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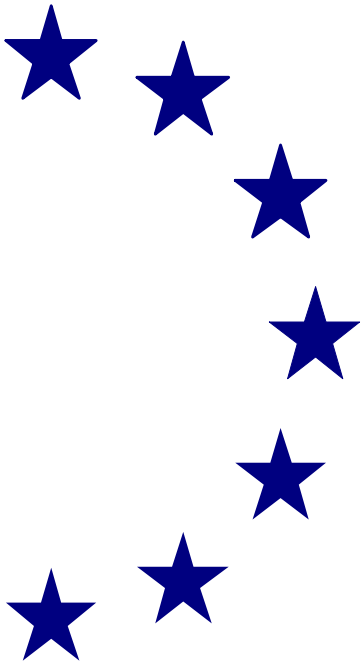

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The economic costs of non-Lisbon

A survey of the literature on the economic impact of Lisbon-type reforms

by Directorate-General for Economic and Financial Affairs

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Comments on the report would be gratefully received at the following address:

Unit E2
Directorate-General for Economic and Financial Affairs
European Commission
B-1049 Brussels
E-mail: fabienne.ilzkovitz@cec.eu.int or adriaan.dierx@cec.eu.int

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

Five years have passed since the Lisbon European Council of March 2000 set out its strategic goal for the next decade: "to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion". This goal was to be achieved through policies boosting the information society and R&D, stepping up structural reform for competitiveness and innovation, and completing the internal market, while modernising the European social model and applying a macroeconomic policy mix that would favour growth. These objectives, and the policies accompanying them, have become known as the "Lisbon strategy" or the "Lisbon agenda". The Gothenburg European Council of June 2001 added an environmental dimension to the original economic and social dimensions of the Lisbon strategy.

However, over the last four years, the overall growth performance of the European economy has been disappointing. Although the poor economic performance has partly been the result of the cyclical slowdowns at both world and European level, the slow pace of policy reforms has also held back economic growth. Structural reforms are especially important in view of the challenges of globalisation, ageing and enlargement that the EU is now facing. For example, European Commission projections estimate that the impact of ageing populations alone will reduce the potential growth rate of the EU by nearly half by 2040, from the present rate of 2-2 ¼% to around 1¼% if structural reforms are not carried out.

The Commission in its Communication on the mid-term review of the Lisbon Strategy "Working together for growth and jobs. A new start for the Lisbon Strategy" therefore favours an increased focus around two principal tasks – delivering stronger, lasting growth and creating more and better jobs. Meeting the growth and jobs challenge is key to help realise Europe's economic, social and environmental objectives. Given the widely shared opinion that where the strategy has gone wrong to date is in its failure to actually implement the programmed initiatives, the renewed Lisbon strategy endeavours to step up the pace of reforms by proposing a stronger partnership with the Member States and social partners to increase their involvement in and commitment to the process.

The purpose of this paper is to analyse the impact of Lisbon-type structural reforms. While these reforms do not correspond exactly to the present Lisbon package, they are designed to achieve the same goals as those set out in the strategy. Since many of these Lisbon-type reforms were already proposed in the Broad Economic Policy Guidelines, the European Employment Strategy and the Internal Market Strategy, there exists a substantial literature on their impact, and by reviewing this literature we are able to obtain an – admittedly partial – assessment of the costs of not implementing the reforms specifically envisaged in the Lisbon strategy.

However, it is extremely difficult to quantify the impact of the reforms as the heterogeneity of individual reform measures, the time lags in their implementation, the complementarities and trade-offs between reforms in different domains, and the influence of short- to medium-term developments make it difficult to separate the effects of reforms undertaken from other determinants of performance. It is also essential to keep in mind that different studies use different methodologies. Comparisons of the growth and employment effects of different reform measures are therefore fraught with danger. Adding the effects reported in one study to those of another should not even be considered. A first and admittedly incomplete overview of the main results of some of most relevant studies may nevertheless be useful.

This paper classifies the Lisbon reforms into five categories: product and capital market reforms; investments in the knowledge-based economy; labour market reforms; social policy reforms; and environmental reforms. They contribute to increased productivity and greater job

creation, which – together with a cleaner environment – should ultimately mean a higher standard of living for EU citizens. This classification of reforms and objectives allows an investigation of the economic channels through which the different reforms affect the ability to achieve certain objectives. A reference is also made to the importance of the macroeconomic framework conditions since they co-determine the likelihood that the reforms will be undertaken and the objective attained. Sound macroeconomic conditions are the essential underpinnings of a credible effort to increase potential growth and create jobs in line with the Lisbon strategy as the continued pursuit of stability-oriented macroeconomic policies with sound budgetary policies is crucial in laying the foundations for a better functioning economy.

We first investigate the economic impact of **product market reforms**. The Lisbon strategy envisages a number of measures aimed at opening up product markets to competition, in particular by completing the internal market and creating a business environment more conducive to market entry. By reducing transport costs and widening markets, interconnected and interoperable trans-European networks will also contribute to foster international trade and fuel internal market dynamism. These reforms affect productivity and employment via three channels:

- Increased allocative efficiency. In a given market, increased competition reduces monopoly rents, which translates into lower prices. As prices move closer to marginal costs, distortions in the structure of production are corrected and total output is raised towards levels closer to the social optimum.
- Increased productive efficiency. Competition has a corrective effect on the behaviour of managers and workers, leading to greater efficiency in the organisation of work.
- Enhanced dynamic efficiency. Stronger competition also provides an increased incentive for producers to invest in product and process innovations. Investments in the knowledge-based economy have a strong impact on dynamic efficiency as well.

By raising productivity, these reforms will also promote the competitiveness of EU firms and eventually lead to gains in terms of world market shares.

One of the best examples of a Lisbon-type reform aimed at creating a more competitive business environment is the single market programme (SMP). A simulation carried out ten years after the launch of the SMP (European Commission, 2002a) showed that GDP would have been 1.8% lower in 2002 if the SMP had not been implemented over the period 1992-2002. The level of employment would have been 1.5% lower than it actually was in 2002. Turning to reforms more directly linked to the Lisbon strategy, a recent study provides estimates of the medium-term impact of the opening up of services to competition. The study by Copenhagen Economics (2005) shows that freedom of establishment for service providers and free movement of services between Member States would raise GDP and employment by 0.6% and 0.3% respectively.

The second area considered is **capital market reforms**. The Lisbon strategy aims to accelerate the completion of the internal market for financial services. This financial integration will enhance the development of the EU financial sector and thereby contribute to a better performance by the EU economy. This view is supported by the economic literature, which indicates a direct causal link from financial development to economic growth and welfare via several channels:

- Lower transaction costs. Financial integration delivers large and liquid financial markets, economies of scale and scope in the provision of financial services and increased

competition among service providers. These factors combine to provide a lower cost of capital for borrowers and higher returns for investors.

- Wider opportunities for risk sharing. By facilitating cross-border transactions, financial integration increases the scope for investors to diversify risk geographically. Furthermore, a large and competitive financial system facilitates innovation and so provides a wider range of instruments/techniques for spreading risk.
- More efficient resource allocation. Lower transaction costs and better risk-sharing opportunities ultimately result in a more efficient allocation of capital, ensuring higher and more productive investment. Easier access to financing improves the competitive position of producers.

Improvements in cost effectiveness, risk management and resource allocation within the EU economy should be reflected in higher sustainable rates of output growth and employment creation. A study by London Economics (2002) estimates that fully integrated financial markets could – in the medium to long term – lower the cost of capital for EU companies by about 0.5 percentage points, and that this could bring about a rise of 1.1% in the level of GDP and 0.5% in the level of employment in the long run.

Thirdly the paper looks at **investment in the knowledge-based economy**, which the EU urgently needs to increase. To give some idea of the scale of the problem, the EU invests only 4.0% of GDP in R&D, software and higher education as opposed to 6.8% in the US. Reforms in the knowledge domain should increase the capacity of the EU to innovate and to produce and use new technologies. While traditional growth theories explain differences in growth by the expansion in inputs, such as capital and labour, and by the catching up of countries with lower productivity, modern theories emphasise research inputs and human capital as the key drivers for long-run growth:

- Investments in education and training. Any loss in production due to people staying longer at school rather than working is offset by an increase in human capital which raises future productive potential.
- Investments in R&D and innovation. Investments in R&D and innovation are a main driver of productivity growth as they can contribute to the creation of new markets or production processes, lead to incremental improvements in already existing products and production processes and increase the country's capacity to absorb new technologies.
- Production and use of ICT. In light of the extraordinary productivity increases in the ICT sector, overall productivity growth can partly be explained by the degree of specialisation of countries in ICT production. However, substantial productivity gains and new business opportunities can also result from the use of ICT in other sectors, notably in services.

A study by the European Commission (2003b) shows that a better and more effective education system might add as much as 0.3 to 0.5 percentage points to the annual EU GDP growth rate. An increase in the share of R&D expenditures in GDP from 1.9% to 3% (in order to reach the Lisbon target by 2010) would result in an increase of 1.7% in the level of GDP by 2010 (European Commission, 2004c). Moreover, several studies have shown that the recent EU–US divergences in productivity trends can partly be explained by the EU's difficulty in re-orienting its economy towards the newer, higher productivity growth sectors such as ICT. Growth accounting estimates show that IT investment typically account for between 0.3 and 0.8 percentage point of growth in GDP per capita over the 1995-2001 period, with the US receiving a larger boost than the EU.

Fourthly, we look at **labour market reforms**. Making better use of human resources is a top priority in the Lisbon strategy, which is made even more challenging by the problem of the ageing population. Labour market reforms tend to focus on:

- Attracting and retaining more people into the labour market. Labour market performance appears to have improved in countries that have created incentives for employers to hire workers and for workers to become or remain active participants in the labour market, including through preventive and active labour market measures. This not only covers financial incentives stemming from the tax and benefit system, but also for example those arising from improved working conditions, more gender equality and enhanced possibilities to reconcile professional and family life, including adequate child care provision..
- Improving matching between human resources and vacancies. Efforts to lower the mark-up of wages over the reservation wage are aimed at lowering insider–outsider barriers. In addition, facilitating labour mobility (both geographical and occupational), modernising public employment services and increasing participation in training throughout the life-cycle allow better matching between jobs and workers.
- Improving labour market adaptability to meet the needs of both workers and enterprises. A greater adaptability of labour markets means new forms of flexibility combined with job security. On the one hand, flexible labour markets are necessary to respond to the increased competition in product markets (which increases the elasticity of demand for labour) and to the challenges created by technological progress. Moreover, they will also help raise productivity by allowing a more efficient (re)-allocation of labour. On the other hand, the improvement in job security will contribute to ensuring higher labour market participation and to reducing the risk of segregation between people in employment (e.g. between employees with and without a permanent contract).

Simulations reported in the 2002 Commission EU Economy Review show that a gradual increase in the participation rate by 1½ percentage points, combined with a cut in the initial real wage claims by 1% (uniform across all countries) would result in a 1 percentage point reduction in the natural rate of unemployment. Some recent papers show that Lisbon-type labour market reforms implemented in the second half of the 1990s are likely to have contributed to the improved employment performance. The precise magnitude of the effect of the reforms, however, is difficult to estimate.

Fifthly, we look at the role of **social policies**. Social policies contribute to the achievement of both social and economic objectives. They not only serve to reduce social exclusion, but also may contribute to a better economic performance, for example by increasing the capacity of the economy to adapt to changing circumstances. Two functions of social policy should be highlighted in this context:

- Reduction in the occurrence and human costs of social exclusion. Social policies provide income support to the unemployed and alleviate poverty.
- Increased adaptability and responsiveness to economic, social and industrial change through an effective combination of job flexibility and security. Well designed social policies (such as active labour market policies and unemployment benefits) improve the match of unemployed with vacancies. As a result, workers' skills are better employed, which leads to increased productivity growth and living standards.

Sixthly and finally, we consider the economic impact of **measures taken to improve the environment**. A distinction can be made between:

- Economy-wide impacts. If environmentally unsustainable trends persist, then they will feedback into significant economic costs for society. Investing in tackling these problems now should be much cheaper in the long run than letting them deteriorate.
- Benefits at company level. Often the drive for a better environment leads to eco-innovation, new ways of working and more efficient use of natural resources and lower clean-up costs. Hence, a better environment can ultimately be associated with higher profits for businesses. Moreover, it may also generate "first-mover" advantages as most countries are facing similar problems.

As the above selection illustrates, the literature on the impact of Lisbon-type reform is wide-ranging and not easy to summarise. Nevertheless, a clear impression emerges that Lisbon-type reforms have substantial positive economic effects. This impression is confirmed by the small number of papers that investigate the macroeconomic impact of reform packages, including the Lisbon strategy (though it should be borne in mind that none measures the effect of the entire package of Lisbon reforms). According to Commission estimates (European Commission, 2002b), for example, product and labour market reforms in the second half of the 1990s resulted in an increase in annual GDP growth of almost ½ a percentage point over the medium term. If the effects of the increased knowledge investments foreseen within the Lisbon strategy are also accounted for, the increase in EU potential growth could reach ¾ of a percentage point. Over a ten-year period, this would imply an increase in the GDP level of up to 7 or 8% (slightly below IMF estimates of the impact of product and labour market reforms, which show a 10% increase in the level of GDP over the long-term). Finally, the costs of not achieving a better environment may be felt in terms of reduced quality of life, negative health impacts (and thus reduced productivity and higher public finance costs), lost economic opportunities as others outpace us in developing eco-efficient innovations, and economic costs as a poor environment becomes a drag on future growth.

Positive as these results show the potential impact of Lisbon to be, they may even underestimate the costs of failing to implement the strategy, as they tend to ignore the complementarities that have already emerged between reforms undertaken in different domains. More analytical studies tend to show that in order to reach maximum effectiveness, measures in one reform domain need to be accompanied by flanking measures in another domain. Measures that increase the level of competition in product markets, for example, often lead to economic restructuring, implying job losses in some sectors and employment creation in others. Well functioning labour markets and sufficient social support tend to facilitate the transition process. Similarly, full exploitation of the potential benefits of EU financial integration would require an efficient competition regime, increased transparency of financial information and macro-stability.

