0,0	0,0	2	0	0	2	4	31,0	-2
326 Transmission equipment	20 201	1,5	1,0	8,4	0,0	0,0	3	0	0	2	5	39,8	-2
327 Other specific equipment	1 089	0,1	0,0	5,3	0,0	0,0	2	0	0	2	4	59,0	-3
328 Other machinery	7 699	0,6	0,1	4,8	0,0	0,0	2	0	0	0	2	27,5	-2
330 Office machinery	952	0,1	0,0	4,8	0,0	0,0	2	0	0	3	5	0,0	0
341 Electrical wires	2 019	0,1	0,1	6,5	0,0	0,0	2	0	0	3	5	47,2	-3

Table 16e (continued)

EC trade barriers facing Romania 1991

NACE No Category	Imports 1 000 ECU	Product % share	Country % share	MFN duty %	Non-tariff barriers QR %	Non-tariff barriers others %	Classification D	Classification QR	Classification ONTB	Classification PT	Duty relief Total	Duty relief %	Duty relief Class.
342 Electrical motors	22 817	1,7	0,3	5,0	0,0	10,8	2	0	3	3	8	58,7	-3
343 Industrial electrical equipment	2 643	0,2	0,1	4,9	0,0	0,0	2	0	0	0	2	68,7	-3
344 Telecommunication equipment	1 030	0,1	0,0	6,1	0,0	0,0	2	0	0	3	5	56,4	-3
345 Radio-, TV sets	4 002	0,3	0,0	13,8	0,0	0,0	3	0	0	2	5	82,9	-3
346 Domestic electrical equipment	13 813	1,0	0,6	4,0	0,0	0,0	1	0	0	2	3	93,4	-3
347 Electrical lighting equipment	5 206	0,4	0,5	5,6	0,0	0,0	2	0	0	2	4	76,3	-3
351 Motor vehicles	4 451	0,3	0,0	10,5	0,0	0,0	3	0	0	2	5	46,3	-3
352 Bodies for motor vehicles	3 801	0,3	1,0	4,4	0,0	0,0	2	0	0	0	2	93,2	-3
353 Parts for motor vehicles	3 951	0,3	0,1	6,9	0,0	0,0	2	0	0	0	2	71,2	-3
361 Shipbuilding	1 032	0,1	0,0	3,2	0,0	0,0	1	0	0	3	4	0,0	0
362 Railway equipment	7 777	0,6	2,1	4,7	0,0	0,0	2	0	0	3	5	73,0	-3
363 Cycles, motor cycles	23	0,0	0,0	8,7	0,0	0,0	3	0	0	0	3	0,0	0
364 Aerospace equipment	3 683	0,3	0,0	1,5	0,0	0,0	1	0	0	2	3	0,0	0
365 Other transport means	29	0,0	0,0	4,1	0,0	0,0	2	0	0	0	2	48,3	-3
371 Precision instruments	1 121	0,1	0,1	5,1	0,0	0,0	2	0	0	0	2	77,0	-3
372 Medico-surgical equipment	141	0,0	0,0	5,5	0,0	0,0	2	0	0	3	5	0,0	0
373 Optical instruments	626	0,0	0,0	9,2	0,0	8,6	3	0	2	0	5	61,4	-3
374 Clocks, parts	47	0,0	0,0	4,3	0,0	0,0	2	0	0	0	2	11,5	-1
43A Yarns	1 630	0,1	0,1	6,8	81,1	57,7	2	3	3	2	10	26,0	-2
43B Woven fabrics	5 125	0,4	0,1	10,3	99,0	0,0	3	3	0	2	8	14,6	-1
436 Knitting industry	84 259	6,2	0,9	13,3	99,8	0,0	3	3	0	0	6	4,3	-1
438 Carpets, floor coverings	10 231	0,7	0,6	7,2	100,0	0,0	3	3	0	2	8	17,7	-1
439 Other textile industries	186	0,0	0,0	6,8	63,4	0,0	2	3	0	0	5	48,3	-3
441 Tanning	19	0,0	0,0	3,6	0,0	100,0	1	0	3	0	4	27,9	-2
442 Leather products	4 688	0,3	0,2	6,6	0,0	81,2	2	0	3	0	5	76,8	-3
451 Footwear	53 878	3,9	1,2	6,9	0,0	100,0	2	0	3	2	7	4,9	-1
453 Clothings	257 985	18,8	1,5	13,5	97,4	0,7	3	3	1	2	9	3,2	-1
455 Household textiles	9 831	0,7	0,6	12,0	74,8	0,0	3	3	0	2	8	21,6	-1
456 Furs, fur goods	2 069	0,2	0,9	5,9	0,0	100,0	2	0	3	0	5	10,2	-1
461 Sawing of wood	7 176	0,5	0,1	0,1	0,0	0,0	1	0	0	0	1	86,8	-3
462 Semi-finished wood products	5 595	0,4	0,3	9,1	0,0	0,0	3	0	0	0	3	47,1	-3
463 Carpentry parts	2 673	0,2	0,3	5,9	0,0	0,0	2	0	0	0	2	50,1	-3
464 Wooden containers	2 385	0,2	3,8	7,5	0,0	0,0	3	0	0	0	3	11,8	-1
465 Other wooden products	6 807	0,5	1,0	0,8	0,0	3,5	1	0	1	0	2	48,7	-3
466 Cork-, straw products	10 605	0,8	2,3	4,6	0,0	0,1	2	0	1	0	3	91,1	-3
467 Wooden furniture	221 197	16,1	8,9	5,6	0,0	0,5	2	0	1	0	3	19,5	-1
471 Pulp, paper, board	4 779	0,3	0,0	7,5	0,0	0,0	3	0	0	0	3	85,4	-3
472 Paper processing	175	0,0	0,0	11,0	0,0	0,0	3	0	0	0	3	24,1	-1
473 Printing industry	416	0,0	0,0	3,0	0,0	0,0	1	0	0	0	1	66,7	-3
481 Rubber products	4 368	0,3	0,2	5,8	0,3	0,0	2	1	0	2	5	67,3	-3
482 Tyre retreading	44	0,0	0,2	5,8	0,0	0,0	2	0	0	0	2	0,0	0
483 Plastics processing	6 579	0,5	0,1	9,3	0,0	7,8	3	0	2	0	5	58,3	-3
491 Jewellery	1 314	0,1	0,0	0,8	0,0	0,6	1	0	1	2	4	0,0	0
492 Musical instruments	1 253	0,1	0,2	6,2	0,0	29,7	2	0	3	0	5	85,8	-3
493 Photographic labs	14	0,0	0,0	4,8	0,0	0,0	2	0	0	2	4	0,0	0
494 Toys, sports goods	2 290	0,2	0,0	7,3	0,0	0,4	3	0	1	2	6	49,4	-3
495 Miscellaneous, manufacturing industries	2	0,0	0,0	0,0	0,0	100,0	0	0	3	0	3	0,0	0
620 Waste-, scrap trade	1 547	0,1	0,0	2,6	0,0	0,4	1	0	1	0	2	0,0	0
Total	1 369 704	100,0	0,3	7,8	30,2	9,5	3	3	3			21,6	-1

Table 16f

EC trade barriers facing CSFR 1992

NACE No	Category	Imports 1 000 ECU	Product % share	Country % share	MFN duty %	Non-tariff barriers QR %	Non-tariff barriers others %	Classification D	Classification QR	Classification ONTB	Classification PT	Duty relief Total	Duty relief %	Duty relief Class.
111	Hard-coal mining	38 602	0,8	0,8	3,7	3,7	95,2	0,0	1	3	0	0	4	
112	Lignite mining	64 966	1,3	70,9	0,0	0,0	100,0	0,0	1	3	0	0	4	
120	Coke ovens	17 383	0,3	7,2	0,4	0,4	1,5	0,0	1	1	0	0	2	
130	Gas-, petroleum extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	
140	Oil refining	32 016	0,6	0,3	4,4	0,0	0,0	0,0	0	0	0	0	0	
151	Fissile ore extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	
152	Fissile materials	686	0,0	0,1	0,3	0,1	0,0	0,0	1	0	0	0	1	
161	Electric power	841	0,0	0,1	0,0	0,0	0,0	0,0	0	0	0	0	0	
162	Gasworks	7 081	0,1	0,2	1,5	0,0	0,0	0,0	0	0	0	0	0	
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	
211	Iron ore extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	
212	Non-ferrous metals extraction	3 486	0,1	0,1	0,0	0,0	0,0	0,0	0	0	0	0	0	
221	Iron & steel industries	358 863	7,0	7,4	4,6	3,7	0,0	57,7	1	0	3	0	4	
222	Steel tubes	98 067	1,9	7,0	9,5	6,5	0,0	81,4	2	0	3	0	5	
223	Steel drawing	86 927	1,7	7,1	5,4	0,0	0,0	0,0	0	0	0	0	0	
224	Non-ferrous metals	157 387	3,1	0,7	3,6	0,9	0,0	0,0	1	0	0	0	1	
231	Building materials extraction	56 393	1,1	6,1	0,0	0,0	0,0	0,0	1	0	0	0	1	
232	Potassium extraction	33	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0	
233	Salt extraction	48	0,0	0,3	19,2	9,6	0,0	0,0	3	0	0	0	3	
239	Other mineral extractions	4 573	0,1	0,5	0,0	0,0	0,0	0,0	1	0	0	0	1	
241	Clay products	12 501	0,2	32,6	4,4	0,6	0,0	0,0	1	0	0	0	1	
242	Cement, lime	114 517	2,2	31,0	3,2	0,0	0,0	0,0	0	0	0	0	0	
243	Cement products	19 735	0,4	14,7	3,3	0,0	0,0	0,0	0	0	0	0	0	
244	Asbestos products	1 069	0,0	2,2	5,9	0,0	0,0	0,0	0	0	0	0	0	
245	Stone working	17 250	0,3	4,1	2,6	0,0	0,0	0,0	0	0	0	0	0	
246	Abrasive products	1 690	0,0	0,6	3,1	0,0	0,0	0,0	0	0	0	0	0	
247	Glass, -ware	175 455	3,4	10,0	8,5	4,5	0,0	0,0	2	0	0	2	4	
248	Ceramics	63 451	1,2	4,9	9,2	4,5	0,0	0,0	2	0	0	2	4	
252	Petrochemical industry	291 459	5,7	2,1	8,9	0,1	0,0	0,0	1	0	1	0	2	
253	Other chemical basic industries	131 490	2,6	2,3	7,9	1,0	0,0	2,2	1	0	1	0	2	
255	Paints,varnishes	1 568	0,0	0,3	8,7	0,0	0,0	0,0	0	0	0	0	0	
256	Chemicals for industry	32 431	0,6	0,7	5,5	0,0	0,0	0,0	1	0	0	2	3	
257	Pharmaceutical products	12 138	0,2	0,2	5,6	0,0	0,0	0,0	0	0	0	3	3	
258	Soap, detergents	2 933	0,1	0,4	6,7	0,0	0,0	0,0	0	0	0	0	0	
259	Chemicals for the home	4 790	0,1	0,1	5,5	0,0	0,0	0,0	0	0	0	0	0	
260	Artificial fibres	51 659	1,0	3,5	8,7	6,2	0,0	0,0	2	0	0	0	2	
311	Foundries	24 714	0,5	4,0	4,5	0,0	0,0	0,0	0	0	0	0	0	
312	Forging	16 713	0,3	4,1	5,5	0,0	0,0	0,0	0	0	0	0	0	
313	Metal treatment	24 463	0,5	2,2	6,0	0,3	0,0	0,0	1	0	0	0	1	
314	Metal structures	94 341	1,8	8,8	5,0	0,0	0,0	0,0	0	0	0	0	0	
315	Boiler, tanks	35 151	0,7	8,7	4,3	0,0	0,0	0,1	0	0	1	3	4	
316	Tools, metal products	162 645	3,2	2,8	5,4	0,0	0,0	0,0	0	0	0	0	0	
321	Machinery for agriculture	63 253	1,2	5,2	7,1	3,1	0,0	0,0	1	0	0	2	3	
322	Machine tools	78 554	1,5	2,3	4,2	0,0	0,0	0,0	0	0	0	2	2	
323	Textile machinery	23 920	0,5	2,1	5,2	0,0	0,0	0,0	0	0	0	2	2	
324	Machinery: food industry	17 953	0,4	0,6	4,0	0,0	0,0	0,0	0	0	0	2	2	
325	Plant for mines	106 634	2,1	2,3	4,7	0,0	0,0	0,0	0	0	0	2	2	
326	Transmission equipment	28 113	0,6	1,5	6,7	0,0	0,0	0,0	0	0	0	2	2	
327	Other specific equipment	18 178	0,4	0,7	3,7	0,0	0,0	0,0	0	0	0	2	2	
328	Other machinery	67 572	1,3	0,5	4,6	0,0	0,0	0,0	0	0	0	0	0	
330	Office machinery	19 892	0,4	0,1	4,3	0,0	0,0	0,0	0	0	0	3	3	
341	Electrical wires	62 343	1,2	3,8	6,5	0,0	0,0	0,0	0	0	0	3	3	

