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# Labour Market and Wage Developments in Europe

European Commission

Directorate-General for Employment, Social Affairs and Inclusion

# Labour Market and Wage Developments in Europe, Annual Review 2022

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## FOREWORD



Russia's war of aggression against Ukraine has caused devastation and widespread suffering on the Ukrainian people. It has also brought severe repercussions on the EU economy. The price of gas has surged to all-time highs following the Russian invasion of Ukraine. Inflation has reached levels unseen in decades, fuelled by energy and food prices, which has wide-ranging consequences for our economy and EU citizens.

As shown in this report, the high cost of energy entails risks for the European labour market. It endangers the viability of many firms and many jobs if not addressed by effective policies. It raises the input costs of many EU firms, in particular energy-intensive ones and SMEs. Moreover, the high inflation erodes the purchasing power of European citizens and their families, with a negative impact on consumption. The low-income households, but also an increasing share of the middle-income ones, are particularly affected. There is a real risk that inequality and poverty will increase as a result.

Despite the increase in the cost of living and the high labour shortages, wage growth has remained moderate so far and has fallen short of inflation. Looking forward, the deterioration of the economic situation and the increase in firms' production costs are likely to further restrain wage growth in real terms. Nevertheless, this report shows that there is room for wage increases, especially for low wages, though the situation varies across firms and sectors, in order to mitigate the losses in purchasing power without exacerbating inflationary pressures. Minimum wage policies and strong collective bargaining at all levels should play a key role in managing the negative consequences of the energy price crisis. In this regard, the recently adopted EU Directive on adequate minimum wages creates a positive momentum for enhancing their adequacy and coverage.

To address the immediate consequences of higher energy prices, a tailored policy response is needed to support those households and businesses particularly affected. It is important that support measures become more targeted to vulnerable households and retain the incentives to reduce energy consumption. Furthermore, in the event of an economic slowdown, the renewed use of job retention schemes should help to preserve employment and firm-specific human capital. These schemes should be designed in a way that supports restructuring processes, notably by easing job transitions, including via upskilling and reskilling, in line with the Commission Recommendation for Effective Active Support to Employment (EASE) and the additional impulse that will be brought about by the 2023 European Year of Skills. The rapid implementation of coherent policy packages to accelerate the green and digital transformations, including through the Recovery and Resilience Facility and the REPowerEU Plan, will improve the resilience of the EU energy systems and address energy poverty. The continued implementation of the European Pillar of Social Rights will help advance the achievement of the 2030 EU targets on employment, skills, and poverty reduction.

While the slowing down of economic growth will mitigate labour shortages, it nevertheless remains important that policies address their main structural drivers, such as ageing, skills shortages, and, in some sectors and occupations, poor working conditions. This can ensure that in the medium to long run shortages do not constrain sustainable progress on productivity and competitiveness and the twin transition. With the 2023 European Year of Skills, the Commission will support investments in training, reskilling and upskilling, including through the European Social Fund Plus (ESF+), to make it easier to match people's aspirations and skill sets with opportunities on the job market. Finally, broad-based policy efforts should be pursued to facilitate the labour market integration and social inclusion of the beneficiaries of temporary protection from Ukraine. Several European initiatives aim to improve the matching between available jobs and skills, including the new guidelines to facilitate the recognition of 'professional' qualifications obtained in Ukraine. In addition, the recent EU Talent Pool pilot online tool will help people fleeing Russia's invasion of Ukraine to successfully integrate into the EU labour market.



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## SUMMARY AND MAIN FINDINGS

Economic growth and labour markets in the EU showed strength ahead of Russia's war of aggression against Ukraine

The Russian invasion of Ukraine unfolded when the EU economy had just returned to its pre-pandemic levels, following a sharp recovery in the second half of 2021 on the back of an improved epidemiological situation. EU labour markets were performing strongly, with robust employment growth and record-low unemployment. At the end of 2021, employment had overtaken its pre-pandemic level. In February 2022, unemployment reached the lowest rate (6.2%) since January 2000. Notwithstanding a slowdown in the second half of the year, in the first half of 2022 employment growth remained above 2% and the unemployment rate further decreased to 6% in July. Yet, job creation in manufacturing was particularly subdued due to supply chain bottlenecks. High labour shortages emerged fast in this recovery, and kept growing in services during 2022.