While this paper shows that a considerable body of empirical literature covering the impact of structural reforms similar to the ones included in the Lisbon strategy already exists, further research would certainly be useful. Although there is wide agreement that there is no genuine trade-off between productivity and employment in the long-run, there is a clear need for greater understanding of the interactions and synergies between the different Lisbon reforms in order to better combine reforms. Similarly, while the empirical literature presented here covers the medium- to long-term impact of structural reforms, it has relatively little to say on the short-term adjustment costs associated with reforms. More work needs to be done, therefore, to establish what flanking policies are needed to maximise the benefits of Lisbon while minimising the adjustment costs.

1. INTRODUCTION

At the European Council of March 2000 in Lisbon, the EU launched a comprehensive set of targets, to be achieved by implementing a raft of integrated structural reforms over the next decade, geared towards the general objective of becoming "the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion" (paragraph 5 of the Council Conclusions). This became known as the "Lisbon strategy" or the "Lisbon agenda". It was a response to the acknowledgement by European leaders of the need for far-reaching reforms in the EU to meet the challenges of ageing, enlargement and globalisation. EU Heads of State and Government were well aware that this could only be effectively undertaken by a concerted approach involving all Member States and many policy areas. The Gothenburg European Council of June 2001 added a third, environmental dimension to the Lisbon strategy, complementing the economic and social dimensions stressed by the Lisbon European Council.

The national governments were asked to develop and implement the reforms at the national level, with the support of an appropriate Europe-wide framework. While the need to coordinate at the EU level the reforms to be undertaken was clearly acknowledged, there was also a clear perception that each Member State was facing different challenges and that the idiosyncrasies of each economy had to be considered in implementing such a strategy.

A mid-term review of the Lisbon strategy is presently under way; but one thing that is already clear is that the objectives are far from being achieved. Over the last four years, the overall growth performance of the European economy has been disappointing. While the cyclical slowdown that has occurred at world – and, more importantly, European – level has put a brake on the economic growth that is so crucial to achieving the Lisbon objectives of creating more and better jobs, the slow pace of structural reforms has also contributed to the failure to achieve these goals. Structural reforms are important in view of the challenges of globalisation, ageing, enlargement and ecological fragility, which the EU is now facing. This point is reinforced by European Commission projections which show that the impact of ageing populations alone will be to reduce the potential growth rate of the EU from the present rate of 2-2¼% to around 1¼% by 2040. Clearly, the structural reforms envisaged in the Lisbon strategy must be implemented if this is to be avoided.

The Commission in its Communication on the mid-term review of the Lisbon Strategy "Working together for growth and jobs. A new start for the Lisbon Strategy" favours an increased focus around two principal tasks – delivering stronger, lasting growth and creating more and better jobs. Meeting the growth and jobs challenge is key to help realise Europe's economic, social and environmental objectives. Given the widely shared opinion that where the strategy has gone wrong to date is in its failure to actually implement the programmed initiatives, the renewed Lisbon strategy endeavours to step up the pace of reforms by proposing a stronger partnership with the Member States and social partners to increase their involvement in and commitment to the process.

The purpose of this paper is to analyse the impact of Lisbon-type structural reforms. While these reforms do no correspond exactly to the present Lisbon package, they are designed to achieve the same goals as those set out in the strategy. Since many of these Lisbon-type reforms were already proposed in the Broad Economic Policy Guidelines, the European Employment Strategy and the Internal Market Strategy, there exists a substantial literature on their impact. This paper presents a survey of existing studies on the benefits of implementing Lisbon-type reforms focusing in particular on the economic impact of product, capital and labour market reforms and of investment in knowledge. A survey should provide some insights into the benefits of implementing the reforms foreseen in the Lisbon strategy.

However it should also be clear that at this stage we have only a partial view of the impact of specific reforms and that we do not yet fully understand the interactions between the different reforms envisaged in the Lisbon strategy. Quantifying the impact of structural reforms is extremely difficult, because the heterogeneity of individual reform measures, the time lags in their implementation, the complementarities and trade-offs between reforms in different domains, and the influence of short- to medium-term developments make it difficult to separate the effects of reforms undertaken from other determinants of performance.

The next section attempts to define the scope of the Lisbon agenda – no easy task since so many different policy targets and measures have become associated with the Lisbon strategy over time. Section 3 explains the economic rationale for the structural reforms foreseen within the Lisbon strategy. The focus is on the channels through which such reforms can have a positive effect on key Lisbon objectives such as growth and employment. This section also provides some empirical evidence on the effects of specific reform measures aimed at improving the functioning of product, labour and capital markets and at facilitating the transition towards the knowledge-based economy. Section 4 discusses the interactions between reforms in different markets and their overall macroeconomic impact, since having an integrated reform strategy is the essence of the Lisbon agenda. Section 5 concludes.

2. WHAT IS THE LISBON STRATEGY?

The Lisbon European Council conclusions – the basic text defining the Lisbon strategy – set out a broad range of objectives and policy tools. The initial objectives were sustainable economic growth, more and better jobs, and greater social cohesion. The Gothenburg European Council of June 2001 added an environmental pillar. As far as policy tools are concerned, the Lisbon conclusions make reference to the need to apply an appropriate macroeconomic policy mix, to modernise the European social model, to invest in people and combat social exclusion; to improve R&D and ICT policies, to stimulate competitiveness and innovation, and to complete the internal market.

The breadth of its scope makes the Lisbon strategy very different from earlier Community initiatives such as the internal market and economic and monetary union, which had more precisely defined programmes. Some argue that one of the reasons why the Lisbon strategy has been relatively ineffective thus far is a lack of focus and clarity about its contents, and this view is reflected in the report prepared by the High Level Group chaired by Wim Kok (2004), which concludes that Europe needs to focus on growth and employment first without neglecting environmental and social concerns in the process.

The wide scope of the Lisbon strategy has made it necessary to identify a set of operational targets or policy measures necessary to achieve the objectives. However, this is far from straightforward given the difficulty of distinguishing clear policy objectives (e.g. “An overall employment rate of 70% in 2010”) from the policy reforms necessary to achieve these objectives (e.g. “Make work pay within tax and benefit systems”), a point that was also made clear in the Kok report and in the Commission communication on the Lisbon Strategy mid-term review.

Nevertheless, a broad classification of policies and objectives should facilitate the description and subsequent economic analysis of the impact of the different reforms undertaken within the context of the Lisbon strategy. Such a classification makes it easier to appreciate the scope of the Lisbon strategy and to assess the economic consequences of reforms undertaken. In this paper the Lisbon reforms are classified in five categories: product and capital market reforms; investment in the knowledge-based economy; labour market reforms; social policy reforms; and environmental reforms. Reference is also made to the macroeconomic framework

conditions, since they influence the likelihood that the necessary reforms will be undertaken and the objectives achieved. Classification is a first step in systematically investigating the economic channels through which the different reforms affect the EU's ability to achieve the Lisbon objectives. These reforms contribute to increased productivity and greater job creation which, together with a cleaner environment, should ultimately lead to a higher standard of living for EU citizens.

This paper suggests a number of links between structural reforms and performance in terms of achieving the Lisbon objectives:

- Reforms in product and capital markets, infrastructure investments to interconnect markets, investment in the knowledge-based economy and labour market reforms should create better functioning markets, thus contributing to the development of a more competitive and dynamic knowledge-based economy. A better economic performance should lead to the creation of more and better jobs which, together with social policy reforms, should help increase social cohesion in the EU.
- Similarly, efficient social policies and increased social cohesion can contribute to better economic performance. In the social domain the Lisbon strategy focuses on the need to modernise social protection systems in order to ensure that work pays, strengthen financial and social sustainability and improve working conditions and skill levels. In the longer term, such social policies, particularly if based on efficient investments in human capital, should be conducive to higher economic growth as they tend to improve the productivity and to raise the participation of the labour force.
- The environmental policy reforms envisaged within the context of the Lisbon strategy are aimed at: improving the understanding of environmental problems such as global warming; stimulating growth through eco-innovation; integration of environmental issues into other policy areas so that policies become more coherent; tax reform and increased use of market-based instruments to tackle environmental degradation so that environmental costs are internalised more efficiently; the removal of environmentally harmful subsidies; and the more economically productive and environmentally sustainable use of natural resources.

3. ECONOMIC RATIONALE AND EMPIRICAL SUPPORT FOR LISBON-TYPE REFORMS

The classification of reforms and objectives set out above suggests a number of economic links between structural reforms and performance. This chapter aims to explain the economic rationale for the Lisbon-type reforms by describing the channels through which these reforms can be related to the main Lisbon targets. Section 3.5 is devoted to a discussion of the potential synergies and trade-offs between the reforms in the different domains while section 3.6 focuses in particular on, social and environmental policies and their interactions with the economy.

The ultimate objective of structural reforms is a sustainable improvement in welfare. This broadly depends on three factors: income or wealth creation; the distribution of that wealth among individuals; and the quality of the environment. Gross Domestic Product (GDP) per head of the population can be viewed as a good measure of income or wealth creation (although as a simple average, it says little about the way in which this is distributed amongst

the population, and it is arguable whether all activities which contribute to GDP are socially or environmentally desirable), and can be broken down as follows[1]:

GDP/Population = (GDP/Employment)*(Employment/Population)

The equation illustrates the fact that income or wealth creation may occur through two main channels: gains in labour productivity, and increases in the share of the population that is actively employed. The former may be brought about by increasing the efficiency and innovative capacity of the productive system, while the latter reflects the extent of job creation and, more generally, increases in the total number of hours worked by the population as a whole. The impact of Lisbon-type reforms on labour productivity and working hours is considered below, from both a theoretical and an empirical perspective.

It is extremely difficult to quantify the impact of such reforms as the heterogeneity of individual reform measures, the time lags in their implementation, the complementarities and trade-offs between reforms in different domains, and the influence of short- to medium-term developments make it difficult to separate the effects of reforms from other determinants of performance.

The various studies investigating the benefits of Lisbon-type reforms are organised by reform domain, as most of them cover one domain only. A small number of studies that look at the effects of the reform effort overall are considered in Section 4. The main results are described below. The results of studies that are particularly relevant for the EU are summarised in Annex I. However, when looking at the overview table it is essential to keep in mind that different studies use different methodologies. Comparisons of the growth and employment effects of different reform measures are therefore fraught with danger. Adding the effects reported in one study to those of another should not even be considered. This short and admittedly incomplete overview of the main results of some of the most relevant studies may nevertheless be useful.

3.1. Product market reforms

The Lisbon strategy envisages a number of measures intended to create a better functioning internal market and improve the business environment. These measures should have a positive effect on productivity and potential growth, because a larger and more attractive market will have more competition as well. As a result, market distortions will be alleviated and incentives for investment and innovation created, and the competitiveness of the EU will be strengthened. The following specific measures are being considered:

1. Within the context of the Internal Market Strategy:

- The completion of the internal market for goods and services, implying the abolishment of all remaining non-tariff barriers to trade and cross-border activities between Member States, in particular in the services sector. It also implies the removal of market distortions created by unwarranted subsidies and State aids.
- The liberalisation of the network industries, which mostly concerns the opening up of telecom, energy, transport and postal services markets to competition at both the national and the Union level and the establishment of physical interconnections between markets.

[1] It should be noted that this breakdown holds only approximately (with more problems in the case of smaller countries). The reason is that productivity (GDP/employment) relates to employment on the domestic territory, while the employment rate refers to resident employment.

- The opening up of markets which were previously sheltered from competition because of stringent entry barriers and regulations (permits, licences, minimum capital requirements, legal barriers, shop opening hours, regulated prices, limited sales periods, etc.) or anti-competitive behaviour.

2. With the aim of creating a more business-friendly environment:

- A reduction of the regulatory burden, an improvement of the quality of legislation and taxation, and a facilitation of business start-ups, for instance through better access to risk capital.

These reforms affect productivity and employment via three channels:

- Increased allocative efficiency. The immediate impact of reforms is on allocative efficiency. In any given market, increased competition reduces monopoly rents, which translates into lower prices. As prices move closer to marginal costs, distortions in the structure of consumption are corrected and total output is raised towards levels closer to the social optimum. However, allocative efficiency gains are neither the only nor the most important outcome of reforms. Already in the mid-1980s, Pelkmans (1984) and Geroski and Jacquemin (1985) argued, when discussing the expected gains from the Single Market Programme, that productive and dynamic efficiency effects were far more important than allocative ones.
- Increased productive efficiency. Competition has a corrective effect on the behaviour of managers and workers, leading to a reduction of slack, trimming of fat and improvement in the efficiency of the organisation of work.
- Enhanced dynamic efficiency. Stronger competition also provides an increased incentive for producers to move closer to the technological frontier, investing more in product and process innovations. Investment in the knowledge-based economy strongly affects dynamic efficiency as well (see section 3.3).

These three kinds of efficiency are strengthened by the completion of a well interconnected Internal Market whereby old national monopolies are obliged to compete with each other and bigger markets allow firms to reap economies of scale. Finally, consumer protection rules help ensure that the benefits of sharper competition are actually passed on to consumers[2].

The European Commission (2004a) surveys the main empirical results on the channels through which product market reforms affect allocative, productive and dynamic efficiency. The main results are summarised in Table 1.

There is a great variety of other empirical work looking at the impact of product market reforms in different policy areas. The survey below classifies the different studies according to the four policy areas identified above. It also provides a short description of studies that have taken a more integrated approach to assessing the impact of product market reforms.

[2] However, the variation between Member States in prices of identical goods and services is evidence that the full force of competition has not yet been felt in business-to-consumer relations.

Table 1: Summary of the main empirical results

Channel	Main empirical results
Allocative efficiency	• Product market reforms usually reduce economic rents (mark-ups). • Product market reforms have substantial impact on entry. • Productivity gains are mainly due to reorganisation within the firm, except in high-tech industries where new firms contribute the most to productivity gains.
Productive efficiency	• Increase in competition is associated with an increase in technical efficiency. • Product market competition reduces agency costs (shareholders better monitor managers).
Dynamic efficiency	• Evidence of an inverted U-shaped relationship between competition and innovation. • More competition usually leads to Total Factor Productivity (TFP) growth but with long lags. • Creative destruction accounts for most of the TFP growth. • Distance to technological frontier matters.