Table 16f (continued)

EC trade barriers facing CSFR 1992

NACE No.	Category	Imports 1 000 ECU	Product % share	Country % share	MFN %	Duty Agreement %	NTB QR %	NTB Others %	Classification D	Classification QR	Classification ONTB	Classification PT	Total
342	Electrical motors	117 944	2,3	1,4	5,2	0,0	0,0	0,0	0	0	0	3	3
343	Industrial electrical equipment	14 694	0,3	0,3	5,2	0,0	0,0	0,0	0	0	0	0	0
344	Telecommunication equipment	19 275	0,4	0,2	6,7	0,0	0,0	0,0	0	0	0	3	3
345	Radio-, TV sets	21 229	0,4	0,1	9,1	0,0	0,0	0,0	0	0	0	2	2
346	Domestic electrical equipment	43 863	0,9	1,7	4,3	0,0	0,0	0,0	0	0	0	2	2
347	Electrical lighting equipment	18 145	0,4	1,7	5,9	2,7	0,0	0,0	1	0	0	2	3
351	Motor vehicles	315 739	6,2	1,6	12,1	0,0	0,0	0,0	1	0	0	2	3
352	Bodies for motor vehicles	19 348	0,4	5,3	5,2	0,0	0,0	0,0	0	0	0	0	0
353	Parts for motor vehicles	44 548	0,9	1,3	6,9	0,0	0,0	0,0	0	0	0	0	0
361	Shipbuilding	1 616	0,0	0,1	3,1	0,0	0,0	0,0	0	0	0	3	3
362	Railway equipment	22 227	0,4	6,2	4,6	0,0	0,0	0,0	0	0	0	3	3
363	Cycles, motor cycles	20 065	0,4	0,7	12,7	0,0	0,0	0,0	0	0	0	0	0
364	Aerospace equipment	12 344	0,2	0,1	0,6	0,0	0,0	0,0	0	0	0	2	2
365	Other transport means	3 341	0,1	3,0	4,2	0,0	0,0	0,0	0	0	0	0	0
371	Precision instruments	10 265	0,2	0,7	5,4	0,0	0,0	0,0	0	0	0	0	0
372	Medico-surgical equipment	3 543	0,1	0,1	5,2	0,0	0,0	0,0	0	0	0	3	3
373	Optical instruments	7 801	0,2	0,2	6,4	0,0	0,0	0,0	0	0	0	0	0
374	Clocks, parts	4 023	0,1	0,2	5,9	0,0	0,0	0,0	0	0	0	0	0
43A	Yarns	20 194	0,4	0,9	6,0	4,3	0,0	0,0	2	0	0	2	4
43B	Woven fabrics	108 247	2,1	2,7	11,2	8,0	35,0	0,0	3	3	0	2	8
436	Knitting industry	124 170	2,4	1,3	13,1	9,3	30,0	0,0	3	3	0	0	6
438	Carpets, floor coverings	8 045	0,2	0,5	9,9	7,0	0,0	0,0	3	0	0	2	5
439	Other textile industries	33 111	0,6	2,6	8,6	3,3	12,0	0,0	1	3	0	0	4
441	Tanning	21 607	0,4	1,5	2,2	0,1	0,0	0,0	1	0	0	0	1
442	Leather products	35 363	0,7	1,6	6,4	0,4	0,0	0,0	1	0	0	0	1
451	Footwear	125 966	2,5	2,8	8,4	6,0	0,0	0,0	2	0	0	2	4
453	Clothings	296 517	5,8	1,8	13,3	9,3	31,0	0,0	3	3	0	2	8
455	Household textiles	54 195	1,1	3,2	11,0	7,3	26,0	0,0	3	3	0	2	8
456	Furs, fur goods	6 248	0,1	2,4	4,8	0,0	0,0	0,0	0	0	0	0	0
461	Sawing of wood	82 801	1,6	1,4	0,1	0,0	0,0	0,0	0	0	0	0	0
462	Semi-finished wood products	28 261	0,6	1,4	9,5	0,0	0,0	0,0	1	0	0	0	1
463	Carpentry parts	29 588	0,6	3,0	5,8	0,0	0,0	0,0	0	0	0	0	0
464	Wooden containers	6 178	0,1	10,8	7,4	0,0	0,0	0,0	0	0	0	0	0
465	Other wooden products	54 545	1,1	7,3	3,7	0,0	0,0	0,0	0	0	0	0	0
466	Cork-, straw products	5 370	0,1	1,1	7,1	0,0	0,0	0,0	0	0	0	0	0
467	Wooden furniture	134 200	2,6	4,8	5,6	0,0	0,0	0,0	0	0	0	0	0
471	Pulp, paper, board	146 761	2,9	1,0	5,6	0,0	0,0	0,0	0	0	0	0	0
472	Paper processing	20 277	0,4	0,7	10,6	0,0	0,0	0,0	0	0	0	0	0
473	Printing industry	36 392	0,7	1,9	1,4	0,0	0,0	0,0	0	0	0	0	0
481	Rubber products	89 461	1,8	2,9	6,4	3,5	1,0	0,0	1	1	0	2	4
482	Tyre retreading	1 964	0,0	7,4	5,8	4,2	0,0	0,0	2	0	0	0	2
483	Plastics processing	66 993	1,3	1,2	9,1	0,1	0,0	0,0	1	0	0	0	1
491	Jewellery	33 273	0,7	0,5	2,7	0,0	0,0	0,0	0	0	0	2	2
492	Musical instruments	18 697	0,4	2,9	5,8	0,0	0,0	0,0	0	0	0	0	0
493	Photographic labs	374	0,0	0,4	5,3	0,0	0,0	0,0	0	0	0	2	2
494	Toys, sports goods	33 286	0,7	0,5	7,0	0,0	0,0	0,0	0	0	0	2	2
495	Miscellaneous, manufacturing industries	4 882	0,1	0,5	7,0	0,0	0,0	0,0	0	0	0	0	0
620	Waste-, scrap trade	69 279	1,4	2,3	1,3	0,0	0,0	0,0	1	0	0	0	1
Total		5 102 182	100,0	1,2	6,8	2,1	5,6	5,7	1	2	2		