The war in Ukraine has led to soaring energy prices, exacerbated trade disruptions and contributed to inflationary pressures

Russia's war of aggression against Ukraine has further driven up energy prices, which were increasing since mid-2021 due to both the strong rebound in demand and supply chain bottlenecks. Price pressures have broadened from energy to other products, such as food items, and brought inflation to levels unseen in decades. The war, together with the sanctions imposed on Russia, has resulted in a disruption of supply chains for certain products, which has fed inflationary pressures. In October, EU inflation reached 11.5% while energy inflation stood at 38.7%.

As a result of the war, gas and electricity prices have risen sharply across the EU

Russia's war against Ukraine has brought about an energy crisis, initiated by the disruption of Russia's gas deliveries to Europe, triggering a gas price shock and creating a risk of gas shortages. The Dutch Title Transfer Facility (TTF), the EU's main gas price benchmark, increased from less than EUR 10 per MWh in the pre-pandemic period to the record level of EUR 230 per MWh in August 2022. The surge in gas prices was compounded by turbulence in electricity markets over the summer, related to the impact of droughts on electricity generation by hydropower and the impact of severe heat on electricity demand. These factors have made the price of electricity more reactive to the price of gas and hence led to a sharp increase in electricity prices.

The high cost of energy entails major risks for employment, especially in energy intensive sectors

The high cost of energy is primarily affecting energy-intensive manufacturing sectors (i.e. coke, basic metals, chemicals and fertilisers, paper, other non-metallic mineral products, fertilisers, wood and food). These account for around 5% of total employment. However, it also affects industries that rely on inputs from these more energy-intensive industries, such as motor vehicles or hospitality. Labour demand is likely to decline first in these sectors. The effect on services might be delayed, but may involve a large number of workers. Indeed, for this sector, which accounts for the largest share of employment, the adjustment of hours worked per worker is constrained by the high share of temporary contracts and the less frequent use of short-time work schemes.

Increases in the price of gas raise the input costs for firms and reduce employment

The empirical analysis presented in this report shows that a shock to the price of energy has a negative effect on GDP, employment and real wages. A doubling of the natural gas price, which corresponds to the increase observed between March and August 2022, may reduce output on average by 3% after one year and employment by 1.5%. Public policies may contribute to cushioning the impact on growth and jobs. By country, the drop in employment depends on the response of output and real wages to the price

shock, on the gas intensity, and on other structural characteristics of the labour market, such as the share of temporary contracts, the share of employment in manufacturing and the openness of the economy. In a cross-country comparison, the response of employment to a gas price shock depends on how the shock affects output and real wages. Latvia, Hungary, Slovakia, Bulgaria and Estonia are among the countries where the high gas dependency is likely to entail relatively larger job losses. A large decline of employment could also be expected in the case of Spain, Ireland, Luxembourg, Germany, Malta and Denmark, in part reflecting the high share of temporary contracts and of employment in manufacturing as well as the openness of their economies.

Electricity price hikes, as compared to gas price shocks, result in a smaller decline in employment and a larger adjustment of hours worked

Persistently high prices for natural gas, key for electricity production, could prolong the increase in electricity prices, weighing on labour demand. An increase in the relative price of electricity has a stronger impact on hours worked per worker than on employment, compared to gas. Estimates suggest that an increase in the cost of gas for companies by 50% – which corresponds to the average increase between end 2020 and end 2021 – reduces the demand for labour by 2.5%, with no change in hours worked per worker. The same percentage increase in the cost of electricity could reduce the number of workers by 1% and hours worked per worker by close to 4%. This difference reflects the importance of gas as a direct factor of production and as an input in the production of electricity. It highlights the importance of facilitating the adjustment of hours worked to mitigate the drop in employment in the presence of a shock to the price of gas.

Although the labour market has been resilient to the shock, first signs of deterioration are visible

Rising gas and electricity prices have started to trigger a decline in production. Many European firms in energy-intensive sectors cannot pass on the full increase in energy prices to consumer prices, due to the overall reduction in demand. This could force them to slow down or to fully shut down their production eventually. This can in turn lead to workers being furloughed or laid off in large numbers across Europe, which may require the renewed use of short-time work schemes, which might be designed to accompany restructuring and reskilling processes. This negative trend in employment does not appear in the European labour market statistics of the second quarter of 2022. Yet, economic confidence indicators show a significant drop in the hiring intentions of companies by October 2022, along with a sharp rise in the unemployment expectations of consumers. In the third quarter of 2022, employment growth remained resilient despite the weakening of economic activity.