Source: European Commission (2004a)

3.1.1. Completing the internal market for goods and services

One of the best examples of a Lisbon-type reform aimed at creating a more competitive business environment is the Single Market Programme (SMP). A simulation carried out ten years after the launch of the SMP showed that GDP would have been 1.8% lower in 2002 if the SMP (including liberalisation of network industries) had not been implemented over the period 1992-2002. The level of employment would have been 1.5% lower than it actually was in 2002 (see Annex I).

Turning to reforms directly linked to the Lisbon strategy, a computable general equilibrium model developed by Copenhagen Economics (2005) provides estimates of the medium-term impact of opening services to competition on GDP (+ 0.6%) and employment (+ 0.3%). The freedom of establishment for service providers and the free movement of services between Member States[3] should result in a direct reduction in the costs of delivering cross-border services and an increase in competition among service providers, which should benefit consumers both within and outside the sector being opened up to competition from abroad.

[3] A recent study commissioned by the Dutch Presidency estimates that the full implementation of the services directive could increase intra-EU bilateral trade in commercial services by 15–35% while total trade within the EU could increase by 1% - 3%. The growth in FDI in services could increase by 15–35%, see CPB (2004).

3.1.2. The liberalisation of the network industries and the better integration of national networks

The effects of the liberalisation of the network industries are the subject of a yearly evaluation by the Commission Services (European Commission, 2004b). The 2004 report shows that market structures in network industries are changing very gradually, with new firms entering those markets that are open to competition. The restructuring process associated with this change in the competitive environment was accompanied by stronger productivity gains in these industries than those seen in the economy as a whole between 1996 and 2001, with productivity increasing most rapidly in the communications, air transport and energy sectors. A study by O'Mahony and van Ark (2003) shows (see Table 2) that EU labour productivity growth rates in gas, electricity and water utilities have outpaced those of the US, where reforms have fallen behind in recent years. This underlines the contribution of market opening to driving efficiency improvements in these sectors. Studies by the OECD (2000a) and the Commission (2002b) point in a similar direction[4]. The latter provides estimates showing a 0.6 percentage point increase in GDP in the long run as a consequence of the liberalisation of electricity and telecom markets in particular (see Annex I for further details).

Table 2: Evolution of labour productivity per hour worked in gas, electricity and water utilities (change per year)

	1979-1990	**1990-1995**	**1995-2001**
EU-15	2.7%	3.6%	5.7%
US	1.1%	1.8%	0.1%

Fully integrated trans-European networks (TENs) are vital for the Union's competitiveness, and this will be particularly true when the new Member States start catching up. By reducing transport costs and by widening markets, TENs foster international trade and favour internal market dynamism. The process of interconnecting national networks is similar to that of reducing trade barriers. TENs improves accessibility and interconnectivity, increasing positive agglomeration externalities and scale economies. Transport networks play an important role in the location of productive activities and services, leading to increased regional specialisation and a concentration of high value added services.

The extended impact assessment of the recent revision of the trans-European transport network policy (European Commission, 2003c) showed that by focusing investments on 30 major transnational axes – in particular cross-border infrastructure – and on the integration of the networks of the new Member States with those of the EU15, economic development and employment would be stimulated. If no investments were made in these axes, European GDP in 2020 would be 0.2-0.3% lower. Other studies focus more specifically on the economic benefits associated with the liberalisation of the air transport (European Commission, 1999 and 2005b) and railway (NERA, 2003) sectors.

[4] There are however studies providing more mixed results. For example, Van der Lijn et al. (2004) show that while entry liberalisation is found to have a positive effect on productivity in the telecommunications sector, no effect is found in the postal and energy sectors. Moreover, the study finds that competition has a negative impact on labour productivity in the postal services sector.

3.1.3. Deregulation of market entry and exit

There is also evidence of the positive effects of the initiatives taken to open up markets sheltered from competition because of stringent regulation on entry. A recent OECD study (OECD (2003)) shows evidence of the positive links between a reduction in entry barriers and productivity performance. Entry liberalisation over a ten-year time horizon is found to have two effects. First, entry liberalisation in utilities and market services is estimated to boost annual productivity growth in the overall business sector by about 0.1 to 0.2 percentage points. Second, the removal of trade and administrative barriers to entry can also help reduce the technology gap accumulated in some heavily regulated manufacturing industries: such reforms are estimated to have boosted manufacturing-wide annual productivity growth by 0.1–0.2 percentage points in some European countries and most notably Germany, France, Italy and Greece. Cincera (2004) shows that a decrease in product market regulation leads on average to higher entry and exit rates, which in turn affect output, employment and labour productivity growth rates (see Annex I). However, Cincera's results show a great variation of such effects across sectors.

3.1.4. The creation of a more business-friendly environment

Market regulation is essential to create a low-cost environment in which commercial transactions can take place. It may also serve to correct market failures or to protect market participants. Nevertheless, the cumulative impact of such regulations may impose substantial economic costs. It is therefore essential that regulations are well designed and proportionate. This is especially important for small and medium-sized enterprises, which usually have only limited resources to deal with the administration resulting from both Community and national legislation. In the EU's quest for better regulation, existing regulation is screened for simplification potential and the overall benefits and costs of new or revised regulations are carefully considered. Requirements to better inform consumers, for example, can be costly for business in the short term, but may be beneficial in the longer run as better informed consumers are more confident and willing to make purchases.

Easing the regulatory burden on business is widely viewed as an effective way to encourage investment. When making major legislative and policy proposals, the Commission and the EU Member States have committed themselves to assessing in an integrated manner the economic, social and environmental impacts of their decisions (see European Commission (2004i), including the impact on the administrative requirements on business. The Council presidency has expressed the aim of streamlining reporting and information obligations arising from business legislation and regulations, and to reduce the administrative burden on firms in this way. The possibility of a common approach for measuring the administrative costs of new and existing legislation is currently being explored. The term "administrative costs" is thus used here to cover only part of the total regulatory costs faced by businesses – which also include the economic, social and environmental costs associated with every piece of legislation. The direct and indirect effects of reducing the administrative costs on firms have been analysed empirically by Tang and Verweij (2004). Under the assumption that the administrative burden on business for the whole of the EU is equivalent to the value estimated for the Dutch economy, 3.6% of GDP (implying that the total administrative burden in the EU would total 340 billion euro in 2002), Tang and Verweij come to the conclusion that a 25% reduction in the administrative burden in the EU would result in a 1% increase in real GDP (1.4% in the long run).

In the field of company taxation, a recent survey by the European Commission (2004j) indicates substantial corporate tax compliance costs that vary between 1.9% of the tax levied on large corporations and up to 30.9% for SMEs. Compliance costs linked to cross-border activities – mainly transfer pricing issues and difficulties in the system of cross-border

repayment or refund of VAT – are also found to be significant obstacles to pan-European operations.

3.1.5. Integrated approach to measuring the impact of product market reforms

Finally there is also increasing empirical evidence showing that integrated product market reforms have a positive impact overall on productivity and employment/output. A paper by the OECD (2001) shows that, even controlling for a number of policies and institutional factors affecting the functioning of labour markets, anticompetitive product market regulations such as those that establish entry barriers in potentially competitive markets or unduly restrict market mechanisms are found to have significant negative effects on non-agricultural employment rates in OECD economies. The data set used in this study is based on the responses by OECD Member States to an ad hoc questionnaire as well as publicly available information that allows the calculation of summary indicators of product market regulation (Nicoletti et al., 1999). The empirical results suggest that in some countries the product market regulatory environment may account for up to 3 percentage points of deviation of the employment rate from the OECD average.

Using a panel of 20 OECD countries for the period 1985-1995, Salgado (2002) estimated the impact of product market reforms (i.e. reductions in tariff rates as well as the deregulation and liberalisation of product markets) on total factor productivity growth to be between 0.2 and 0.3 percentage points a year in the long run, while being weak in the short run, a finding which lends support to the Lisbon strategy's emphasis on long-term reform measures. Evidence for the EU in particular can be found in European Commission (2003a), which estimated that moving to US levels of regulation would result in a 0.15 percentage point increase in the long-run productivity growth rate of the EU economy (see Annex I). These gains would mostly occur through increased investment, since the regulatory environment is identified in the study as a key determinant of capital deepening.

3.2. EU financial integration

The Lisbon strategy includes a number of concrete measures to accelerate the completion of the internal market for financial services. These measures include: (i) implementing the Financial Services Action Plan (FSAP) by 2005 and the Risk Capital Action Plan (RCAP) by 2003; (ii) promoting further integration of EU government bond markets; (iii) enhancing the comparability of companies' financial statements; (iv) more intensive co-operation among financial market regulators; and (v) conclusion of the "tax package"[5].

Financial integration will enhance the development of the EU financial sector and reduce the cost of capital, and thereby contribute to other Lisbon objectives such as e.g. investment in knowledge and innovation. This should have positive effects on the overall performance of the EU economy. Indeed the economic literature indicates a direct causal link from financial development to economic growth and welfare via several channels:

- Lower transaction costs. Financial integration delivers large and liquid financial markets, economies of scale and scope in the provision of financial services, and increased competition among service providers. These factors combine to provide a lower cost of capital for borrowers and higher returns for investors.

[5] In December 1997, EU Finance Ministers adopted a tax package, the three main elements of which are a Code of Conduct on Business Taxation, proposals for a Directive on the taxation of income from savings, and proposals for a Directive on the taxation of interest and royalty payments between companies.

- Wider opportunities for risk sharing. By facilitating cross-border transactions, integration increases the scope for investors to diversify risk geographically. Furthermore, a large and competitive financial system stimulates innovation and so provides a wider range of instruments/techniques for spreading risk.
- More efficient resource allocation. Lower transaction costs and better risk-sharing opportunities ultimately result in a more efficient allocation of capital, ensuring higher and more productive investment. Easier access to financing improves the competitive position of producers and facilitates the adjustment of the economy to changes in the external environment and/or technology[6].

Improvements in cost effectiveness, risk management and resource allocation within the EU economy should be reflected in higher sustainable rates of output growth and employment creation.

Little empirical analysis has been conducted on the economic effects of financial integration, although what is available tends to support the existence of significant economic benefits. In the specific case of the EU, an early estimation of the economic benefits of financial integration was made in the 1988 Cecchini Report in connection with the Single Market Programme (SMP). It estimated that there would be an increase of 0.7% of GDP from the value-added of financial services in the eight Member States analysed, arising directly from the integration of financial markets (European Commission, 1988). This estimate was based on relatively simple static analysis; dynamic effects might be expected to generate a higher figure. The economic benefits of financial integration were confirmed by two independent studies undertaken on behalf of the Commission and published at the end of 2002[7].

A study by London Economics (2002) adopts a macroeconomic approach to quantifying the economic effect of financial integration in the EU. The study focuses on the benefits of integrating the set of fragmented national systems into a pan-EU system by estimating the static efficiency gains from deeper and more liquid equity and bond markets. These gains are supplemented by improvements in the functioning of market infrastructure and greater competition between sources of direct and indirect financing. The London Economics study concludes that fully integrated markets could – in the medium to long term – lower the cost of capital for EU companies by about 0.5 percentage points, and that this could bring about (i) a rise in the level of GDP of 1.1% in the long run; (ii) a 6% increase in the level of investment; (iii) a 0.8% increase in the level of private consumption; and (iv) a rise of 0.5% in the level of employment. The authors suggest that introducing dynamic adjustments would greatly increase the output and employment gains. The study also presents the results of a survey of market participants, which is used to confirm the assumptions underlying the empirical analysis.

Giannetti et al. (2002) adopt a more microeconomic approach and focus on the relationship between financial-market integration and corporate growth. Their approach has three stages. First, they screen the available measures of financial development – related for instance to efficiency or the size of the financial system. Second, they examine the impact of financial integration on financial development, which is expected to be positive, both quantitatively

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6 The lag in financial development may be considered an important factor explaining the gap in performance between the EU and the US, most notably in relation to the availability of finance for innovative – but riskier – companies.

7 The available evidence is not conclusive, however. Some studies show for example that the size of the effect of international financial integration on economic growth is conditional on the degree of development of country's overall and financial institutions – which is an interesting consideration especially for some of the new Member States. Other studies find that the estimated effect varies with the indicator used to measure financial integration. Other studies still find no positive effect at all. See, for example, Edison et al. (2002) and Khan et al. (2000). .

(larger market and access to foreign markets and lenders) and qualitatively (import of better institutions, e.g. relating to creditor rights and investor protection). Third, an econometric analysis, at both industry sector and firm level, provides estimates of the output growth effects of greater financial development due to integration. The effect varies among Member States depending on their initial level of financial development, and SMEs would gain more than large companies, reflecting the fact that the latter already have access to international capital markets. In a scenario in which EU manufacturing companies would have the same access to finance as US companies, the annual growth rate of value added in EU manufacturing is estimated to increase by 0.75–0.94 percentage points on a durable basis.

In spite of progress in other domains, retail financial markets in the EU remain heavily fragmented. Cecchini et al. (2003) show that the integration of markets such as those for mortgage credits, online-banking or investment funds is still incomplete, which is costly, in particular for private consumers. The study confirms that the lack of integration in Europe's retail financial markets weakens the EU's overall growth perspective.

3.3. Investment in the knowledge-based economy

Increasing investment in knowledge is crucial for the EU. To put things into perspective, the EU invests only 4.0% of GDP in R&D, software and higher education as opposed to the US's 6.8%. Moreover, the EU has been less successful than the US in translating knowledge investment into innovative technologies used in commercial products. Fostering the transition to a knowledge-based economy is therefore a central part of the overall strategy to increase the growth potential of the EU. The knowledge-based economy is based on the diffusion of knowledge (lifelong learning), the addition of new knowledge to the existing stock (R&D, education) and its application to everyday life (use of technology, product and process innovation).

While traditional growth theories explain differences in growth by the expansion in inputs, such as capital and labour, and by the catching-up of countries with lower productivity, modern theories emphasise research inputs and human capital as the key drivers for long-run growth:

- Investment in education and training. Any loss in production due to people staying longer at school rather than working is offset by an increase in human capital which raises future productive potential. Both the individual and society as a whole are thus rewarded for sacrificing current consumption in return for higher output, consumption and welfare in future years. As the macroeconomic rewards on such investment tend to outweigh private returns, there is a case for combining public and private investment in education and training.
- Investment in R&D and innovation. R&D affects economic growth through various channels. While the more innovative R&D will contribute to economic growth by creating new markets in the form of new products and services or new processes, most R&D is more of the incremental type, bringing improvements to existing products, services and processes. Nonetheless, in general R&D is considered to increase economic growth by shifting the production frontier upward. It does so by improving the productivity of physical and human capital inputs or by inducing changes in these inputs. Moreover, R&D not only stimulates growth for the organisation engaged in R&D itself, but also triggers knowledge diffusion throughout the economy, benefiting other technology users.