Table 16g

EC trade barriers facing Hungary 1992

NACE No.	Category	Imports 1 000 ECU	Product % share	Country % share	Duty MFN %	Duty Agreement %	NTB QR %	NTB Others %	Classification D	Classification QR	Classification ONTB	Classification PT	Total
111	Hard-coal mining	61	0,0	0,0	2,0	2,0	100,0	0,0	1	3	0	0	4
112	Lignite mining	1	0,0	0,0	0,0	0,0	100,0	0,0	0	3	0	0	3
120	Coke ovens	1 359	0,0	0,6	0,4	0,4	0,0	0,0	1	0	0	0	1
130	Gas-, petroleum extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
140	Oil refining	54 892	1,8	0,5	4,8	0,0	0,0	0,0	0	0	0	0	0
151	Fissile ore extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
152	Fissile materials	34	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
161	Electric power	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
162	Gasworks	3 585	0,1	0,1	1,5	0,0	0,0	0,0	0	0	0	0	0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
211	Iron ore extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
212	Non-ferrous metals extraction	3 180	0,1	0,1	0,0	0,0	0,0	0,0	0	0	0	0	0
221	Iron & steel industries	85 673	2,8	1,8	4,6	3,6	0,0	0,0	1	0	0	0	1
222	Steel tubes	27 457	0,9	2,0	9,2	4,1	0,0	0,0	2	0	0	0	2
223	Steel drawing	14 378	0,5	1,2	5,0	0,0	0,0	0,0	0	0	0	0	0
224	Non-ferrous metals	104 772	3,4	0,5	5,4	0,4	0,0	0,0	1	0	0	0	1
231	Building materials extraction	650	0,0	0,1	0,1	0,0	0,0	0,0	1	0	0	0	1
232	Potassium extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
233	Salt extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
239	Other mineral extractions	1 594	0,1	0,2	0,1	0,0	0,0	0,0	1	0	0	0	1
241	Clay products	690	0,0	1,8	6,3	0,0	0,0	0,0	0	0	0	0	0
242	Cement, lime	256	0,0	0,1	3,2	0,0	0,0	0,0	0	0	0	0	0
243	Cement products	1 794	0,1	1,3	4,0	0,0	0,0	0,0	0	0	0	0	0
244	Asbestos products	3 789	0,1	7,7	5,3	0,0	0,0	0,0	0	0	0	0	0
245	Stone working	3 548	0,1	0,8	2,7	0,0	0,0	0,0	0	0	0	0	0
246	Abrasive products	143	0,0	0,1	2,5	0,0	0,0	0,0	0	0	0	0	0
247	Glass, -ware	56 925	1,9	3,2	6,6	2,3	0,0	0,0	1	0	0	2	3
248	Ceramics	27 003	0,9	2,1	8,9	2,5	0,0	0,0	1	0	0	2	3
252	Petrochemical industry	290 969	9,6	2,1	9,0	0,0	0,0	0,0	0	0	0	0	0
253	Other chemical basic industries	27 883	0,9	0,5	7,2	0,4	0,0	11,2	1	0	3	0	4
255	Paints,varnishes	465	0,0	0,1	8,7	0,0	0,0	0,0	0	0	0	0	0
256	Chemicals for industry	19 998	0,7	0,4	5,8	0,0	0,0	0,0	0	0	0	2	2
257	Pharmaceutical products	25 302	0,8	0,5	6,1	0,0	0,0	0,0	0	0	0	3	3
258	Soap, detergents	1 931	0,1	0,2	6,8	0,0	0,0	0,0	0	0	0	0	0
259	Chemicals for the home	10 861	0,4	0,3	10,4	0,0	0,0	0,0	0	0	0	0	0
260	Artificial fibres	14 954	0,5	1,0	8,4	6,0	0,0	0,0	2	0	0	0	2
311	Foundries	17 903	0,6	2,9	5,8	0,0	0,0	0,0	0	0	0	0	0
312	Forging	4 847	0,2	1,2	5,3	0,0	0,0	0,0	0	0	0	0	0
313	Metal treatment	5 240	0,2	0,5	6,0	0,0	0,0	0,0	0	0	0	0	0
314	Metal structures	40 522	1,3	3,8	5,0	0,0	0,0	0,0	0	0	0	0	0
315	Boiler, tanks	17 983	0,6	4,5	4,7	0,0	0,0	0,0	0	0	0	3	3
316	Tools, metal products	93 864	3,1	1,6	5,4	0,0	0,0	0,0	0	0	0	0	0
321	Machinery for agriculture	34 692	1,1	2,8	3,7	0,0	0,0	0,0	0	0	0	2	2
322	Machine tools	33 308	1,1	1,0	4,2	0,0	0,0	0,0	0	0	0	2	2
323	Textile machinery	2 100	0,1	0,2	4,1	0,0	0,0	0,0	0	0	0	2	2
324	Machinery: food industry	20 997	0,7	0,7	4,0	0,0	0,0	0,0	0	0	0	2	2
325	Plant for mines	59 990	2,0	1,3	4,7	0,0	0,0	0,0	0	0	0	2	2
326	Transmission equipment	21 555	0,7	1,2	7,7	0,0	0,0	0,0	0	0	0	2	2
327	Other specific equipment	7 566	0,2	0,3	3,8	0,0	0,0	0,0	0	0	0	2	2
328	Other machinery	78 452	2,6	0,5	4,4	0,0	0,0	0,0	0	0	0	0	0
330	Office machinery	21 377	0,7	0,1	4,3	0,0	0,0	0,0	0	0	0	3	3
341	Electrical wires	100 347	3,3	6,1	6,5	0,0	0,0	0,0	0	0	0	3	3

Table 16g (continued)

EC trade barriers facing Hungary 1992

NACE No.	Category	Imports 1 000 ECU	Product % share	Country % share	Duty MFN %	Duty Agreement %	NTB QR %	NTB Others %	Classification D	Classification QR	Classification ONTB	PT	Total
342	Electrical motors	85 451	2,8	1,0	5,0	0,0	0,0	0,0	0	0	0	3	3
343	Industrial electrical equipment	22 304	0,7	0,5	5,3	0,0	0,0	0,0	0	0	0	0	0
344	Telecommunication equipment	12 333	0,4	0,1	6,7	0,0	0,0	0,0	0	0	0	3	3
345	Radio-, TV sets	34 581	1,1	0,2	6,8	0,0	0,0	0,0	0	0	0	2	2
346	Domestic electrical equipment	72 358	2,4	2,9	4,2	0,0	0,0	0,0	0	0	0	2	2
347	Electrical lighting equipment	67 747	2,2	6,2	5,6	2,8	0,0	0,0	1	0	0	2	3
351	Motor vehicles	41 808	1,4	0,2	9,7	1,1	0,0	0,0	1	0	0	2	3
352	Bodies for motor vehicles	41 291	1,4	11,3	4,5	0,0	0,0	0,0	0	0	0	0	0
353	Parts for motor vehicles	35 289	1,2	1,0	6,9	0,0	0,0	0,0	0	0	0	0	0
361	Shipbuilding	149	0,0	0,0	3,3	0,0	0,0	0,0	0	0	0	3	3
362	*Railway equipment*	*4 147*	*0,1*	*1,2*	*4,3*	*0,0*	*0,0*	*0,0*	*0*	*0*	*0*	*3*	*3*
363	Cycles, motor cycles	1 367	0,0	0,0	11,1	0,0	0,0	0,0	0	0	0	0	0
364	Aerospace equipment	758	0,0	0,0	2,2	0,0	0,0	0,0	0	0	0	2	2
365	Other transport means	1 728	0,1	1,5	4,2	0,0	0,0	0,0	0	0	0	0	0
371	Precision instruments	4 488	0,1	0,3	5,0	0,0	0,0	0,0	0	0	0	0	0
372	Medico-surgical equipment	13 085	0,4	0,5	5,2	0,0	0,0	0,0	0	0	0	3	3
373	Optical instruments	4 813	0,2	0,1	7,3	0,0	0,0	0,0	0	0	0	0	0
374	Clocks, parts	3 610	0,1	0,1	6,1	0,0	0,0	0,0	0	0	0	0	0
43A	Yarns	17 167	0,6	0,7	5,5	3,9	0,0	0,0	1	0	0	2	3
43B	Woven fabrics	23 676	0,8	0,6	10,9	7,8	12,0	0,0	3	3	0	2	8
436	Knitting industry	142 600	4,7	1,4	13,4	9,6	23,0	0,0	3	3	0	0	6
438	Carpets, floor coverings	7 746	0,3	0,5	9,4	6,7	4,0	0,0	2	1	0	2	5
439	Other textile industries	9 904	0,3	0,8	8,6	5,6	0,0	0,0	2	0	0	0	2
441	Tanning	14 255	0,5	1,0	3,5	0,1	0,0	0,0	1	0	0	0	1
442	Leather products	32 625	1,1	1,5	6,3	0,0	0,0	0,0	0	0	0	0	0
451	Footwear	168 358	5,5	3,8	7,0	4,4	0,0	0,0	2	0	0	2	4
453	Clothings	424 659	14,0	2,6	13,1	9,1	19,0	0,0	3	3	0	2	8
455	Household textiles	33 463	1,1	2,0	8,8	5,3	6,0	0,0	2	2	0	2	6
456	Furs, fur goods	6 799	0,2	2,6	4,5	0,0	0,0	0,0	0	0	0	0	0
461	Sawing of wood	27 208	0,9	0,5	0,0	0,0	0,0	0,0	0	0	0	0	0
462	Semi-finished wood products	8 703	0,3	0,4	8,7	0,0	0,0	0,0	0	0	0	0	0
463	Carpentry parts	17 923	0,6	1,8	5,7	0,0	0,0	0,0	0	0	0	0	0
464	Wooden containers	1 137	0,0	2,0	7,2	0,0	0,0	0,0	0	0	0	0	0
465	Other wooden products	18 861	0,6	2,5	2,9	0,0	0,0	0,0	0	0	0	0	0
466	Cork-, straw products	5 850	0,2	1,3	5,1	0,0	0,0	0,0	0	0	0	0	0
467	Wooden furniture	86 232	2,8	3,1	5,6	0,0	0,0	0,0	0	0	0	0	0
471	Pulp, paper, board	15 209	0,5	0,1	8,3	0,0	0,0	0,0	0	0	0	0	0
472	Paper processing	8 921	0,3	0,3	10,4	0,0	0,0	0,0	0	0	0	0	0
473	Printing industry	19 607	0,6	1,0	2,2	0,0	0,0	0,0	0	0	0	0	0
481	Rubber products	46 326	1,5	1,5	5,5	0,2	0,0	0,0	1	0	0	2	3
482	*Tyre retreading*	*294*	*0,0*	*1,1*	*5,8*	*0,0*	*0,0*	*0,0*	*0*	*0*	*0*	*0*	*0*
483	Plastics processing	51 211	1,7	0,9	9,9	0,0	0,0	0,0	1	0	0	0	1
491	Jewellery	5 235	0,2	0,1	1,5	0,0	0,0	0,0	0	0	0	2	2
492	Musical instruments	437	0,0	0,1	5,9	0,0	0,0	0,0	0	0	0	0	0
493	Photographic labs	631	0,0	0,7	2,3	0,0	0,0	0,0	0	0	0	2	2
494	Toys, sports goods	15 288	0,5	0,2	7,2	0,0	0,0	0,0	0	0	0	2	2
495	Miscellaneous, manufacturing industries	213	0,0	0,0	5,6	0,0	0,0	0,0	0	0	0	0	0
620	Waste-, scrap trade	34 462	1,1	1,2	1,0	0,1	0,0	0,0	1	0	0	0	1
Total		3 037 197	100,0	0,7	7,4	2,5	3,9	0,1	1	1	1		