Despite high inflation, wage growth has remained moderate

Wage growth has been moderate so far in spite of high inflation. In 2021, compensation per employee expanded by 4.2%, well above the average of 1.7% in the period 2013-2019. This wage growth, however, reflected the rebound in working hours after the pandemic. In the first three quarters of 2022, both compensation per employee and compensation per hour worked accelerated at a similar pace, expanding by 4.4% and 3.8% in the third quarter (on a yearly basis). Wages expanded below inflation, thus real wages declined. This led to a deterioration of the purchasing power for many workers, and notably low wage earners. Despite substantial increases (in nominal terms), as of October 2022, statutory minimum wages have decreased in real terms in most Member States where they exist.

With the slowdown of the EU economy, wage growth is likely to remain subdued, leading to a further decline in real wages

Looking ahead, the prospects for wage developments are mixed. On the one hand, the losses in purchasing power caused by inflation are expected to raise demands for higher wages in wage negotiations. On the other hand, wage growth may be restrained by the large increases in firms' production costs and overall deterioration in economic activity, while inflation plays a lesser formal role in wage setting than in the past. Thus, whereas nominal wage growth might stay above the pre-pandemic average, it is likely that real wages will continue to decline in 2022 and 2023 in the EU. The prospects for wage developments also vary across sectors. In particular, activity in manufacturing is constrained by rising input costs and persistent supply bottlenecks, which is expected to limit wage growth to a larger extent. The sharp deterioration in the terms of trade is also putting European companies at a competitive disadvantage relative to other regions, as it increases further the costs of some inputs (including energy) vis-à-vis other competitors.

The room for wage increases varies across firms and sectors

Future wage developments will need to strike a balance between mitigating losses in workers' purchasing power and preserving employment and economic activity. Some wage adjustment, focused on low wages, would support poorer households with potentially limited impacts on inflation. By contrast, large wage increases, for instance aimed at recovering all or most of past inflation and applying to most wages, would make inflation more persistent and lead to adverse macroeconomic consequences. In some services sectors, where low-wage earners are relatively more represented, firms may have more room for increasing wages than in manufacturing sectors more exposed to cost pressures. Policies aimed at supporting low wages, notably through increases in adequate minimum wages and the promotion of collective bargaining, can mitigate the purchasing power losses while preserving positive productivity developments. In this regard, the EU Directive on adequate minimum wages is expected to create a positive momentum for measures enhancing their adequacy and coverage. In addition, temporary budgetary support measures targeted at low wage earners can help to alleviate the loss of purchasing power due to the energy crisis.

*During the rebound from the Covid-19 recession, labour shortages rose to very high levels.*

By the end of 2021, labour shortages reached or exceeded pre-pandemic levels in several EU countries, amid a decline in both unemployment and labour market slack. In 2022, after the start of the Russian aggression on Ukraine, shortages in the European economy kept rising, especially in services, with some signs of lessening in manufacturing. The largest labour and skills shortages are concentrated in few sectors and occupations, such as health care, hospitality, construction and ICT. The pandemic contributed to the rise in shortages by accelerating digitalization and by driving workers away from occupations affected by containment measures and with difficult working conditions. However, in spite of the increase in labour shortages, the efficiency of labour market matching did not deteriorate, thus suggesting no apparent increase in structural unemployment at the EU level. In the short run, and in the absence of structural barriers to filling shortages, excess labour demand can improve workers' access to higher wages and better working conditions, while also adding to the cost and competitiveness pressures in some sectors.

Labour shortages have structural drivers, which should be addressed by policies in a forward-looking way

Labour shortages are driven not only by cyclical factors, but also by structural changes, such as ageing, skills shortages in the context of the twin transitions, changes to labour mobility and migration patterns, and poor working conditions in some sectors and occupations. Indeed, the cross-country and cross-sectoral patterns of labour shortages in the recovery have followed pre-pandemic trends. If not addressed, structural labour shortages will reduce Europe's economic potential, including in the context of the twin transitions, and jeopardise the sustainability of the economic recovery from the pandemic and the energy crisis. Shortages in one occupation can also reduce the opportunities of growth in linked and complementary occupations and sectors.