- Production and use of ICT. In the light of the extraordinary productivity increases in the ICT sector, a country's overall productivity growth rate can partly be explained by its degree of specialisation in the ICT sector. However, productivity gains can also result from the use of ICT technologies in other sectors, further sustaining the ICT effect on aggregate productivity.

Finally, it is important to keep in mind that an economy's innovation capacity is defined not only as its ability to produce new ideas but also its ability to commercialise the flow of innovative technologies and product innovations over the longer term.

The EU's future productivity performance thus hinges on its capacity to boost the production, absorption and commercial exploitation of new, more knowledge-based, technologies. The Lisbon strategy reforms in the knowledge domain are therefore aimed at interactively stimulating investment in: (i) education and training (i.e. human capital); (ii) research and innovation, and (iii) the production and use of Information and Communication Technologies (ICT).

3.3.1. Investment in education and training

The achievement of the Lisbon goal of increasing potential growth is crucially dependent on the quality of Europe's human capital. Increased investments in lifelong learning (including initial and continuing education and vocational and adult training) will help create a more adaptable labour force, better suited for the new jobs being created in the knowledge economy, as well the development of an entrepreneurial attitude. By fostering individual employability while ensuring social and economic inclusion, the improvement of the stock of human capital will promote growth, productivity and employment.

There is evidence that rising educational attainment, i.e. the successful completion of a given level of education, such as lower-secondary school, has been a major influence on economic growth (see Annex I). The European Commission (2003b) estimates that a better endowed and more effective education system leading to a one-year increase in the average attainment of the working age population might add as much as 0.3 to 0.5 percentage points to the annual EU GDP growth rate. This justifies the Education Council's adoption of benchmarking in this area (see Council, 2003).

Public investment in education in Europe amounts to some 5% of GDP and 11% of public budgets. It is therefore legitimate to devote a significant, concerted effort to ensuring its greatest possible efficiency in order to maximise the return on it. Additional public resources should, in the first instance, focus on activities for which the social returns are high compared to private returns. A good case might for example be made in favour of guaranteeing universal access to pre-school education and childcare from infancy. This is likely to have a significant impact both on labour force participation of parents and on greater equity in the personal development of young children. A reduction in the number of early school leavers and increased access to upper secondary and tertiary education would also help in achieving greater equity.

Ensuring appropriate incentives for private investment in lifelong learning should also be a concern for public policy. One of the key differences between the EU and its competitors lies in the level of private investment in education, particular higher education and continuing training. For example, private investment in educational institutions is four times higher in the US than in the EU (2.2% of GDP compared with 0.6% in the EU). Thought needs to be given to how to reconcile European concerns about the impact on equity of increased private investment with the efficiency gains from the public-private partnership.

3.3.2. Investments in R&D and innovation

The efforts put into education and training should be accompanied by an increase in spending on R&D, since a persistent and growing differential exists in the amount of resources devoted to R&D in the EU and in the US, both in terms of the overall research intensity of the respective economies (1.9% versus 2.8% of GDP) and in absolute amounts. The superior performance of the US economy in creating and exploiting new technologies was one of the motivations for launching the Lisbon strategy. The US employs nearly 300 000 more researchers than the EU, the majority in the business sector (over 80%, against 50% in the EU). A much larger share of R&D in the US is carried out by businesses than in the EU. This is why the 2002 Barcelona Council set the ambitious and challenging objective for the Union of increasing its investment in research and development towards 3% of GDP by 2010, with two thirds of total R&D spending coming from the business sector. Other structural problems the EU faces in this domain are the fragmentation of its research activity, the lack of mobility of researchers induced by labour market fragmentation and rigidities, and the difficulty (and insufficient incentives) of bringing innovations into the marketplace and of hiring non-EU nationals as researchers.

Structural reforms under the Lisbon agenda will boost the research inputs from the public and private sectors, by laying the foundations for the development of a genuine European Research Area, creating better interconnections between science and industry and improving the framework conditions for investment in technology and innovation. To achieve this, it is crucial to ensure:

- the promotion of a strong culture of innovation which builds on a productive, interactive relationship between education, research and industry[8];
- well functioning product markets so that firms have an incentive to innovate and new ideas can flow into the market through the entry of new firms;
- flexible labour and capital markets, so that innovators have access to financial and human capital.

Evidence that R&D investments can be a main driver of productivity growth can be found in the empirical literature. Following the pioneering work of Griliches (i.e. 1979, 1998) a large number of empirical studies at the country, firm and sector level have confirmed that R&D activity has a positive impact on productivity growth. (for a review of the literature see e.g. Mairesse & Sassenou 1991, Mohnen 2001, WIFO 2001, Mairesse and Mohnen 2002; OECD 2004a). The European Commission (2003a) also highlights the potency of R&D investments in raising long-run productivity and GDP growth rates (see Annex I). A more recent study by the European Commission (2004c) looks in particular at the effects of increasing total EU R&D spending from 1.9% of GDP in 2002 to 3% in 2010 (target set by the Barcelona European Council in March 2002). It estimates that this would result in an increase of 1.7% of GDP (by 2010) while the public budget balances would deteriorate by 0.16% of GDP. In the longer term, GDP would be up by 4.2% in 2015 and 7.0% in 2020, equivalent to a growth surplus of nearly 0.5% per year, and the budget balances would be broadly improved.

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[8] Increased investment in R&D has manpower implications. It is estimated that an additional 1.1 million research personnel, including 700,000 researchers, are required to sustain the 3%-of-GDP target. This has implications for the output of potential researchers by the education system and for the management of the "brain circulation", including the reduction of the internal "brain drain", i.e. wastage of potential researchers (especially women) who are trained by the education system but lost to research. Europe already produces roughly twice as many mathematics, science and technology graduates as the US, but many are lost to European research due to the disincentives which face them as they advance through their career. These disincentives include not only financial conditions but also working conditions and access to advanced technologies.

3.3.3. Production, diffusion and commercialisation of new technologies (including ICT)

Increasing the capacity of the EU to innovate is essential if the EU wants to retain the capacity to develop specialisations in new technologies and sectors. Several studies have shown that some of the recent EU–US divergences in productivity trends are related to the EU's difficulty in re-orienting its economy towards the newer, higher productivity, growth sectors such as ICT. With respect to the ICT sector, the growth accounting estimates reported in Colechia & Schreyer (2002) and van Ark et al. (2003) show that IT investment typically accounts for between 0.3 and 0.8 of a percentage point of growth in GDP per capita over the 1995-2001 period, with the US receiving a larger boost than most EU-15 countries (see also OECD (2004a)).

Comparing the sectoral productivity growth structure of the EU and US economies, one can observe that the EU is not only less specialised in those high-tech sectors which have seen extraordinary gains in productivity (such as ICT-producing sectors) but also that it has been unable to reap the same benefits as the US in terms of TFP gains in the ICT-using sectors (ICT diffusion in the broader sense). It must be emphasised that the most important gains occur in a very narrow segment of the economy and especially in service sectors (retail and wholesale trade and financial services) where productivity is difficult to measure. But beyond any measurement issue, the fact that TFP accelerations in ICT-using industries are not observed in the EU could be either due to adjustment costs (the EU is at an earlier stage of the transition) or it could be the result of institutional constraints in specific industries (e.g. land-use regulations in wholesale and retail trade, less entry of new establishments) which prevents firms from reaping the full benefits of the new technology in EU countries. Gust and Marquez (2002) show that burdensome regulatory environments (including in particular labour market regulations) have impeded the adoption of information technologies in a number of European countries.

3.4. Labour market reforms

The fact that human resources remain greatly under-utilised in the EU is one of the main reasons why GDP per capita is well below the US level; fewer people are in employment and those who are tend to work fewer hours. Making better use of human resources is a top priority in the Lisbon strategy. The EU Heads of State and Government established targets to be achieved by 2010 for overall, female and older workers' employment rates and called for an increase of five years in the effective average age at which people stop working.

The twin aspiration of improving labour market performance and raising productivity growth is neatly summed up in the phrase 'more and better jobs', which implies not only higher employment rates but also more productive and higher-quality employment[9]. This represents a shift from the idea that high unemployment could be solved by discouraging labour supply, an idea which was a great weakness of the employment policies of recent decades and greatly diminished the efficiency of public interventions in the labour market. Labour market reforms now tend to focus on policy measures aimed at:

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[9] The Commission adopted a multidimensional plan aiming to raise the quality of EU jobs and living standards. The new strategy aims to benchmark governments, social partners and NGOs on the basis of 'quality indicators' for individual jobs, labour markets and social policies. The strategy, tabled by Employment and Social Affairs Commissioner Anna Diamantopoulou, calls upon Member States to create an environment for better-paid, better-skilled, safer and healthier jobs, as well as better access to jobs and better social provision. As agreed at the Lisbon summit and in the Social Policy Agenda endorsed at Nice, these goals should be reached by following best practice and by long-term investment in human capital. For governments, this will mean shifting the balance of public resources from passive social transfers to investment.

- Attracting and retaining more people into the labour market. Labour market performance appears to have improved in countries that have created incentives for employers to recruit workers and for workers to become or remain active participants in the labour market, including through preventive and active labour market measures. This not only covers financial incentives stemming from the tax and benefit system, but also for example those arising from improved working conditions, more gender equality, higher job quality and enhanced possibilities to reconcile professional and family life, including child care provision.
- Improving matching between human resources and vacancies. Efforts to lower the mark-up of wages over the reservation wage are aimed at lowering insider-outsider barriers, thus helping to bring down the rate of structural unemployment. Moreover, facilitating labour mobility (both geographical and occupational), modernising public employment agencies and increasing participation in training throughout the life-cycle, leave ample room for better matching. In addition, a preventive, targeted approach should prevent short-term unemployment spells being transformed into long-term unemployment.
- Improving labour market adaptability to meet the needs of workers and enterprises. A greater adaptability of labour markets means increased flexibility combined with security. On the one hand, flexible labour markets are necessary to respond to the increased competition in product markets (which increases the elasticity of demand for labour) and to the challenges raised by technological progress. Moreover, they will raise productivity by allowing a more efficient (re)-allocation of labour. On the other hand, the improvement in job security will contribute to ensuring higher labour market participation and to reducing the risk of segregation between people in employment (e.g. between employees with and without a permanent contract). Moreover, better work organisation will raise social welfare through higher job satisfaction while further increasing the incentives to invest in training and life-long learning.

This change in focus is also reflected in the conclusions of the European Employment Task Force (2002) chaired by Wim Kok, which highlighted four key priorities that must be achieved if the Lisbon employment targets are to be reached. These are: increasing adaptability of workers and enterprises; attracting more people to the labour market and making work a real option for all; investing more – and more effectively – in human capital (for the benefit of productivity as well as employment); and ensuring effective implementation of reforms through better governance.

3.4.1. Recent progress towards the Lisbon employment targets and longer-term developments in European labour markets

Recently, progress towards the Lisbon employment targets has been slower than expected and in contrast with the good performance around the turn of the century. The overall employment rate for the EU-15, for example, increased by only 1.0 percentage point between 2000 and 2003, and the increase in the new Member States was even slower, with the employment rate in the EU-15 reaching only 64.4% in 2003. This disappointing record is largely related to the sharp slowdown in economic activity recorded since mid-2000.

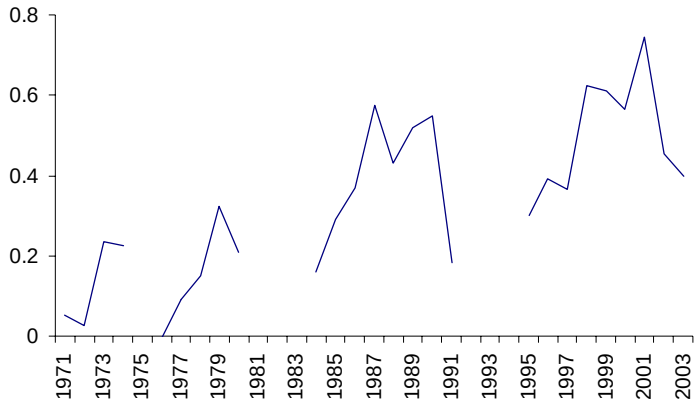
The 2010 target for the female employment rate (60%) seems to be more easily achievable in the EU-15 as the gap is currently only 3.9 percentage points[10]. However, for the EU-25 this gap is still 4.9 percentage points. With respect to the employment rate of older workers (aged

[10] Given changes in cultural attitudes, women from younger generations show higher participation than women from older generations. This cohort effect, fostered further by the increasing average level of female education, may be a main factor in helping bring the female employment rate closer to the Lisbon target.

55-64), despite the considerable recent improvements, in 2003 it is still a long way from the set target of 50%. The gap stands at 8.3 and 9.8 percentage points in the EU-15 and EU-25 respectively. Further assessments can be found in the Employment in Europe report as well as in the Joint Employment Report 2004-05[11].

Nevertheless, two positive developments can be observed. First, in the recent economic downturn employment growth has been quite resilient. In comparison with the late 1980s and early 1990s, the employment intensity of economic growth (i.e. the ratio of employment to GDP growth) has increased significantly (see Graph 1), which may be a sign of structural progress. Another is the fact that the relative situation of older workers improved more over the period 2000-2003 than it did during the recovery of the late 1990s, despite the much less favourable cyclical conditions. However, the resilience of employment during the recent downturn can also be attributed in part to factors that are outside the direct control of discretionary government policies, such as the change in cultural attitudes which has led to a higher rate of participation of women in the labour force.