Table 16h

EC trade barriers facing Poland 1992

NACE No.	Category	Imports 1 000 ECU	Product % share	Country % share	Duty MFN %	Duty Agreement %	NTB QR %	NTB Others %	Classification D	Classification QR	Classification ONTB	Classification PT	Total
111	Hard-coal mining	336 098	5,8	6,5	4,2	4,2	43,0	0,0	2	3	0	0	5
112	Lignite mining	23 913	0,4	26,1	0,0	0,0	100,0	0,0	1	3	0	0	4
120	Coke ovens	69 989	1,2	28,8	0,4	0,4	0,0	0,0	1	1	0	0	2
130	Gas-, petroleum extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
140	Oil refining	65 332	1,1	0,6	4,9	0,0	0,0	0,0	0	0	0	0	0
151	Fissile ore extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
152	Fissile materials	236	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
161	Electric power	9	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
162	Gasworks	98	0,0	0,0	1,5	0,0	0,0	0,0	0	0	0	0	0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
211	Iron ore extraction	480	0,0	0,0	0,0	0,0	8,3	0,0	0	2	0	0	2
212	Non-ferrous metals extraction	21 355	0,4	0,8	0,0	0,0	0,0	0,0	0	0	0	0	0
221	Iron & steel industries	212 901	3,7	4,4	4,4	3,5	0,0	2,4	1	0	1	0	2
222	Steel tubes	48 711	0,8	3,5	8,4	3,2	0,0	0,0	1	0	0	0	1
223	Steel drawing	33 958	0,6	2,8	5,3	0,0	0,0	0,0	0	0	0	0	0
224	Non-ferrous metals	654 446	11,2	3,1	1,2	0,3	0,0	0,0	1	0	1	0	2
231	Building materials extraction	46 068	0,8	5,0	0,0	0,0	0,0	0,0	1	0	0	0	1
232	Potassium extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
233	Salt extraction	1 421	0,0	10,3	12,9	6,5	0,0	0,0	2	0	0	0	2
239	Other mineral extractions	4 619	0,1	0,5	0,0	0,0	0,0	0,0	1	0	0	0	1
241	Clay products	1 079	0,0	2,8	3,3	0,0	0,0	0,0	0	0	0	0	0
242	Cement, lime	76 515	1,3	20,7	3,2	0,0	0,0	0,0	0	0	0	0	0
243	Cement products	8 196	0,1	6,1	3,3	0,0	0,0	0,0	0	0	0	0	0
244	Asbestos products	135	0,0	0,3	6,3	0,0	0,0	0,0	0	0	0	0	0
245	*Stone working*	*11 019*	*0,2*	*2,6*	*2,5*	*0,0*	*0,0*	*0,0*	*0*	*0*	*0*	*0*	*0*
246	Abrasive products	1 149	0,0	0,4	3,3	0,0	0,0	0,0	0	0	0	0	0
247	Glass, -ware	82 312	1,4	4,7	8,8	2,5	0,0	0,0	1	0	0	2	3
248	Ceramics	28 781	0,5	2,2	10,0	5,8	0,0	0,0	2	0	0	2	4
252	Petrochemical industry	212 389	3,6	1,5	8,7	0,0	0,0	0,1	0	0	1	0	1
253	Other chemical basic industries	215 232	3,7	3,8	7,0	0,4	0,0	5,1	1	0	2	0	3
255	Paints,varnishes	597	0,0	0,1	8,8	0,0	0,0	0,0	0	0	0	0	0
256	Chemicals for industry	34 948	0,6	0,8	5,5	0,0	0,0	2,6	1	0	1	2	4
257	Pharmaceutical products	8 585	0,1	0,2	5,9	0,0	0,0	0,0	0	0	0	3	3
258	Soap, detergents	3 451	0,1	0,4	6,6	0,0	0,0	0,0	0	0	0	0	0
259	Chemicals for the home	9 199	0,2	0,2	7,0	0,0	0,0	0,0	0	0	0	0	0
260	Artificial fibres	24 272	0,4	1,6	8,1	5,8	0,0	0,0	2	0	0	0	2
311	Foundries	34 745	0,6	5,6	4,7	0,0	0,0	0,0	0	0	0	0	0
312	Forging	25 689	0,4	6,3	5,2	0,0	0,0	0,0	0	0	0	0	0
313	Metal treatment	26 386	0,5	2,4	6,1	0,0	0,0	0,0	0	0	0	0	0
314	Metal structures	115 515	2,0	10,8	4,2	0,0	0,0	0,0	0	0	0	0	0
315	Boiler, tanks	57 992	1,0	14,3	4,5	0,0	0,0	0,0	0	0	0	3	3
316	Tools, metal products	134 846	2,3	2,3	5,4	0,0	0,0	0,0	0	0	0	0	0
321	Machinery for agriculture	29 906	0,5	2,5	5,9	0,0	0,0	0,0	0	0	0	2	2
322	Machine tools	28 314	0,5	0,8	4,1	0,0	0,0	0,0	0	0	0	2	2
323	Textile machinery	7 573	0,1	0,7	7,4	0,0	0,0	0,0	0	0	0	2	2
324	Machinery: food industry	20 012	0,3	0,7	4,0	0,0	0,0	0,0	0	0	0	2	2
325	Plant for mines	43 054	0,7	0,9	4,4	0,0	0,0	0,0	0	0	0	2	2
326	Transmission equipment	29 643	0,5	1,6	7,5	0,0	0,0	0,0	0	0	0	2	2
327	Other specific equipment	12 606	0,2	0,5	4,2	0,0	0,0	0,0	0	0	0	2	2
328	Other machinery	101 676	1,7	0,7	4,8	0,0	0,0	0,0	0	0	0	0	0
330	Office machinery	3 443	0,1	0,0	4,4	0,0	0,0	0,0	0	0	0	3	3
341	Electrical wires	27 912	0,5	1,7	6,5	0,0	0,0	0,0	0	0	0	3	3

Table 16h (continued)

EC trade barriers facing Poland 1992

NACE No. Category	Imports 1 000 ECU	Product % share	Country % share	MFN %	Duty Agreement %	NTB QR %	NTB Others %	Classification D	Classification QR	Classification ONTB	PT	Total
342 Electrical motors	59 768	1,0	0,7	4,9	0,0	0,0	0,0	0	0	0	3	3
343 Industrial electrical equipment	20 457	0,4	0,5	5,4	0,0	0,0	0,0	0	0	0	0	0
344 Telecommunication equipment	12 828	0,2	0,1	5,6	0,0	0,0	0,0	0	0	0	3	3
345 Radio-, TV sets	22 267	0,4	0,1	10,6	0,0	0,0	0,0	0	0	0	2	2
346 Domestic electrical equipment	*63 642*	*1,1*	*2,5*	*4,5*	*0,0*	*0,0*	*0,0*	*0*	*0*	*0*	*2*	*2*
347 Electrical lighting equipment	38 078	0,7	3,5	5,2	0,0	0,0	0,0	0	0	0	2	2
351 Motor vehicles	213 724	3,7	1,1	10,6	0,3	0,0	0,0	1	0	0	2	3
352 Bodies for motor vehicles	20 797	0,4	5,7	4,9	0,0	0,0	0,0	0	0	0	0	0
353 Parts for motor vehicles	29 709	0,5	0,9	6,9	0,0	0,0	0,0	0	0	0	0	0
361 Shipbuilding	62 657	1,1	2,8	1,0	0,0	0,0	0,0	0	0	0	3	3
362 Railway equipment	7 128	0,1	2,0	4,7	0,0	0,0	0,0	0	0	0	3	3
363 Cycles, motor cycles	11 539	0,2	0,4	15,0	0,0	0,0	0,0	0	0	0	0	0
364 Aerospace equipment	3 296	0,1	0,0	2,1	0,0	0,0	0,0	0	0	0	2	2
365 Other transport means	2 669	0,0	2,4	4,2	0,0	0,0	0,0	0	0	0	0	0
371 Precision instruments	10 571	0,2	0,7	5,4	0,0	0,0	0,0	0	0	0	0	0
372 Medico-surgical equipment	5 632	0,1	0,2	5,1	0,0	0,0	0,0	0	0	0	3	3
373 Optical instruments	2 272	0,0	0,1	7,5	0,0	0,0	0,0	0	0	0	0	0
374 Clocks, parts	259	0,0	0,0	5,7	0,0	0,0	0,0	0	0	0	0	0
43A Yarns	16 864	0,3	0,7	5,4	3,9	0,2	0,0	1	1	0	2	4
43B Woven fabrics	40 470	0,7	1,0	11,6	8,3	20,0	0,0	3	3	0	2	8
436 Knitting industry	139 680	2,4	1,4	13,5	9,6	25,0	0,0	3	3	0	0	6
438 Carpets, floor coverings	5 114	0,1	0,3	9,1	6,5	0,0	0,0	2	0	0	2	4
439 Other textile industries	9 058	0,2	0,7	8,7	5,8	19,0	0,0	2	3	0	0	5
441 Tanning	40 096	0,7	2,9	3,2	0,1	0,0	0,0	1	0	0	0	1
442 Leather products	17 789	0,3	0,8	5,5	0,0	0,0	0,0	0	0	0	0	0
451 Footwear	114 097	2,0	2,6	6,8	3,5	0,0	0,0	1	0	0	2	3
453 Clothings	850 169	14,6	5,1	13,7	9,7	16,0	0,0	3	3	0	2	8
455 Household textiles	43 674	0,7	2,6	10,7	7,0	13,0	0,0	2	3	0	2	7
456 Furs, fur goods	6 811	0,1	2,6	5,0	0,0	0,0	0,0	0	0	0	0	0
461 Sawing of wood	139 138	2,4	2,4	0,3	0,0	0,0	0,0	0	0	0	0	0
462 Semi-finished wood products	56 092	1,0	2,7	9,7	2,2	0,0	0,0	1	0	0	0	1
463 Carpentry parts	30 538	0,5	3,1	5,6	0,0	0,0	0,0	0	0	0	0	0
464 Wooden containers	6 882	0,1	12,1	7,5	0,0	0,0	0,0	0	0	0	0	0
465 Other wooden products	121 478	2,1	16,3	3,1	0,0	0,0	0,0	0	0	0	0	0
466 Cork-, straw products	10 653	0,2	2,3	5,1	0,0	0,0	0,0	0	0	0	0	0
467 Wooden furniture	*326 345*	*5,6*	*11,8*	*5,6*	*0,0*	*0,0*	*0,0*	*0*	*0*	*0*	*0*	*0*
471 Pulp, paper, board	72 567	1,2	0,5	6,1	0,0	0,0	0,0	0	0	0	0	0
472 Paper processing	19 842	0,3	0,7	9,4	0,0	0,0	0,0	0	0	0	0	0
473 Printing industry	5 097	0,1	0,3	1,5	0,0	0,0	0,0	0	0	0	0	0
481 Rubber products	55 097	0,9	1,8	5,8	0,3	0,0	0,0	1	0	0	2	3
482 Tyre retreading	1 309	0,0	4,9	5,8	0,0	0,0	0,0	0	0	0	0	0
483 Plastics processing	36 507	0,6	0,6	8,7	0,0	0,0	0,0	1	0	0	0	1
491 Jewellery	10 783	0,2	0,2	1,5	0,0	0,0	0,0	0	0	0	2	2
492 Musical instruments	3 920	0,1	0,6	5,8	0,0	0,0	0,0	0	0	0	0	0
493 Photographic labs	128	0,0	0,1	7,5	0,0	0,0	0,0	0	0	0	2	2
494 Toys, sports goods	20 085	0,3	0,3	7,2	0,0	0,0	0,0	0	0	0	2	2
495 Miscellaneous, manufacturing industries	7 138	0,1	0,8	5,7	0,0	0,0	0,0	0	0	0	0	0
620 Waste-, scrap trade	91 798	1,6	3,1	1,2	0,1	0,0	0,0	1	0	0	0	1
Total	5 823 317	100,0	1,4	6,4	2,4	6,1	0,3	1	2	1		

Table 16i

EC trade barriers facing Bulgaria 1993

NACE No.	Category	Imports 1 000 ECU	Product % share	Country % share	Duty MFN %	Duty Agreement %	NTB QR %	NTB Others %	Classification D	Classification QR	Classification ONTB	Classification PT	Total
111	Hard-coal mining	1 412	0,2	0,0	8,3	8,3	0,0	0,0	3	0	0	0	3
112	Lignite mining	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
120	Coke ovens	3	0,0	0,0	0,4	0,4	0,0	0,0	1	0	0	0	1
130	Gas-, petroleum extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
140	Oil refining	1 623	0,2	0,0	3,9	0,0	0,0	0,0	0	0	0	0	0
151	Fissile ore extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
152	Fissile materials	1	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
161	Electric power	1 470	0,2	0,2	0,0	0,0	0,0	0,0	0	0	0	0	0
162	Gasworks	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
211	Iron ore extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
212	Non-ferrous metals extraction	897	0,1	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
221	Iron & steel industries	39 790	5,7	0,8	4,5	3,6	0,0	0,0	1	0	0	0	1
222	Steel tubes	3 525	0,5	0,3	8,4	0,0	0,0	0,0	0	0	0	0	0
223	Steel drawing	6 539	0,9	0,5	5,4	0,0	0,0	0,0	0	0	0	0	0
224	Non-ferrous metals	66 804	9,6	0,3	1,1	0,2	0,0	0,0	1	0	0	0	1
231	Building materials extraction	3 468	0,5	0,4	0,0	0,0	0,0	0,0	1	0	0	0	1
232	Potassium extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
233	Salt extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
239	Other mineral extractions	423	0,1	0,1	0,0	0,0	0,0	0,0	1	0	0	0	1
241	Clay products	345	0,0	0,9	7,9	0,0	0,0	0,0	0	0	0	0	0
242	Cement, lime	1 979	0,3	0,5	3,2	0,0	0,0	0,0	0	0	0	0	0
243	Cement products	299	0,0	0,2	3,5	0,0	0,0	0,0	0	0	0	0	0
244	Asbestos products	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
245	Stone working	2 085	0,3	0,5	3,5	0,0	0,0	0,0	0	0	0	0	0
246	Abrasive products	367	0,1	0,1	2,0	0,0	0,0	0,0	0	0	0	0	0
247	Glass, -ware	7 780	1,1	0,4	8,9	0,0	0,0	0,0	0	0	0	2	2
248	Ceramics	8 641	1,2	0,7	9,3	0,0	0,0	0,0	0	0	0	2	2
252	Petrochemical industry	20 129	2,9	0,1	7,4	0,0	0,0	0,4	0	0	1	0	1
253	Other chemical basic industries	44 584	6,4	0,8	8,4	2,4	0,0	24,4	1	0	3	0	4
255	Paints,varnishes	359	0,1	0,1	7,6	0,0	0,0	0,0	0	0	0	0	0
256	Chemicals for industry	4 425	0,6	0,1	3,8	0,0	0,0	3,7	0	0	1	2	3
257	Pharmaceutical products	7 690	1,1	0,1	5,8	0,0	0,0	0,0	0	0	0	3	3
258	Soap, detergents	663	0,1	0,1	6,6	0,0	0,0	0,0	0	0	0	0	0
259	Chemicals for the home	7 157	1,0	0,2	4,9	0,0	0,0	0,0	0	0	0	0	0
260	Artificial fibres	5 186	0,7	0,3	8,0	5,7	0,0	0,0	2	0	0	0	2
311	Foundries	4 745	0,7	0,8	4,8	0,0	0,0	0,0	0	0	0	0	0
312	Forging	691	0,1	0,2	5,2	0,0	0,0	0,0	0	0	0	0	0
313	Metal treatment	1 677	0,2	0,2	6,4	0,0	0,0	0,0	0	0	0	0	0
314	Metal structures	1 184	0,2	0,1	4,4	0,0	0,0	0,0	0	0	0	0	0
315	Boiler, tanks	208	0,0	0,1	4,2	0,0	0,0	0,0	0	0	0	3	3
316	Tools, metal products	6 785	1,0	0,1	5,5	0,0	0,0	0,0	0	0	0	0	0
321	Machinery for agriculture	2 017	0,3	0,2	4,6	0,0	0,0	0,0	0	0	0	2	2
322	Machine tools	11 627	1,7	0,3	3,8	0,0	0,0	0,0	0	0	0	2	2
323	Textile machinery	364	0,1	0,0	4,2	0,0	0,0	0,0	0	0	0	2	2
324	Machinery: food industry	1 921	0,3	0,1	4,1	0,0	0,0	0,0	0	0	0	2	2
325	Plant for mines	19 199	2,8	0,4	4,5	0,0	0,0	0,0	0	0	0	2	2
326	Transmission equipment	1 613	0,2	0,1	7,8	0,0	0,0	0,0	0	0	0	2	2
327	Other specific equipment	1 091	0,2	0,0	5,0	0,0	0,0	0,0	0	0	0	2	2
328	Other machinery	8 076	1,2	0,1	4,7	0,0	0,0	0,0	0	0	0	0	0
330	Office machinery	2 961	0,4	0,0	4,5	0,0	0,0	0,0	0	0	0	3	3
341	Electrical wires	2 851	0,4	0,2	6,5	0,0	0,0	0,0	0	0	0	3	3

Table 16i (continued)

EC trade barriers facing Bulgaria 1993

NACE No. Category	Imports 1 000 ECU	Product % share	Country % share	Duty MFN %	Duty Agreement %	NTB QR %	NTB Others %	Classification D	Classification QR	Classification ONTB	Classification PT	Total
342 Electrical motors	10 921	1,6	0,1	5,0	0,0	0,0	0,0	0	0	0	3	3
343 Industrial electrical equipment	8 202	1,2	0,2	4,7	0,0	0,0	0,0	0	0	0	0	0
344 Telecommunication equipment	2 634	0,4	0,0	3,9	0,0	0,0	0,0	0	0	0	3	3
345 Radio-, TV sets	1 457	0,2	0,0	9,0	0,0	0,0	0,0	0	0	0	2	2
346 Domestic electrical equipment	8 307	1,2	0,3	4,1	0,0	0,0	0,0	0	0	0	2	2
347 Electrical lighting equipment	1 556	0,2	0,1	6,0	0,0	0,0	0,0	0	0	0	2	2
351 Motor vehicles	762	0,1	0,0	9,9	0,0	0,0	0,0	0	0	0	2	2
352 Bodies for motor vehicles	1 085	0,2	0,3	5,0	0,0	0,0	0,0	0	0	0	0	0
353 Parts for motor vehicles	2 535	0,4	0,1	6,9	0,0	0,0	0,0	0	0	0	0	0
361 Shipbuilding 189	0,0	0,0	4,4	0,0	0,0	0,0	0	0	0	3	3	
362 Railway equipment	981	0,1	0,3	3,8	0,0	0,0	0,0	0	0	0	3	3
363 Cycles, motor cycles	142	0,0	0,0	10,2	0,0	0,0	0,0	0	0	0	0	0
364 Aerospace equipment	976	0,1	0,0	4,7	0,0	0,0	0,0	0	0	0	2	2
365 Other transport means	122	0,0	0,1	4,1	0,0	0,0	0,0	0	0	0	0	0
371 Precision instruments	1 237	0,2	0,1	5,2	0,0	0,0	0,0	0	0	0	0	0
372 Medico-surgical equipment	483	0,1	0,0	5,2	0,0	0,0	0,0	0	0	0	3	3
373 Optical instruments	963	0,1	0,0	7,4	0,0	0,0	0,0	0	0	0	0	0
374 Clocks, parts	38	0,0	0,0	5,7	0,0	0,0	0,0	0	0	0	0	0
43A Yarns	6 668	1,0	0,3	4,0	2,9	0,3	0,0	1	1	0	2	4
43B Woven fabrics	15 329	2,2	0,4	11,1	7,9	16,0	0,0	3	3	0	2	8
436 Knitting industry	41 566	6,0	0,4	13,7	9,8	54,0	0,0	3	3	0	0	6
438 Carpets, floor coverings	924	0,1	0,1	7,6	5,4	0,0	0,0	2	0	0	2	4
439 Other textile industries	823	0,1	0,1	7,4	5,1	0,0	0,0	2	0	0	0	2
441 Tanning	3 319	0,5	0,2	1,9	0,5	0,0	0,0	1	0	0	0	1
442 Leather products	11 310	1,6	0,5	5,8	0,0	0,0	0,0	0	0	0	0	0
451 Footwear	44 068	6,4	1,0	7,3	0,0	0,0	0,0	0	0	0	2	2
453 Clothings	111 474	16,1	0,7	13,7	9,8	33,0	0,0	3	3	0	2	8
455 Household textiles	15 800	2,3	0,9	12,3	8,8	0,0	0,0	3	0	0	2	5
456 Furs, fur goods	1 094	0,2	0,4	5,4	0,0	0,0	0,0	0	0	0	0	0
461 Sawing of wood	6 882	1,0	0,1	0,2	0,0	0,0	0,0	0	0	0	0	0
462 Semi-finished wood products	5 811	0,8	0,3	9,9	0,0	0,0	0,0	0	0	0	0	0
463 Carpentry parts	943	0,1	0,1	5,5	0,0	0,0	0,0	0	0	0	0	0
464 Wooden containers	831	0,1	1,5	6,5	0,0	0,0	0,0	0	0	0	0	0
465 Other wooden products	1 793	0,3	0,2	1,8	0,0	0,0	0,0	0	0	0	0	0
466 Cork-, straw products	338	0,0	0,1	6,1	0,0	0,0	0,0	0	0	0	0	0
467 Wooden furniture	12 375	1,8	0,4	5,6	0,0	0,0	0,0	0	0	0	0	0
471 Pulp, paper, board	12 407	1,8	0,1	1,4	0,0	0,0	0,0	0	0	0	0	0
472 Paper processing	*1 223*	*0,2*	*0,0*	*9,4*	*0,0*	*0,0*	*0,0*	*0*	*0*	*0*	*0*	*0*
473 Printing industry	283	0,0	0,0	1,8	0,0	0,0	0,0	0	0	0	0	0
481 Rubber products	13 155	1,9	0,4	7,9	0,0	0,0	0,0	0	0	0	2	2
482 Tyre retreading	22	0,0	0,1	5,8	0,0	0,0	0,0	0	0	0	0	0
483 Plastics processing	7 855	1,1	0,1	10,0	0,0	0,0	0,0	0	0	0	0	0
491 Jewellery	15 263	2,2	0,2	0,0	0,0	0,0	0,0	0	0	0	2	2
492 Musical instruments	425	0,1	0,1	6,3	0,0	0,0	0,0	0	0	0	0	0
493 Photographic labs	93	0,0	0,1	4,3	0,0	0,0	0,0	0	0	0	2	2
494 Toys, sports goods	4 628	0,7	0,1	7,8	0,0	0,0	0,0	0	0	0	2	2
495 Miscellaneous, manufacturing industries	2 103	0,3	0,2	7,1	0,0	0,0	0,0	0	0	0	0	0
620 Waste-, scrap trade	7 884	1,1	0,3	0,8	0,0	0,0	0,0	1	0	0	0	1
Total	693 933	100,0	0,2	7,2	3,0	8,9	1,6	1	2	1		