Graph 1: Employment intensity of economic growth in the EU-15[12]



Source *ECFIN, AMECO database*

The second positive development is that the non-accelerating inflation rate of unemployment (NAIRU) declined in several Member States in the second half of the 1990s. The decline in the structural component of unemployment went hand in hand with the decline in the rate of long-term unemployment. While many factors may explain job-rich growth, wage moderation is certainly an important one. With EMU providing a macro-economic framework in which nominal wage restraint became meaningful, social partners pursued employment-friendly wage agreements over a long period and thereby contributed to the improved employment and labour force response to cyclical developments. Other factors may have played an important role such as the greater availability of part-time work (allowing especially for greater female participation), the shift towards the service sectors, and possibly the increasing skill level of the workforce. There is also evidence that changes in employment and labour force participation increasingly reflect the business cycle. This observation seems to be related to the increase in the share of temporary employment contracts.

It is also critical to continue to ensure that wage-bargaining systems in Europe allow wages to reflect productivity, taking into account productivity differences across skills and local labour-market conditions. According to the economic literature, wage compression, which is

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11 COM(2005)13 final.

12 The employment intensity of economic growth is defined as the ratio of employment growth to GDP growth. The curve has been trimmed because this ratio loses significance whenever GDP growth approaches zero.

likely to be influenced by wage-bargaining institutions, might cause under-employment especially in most disadvantaged groups. In this respect, whilst Europe is often said to be characterised by a high degree of wage compression, a recent study published in the Employment in Europe Report 2004 (European Commission, 2004l) has provided some conflicting empirical evidence, which calls for some caution. The study suggests that relative wage structures may be broadly similar across countries and are not found to be a major determinant of employment structures[13].

The 2004 EU Economy Review (European Commission, 2004f) and annual editions of Employment in Europe (European Commission 2002e, 2003f and 2004l) provide a comprehensive evaluation of labour market performance since the launch of the Lisbon strategy. These studies conclude that the changes in employment performance observed in the latest years reflect structural improvements, especially in those countries that were early in tackling the issue of low participation rates through better designed active labour market policies and welfare-related taxes and benefits as well as reviewing employment protection legislation.

[13] For example, the relative wage structures in the EU, despite very different wage-setting institutions, are not out of line with relative pay structures in the US. The 'wage compression hypothesis' according to which low-wage employment in Europe might be reduced (especially in comparison with the situation on the US labour market) is not confirmed. Comparing employment data on educational attainment levels show, that 'the employment situation of the low-skilled at EU-level seems somewhat more favourable than in the US, with higher employment rates and lower unemployment and inactivity rates for the low-skilled in the EU as compared to the US,' (page 122,123 of the EIE Report 2004) with, however, wide variations within the EU, which it is difficult to link to wage-setting mechanisms.

3.4.2. An assessment of the impact of labour market reforms in the EU Member States

Box 1: The effects of institutions on employment performance

Three main groups of studies on the effects of institutions on labour markets can be identified, as follows:

- Indicators of labour market institutions are used to explain cross-country differences in unemployment rates[14]. Unemployment is usually found to be positively associated with high tax wedges and negatively associated with active labour market policies (ALMPs) and a high degree of coordination/centralisation in wage bargaining. The role of employment protection legislation and union density is still uncertain. The Employment in Europe 2004 Report also provides evidence that reforms of labour market institutions in line with the Lisbon strategy had a positive impact on employment. In fact, it shows that increases in part-time employment and in the intensity of ALMPs spending strongly contributed to the rise of the EU employment rate over the period 1997-2002. Employers' social security contributions are found to have a significant and negative effect on employment rate, although changes in the overall tax wedge did not affect long-term employment performance. However, a large part of the change in structural unemployment remains unexplained. Moreover, these findings must be considered with caution since the interactions between individual institutions can change the sign of the impact each of them has on unemployment. For example the Danish and Swedish cases (see Box 2) show that a generous unemployment benefit coupled with well designed active labour market policies and strict requirement on acceptance of suitable jobs can help to reach a low unemployment rate. This points to the fact that institutions should be assessed according to whether they prevent or facilitate adjustment to economic changes.
- A second group of studies focuses on the interactions between labour market institutions and macroeconomic shocks[15]. The essence of these is that transitory increases in unemployment due to shocks may be prolonged by labour market institutions that restrict labour market flows and protract the adjustment of wages. There is no full consensus on the impact of different institutions. In Blanchard and Wolfers (2000), for instance, all the 'usual suspects' except union density are significant and with the expected sign. Nickell et al. (2005) find that long benefit duration, high union density and low labour mobility contribute to an increase in unemployment, while employment protection legislation has the opposite effect. However, the World Bank (2003) shows that social partnership can lead to lower unemployment.
- A third important strand are studies that look at interactions between different labour market institutions, tackling the caveat mentioned under the first bullet point. Coe and Snower (1997) argued theoretically that a wide range of institutions may have complementary effects on unemployment. In Belot and Van Ours (2001, 2004), institutions strongly influence performance when they reinforce each other. This means that it is harder to predict the response of equilibrium employment to changes in a single institutional variable in isolation. Belot and Van Ours find, for example, that high labour taxes and benefit replacement rates combine to weaken the financial incentives for employment, and that this interaction has driven the evolution of unemployment rates in several countries. The Employment in Europe 2004 Report suggests that the employment response to ALMPs and to changes in policy variables such as the tax wedge and the unemployment benefit replacement ratio partly depends on the level of centralisation of wage bargaining. This again highlights the importance of labour market institutions.

The 2004 EU Economy Review study also summarises the wealth of empirical studies on the effects of institutions on employment performance (see Box 1). Taken together, these studies suggest that labour market institutions can explain a significant share of cross-country differences in labour market performance.

The remainder of this section will review the evidence in three key reform areas – first, measures to increase the financial incentives to work, or "make work pay" policies, second, other incentives to take up a job, and third, reform of Employment Protection Legislation (EPL) as part of efforts to promote both flexibility and security in the labour market at the same time. However, this is not an exhaustive review of the empirical evidence on the impact of labour market reforms (see chapter 2 in European Commission (2004l) on the impact of institutions on employment performances). For instance, the role and effectiveness of active labour market programmes are not discussed here.

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14 See Elmeskov et al. (1998); Nickell and Layard (1999).

15 See Blanchard and Wolfers (2000); Fitoussi et al. (2000); Bertola et al. (2001).

Reform of tax and benefit systems to make work pay: A key feature of policy recommendations in the BEPGs and the European Employment Strategy is the reform of tax and benefit systems to tackle so-called unemployment, inactivity and low-wage traps. The decision to search for and accept a job depends on the situation of other household members and a variety of non-financial incentives (quality of work, availability of child care, work–life balance etc.) as well as financial incentives, which are especially important for people at the lower end of the wage scale who are eligible for welfare transfers[16]. The issue is complex, as the disincentives to work depend not only on taxation, but also on the design of benefit schemes (such as in-work benefits and housing benefits) and discontinuities in social security contribution schedules (see Carone and Salomaki (2001) for a review of the literature on this subject).

Carone, Salomaki, Immervoll and Paturot (2003) show that "make work pay" reforms have diminished the risk of potential low-wage and unemployment traps at certain – especially low – income levels. However, there remains a risk of a low-wage trap for employed persons, especially when benefit levels are negatively related to a person's income. This risk is the highest for households whose overall gross earnings are close to the minimum wage.

Strengthen the other incentives to participate: The BEPGs and the EGs also define a series of incentives for taking up jobs which are not directly related to the tax and benefit systems. For example, life-long learning is likely to be an incentive for older workers to stay in the labour market, while a reduction in the gender pay gap might be an additional incentive to higher participation by women in the labour force. The narrowing in the pay gap is not fully explained by convergence in experience and education but may also be related to the decline in gender discrimination (Pissarides et al.2003)[17]. Moreover, female participation may benefit from measures aimed at better reconciliation of work and family life such as childcare subsidies. Evidence (Jaumotte, 2003) indicates that such subsidies raise the female labour supply and that the employment rate of married women is higher in countries providing for subsidised childcare. Maternity leave (or short paid parental leave) also helps women to reconcile working and family life, reinforcing their attachment to the labour market while allowing them to take care of newborn children. Lastly, the increase in female education in recent decades appears to be a major determinant of the positive trend in female labour force participation: improved education may also increase the returns to professional experience, as more women access higher responsibilities and more qualified occupations (Olivetti, 2001).

Employment Protection Legislation (EPL): the evidence on the impact of EPL on employment and unemployment is somewhat mixed. From a theoretical point of view, Bentolila and Bertola (1990) argue that both job creation and destruction will decrease as a result of an increase in labour adjustment costs but that the resulting effect on total employment in the long run is uncertain. Bertola (1992) suggests also that individual sectors may be affected differently by job protection, which complicates the analysis at the aggregate level. However, Caballero and Hammour (1998) have highlighted the fact that a rise in firing costs may lead firms to substitute capital for labour in the medium run, resulting in a lower job intensity of economic growth.

The empirical evidence is also mixed as regards the EPL effect on total employment. Using cross-sectional data, Nickell (1997) and Nickell et al. (2001) do not find that employment

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16 For a review of policies to make work pay, see EMCO (2003).

17 Anti-discrimination policies, which are part of gender mainstreaming process, are expected to lead to further increases in female participation and employment. However, although there is a relatively well-developed legislative framework regarding equal pay and employment opportunities within the European Union, there remain substantial differences in enforcement (measured for example by the number of lawsuits) and public awareness of these problems.

protection legislation has a significant effect on unemployment and employment rates across countries. Exploiting the time-series dimension of the data, Lazear (1990) and Scarpetta (1996) show a positive relationship between firing costs and unemployment. Blanchard and Wolfers (2000) argue that higher employment protection leads to adverse macroeconomic shocks having a greater effect on unemployment. However, using a survey-based indicator of employment security, Morgan (2001) finds that EPL slows the dynamic adjustment of employment but does not increase the number of persons employed.

The 2002 EU Economy Review (European Commission, 2002b) simulates the potential impact of structural reforms, particularly labour market reforms. The simulation shows that a gradual increase in the participation rate by 1½ percentage points, combined with a cut in initial real wage claims by 1%[18] (uniform across all countries) would result in a 1 percentage point reduction in the natural rate of unemployment. (see Annex I). Moreover, Garibaldi and Mauro (2002), IMF (2003) and Mourre (2004), show that Lisbon-type labour market reforms implemented in the second half of the 1990s are likely to have contributed to the improved employment performance achieved in Europe during the recovery of the late 1990s, although the precise magnitude of the reform effect remains difficult to estimate.

3.5. Policy interactions

The Lisbon strategy embodies the idea that structural improvements in the functioning of markets are required for a sustained increase in employment rates and higher productivity growth. To yield maximum synergies, structural reforms are best implemented in a comprehensive and co-ordinated way. For example, new business opportunities created by product and capital market reforms can only be seized if appropriately educated and skilled workers can be hired under the right conditions. Investment and innovation are likely to benefit from a more competitive and entrepreneurial environment, fostered by structural reforms in product, capital and labour markets that improve market functioning and thus the transfer of resources from low-productivity to higher productivity use. Box 2 describes some examples of reform packages that benefit from such positive synergies.

[18] This corresponds to an ex ante downward shift in the wage-setting curve (i.e. a reduction in the wage mark up) by 1% compared with the baseline level of real wages. Eventually real wages will approach the baseline level.

Box 2: Some examples of successful comprehensive packages of structural reforms

The implementation of the Lisbon strategy does not require a single model of structural reform to be enforced across the EU. Two different models can be regarded as examples of equally good practice in terms of growth and jobs performance.

- The "Anglo-Saxon model" of the Irish and UK economies is based on low levels of regulation, relatively low tax and benefit levels and a relatively high wage and income dispersion. Ireland has implemented a strategy of boosting productivity based on inward foreign direct investment (FDI). Sustained investment in education and training, investments in infrastructure, low corporate and labour tax levels, and low regulatory barriers have contributed to the success of this policy.

  The UK economy has managed to sustain an increase in employment and productivity levels by reforms to improve the functioning of the labour market such as the introduction of programmes to make work pay on the one hand, and the deregulation of product and capital markets on the other (for example, competition-enhancing reforms have been introduced in specific sectors, e.g. professional services), which has put the UK among the OECD economies with the lowest levels of regulation. These reforms have been complemented with measures to support science and innovation (through the extension of tax credits for R&D to large companies) and to improve the skill base, with a particular focus on basic skills and training measures for adults, including apprenticeships.

- The "Scandinavian model", followed in particular in Denmark and Sweden, is based on high levels of taxes and benefits together with relatively compressed wage and income structures. Employment rates are high in both economies and unemployment has decreased, arguably in response to active labour market policies implemented to upgrade skills and to push for continued labour market participation. Denmark for example has introduced important reforms with respect to the duration of benefits and strengthened enforcement of the requirement to take up of what are deemed to be appropriate jobs. Despite the still rather generous benefit levels, such initiatives have had considerable impact on the behaviour of unemployed workers, particularly among the young. The fact that Denmark has somewhat lenient hiring-and-firing rules is another important factor.

  Denmark and Sweden have also taken significant steps to tackle the problem of the ageing population by maintaining high employment rates for older workers. Sweden, for example, has established a notional defined contribution public pension system, with an actuarial link between contributions and entitlements. From the age of 61 it is possible to gradually withdraw from the labour market, combining part-time work and retirement income.

  In addition, both countries have relatively low regulatory barriers in product markets. Given the remaining problems with lack of competition in some sectors (the price levels are well above the EU average) the further opening of particular markets is a policy priority. This strategy has been complemented, particularly in Sweden, by considerable investment in the knowledge economy (Sweden spends more on R&D and IT than the US) and high levels of educational attainment.

  Finally, both countries show that economic reforms can be married successfully with measures to improve environment without the two objectives conflicting. This care of their environment has led to the countries often scoring well in terms of quality of life for their citizens.

In general, it can be said that the UK, Ireland and the Nordic countries are amongst the best performing EU Member States, with relatively high levels of GDP per capita and low rates of structural unemployment[19]. Despite the obvious differences, what these countries have in common is the fact that they have undertaken relatively comprehensive and integrated economic reforms designed to improve the functioning of the market. By doing this they have become more attractive places for firms to develop their activities. However, it should be noted that the Nordic model performs much better when it comes to social and environmental indicators[20].

Some have argued that raising both employment rates and productivity growth may be difficult, because they perceive a negative trade-off between employment and productivity.