Table 16j

EC trade barriers facing Romania 1993

NACE No.	Category	Imports 1 000 ECU	Product % share	Country % share	Duty MFN %	Duty Agreement %	NTB QR %	NTB Others %	Classification D	Classification QR	Classification ONTB	Classification PT	Total
111	Hard-coal mining	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
112	Lignite mining	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
120	Coke ovens	11	0,0	0,0	0,4	0,4	0,0	0,0	1	0	0	0	1
130	Gas-, petroleum extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
140	Oil refining	13 349	1,0	0,1	5,8	0,0	0,0	0,0	0	0	0	0	0
151	Fissile ore extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
152	Fissile materials	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
161	Electric power	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
162	Gasworks	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
163	District heating	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
211	Iron ore extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
212	Non-ferrous metals extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
221	Iron & steel industries	82 573	6,3	1,7	4,7	3,8	0,0	0,0	1	0	0	0	1
222	Steel tubes	21 273	1,6	1,5	8,5	1,6	0,0	18,8	1	0	3	0	4
223	Steel drawing	3 086	0,2	0,3	5,8	0,0	0,0	0,0	0	0	0	0	0
224	Non-ferrous metals	13 682	1,0	0,1	4,7	1,9	0,0	0,0	1	0	0	0	1
231	Building materials extraction	469	0,0	0,1	0,0	0,0	0,0	0,0	0	0	0	0	0
232	Potassium extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
233	Salt extraction	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
239	Other mineral extractions	57	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
241	Clay products	0	0,0	0,0	0,0	0,0	0,0	0,0	0	0	0	0	0
242	Cement, lime	26 210	2,0	7,1	3,2	1,1	0,0	100,0	1	0	3	0	4
243	Cement products	31	0,0	0,0	3,2	0,0	0,0	0,0	0	0	0	0	0
244	Asbestos products	52	0,0	0,1	6,1	0,0	0,0	0,0	0	0	0	0	0
245	Stone working	986	0,1	0,2	2,9	0,0	0,0	0,0	0	0	0	0	0
246	Abrasive products	55	0,0	0,0	3,4	0,0	0,0	0,0	0	0	0	0	0
247	Glass, -ware	28 830	2,2	1,6	10,1	5,1	0,0	0,0	2	0	0	2	4
248	Ceramics	14 661	1,1	1,1	10,3	3,3	0,0	0,0	1	0	0	2	3
252	Petrochemical industry	48 399	3,7	0,4	10,4	0,0	0,0	0,0	1	0	1	0	2
253	Other chemical basic industries	22 578	1,7	0,4	8,2	2,7	0,0	19,6	1	0	3	0	4
255	Paints,varnishes	30	0,0	0,0	4,1	0,0	0,0	0,0	0	0	0	0	0
256	Chemicals for industry	2 423	0,2	0,1	3,5	0,0	0,0	17,8	0	0	3	2	5
257	Pharmaceutical products	1 699	0,1	0,0	5,1	0,0	0,0	0,0	0	0	0	3	3
258	Soap, detergents	469	0,0	0,1	6,6	0,0	0,0	0,0	0	0	0	0	0
259	Chemicals for the home	729	0,1	0,0	6,2	0,0	0,0	0,0	0	0	0	0	0
260	Artificial fibres	12 578	1,0	0,8	8,2	5,9	7,0	7,8	2	2	2	0	6
311	Foundries	2 777	0,2	0,4	4,3	0,0	0,0	0,0	0	0	0	0	0
312	Forging	816	0,1	0,2	5,0	0,0	0,0	0,0	0	0	0	0	0
313	Metal treatment	3 376	0,3	0,3	6,2	0,0	0,0	0,0	0	0	0	0	0
314	Metal structures	3 703	0,3	0,3	4,2	0,0	0,0	0,0	0	0	0	0	0
315	Boiler, tanks	1 535	0,1	0,4	4,3	0,0	0,0	0,0	0	0	0	3	3
316	Tools, metal products	26 444	2,0	0,5	5,3	0,8	0,0	0,0	1	0	0	0	1
321	Machinery for agriculture	4 454	0,3	0,4	8,5	0,0	0,0	0,0	0	0	0	2	2
322	Machine tools	9 902	0,8	0,3	4,1	0,0	0,0	0,0	0	0	0	2	2
323	Textile machinery	746	0,1	0,1	4,3	0,0	0,0	0,0	0	0	0	2	2
324	Machinery: food industry	349	0,0	0,0	4,0	0,0	0,0	0,0	0	0	0	2	2
325	Plant for mines	4 313	0,3	0,1	4,4	0,0	0,0	0,0	0	0	0	2	2
326	Transmission equipment	19 609	1,5	1,1	8,4	0,0	0,0	0,0	0	0	0	2	2
327	Other specific equipment	997	0,1	0,0	5,3	0,0	0,0	0,0	0	0	0	2	2
328	Other machinery	7 880	0,6	0,1	4,5	0,0	0,0	0,0	0	0	0	0	0
330	Office machinery	207	0,0	0,0	4,6	0,0	0,0	0,0	0	0	0	3	3
341	Electrical wires	2 643	0,2	0,2	6,5	0,0	0,0	0,0	0	0	0	3	3

Table 16j (continued)

EC trade barriers facing Romania 1993

NACE No.	Category	Imports 1 000 ECU	Product % share	Country % share	MFN %	Duty Agreement %	NTB QR %	NTB Others %	Classification D	Classification QR	Classification ONTB	PT	Total
342	Electrical motors	18 745	1,4	0,2	5,0	0,0	0,0	0,0	0	0	0	3	3
343	Industrial electrical equipment	1 811	0,1	0,0	5,2	0,0	0,0	0,0	0	0	0	0	0
344	Telecommunication equipment	496	0,0	0,0	6,5	0,0	0,0	0,0	0	0	0	3	3
345	Radio-, TV sets	3 070	0,2	0,0	13,3	0,0	0,0	0,0	0	0	0	2	2
346	Domestic electrical equipment	7 909	0,6	0,3	4,1	0,0	0,0	0,0	0	0	0	2	2
347	Electrical lighting equipment	6 300	0,5	0,6	5,6	0,0	0,0	0,0	0	0	0	2	2
351	Motor vehicles	6 231	0,5	0,0	10,7	0,0	0,0	0,0	0	0	0	2	2
352	Bodies for motor vehicles	2 185	0,2	0,6	4,6	0,0	0,0	0,0	0	0	0	0	0
353	Parts for motor vehicles	4 428	0,3	0,1	6,9	0,0	0,0	0,0	0	0	0	0	0
361	Shipbuilding	4 582	0,4	0,2	1,1	0,0	0,0	0,0	0	0	0	3	3
362	Railway equipment	8 475	0,7	2,4	4,8	0,0	0,0	0,0	0	0	0	3	3
363	Cycles, motor cycles	96	0,0	0,0	11,0	0,0	0,0	0,0	0	0	0	0	0
364	Aerospace equipment	5 167	0,4	0,0	3,0	0,0	0,0	0,0	0	0	0	2	2
365	Other transport means	67	0,0	0,1	4,2	0,0	0,0	0,0	0	0	0	0	0
371	Precision instruments	1 216	0,1	0,1	5,3	0,0	0,0	0,0	0	0	0	0	0
372	Medico-surgical equipment	70	0,0	0,0	5,3	0,0	0,0	0,0	0	0	0	3	3
373	Optical instruments	1 178	0,1	0,0	8,6	0,0	0,0	0,0	0	0	0	0	0
374	*Clocks, parts*	47	*0,0*	*0,0*	5,7	*0,0*	*0,0*	*0,0*	*0*	*0*	*0*	*0*	*0*
43A	Yarns	5 442	0,4	0,2	6,4	4,6	13,0	0,0	2	3	0	2	7
43B	Woven fabrics	4 196	0,3	0,1	11,0	7,9	7,0	0,0	3	2	0	2	7
436	Knitting industry	94 475	7,2	1,0	13,5	9,6	34,0	0,0	3	3	0	0	6
438	Carpets, floor coverings	6 776	0,5	0,4	7,1	5,0	0,0	0,0	2	0	0	2	4
439	Other textile industries	455	0,0	0,0	6,7	4,7	0,0	0,0	2	0	0	0	2
441	Tanning	1 326	0,1	0,1	1,0	0,1	0,0	0,0	1	0	0	0	1
442	Leather products	4 926	0,4	0,2	6,8	0,0	0,0	0,0	0	0	0	0	0
451	Footwear	68 311	5,2	1,5	6,8	3,3	0,0	0,0	1	0	0	2	3
453	Clothings	367 369	28,2	2,2	13,6	9,7	37,0	0,0	3	3	0	2	8
455	Household textiles	9 065	0,7	0,5	11,7	7,7	14,0	0,0	3	3	0	2	8
456	Furs, fur goods	2 019	0,2	0,8	5,8	0,0	0,0	0,0	0	0	0	0	0
461	Sawing of wood	7 591	0,6	0,1	0,0	0,0	0,0	0,0	0	0	0	0	0
462	Semi-finished wood products	8 139	0,6	0,4	8,9	0,0	0,0	0,0	0	0	0	0	0
463	Carpentry parts	3 961	0,3	0,4	5,9	0,0	0,0	0,0	0	0	0	0	0
464	Wooden containers	1 895	0,1	3,3	7,4	0,0	0,0	0,0	0	0	0	0	0
465	Other wooden products	5 467	0,4	0,7	0,7	0,0	0,0	0,0	0	0	0	0	0
466	Cork-, straw products	11 289	0,9	2,4	4,6	0,0	0,0	0,0	0	0	0	0	0
467	Wooden furniture	213 167	16,4	7,7	5,6	2,8	0,0	0,0	1	0	0	0	1
471	Pulp, paper, board	3 145	0,2	0,0	7,4	0,0	0,0	0,0	0	0	0	0	0
472	Paper processing	239	0,0	0,0	9,1	0,0	0,0	0,0	0	0	0	0	0
473	Printing industry	469	0,0	0,0	0,3	0,0	0,0	0,0	0	0	0	0	0
481	Rubber products	7 361	0,6	0,2	5,6	0,0	0,0	0,0	0	0	0	2	2
482	Tyre retreading	3	0,0	0,0	5,8	0,0	0,0	0,0	0	0	0	0	0
483	Plastics processing	10 647	0,8	0,2	11,8	0,3	0,0	0,0	1	0	0	0	1
491	Jewellery	1 435	0,1	0,0	0,4	0,0	0,0	0,0	0	0	0	2	2
492	Musical instruments	1 525	0,1	0,2	6,1	0,0	0,0	0,0	0	0	0	0	0
493	Photographic labs	36	0,0	0,0	7,0	0,0	0,0	0,0	0	0	0	2	2
494	Toys, sports goods	3 004	0,2	0,0	6,9	0,0	0,0	0,0	0	0	0	2	2
495	Miscellaneous, manufacturing industries	147	0,0	0,0	7,1	0,0	0,0	0,0	0	0	0	0	0
620	Waste-, scrap trade	3 276	0,3	0,1	1,4	0,0	0,0	0,0	1	0	0	0	1
Total		1 303 210	100,0	0,3	8,9	4,8	13,1	2,8	2	3	1		

Table 17

EC exports to the CEECs; sum of absolute differences in NACE 3-digit shares[1]

Country	88-87	89-88	90-89	91-90	92-91	93-92
Bulgaria	26,3	23,9	30,1	49,9	42,8	37,3
CSFR	16,9	13,2	20,6	33,7	21,7	18,6
Hungary	13,4	14,6	18,9	20,8	15,9	13,6
Poland	15,6	22,5	35,1	35,9	25,6	15,7
Romania	27,2	36,2	42,1	55,4	35,4	36,0
CEEC-5	12,1	14,8	20,0	26,8	14,4	11,9
EFTA	6,8	4,0	4,6	5,2	5,8	7,4
USA	15,8	8,9	8,1	14,8	6,7	13,7
Japan	10,6	12,7	14,8	11,8	15,8	14,2

[1] Sum(i) of I share(i,t) - share(i,t-1) I in which share(i,t) is the sectoral share of sector i in year t.

Table 18

EC imports from the CEECs; sum of absolute differences in NACE 3-digit shares[1]

Country	88-87	89-88	90-89	91-90	92-91	93-92
Bulgaria	37,1	32,7	22,5	33,7	37,3	24,1
CSFR	11,0	10,7	12,3	30,5	21,0	17,4
Hungary	9,7	10,9	13,9	19,2	16,8	17,5
Poland	19,3	17,0	18,9	20,3	17,9	27,5
Romania	21,7	10,9	27,9	20,7	23,6	22,5
CEEC-5	11,8	9,3	12,2	14,6	14,6	18,0
EFTA	5,9	4,7	6,6	6,4	5,5	8,2
USA	9,4	10,7	6,8	7,7	9,9	12,4
Japan	7,1	5,4	4,9	7,2	8,2	8,4

[1] Sum(i) of I share(i,t) - share(i,t-1) I in which share(i,t) is the sectoral share of sector i in year t.

Table 19

EC's factor intensities at the NACE 3-digit level

Sector	Capital intensity	Labour intensity	R&D intensity	Skill intensity	Energy intensity
221 Iron & steel (ECSC)	7,37	7,29	0,60	33,40	10,47
222 Steel tubes	3,16	9,48	0,60	33,40	5,02
223 Steel drawing, cold rolling & folding	5,04	8,85	0,60	33,40	3,26
224 Non-ferrous metals	6,64	6,03	0,65	33,40	7,85
241 Clay products	6,61	14,00	0,60	29,50	13,26
242 Cement, lime, plaster	12,48	6,24	0,60	29,50	19,40
243 Concrete, cement & plaster products	5,20	9,93	0,60	29,50	3,41
244 Asbestos articles	3,94	17,78	0,60	29,50	3,16
245 Stone	7,50	10,12	0,60	29,50	8,22
246 Grindstones	2,56	14,01	0,60	29,50	2,09
247 Glass	5,59	12,70	0,60	29,50	7,85
248 Ceramic goods	3,12	17,43	0,60	29,50	5,75
255 Paint	4,13	8,59	4,21	53,20	1,97
256 Other chemicals for industrial use	7,71	7,02	4,21	53,20	4,57
257 Pharmaceutical products	6,13	7,81	9,48	53,20	1,52
258 Soap, perfume etc.	5,39	6,83	4,21	53,20	1,12
259 Other chemicals for home use	5,93	8,59	4,21	53,20	1,93
260 Artificial fibres	8,47	8,15	0,59	41,60	7,57
311 Foundries	3,35	15,14	0,59	28,70	6,48
312 Forging etc.	3,74	12,92	0,59	28,70	4,42
313 Secondary treatment of metals	3,42	15,80	0,59	28,70	3,26
314 Structural metal products	2,38	12,29	0,59	28,70	1,24
315 Boilers, tanks etc.	2,00	13,20	0,59	28,70	1,20
316 Finished metal goods	3,44	13,75	0,59	28,70	1,82
321 Agricultural machinery	2,88	10,66	1,18	40,90	1,46
322 Machine tools	3,61	14,09	1,18	40,90	1,42
323 Textiles machinery	3,94	12,45	1,18	40,90	1,18
324 Machinery for food & chem. ind.	2,94	11,75	1,18	40,90	0,92
325 Plant	2,62	11,20	1,18	40,90	1,20
326 Transmission equipment	3,99	15,95	1,18	40,90	2,17
327 Machinery for specific branches	3,91	11,43	1,18	40,90	1,06
328 Other machinery	3,14	12,38	1,18	40,90	1,70
330 Office machinery	8,53	6,59	6,06	75,60	0,68
341 Insulated wires & cables	4,40	9,71	6,83	48,40	2,24
342 Electrical machinery	2,56	14,41	14,30	48,40	1,65
343 Electrical equipment for industrial use	3,83	14,48	6,83	48,40	2,43
344 Telecommunications	4,00	14,20	6,83	48,40	0,94
345 Radio, TV etc.	5,36	10,89	6,83	48,40	1,19
346 Domestic electric goods	3,83	12,33	6,83	48,40	1,27
347 Electric lamps etc.	3,28	14,64	6,83	48,40	1,73
351 Motor vehicles & engines	6,69	7,49	3,43	29,90	1,00
352 Bodies of motor vehicles	2,20	11,78	3,43	29,90	1,10
353 Parts for motor vehicles	4,73	12,48	3,43	29,90	1,80
361 Shipbuilding	2,23	17,26	0,76	42,30	2,13
362 Rolling-stock	1,91	16,29	1,22	42,30	2,18
363 (Motor) Cycles	3,05	12,79	1,22	42,30	1,40
365 Other transport equipment	2,09	17,28	1,22	42,30	1,35
371 Metrology equipment	2,33	15,27	3,98	47,60	0,96
372 Medical equipment	3,10	17,62	3,98	47,60	1,11
373 Optical instruments	4,55	16,09	3,98	47,60	0,99
374 Clocks & watches	2,32	15,73	3,98	47,60	1,05
411 Oils & fats	8,91	3,02	0,24	37,20	1,90
412 Meat	3,76	6,97	0,24	37,20	1,86
413 Dairy products	6,07	4,27	0,24	37,20	1,71
414 Fruit and vegetables	5,88	8,06	0,24	37,20	2,10
415 Seafood	3,47	11,53	0,24	37,20	1,92
417 Pasta	9,13	5,03	0,24	37,20	1,99
418 Starch etc.	12,03	4,51	0,24	37,20	4,99
422 Animal feedstuff	7,86	3,62	0,24	37,20	1,74
423 Other food	6,26	5,36	0,24	37,20	1,21
427 Beer	12,73	6,33	0,24	37,20	2,30
428 Soft drinks	9,53	6,88	0,24	37,20	1,71
436 Knitted goods	2,11	16,14	0,14	27,10	1,72
438 Floor coverings	3,95	10,53	0,14	27,10	2,94
439 Miscellaneous textiles	3,21	15,65	0,14	27,10	3,23
441 Tanning & dressing of leather	3,21	7,38	0,59	28,70	2,19
442 Leather products	1,42	18,14	0,59	28,70	0,76
451 Mass-produced footwear	1,35	18,64	0,14	24,50	0,98
453 Ready-made clothing	1,09	20,39	0,14	24,50	0,82
455 Household textiles	2,08	16,44	0,14	24,50	1,49
456 Furs	1,27	15,25	0,14	24,50	1,94
461 Wood sawing & processing	4,20	11,35	0,19	23,20	1,70
462 Semi-finished wood products	6,42	9,56	0,19	23,20	3,14
463 Carpentry	3,10	13,39	0,19	23,20	1,60
464 Wooden containers	2,29	16,17	0,19	23,20	1,88
465 Other wood products	3,17	15,68	0,19	23,20	2,66
466 Cork, straw etc.	2,51	17,76	0,19	23,20	1,60
467 Wooden furniture	2,38	14,13	0,19	23,20	1,55
471 Pulp, paper, board	12,43	6,68	0,14	48,80	8,53
472 Processing of paper & board	4,92	10,95	0,14	48,80	2,52
473 Printing etc.	4,18	11,68	0,14	48,80	1,48
481 Rubber goods	3,44	14,34	1,14	33,70	3,90
482 Remould tyres	4,00	15,11	1,14	33,70	4,46
483 Processing of plastics	5,16	11,63	1,14	33,70	2,94
491 Jewellery	2,05	10,57	0,59	35,20	1,39
492 Musical instruments	1,69	17,69	0,59	35,20	1,31
493 Film developing etc.	4,06	19,40	0,59	35,20	1,53
494 Toys & sports goods	3,02	16,91	0,59	35,20	1,38
495 Other manufacturing products	2,84	17,46	0,59	35,20	1,53

Table 20a

EC's capital intensity and trade with the CEECs in 1992

Imports from CEECs	Total CEEC-5	Bulgaria	CSFR	Hungary	Poland	Romania
30 sectors with highest capital intensity	29,4	31,1	35,3	20,7	32,2	16,5
29 sectors with medium capital intensity	22,3	15,1	21,2	30,6	21,5	12,9
30 sectors with lowest capital intensity	37,4	41,6	30,8	38,0	36,2	64,1
Sectors with unknown capital intensity	10,9	12,2	12,7	10,8	10,1	6,5
Total of all sectors	100	100	100	100	100	100

Exports to CEECs	Total CEEC-5	Bulgaria	CSFR	Hungary	Poland	Romania
30 sectors with high capital intensity	31,7	28,1	29,7	32,0	35,9	21,7
29 sectors with medium capital intensity	29,2	23,0	32,9	29,4	27,5	27,3
30 sectors with low capital intensity	23,9	20,7	27,1	25,1	21,6	21,0
Sectors with unknown capital intensity	15,2	28,3	10,3	13,5	14,9	30,1
Total of all sectors	100	100	100	100	100	100

Table 20b

EC's labour intensity and trade with the CEECs in 1992

Imports from CEECs	Total CEEC-5	Bulgaria	CSFR	Hungary	Poland	Romania
30 sectors with highest labour intensity	30,8	37,3	24,0	33,7	29,8	49,5
29 sectors with medium labour intensity	26,9	18,0	30,1	25,7	26,3	26,5
30 sectors with lowest labour intensity	31,4	32,5	33,2	29,9	33,9	17,5
Sectors with unknown labour intensity	10,9	12,2	12,7	10,8	10,1	6,5
Total of all sectors	100,00	100,00	100,00	100,00	100,00	100,00