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19 The two models described above are not equivalent if we consider a broader set of structural indicators rather than overall labour market indicators such as the employment rate. Whilst it is true that the Nordic countries perform well on almost all structural indicators, the UK performs poorly on some key indicators such as productivity per hour (although it is rising rapidly towards the EU average), risk of poverty rate (17% in UK as opposed to 15% in EU) and business investment (14.6% in UK as opposed to 16.7% in EU).

20 European Commission, SEC(2005)160.

Economic reforms targeted at job creation tend to lure low-productivity workers into employment, which will be reflected not only in a higher employment rate but also in lower productivity figures. However, this short-run notion of a negative relationship between employment and productivity levels should not be confused with a genuine trade-off in a long-run dynamic sense. One of the "big" stylised facts in economics is that, in the long run, technical progress is neutral with respect to employment. Along a balanced growth path, labour productivity, real wages and the capital intensity of production grow at the same rate, driven by technical progress and the efficiency with which factors of production are combined. Labour productivity growth may deviate from this balanced growth path over the short-to-medium term due to job creation, but this should not be regarded as evidence of a true trade-off.

3.6. Social and environmental policies: interactions with the economy

The debate is particularly intense about the interactions between economic reforms, economic performance and social and environmental policies. Some fear that the refocusing of the Lisbon strategy on growth and jobs threatens the European model of society, with its emphasis on social cohesion and high levels of environmental protection. Others argue that overly ambitious or poorly designed and implemented social and environmental policies are a significant drag on growth and adversely affect the performance of the European economy, reducing our ability to deliver social cohesion and environmental protection. A third standpoint is that well-designed social and environmental policies will keep trade-offs to the minimum and can contribute to economic growth and employment, while economic growth that is based on entrenching or widening existing inequalities and increasing damage to the environment will not be sustainable. The remainder of this section considers the potential interactions of social and environmental policies with growth and employment.

3.6.1. Social policies

In the economic literature there is a widely held view that social policy performs two main functions:

- Re-distributing resources from richer to poorer households so as to reduce poverty and improve life opportunities
- Provide income support to those experiencing periods of non-employment

Over the past decade, our comprehension of the role of social policies has improved as we better understand the multiple factors behind economic and social success. The EU has taken the lead in addressing these issues. The role of social policies is much wider than traditionally thought. They not only help reduce social exclusion, but also may contribute to a better economic performance, for example by increasing the capacity of the economy to adapt to economic, social and industrial change. They allow an efficient combination of flexibility and security at the workplace and in the labour market. Social policies therefore perform social as well as economic functions and are an integral part of dynamic economies and societies (see De Grauwe (2002)).

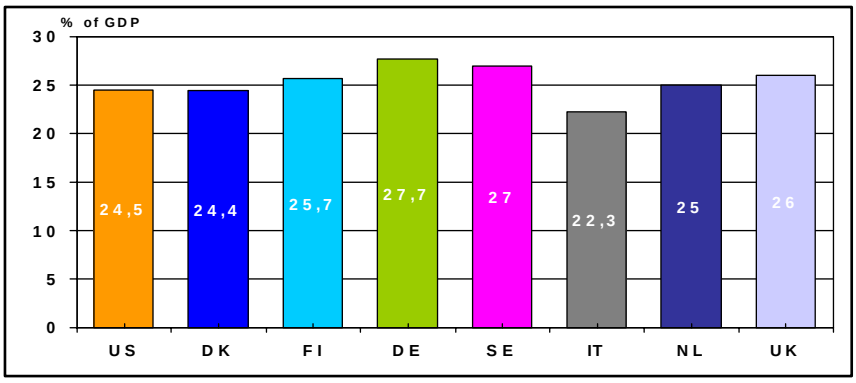
The spectrum of social policies is quite wide and covers forms of income protection such as unemployment insurance and policies against poverty, as well as measures that ease the access to the world of work for both men and women or that protect workers' employability (education, training, and health policies). Social policies cover a variety of areas:

- Labour market policies, educational and training policies improve the employability adaptability of workers and strengthen their human capital There is evidence that educational attainment substantially increases income prospect over the lifetime;

- Inclusion policies increase the prospects of bringing into economic life those groups and individuals at high risk of unemployment or inactivity;
- Investments in social partnership, minimising costly social and industrial conflicts; and
- Investments in high performance standards (including health and safety) at the workplace which raise productivity and reduce accident losses.

The OECD has shown that the total net social protection expenditure, covering both public and obligatory private expenditure, is of a similar order throughout the industrialised world (see Graph 2). The EU does have a real social advantage, with the benefits and costs of our social systems being more evenly shared across our populations, and with fewer social problems in consequence.

Graph 2: Net Social Expenditure



Source:OECD 2000 – Data for 1995 – percentage of GDP at factor cost (incl. Net Public and Obligatory Private Expenditure)

Contrary to the view held by some that social protection undermines competitiveness, economic growth and high employment levels, the example of countries such as Sweden, Denmark, and the Netherlands shows the opposite (see European Policy Centre (2004)). European countries that hold top positions in the World Economic Forum competitiveness ranking tend to have high expenditures on social policies, with high employment rates and low poverty rates after social transfers.

Ensuring that redistributive policies improve overall economic welfare requires careful design of labour market institutions to avoid distortions and dead-weight losses. Labour market institutions should be designed in such a way that they provide an efficient safety net which makes work pay. At the same time, labour market institutions should not hinder labour market dynamics which is an intrinsic characteristic of growing and dynamic economies.

In practice, the occurrence of trade-offs between the economic and social Lisbon objectives depends on how these objectives are pursued. There may be many ways to improve social cohesion, for example, but not all are consistent with higher employment and productivity. As a result, the debate on how to reform European labour and product markets has often been dominated by the false perception of an inescapable trade-off between efficiency and equity. The economic literature suggests that trade-offs are more likely to emerge with poorly designed labour market institutions. There is therefore an important role for policy interventions in designing institutions that provide benefits in terms of insurance and social protection while avoiding the distortions that provide little benefits in terms of both efficiency and distribution of income. One may well imagine ways to improve labour market institutions

and product market regulations which would improve both efficiency and equity, or at least improve one without compromising the other[21].

Despite the above evidence, and despite continued widespread popular public support for Europe's social systems, the benefits of Europe's social policies and their relationship to quality in work are often taken for granted. In general there is a tendency to forget the 'counter-factual' alternative - the cost of not having such social policies in place (see Begg et al. (2004)). Well designed social policies increase adaptability and responsiveness to economic, social and industrial change and avoid 'wastage' and under-use of human resources. This underlines the potential benefits of a modernisation of social policies.

3.6.2. Environmental policies

Environmental policy reforms have both macroeconomic and microeconomic impacts[22]. If environmentally unsustainable trends persist, they will feed back into significant economic costs for the society as a whole. At company level the drive for a better environment leads to eco-innovation, new ways of working, more efficient use of natural resources and lower clean-up costs. There may also be "first-mover" advantages in such reforms as most countries are facing similar problems.

Allowing an environmental problem to deteriorate is not neutral in terms of cost for society or for business. We will eventually have to tackle issues like climate change or they will impose prohibitive costs on our economies through the disruption they cause. Apart from its impact on climate-dependent sectors such as agriculture and tourism, climate change has the potential to cause wider economic disruption, as more frequent and severe storms threaten the security of energy supplies and cause damage to property. Tackling these problems now is likely to be more efficient in the long run.

The recently established European emissions trading scheme is a good example of the type of flexible policies that are needed. Also, when investing in new infrastructure and production facilities, environmental concerns can mostly be taken into account at small or moderate extra cost using existing technologies. This is why it is important to integrate environmental thinking into decisions made in other sectors.

Environmental policies cause an adjustment of economic structures, mainly by changing the property rights regimes for natural resources. The price (in the widest sense of the word) of using environmental resources and of exposing the public to health risks should thus be brought closer in line with the social cost, with the consequence that pollution and risks to public health should decline, and GDP become less pollution-intensive. Polluting industries will thus be held in check while cleaner industries will be boosted, and the net effects on welfare – though not necessarily on economic activity as measured in national accounts statistics – should be largely positive.

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21 Blank (2001) notes three situations in the management of social transfers in which the equity-efficiency trade-off may be low, or there may even be complementarities between equity and efficiency. These are: (1) when transfers go to segments of the population with no capacity of changing their behaviour; (2) when benefits are paid conditional to behavioural requirements; (3) when payments change the behaviour or the opportunities in such a way that income increases in the future. For a recent discussion on labour market institutions and their role in imperfectly competitive and open markets see European Commission (2004d) "Chapter 3 – Labour Markets in the EU: an economic analysis of recent performance and prospects" and the references therein. See also R.A. de Mooij and P.J.G. Tang (2004).

22 In addition to the economic impacts, an improved environment has a direct effect on the quality of life, which can come both through use of natural resources (such as enjoyment of forests rich in biodiversity), non-use (such as the well-documented desire to preserve our national heritage for our children) and through the services that the environment provides to people (for example, healthy ecosystems act as a sink for pollutants that have a negative impact on human health).

Surveys of the literature (such as that by Jaffe et al. (1995)) indicate that there is no robust empirical result suggesting that environmental regulations are negative for competitiveness. This is partially because, with the possible exception of very specific and very polluting industries, regulations have only a limited and marginal impact on economic decisions and are usually marginal compared to other cost concerns. This is true both for trade and specialisation (cf. Ederington, Levinson and Minier (2003), Eskeland and Harrison (2003), Jeppesen, List and Folmer (2002), and Xu (2000)) and for employment (cf. Morgenstern, Pizer and Shih (2000)). It is also worth noting that the environment is a *qualitative* attraction factor that can be important in pulling in skilled workers, as illustrated by Seattle and California.

Moreover, the financial costs of environmental policy are often offset by financial benefits at company level. In particular, environmental policy can encourage companies to innovate, thereby promoting efficient resource use, improving brand and corporate image, and ultimately feeding through into increased profitability. Innovations occur in the development of eco-efficient products, but also in other business areas, as a by-product of investments associated with environmental regulation (see, for example, Porter & Van der Linde (1995), and Lanoie and Laplante (1992)). The gradual but credible long-term tightening of environmental standards and ambitions thus helps to establish new markets for environmental – both abatement and clean – technologies. Eco–industries[23] in the EU-15 were already responsible for providing direct employment for 2 million workers in 1999, see Ecotec (2002). Resource-saving, cost-reducing innovation may also offer first-mover advantages, if other countries subsequently adopt similar policies. Environmental regulation may thus also encourage international competitiveness in particular sectors: Ecotec (2002) found that the EU-15 had a trade surplus of about €5 billion in environmental goods and services. However, this potential first mover advantage does not give carte blanche for tighter European environmental standards – such measures will give rise to international competitive advantage only if European standards are followed internationally.

This survey of the literature does not aim to give a comprehensive review of the impact of environmental policy on growth and employment, as few definitive conclusions can be drawn. For example, while there is a sizeable academic literature on the potential for a "double dividend" of less pollution and higher employment by shifting taxes from labour to pollution, there is little ex post empirical research to support (or refute) this hypothesis. Regarding the links to jobs, a recent OECD (2004b) review concluded that the net effect on employment for the economy as a whole of environmental policy is likely to be neutral or even slightly positive, albeit with the possibility of negative short-term sectoral effects.

Trade-offs with other sectors of the European economy should also be kept in mind. Although there is substantial scope for environmental policy to contribute towards economic performance, there are also areas of environmental policy where trade-offs with economic activity may be unavoidable – and even desirable from the perspective of society at large. Protecting natural habitats, for example, will very often mean restricting the type of economic activity that can take place there. This clearly has costs in terms of foregone economic output but, from the wider perspective of society at large, these costs may be worth paying in order to secure the non-market benefits of nature protection. Jacobs (2004) reports that, in the case of Natura 2000 sites in Scotland, the public give a much higher value to the continued

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[23] Eco-industries include the pollution management sector (air pollution control, waste water treatment, waste management, remediation and clean-up of soil and groundwater, noise and vibration control, environmental monitoring and instrumentation, environmental research and development, public environmental administration, and private environmental management) and the resource management sector (water supply recycled materials, and nature protection).

existence of the protected natural sites than the cost of the lost economic output. Another example is the development of the (internationally successful) European renewable energy industry, which has come at the cost of higher electricity prices for consumers, and presumably, lower levels of investment in conventional electricity generating technologies. Generally, however, with the possible exception of certain very specific and very polluting industries, environmental regulations tend to have only a limited and marginal impact on economic decisions. In particular, it is worth noting that there is no evidence to support the assertion that decoupling has been achieved by exporting pollution through large scale delocalisation towards foreign sites, as this process tends to be determined by factors other than environmental legislation.

Careful design of policies can ensure that negative trade-offs are minimised and positive trade-offs accentuated (European Commission, 2004h). If environmental policy is to stimulate rather than shackle economic activity it must be aimed at reducing damage to productive resources, and must allow for flexible and innovative ways for firms to comply with it. This means that policy should in general specify ends rather than means, and should allow time for firms to adjust to the change in policy so that they can devise and implement innovative solutions. The scope for resource-saving innovation is large: from 1985 to 1999 the output of European manufacturing industry rose by 29 per cent, without any corresponding rise in energy consumption, even at a time of falling real energy prices (European Commission, 2002c). Some other cases in which innovation has reduced the cost of environmental regulation are surveyed in chapter 6 of the 2004 European Economy Review (European Commission, 2004g).

In the same way that well-designed environmental policies can stimulate innovation and benefit the economy, appropriate structural reforms can be environmentally beneficial. In the United Kingdom, for example, electricity market liberalisation led to both lower prices and less pollution as distortions that favoured more expensive, dirtier energy sources were removed. Throughout the new Member States, economic reforms and rapid growth during the 1990s have been accompanied by lower levels of pollution. An example of good policy practice in the transport sector is the quite widespread modification of taxes or introduction of charges to reflect environmental or congestion costs. Such measures encourage the purchase of technologically advanced and fuel-efficient vehicles and a more efficient use of the existing vehicle fleet. Moreover, they significantly reduce the logistical costs of industry associated with congestion.

Structural reforms that aim to encourage more efficient use of resources will often be compatible with reduced levels of pollution and environmental damage. This potential for beneficial environmental spillovers from economic reforms should be encouraged by coupling product market reforms with measures to internalise external environmental costs and to gradually remove environmentally harmful subsidies (such as those to coal), which themselves are a cause of inefficient use of resources.