Exports to CEECs	Total CEEC-5	Bulgaria	CSFR	Hungary	Poland	Romania
30 sectors with highest labour intensity	17,2	16,9	17,2	20,2	15,7	16,9
29 sectors with medium labour intensity	39,3	28,0	45,0	36,8	39,6	30,9
30 sectors with lowest labour intensity	28,2	26,8	27,5	29,5	29,7	22,1
Sectors with unknown labour intensity	15,2	28,3	10,3	13,5	14,9	30,1
Total of all sectors	100	100	100	100	100	100

Table 20c

EC's R&D intensity and trade with the CEECs in 1992

Imports from CEECs	Total CEEC-5	Bulgaria	CSFR	Hungary	Poland	Romania
30 sectors with highest R&D intensity	17,8	13,9	22,9	22,8	13,2	8,4
29 sectors with medium R&D intensity	30,4	29,3	37,0	21,6	32,2	21,4
30 sectors with lowest R&D intensity	40,9	44,7	27,4	44,8	44,4	63,7
Sectors with unknown R&D intensity	10,9	12,2	12,7	10,8	10,1	6,5
Total of all sectors	100	100	100	100	100	100
Exports to CEECs	**Total CEEC-5**	**Bulgaria**	**CSFR**	**Hungary**	**Poland**	**Romania**
30 sectors with highest R&D intensity	45,4	38,5	53,7	44,9	42,4	34,0
29 sectors with medium R&D intensity	21,8	17,0	22,3	23,1	22,5	16,5
30 sectors with lowest R&D intensity	17,7	16,2	13,7	18,5	20,2	19,4
Sectors with unknown R&D intensity	15,2	28,3	10,3	13,5	14,9	30,1
Total of all sectors	100	100	100	100	100	100

Table 20d

EC's skill intensity and trade with the CEECs in 1992

Imports from CEECs	Total CEEC-5	Bulgaria	CSFR	Hungary	Poland	Romania
30 sectors with highest skill intensity	15,6	15,5	19,5	20,3	11,2	7,5
29 sectors with medium skill intensity	32,8	33,5	32,3	32,8	36,5	17,3
30 sectors with lowest skill intensity	40,8	38,9	35,5	36,1	42,1	68,7
Sectors with unknown skill intensity	10,9	12,2	12,7	10,8	10,1	6,5
Total of all sectors	100	100	100	100	100	100
Exports to CEECs	**Total CEEC-5**	**Bulgaria**	**CSFR**	**Hungary**	**Poland**	**Romania**
30 sectors with highest skill intensity	38,9	31,0	44,5	37,0	39,0	27,2
29 sectors with medium skill intensity	31,6	28,5	33,4	30,5	32,4	26,5
30 sectors with lowest skill intensity	14,3	12,1	11,8	19,0	13,6	16,3
Sectors with unknown skill intensity	15,2	28,3	10,3	13,5	14,9	30,1
Total of all sectors	100	100	100	100	100	100

Table 20e

EC's energy intensity and trade with the CEECs in 1992

Imports from CEECs	Total CEEC-5	Bulgaria	CSFR	Hungary	Poland	Romania
30 sectors with highest energy intensity	28,6	28,0	36,1	19,7	29,7	19,7
29 sectors with medium energy intensity	28,8	25,3	20,5	35,6	30,8	35,9
30 sectors with lowest energy intensity	31,7	34,5	30,7	33,9	29,4	38,0
Sectors with unknown energy intensity	10,9	12,2	12,7	10,8	10,1	6,5
Total of all sectors	100	100	100	100	100	100

Exports to CEECs	Total CEEC-5	Bulgaria	CSFR	Hungary	Poland	Romania
30 sectors with highest energy intensity	19,0	17,7	17,4	20,6	20,0	17,1
29 sectors with medium energy intensity	26,7	20,9	26,2	27,0	29,0	20,7
30 sectors with lowest energy intensity	39,1	33,1	46,1	38,8	36,1	32,2
Sectors with unknown energy intensity	15,2	28,3	10,3	13,5	14,9	30,1
Total of all sectors	100	100	100	100	100	100

Table 21a

EC's imports from CEEC-5; geographical breakdown

Total manufacturing (NACE 2-4)

Year	BLEU	DK	D	GR	E	F	IRL	I	NL	P	UK	EC
1980	4,1	2,3	47,0	NA	NA	12,9	0,5	16,2	6,5	NA	10,5	100
1985	3,5	3,4	44,8	2,4	1,5	12,8	0,5	13,3	6,3	0,2	11,5	100
1988	3,8	2,6	45,0	3,2	2,4	11,2	0,4	13,0	6,4	0,4	11,6	100
1989	3,5	2,4	46,3	3,2	2,4	11,3	0,4	13,0	6,8	0,3	10,3	100
1990	4,0	2,8	50,3	2,5	2,2	10,7	0,5	11,8	6,6	0,3	8,3	100
1991	3,7	2,8	57,2	2,7	2,0	8,7	0,3	10,6	5,5	0,2	6,2	100
1992	3,4	2,6	59,0	1,9	2,0	7,5	0,2	12,0	5,5	0,2	5,5	100
1993	3,0	2,6	60,3	1,8	1,4	7,5	0,2	11,3	5,6	0,2	6,1	100

Table 21b

EC's imports from CEEC-5; geographical breakdown

Production and preliminary processing of metals (NACE 22)

Year	BLEU	DK	D	GR	E	F	IRL	I	NL	P	UK	EC
1980	8,1	1,6	55,7	NA	NA	7,6	0,6	17,3	1,8	NA	7,2	100
1985	6,3	3,2	50,6	2,7	1,5	11,3	0,3	13,2	3,8	0,3	6,7	100
1988	3,1	2,1	52,7	2,7	2,7	8,9	0,2	13,9	5,1	0,5	8,1	100
1989	3,3	2,3	55,0	4,2	1,2	7,8	0,2	15,6	4,1	0,5	5,7	100
1990	5,3	2,4	53,3	3,7	2,2	8,1	0,3	15,5	3,2	0,5	5,6	100
1991	4,5	1,9	60,0	4,1	1,3	5,9	0,3	12,8	3,0	0,4	5,9	100
1992	4,8	1,4	61,4	2,9	1,8	5,5	0,1	11,8	3,2	0,3	6,8	100
1993	4,8	1,0	60,9	3,6	0,7	4,6	0,1	10,5	2,7	0,1	11,0	100

Table 21c

EC's imports from CEEC-5; geographical breakdown

Footwear and clothing industry (NACE 45)

Year	BLEU	DK	D	GR	E	F	IRL	I	NL	P	UK	EC
1980	1,8	2,2	52,9	NA	NA	11,8	0,2	9,4	10,4	NA	11,4	100
1985	1,6	2,6	57,9	0,1	0,1	9,7	0,2	8,9	8,3	0	10,5	100
1988	2,3	2,7	59,6	0,1	0,3	9,1	0,2	7,7	7,8	0	10,1	100
1989	2,4	2,6	60,0	0,2	0,4	9,6	0,2	8,1	7,8	0	8,8	100
1990	2,5	3,2	64,4	0,1	0,4	8,6	0,3	6,2	7,4	0	6,9	100
1991	2,1	3,6	65,6	0,1	0,4	7,9	0,2	8,0	6,4	0	5,8	100
1992	2,1	3,4	62,8	0,2	0,5	6,5	0,1	12,6	6,8	0	5,0	100
1993	1,6	3,0	63,8	0,2	0,1	5,9	0,1	12,9	7,7	0	4,6	100

Table 22a

EC's exports to CEEC-5; geographical breakdown

Total manufacturing (NACE 2-4)

Year	BLEU	DK	D	GR	E	F	IRL	I	NL	P	UK	EC
1980	4,2	1,7	48,6	NA	NA	15,8	0,3	12,6	6,2	NA	10,6	100
1985	3,6	1,8	51,1	1,3	2,1	11,4	0,4	13,3	5,9	0,3	8,8	100
1988	3,7	1,9	54,5	0,7	1,3	10,2	0,5	12,0	6,2	0,3	8,7	100
1989	3,9	2,1	54,4	1,1	1,4	9,7	0,4	12,5	6,6	0,2	7,7	100
1990	3,3	2,5	53,4	0,9	1,2	9,4	0,6	15,2	6,1	0,2	7,1	100
1991	3,5	4,1	56,2	0,8	1,3	10,4	0,4	11,6	5,9	0,1	5,7	100
1992	3,7	2,6	56,5	1,0	1,3	9,7	0,3	13,4	5,9	0,1	5,5	100
1993	4,0	2,3	55,8	1,2	1,7	7,6	0,4	15,0	5,9	0,1	6,1	100

Table 22b

EC's exports to CEEC-5; geographical breakdown

Mechanical engineering (NACE 32)

Year	BLEU	DK	D	GR	E	F	IRL	I	NL	P	UK	EC
1980	2,2	2,1	53,5	NA	NA	16,2	0,3	13,4	2,8	NA	9,5	100
1985	1,4	2,6	59,5	0,0	0,7	8,9	0,2	15,6	2,8	0	8,2	100
1988	1,7	2,5	60,8	0,0	0,9	6,5	0,3	16,5	3,3	0	7,5	100
1989	2,1	2,8	59,2	0,0	1,4	6,2	0,1	17,6	4,7	0	5,9	100
1990	1,5	2,8	55,1	0,1	0,8	6,1	0,2	24,5	3,7	0	5,0	100
1991	1,5	2,8	60,8	0,2	0,8	7,1	0,2	17,8	3,3	0	5,3	100
1992	1,8	3,3	59,5	0,2	1,5	6,7	0,1	19,0	3,1	0	4,7	100
1993	2,1	2,9	58,7	0,5	1,2	6,0	0,2	19,7	3,5	0	5,2	100

Table 22c

EC's exports to CEEC-5; geographical breakdown

Chemical industry (NACE 25)

Year	BLEU	DK	D	GR	E	F	IRL	I	NL	P	UK	EC
1980	5,7	0,8	47,9	NA	NA	15,6	0,1	9,7	11,0	NA	9,3	100
1985	5,8	1,1	49,0	1,1	1,3	12,0	0,2	9,1	9,9	0,1	10,5	100
1988	6,7	1,3	50,2	0,5	1,5	11,0	0,5	9,6	8,3	0,0	10,3	100
1989	7,3	0,8	49,3	0,3	1,5	11,1	0,6	10,4	8,4	0,0	10,3	100
1990	6,8	1,4	49,5	0,2	1,2	11,0	1,5	8,6	8,6	0,0	11,3	100
1991	6,5	1,7	54,3	0,3	1,0	9,9	1,2	7,1	7,1	0,0	10,9	100
1992	6,6	1,3	52,3	0,4	1,0	11,4	0,7	8,0	5,8	0,1	12,4	100
1993	7,4	1,3	49,0	0,7	1,4	10,9	0,8	9,4	7,3	0,0	11,7	100