4. MACROECONOMIC IMPACT OF SOME PACKAGES OF LISBON REFORMS

It is important to take stock of the available empirical evidence of the Lisbon strategy's potential benefits now we have reached its mid-term point, so that we can make an initial assessment of the potential costs of failure to fully implement this integrated reform agenda. The literature on the impact of Lisbon-type reforms is wide-ranging and not easy to summarise. Nevertheless, a clear impression emerges that Lisbon-type reforms have substantial positive economic effects. However, the partial evidence provided in the previous section cannot be simply added up in order to arrive at a global assessment of the costs of non-Lisbon.

To make a global assessment, a global analytical framework – such as the one presented in Sections 2 and 3 – must be integrated into in a macroeconomic model. Some empirical studies have endeavoured to do so by identifying the economic channels through which the individual reforms can have an impact and by linking these reforms to intermediate performance indicators. These intermediate indicators are then used for the construction of stylised Lisbon scenarios. These studies are thus able to provide some evidence on the complementarities and synergies of reforms and to shed light on the economy-wide impact of microeconomic policies. However, the models presented below are not capable of precisely tracking the effects of the reform effort on macroeconomic outcomes, because micro-structural reforms tend to be scattered across countries and over time. Moreover, the analyses tend to be limited to an investigation of the medium-/long-run equilibrium effects of reforms undertaken. Short-term adjustment issues are generally ignored. Therefore, it is not yet possible to show the results of a fully-fledged Lisbon scenario, and more work will be necessary to obtain a comprehensive measure of the costs of non-Lisbon.

4.1. The combined impact of product and labour market reforms

The European Commission (2002b) presents an investigation of the macroeconomic impact of a combined set of product and labour market reform scenarios carried out over the 1990s. It takes into account the three main channels through which labour and product market reforms affect macroeconomic performance, namely wage moderation, greater competitive pressures and productivity gains. The analysis explicitly allows for interactions between structural reforms in product and labour markets, taking into account three main mechanisms through which product market reforms can affect labour markets. First, stepping up competition on product markets increases output and the demand for labour, which makes the latter more sensitive to wages. Second, competitive pressures in the product market dissipate economic rents, putting downward pressure on the associated wage premiums. Finally, with sharper competition firms will produce at lower cost and operate more efficiently, which should lead to a better use of resources and an increase in total factor productivity (TFP).

The scenarios illustrate the joint effects of labour market reforms, increased competition in product markets and higher productivity. Labour market reforms take the form of a gradual increase in the overall participation rate by one and a half percentage points combined with a 1% wage moderation[24]. The increase in competition in product markets is modelled as a reduction of half a percentage point in the mark-up of prices over marginal costs[25]. Finally, we expect that firms tend to operate more efficiently with increasing levels of competition. On this assumption, a one-off TFP-augmenting shock of 1% is introduced in the model simulation.

The simulation shows that the joint introduction of product and labour market reforms leads to a 3–4% increase in GDP levels over a 7-to-8 year period. This corresponds to an increase in the annual GDP growth rate by almost half a percentage point and results in the creation of 5-6 million additional jobs. However, this simulation does not explicitly take into account the entire scope of the Lisbon agenda. In particular, it does not consider initiatives taken to foster the transition to a knowledge-based economy, which would lead to dynamic efficiency gains and an increase in TFP. Dierx, Pichelmann and Röger (2004) use a similar methodology but restrict the analysis to the impact of product market reforms only. They show that such reforms would lead to a medium-term increase in GDP relative to its baseline level of about

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[24] This corresponds to an ex ante downward shift in the wage-setting curve (i.e. a reduction in the wage mark up) by 1% compared with the baseline level of real wages. Eventually real wages will approach the baseline level.

[25] The size of this shock on price mark-ups is based on the empirical evidence of the effects on prices following the liberalisation of the telecom and electricity sectors carried out in previous years.

2% and an acceleration of output growth by almost a quarter of a percentage point annually over a period of seven to eight years.

Other studies have looked at the macroeconomic impact of product and labour market reforms as well. The IMF (2003) carries out a simulation assessing the impact on the euro area of closing the price mark-up gap with the US. It shows that this would lead to a 10% increase in the level of GDP over the long-term (the GDP level would increase by only 4.3% if reforms were limited to the introduction of competition-friendly policies on product markets only). Using a similar methodology, Bayoumi, Laxton and Pesenti (2004) find an even larger impact on GDP of a combined package of product and labour market reforms (+ 12.4%). However, if reforms were restricted to product markets only, the long-run increase in the level of GDP would be less, at 8.6%.

Although useful as analytical instruments, the results of this type of simulation should not be considered to be precise estimates of the macroeconomic effects of specific reforms in improving the functioning of product and labour markets. Amongst other limitations, they often assume a "big bang" implementation, not taking into account the timing and sequencing issues of gradually phased-in reforms. There are quite substantial differences between the results reported in the different studies. These can be due to different assumptions underlying the model simulations or to differences in the research methodology applied.

4.2. The combined impact of product market deregulation and integration, and investment in knowledge

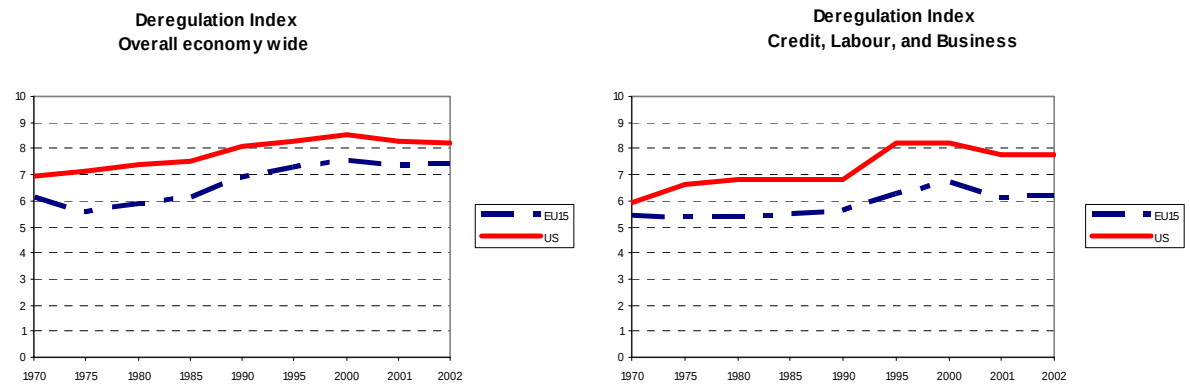
The European Commission (2003a) analyses the macroeconomic impact of a package of Lisbon-type reforms, extending the scope of analysis by including reforms aimed at stimulating investment in knowledge. The empirical framework used in this study combines standard growth regressions with recent developments in endogenous growth theory. The regression model is subjected to "stylised reform shocks" that represent the channels through which Lisbon reforms affect economic performance. The analysis in the Commission paper focuses on the potential impact of regulatory reforms and measures taken to encourage investment in knowledge.

Regulatory reforms

Easing the regulatory burden on business is widely viewed as an effective way to encourage investment. The Commission and the EU Member States have committed themselves to assessing the impact on business of any major legislative and policy proposals they make. Nevertheless, summary indices (such as the one calculated by the Fraser Institute[26], see Graph 3) show that the European economy is still more regulated than the US economy. The graph, which presents an economy-wide deregulation index as well as one relating specifically to capital, labour and goods markets, also reflects EU regulatory reforms, particularly those of the late 1990s.

[26] The overall Fraser index measures the degree of economic freedom present by five major criteria: size of government; legal structure and security of property rights; access to sound money; freedom to trade internationally; and regulation of credit, labour and business. This last sub-index identifies the extent to which regulatory restraints and bureaucratic procedures limit competition and the operation of markets.

Graph 3: Fraser Institute Deregulation Indices



Source: Fraser Institute

The Commission paper shows that the elimination of the EU-US gap in the overall economy-wide deregulation index between 2003 and 2010 would give only a limited boost to the level of labour productivity (i.e. an increase 0.2 per cent annually over the seven-year period). Such a change would by itself be insufficient to close the EU-US gap in terms of labour productivity. This suggests that, to be fully effective, deregulation must be accompanied by other structural reforms.

Knowledge production

The second element of this illustrative "Lisbon" package is action to boost TFP growth. On the TFP side, action is needed to boost investment in the knowledge economy, in the form of higher spending on tertiary education, software and R&D. By focusing on reforms aimed at fostering the transition to a knowledge-based economy, this simulation exercise explicitly accounts for one of the main pillars of the Lisbon strategy. With respect to R&D[27], the focus should not be on boosting public R&D spending directly, but on creating the conditions which will promote an endogenous increase in research spending[28]. There are three main channels through which this could be achieved, namely higher product market integration, education and more efficient financial markets. Market size seems to be a crucial determinant for R&D since the development of new products typically involves large sunk costs. Since research activities are human-capital-intensive, education is an essential requirement for any R&D activity. More equity-based financial structures seem to promote the "riskier" forms of investment, such as R&D, more strongly than bank-based systems.

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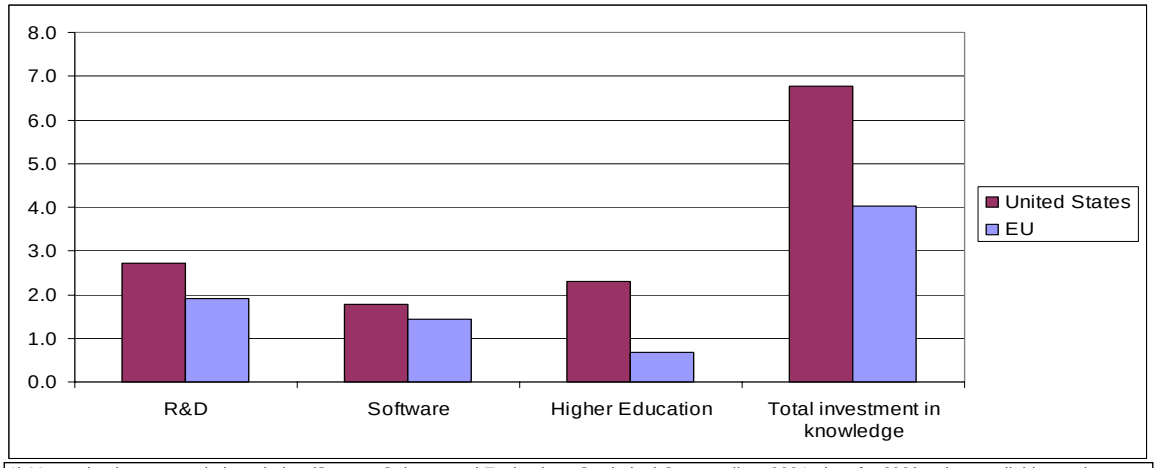
27 See OECD (2001) and Guellec and Van Pottelsberghe (2001). For a discussion on recent trends in R&D intensity, see OECD (2000b) "Science and Technology Outlook".

28 The wide variation across industries in the expected returns from R&D activities suggests that direct forms of support for specific industries should be avoided in favour of a more market-based, tax credit approach, except in instances where potentially large social benefits can be credibly predicted.

Graph 4: Investing in the knowledge economy: EU versus US. 1998 (% of GDP)



1) Measuring investment in knowledge (Source: Science and Technology Statistical Compendium 2004, data for 2000 or last available year)
Total investment in knowledge is defined and calculated as the sum of expenditure on R&D, on total higher education from both public and private sources and on software. Simple summation of the three components would lead to overestimation of the investment in knowledge owing to overlaps between the three components (R&D and software, R&D and education, software and education). Therefore, before the total investment in knowledge could be calculated the data required various transformations in order to derive figures that meet the definition.
• The R&D component of higher education, which overlaps R&D expenditure, was estimated and subtracted from total higher education expenditure (both public and private sources).
• All expenditure on software cannot be considered investment. Some is considered as consumption. Purchase of packaged software by households and operational services in firms was estimated using data from private sources and excluded.
• The software component of R&D, which overlaps R&D expenditure, was estimated using information from national studies and subtracted from software expenditure.
• Owing to a lack of information, it was not possible to separate the overlap between education and software expenditure; however, the available information indicates that the overlap is quite small. A more complete picture of investment in knowledge would also include other components. Owing to the lack of data availability, it was not possible to include them.
• Data relating to expenditure on the design of new goods are collected from innovation surveys but are only available for a few countries. The data for European countries are available for the reference year 1996 only.
• Data on spending by enterprises on job-related training programmes are scarce.
• Other components, such as spending on organisational change, are even more difficult to estimate at this stage. Data relating to investment in knowledge were also reported in the 1999 Science, Technology and Industry Scoreboard. However, as a result of changes in methodology and availability of additional data, figures on investment in knowledge reported here should not be compared with those in the 1999 edition.
For further information, see OECD, "Investment in Knowledge", STI Review (No. 27, 2001).
2) for the EU, the total refers to the available countries (OECD calculations), see Science and Technology Statistical Compendium 2004
3) for the US, Education data also includes post-secondary non-tertiary education (ISCED 4).

The combined effects of regulatory reforms and investment in knowledge

The Commission paper shows that the effect of introducing such a large package of supply-side reforms (deregulation, product market integration, human capital development and an investment climate conducive to the channelling of financial resources into R&D and other high-risk investment domains) over the coming years would be to significantly boost EU potential growth rates, on average by ½ to ¾ of a percentage point over a 5–10 year horizon.

The shortcoming of the methodology used in the Commission paper is that it does not allow the transmission channels of specific policy measures to be disentangled. As a result, complementarities and trade-offs cannot be made explicit. Moreover, the time lag between the introduction of proposals for policy reform, the implementation of reforms and the appearance of visible effects is not fully taken into consideration.

5. CONCLUSION

This paper provides a survey of the fairly substantial literature on the likely economic impact of Lisbon-type structural reforms – reforms of the past (e.g. the Single Market Programme or the Financial Services Action Plan) or the future (e.g. the opening up of services to competition) – and uses this information to obtain an admittedly partial assessment of the benefit of implementing the reforms foreseen in the Lisbon strategy.

A distinction is made between five classes of reforms: product and capital market reforms; investments in the knowledge-based economy; labour market reforms; social policy reforms; and environmental reforms. These reforms are then related to five key Lisbon objectives: greater competitiveness; creation of a dynamic knowledge-based economy; increased employment; better jobs and greater social cohesion; and a better environment. This classification of reforms and objectives allows an investigation of the economic channels through which the different reforms affect the ability to achieve a sustainable improvement in the standard of living.

The description of the multiple linkages between reforms and objectives is complemented by a survey of the economic literature providing empirical evidence on the effects of Lisbon-type reforms. Not surprisingly, in the light of the wide scope of the Lisbon strategy, this literature is wide-ranging and not easy to summarise. Nevertheless, a clear impression emerges that Lisbon-type reforms (such as the Internal Market Programme, measures that encourage investment in knowledge, or tax and benefit reforms) have substantial positive economic effects.

This impression is confirmed by the small number of papers that investigate the macroeconomic impact of reform packages (such as the Lisbon strategy). Recent estimates by the Commission, for example, showed that product and labour market reforms in the second half of the 1990s resulted in an increase in annual GDP growth rate of almost half a percentage point over the medium term. If the effects of the increased knowledge investments foreseen within the Lisbon strategy were added in, the increase in EU potential growth could reach three quarters of a percentage point. Over a ten-year period, this would imply an increase in the GDP level of up to 7 or 8%.

This may even be an underestimation of the costs of non-Lisbon, as the estimation procedure ignores existing complementarities between reforms undertaken in different domains. It should therefore be made clear that such empirical analyses do not provide a comprehensive measure of the economic costs of non-Lisbon, in particular because of the heterogeneity of the different reform measures and the complementarities and trade-offs between reforms in different domains. Moreover one needs to recognise that reforms have to be properly designed and implemented. For example, ill-conceived regulatory reforms can lead to anti-competitive behaviour or inadequate incentives, resulting in higher prices and under-provision of services. A recent striking example of this kind of regulatory failure occurred in the electricity industry in California in 2001, when there were blackouts and sharp increases in electricity prices. Ill-conceived reforms may also lead to environmental damage or social problems.

More analytical studies tend to show that, in order to reach maximum effectiveness, measures in one reform domain need to be accompanied by flanking measures in another domain. Measures that increase the level of competition in product markets, for example, often lead to economic restructuring, implying job losses in some sectors and employment creation in others. Well-functioning labour markets and efficient social policies would tend to facilitate such a transition. Similarly, a full exploitation of the potential benefits of EU financial integration would require an efficient competition regime, increased transparency of financial

information and macro-stability. Moreover, innovators need well functioning product, capital and labour markets in order to bring growth-enhancing innovations to the market.

The available evidence on the impact of Lisbon-type reforms is based on partial impact assessments only. A "systemic" approach is still missing. Hence, further research would be useful. Although we now widely agree that there is no genuine trade-off between productivity and employment in the long run we clearly need to better understand the interactions and synergies between the different Lisbon reforms in order to better organise the sequencing of reforms. In fact, the empirical literature presented here covers the medium- to long-term impact of structural reforms but has relatively little to say on the short-term adjustment costs associated with reforms. Additional research is also necessary on the reasons for the variation in the effects of different reform initiatives across Member States, sectors and actors, and on the conditions that need to be present in order for the reforms to deliver benefits. Further reflection is also required on what accompanying policies are needed in order to maximise the benefits of Lisbon while minimising the adjustment costs.

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ANNEX I: SUMMARY OF MAIN RECENT EMPIRICAL EVIDENCE ON THE IMPACT OF LISBON TYPE REFORMS

Caveat: Adding up the partial results presented in this table would not be correct given the different scope and methodologies employed by the various papers.

LISBON REFORMS	STUDY	MEDIUM- & LONG-TERM IMPACT ON THE EU
PRODUCT MARKET REFORMS		
(1) Improving the functioning of the Internal Market		
Implementation of the Internal Market Programme over the period 1992-2002	European Commission (2002a)	The first 10 years of the implementation of the Internal Market Programme (not including effects of liberalisation of telecommunication and electricity markets) have led to: • GDP and employment levels increase of 1.4% and 0.9% in 2002 respectively • an additional GDP level increase of 0.4% and 0.5% until 2012 and 2022 respectively
Removal of obstacles to the freedom of establishment for service providers and to the free movement of services	Copenhagen Economics (2004)	The implementation of the services directive would lead to: • a total employment level increase (from the benchmark) of approximately 0.3% in the medium run • real wages level increase (from the benchmark) of approximately 0.4% in the medium run • a welfare level increase (from the benchmark) of 0.6% - 0.7% in the medium run
Liberalisation of the telecommunication and electricity markets	European Commission (2002b)	The liberalisation of the telecommunication and electricity markets would lead to: • GDP and employment levels increase of 0.4% and 0.6% respectively, 4 years after the liberalisation • a GDP level increase of 0.6%, 10 years after liberalisation

Investment in trans-European networks	European Commission (2003c)	New investments in the 30 TEN transport priorities projects decided by the Council and Parliament would lead to: • GDP level increase by 0.2%–0.3% by 2020 • 1 million permanent jobs, to be added to the 3 million temporary jobs created during the construction period • time-savings on travelling in interregional routes of around 8 billion euro per year and a reduction of 14% in congestion delays (not included in the GDP calculation). A 4% reduction in greenhouse gases emissions is also expected.
(2) Improving the business climate		
Improvement in product market regulation aiming at facilitating entry and exit of firms	Cincera (2004)	Reforms that may affect entry and exit rates of firms include: ease of starting a new business, elimination of trade barriers and of restrictions to FDI, reduction in the administrative and regulatory burdens… These reforms have an impact on economic performance: • a 1% increase in the entry rate leads to a contemporary increase in output, employment and labour productivity growth rate of 2.2%, 2.7% and 0.6% respectively • a 1% increase in exit rate reduces output growth rate of 0.8% (one year lag), while increases labour productivity growth by 0.7% (2-year lag)
Reduction in administrative burdens	Tang and Verveij (2004)	A reduction of 25% in administrative burdens in the EU would lead to: • a real GDP level increase of 1% in the short run • a real GDP level increase of 1.4% in the long run

(3) Overall impact of product market reforms		
Product market reforms aiming at increasing competition and at improving the regulatory environment	Salgano (2002)	Product market reforms (i.e. reductions in tariff rates as well as the deregulation and liberalisation of product markets) in OECD countries over the period 1985–1995 contributed to: • an increase of 0.2–0.3 percentage points in TFP growth in the long run, while being weak in the short run,
	European Commission (2003a)	Moving to US levels of regulation as measured by the Fraser index would lead to: • a labour productivity growth rate increase of 0.15 percentage points in the long run
	IMF (2003)	Competition friendly product market reforms leading to a price-mark-up decline in the euro area by 10 pp would lead to: • a GDP level increase in the euro area of 4.3% in the long run
	Bayoumi et al. (2004)	Competition-friendly product market reforms leading to a price mark-up in the euro area similar to the US level would lead to: • a GDP level increase in the Euro-area of 8.6% (relative to its baseline level) in the long run
	Dierx et al. (2004)	Product markets reforms aiming at increasing competition and reducing monopoly rents would increase the elasticity of product demand and reduce mark ups of prices over marginal cost. The enhanced competition restores productive efficiency and increases TFP. Such reforms would lead to: • a GDP increase (relative to its baseline level) of about 2% in the medium run (acceleration of output growth by almost a quarter of a percentage point annually over a period of 7 to 8 years)

EU FINANCIAL INTEGRATION		
Greater financial market integration	London Economics (2002)	Greater financial integration leading to efficiency gains and greater competition should lead to: • GDP and employment levels increase of 1.1% and 0.5% in the long-run respectively
	Giannetti et al. (2002)	Greater financial-market integration leading to efficiency gains and access to a larger and deeper market should lead to: • value-added growth in manufacturing increase by 0.75%-0.94% on a durable basis
INVESTMENTS IN KNOWLEDGE-BASED ECONOMY		
Reforms aiming at improving educational attainment via an increase in investment in education and an improved efficiency of these investments	European Commission (2003a)	A permanent increase of one year in the average education levels of the labour force would lead to: • a labour productivity growth rate increase of 0.45 percentage points in the long run
	European Commission (2003b)	Reforms aimed at increasing by one year the average attainment of the population aged 25–64 would lead to: • a TFP level increase of 4% to 6% (with an additional 3% in the long run) • a GDP annual growth increase of approximately 0.3 to 0.5 percentage points
Increase in R&D spending	European Commission (2003a)	A permanent increase in the share of R&D in GDP of 1 percentage point would lead to a: • a labour productivity growth rate increase of 0.6 percentage points in the long run
	European Commission (2004c)	Measures to increase total EU R&D spending from 1.9% to 3% of GDP in 2010 (in order to reach the Lisbon target) when compared to a status quo situation (i.e. no increase in R&D spending) would lead to: • a GDP level increase of 1.7% by 2010 (0.25% per year) • TFP, employment and real income levels increase of 0.8%, 1.4% and 3% respectively by 2010 • GDP level increases of 4.2%, 7.5% and 12.1% in 2015, 2020 and 2030 respectively

LABOUR MARKET REFORMS		
Reforms aiming at increasing the participation rate of the workforce and leading to more employment-friendly wage setting	European Commission (2002b)	Reforms aiming at increasing the participation rate by 1½ percentage points combined with an ex ante downward shift of the wage setting by 1%, would lead to: • a NAIRU reduction of 1 percentage points • a GDP level increase (relative to its baseline) of 2% in the medium run • an employment level increase (relative to its baseline) of 3%–4% in the medium run
COMBINED IMPACT OF REFORMS		
Reforms aiming at increasing competition, improving the regulatory environment, increasing the participation rate in the labour market and leading to more employment-friendly wage-setting	European Commission (2002b)	Product market reforms increase competition, thereby reducing monopoly rents and increasing the elasticity of product demand, which leads to a reduction in mark-ups of prices over marginal cost. The enhanced competition restores productive efficiency increasing TFP. Labour market reforms increase labour participation rate and result in a more employment friendly wage-setting curve. The combined effect of such reforms would lead to: • a GDP level increase (relative to its baseline level) of 3%–4% in the medium run (acceleration of output growth by almost ½ of a percentage point annually over 5 years) • 5–6 million additional jobs and 2 million fewer workers unemployed in the medium run
	IMF (2003)	Competition friendly reforms in product and labour markets aimed at closing the gap with the US, reducing price and wages mark-ups, leading to: • a GDP level increase in the euro area of 10% in the long run
	Bayoumi et al. (2004)	Reforms aiming at reducing regulation in product and labour markets to the US levels would increase competition and reduce mark-ups in prices and wages over marginal costs while increasing the substitutability of goods and inputs. These reforms would lead to: • a GDP level increase in the euro area of 12.4% (relative to baseline) in the long run

Package of Lisbon-type reforms aiming at improving the regulatory environment and at boosting knowledge production	European Commission (2003a)	Package of reforms aiming at improving the regulatory environment (the difference with the US in terms of the overall economy-wide deregulation index will be eliminated) and at increasing knowledge production would lead to an overall: • GDP growth rate increase of 0.5 to 0.75 percentage points in the medium run

ANNEX II: THE MAIN LISBON TARGETS (JAN. 2005)

Progress of Member States on the Measurable of the Lisbon Strategy

Lisbon Strategy	Target	Target year	Reference year [1]	EU 15 average	EU-15: target achieved	EU 25 average	EU-25: target achieved
Employment							
Overall employment rate	67%	2005	2003	64.4%	7	63.0%	8
Overall employment rate	70%	2010	2003	64.4%	4	63.0%	4
Female employment rate	57%	2005	2003	56.1%	9	55.1%	14
Female employment rate	60%	2010	2003	56.1%	7	55.1%	8
Employment rate for workers aged 55-64	50%	2010	2003	41.7%	4	40.2%	6
Increase in average effectif retirement age	by 5 years to EU average 65	2010	2003	61.4	0	61	0
Available childcare for pre-school children over three	90%	2010	2004	n.a.	4	n.a.	n.a.
Available childcare for children under three	33%	2010	2004	n.a.	2	n.a.	n.a.
Research, Innovation, ICT and Education							
R&D spending/GDP	3%	2010	2003	1.99%	2	1.93%	2
Business participation in R&D spending	2/3	2010	2003	56.0%	3	55.4%	3
All schools with internet connection	100%	2002	2002	93.0%	1	n.a.	n.a.
All teachers to have training in digital skills	100%	2003	2002	56.8%	0	n.a.	n.a.
Internet penetration in households	30%	2002	2004	47.0%	12	44%	15
eGovernment: basic services online	100%	2002	2003	45.0%	0	n.a.	n.a.
Upper secondary attainment of young people (20-24 years old)	85%	2010	2004	73.5%	3	76.4%	8
Maths, science and technology graduates	15%	2010	2002	3.9%	1	4.4%	2
Economic Reform							
Transposition rate of internal market directives	98.50%	2002	2004	97.0%	1	96.3%	2
2 years timelimit for transposition of internal market directives	0 directives	2002	2004	n.a.	3	n.a.	3
Open electricity markets for customers	100%	2007	2004	90.0%	9	87.0%	9
Open gas markets for customers	100%	2007	2004	94.0%	7	88.0%	7
Cross-border energy transmission capacity relative to installed production capacity	10%	2005	2003	n.a.	10	n.a.	19*
Social Cohesion							
Low achieving 15 year olds in reading literacy	-20%	2010	2003	9.7%	0	2.2%	2
Early school leavers	10%	2010	2004	18.0%	5	15.9%	9
Participation in life long learning, % of adulst 25-64	12.5%	2010	2004	10.1%	6	9.4%	
Environment/Sustainable Development							
Visible progress at reducing greenhouse gas emissions	Reach EU average of 92% of the 1990 level	2008-2012	2002, 1990=100	97.1%	3 respect national targets	91.0%	10 respect national targets
Contribution of electricity produced from renewable energy sources to gross electricity consumption	Reach EU-15 average of 22% and EU-25 average of 21%	2010	2002	15.2%	4 respect national targets	14.2%	4 respect national targets

n.a.= not available

1-if data not available for reference year, earlier data has been taken for some Member States

*** 19/23 as the target does not apply to Cyprus and Malta**