As the economy slows down, shortages are likely to diminish, yet policies should keep addressing their structural causes

While the deterioration of the economic situation may partially mitigate labour shortages in some sectors and countries, especially in manufacturing, policies addressing their structural drivers should be pursued. This includes improvements in education, activation, skills, regular migration and labour mobility policies, measures supporting labour market transitions and efforts to improve working conditions. Stepping up policy efforts therefore remains essential to ensure that labour shortages do not constrain innovation, growth prospects and the ongoing green and digital transitions, while preserving the improvements in working conditions and productivity that can be expected to arise from a situation of constrained labour supply.

The integration of the millions of displaced persons from Ukraine can have a positive impact on the labour market and the economy in the medium to long term

Another consequence of Russia's war on Ukraine is Europe's biggest refugee crisis since the Second World War. The majority of people fleeing the war are women, accompanied by children, elderly people and other vulnerable individuals, whereas men are mostly staying in Ukraine for military service. Following the activation of the Temporary Protection Directive, Ukrainians fleeing the war can select the country in which they intend to settle and receive temporary protection. This, and their relatively high skill level, can ease their access to the labour market. However, they first need humanitarian aid and access to supportive services. In particular, language classes and the recognition of their skills are needed to realise their employment potential while residing in the EU and to support their broader integration in society. In the medium to long run, the labour market integration of Ukrainians who wish to stay will have a positive impact on GDP and employment in the EU.

As a response to the energy crisis, the EU has taken measures to reduce its dependency on Russia's fossil fuels

The EU and the Member States took several measures to respond to the energy crisis. To accelerate the transition away from volatile and expensive fossil fuels, the REPowerEU plan presented a comprehensive set of actions and resources to strengthen the resilience of the energy system, increase energy efficiency and the use of renewable energy sources. A new Gas Storage Regulation was adopted to secure gas storage levels of at least 80%, accompanied by a Gas Demand Reduction Plan. In addition, the Council agreed on an emergency intervention in EU energy markets to tackle the surge in gas and electricity prices and alleviate cost pressures on households and companies. It introduced electricity consumption reduction targets, an EU-level cap on the revenues of companies that produce electricity at a low cost, and a temporary solidarity contribution from fossil fuel energy companies. Member States will use these funds to protect consumers. On 18 October, the Commission proposed an energy package with measures to support joint gas purchasing at EU level, to make gas prices more predictable, to ensure solidarity between Member States in dealing with gas



supply shortages and to ensure demand reduction and the stepping-up of energy efficiency. Furthermore, it proposed that unused cohesion policy funding from the 2014-2020 programming period can be used to support small and medium businesses, vulnerable households, employees and the self-employed to cope with the rise in energy prices.

To support businesses and households in the context of rising energy prices and inflation, Member States have implemented a broad range of measures

Since inflation started to pick up, Member States have adopted measures to protect households and businesses from the spike in energy prices. The majority of price measures and national income support policies are not targeted to vulnerable households with low or lower middle incomes. For instance, many Member States introduced generalised price caps and/or reductions in network and distribution costs, or VAT and energy taxes. Such generalised measures tend to be costly for public budgets and ineffective at protecting vulnerable households. Depending on their design and levels, they can also undermine the necessary incentives to reduce energy demand and to contain inflation. Finally, several Member States have substantially increased statutory minimum wages and adopted measures related to public wages. In this regard, both wage and non-wage policies to support households' purchasing power need to be well-articulated. They can be seen as complementary in supporting households, notably in the short run. The composition of policies notably depends on firms' competitiveness, as well as on Member States' fiscal space.

Targeted and temporary measures can help viable firms in the current energy crisis

So far, the increase in energy prices has not led to a deterioration in overall employment and unemployment levels. Energy-intensive industries – such as non-ferrous metals, ferro-alloys and fertilizers –, usually capital intensive and highly productive, and the transport sector have seen a fall in output and employment. If the high energy prices and the deterioration in the terms of trade persist over time, some companies are likely to cut output and employment, either temporarily or permanently depending on their individual situation. Short-time work schemes should then play an important role, in order to preserve employment in otherwise viable firms, and to accompany potential restructuring processes. Compared to the pandemic, this time, short-time work schemes should be targeted to firms facing acute increases in energy costs or related inputs and should focus on reskilling and upskilling, as well as job-to-job transitions in the case of firms or sectors undergoing restructuring.

Existing EU initiatives and instruments underpin national policies to address rising labour shortages

The EU has put forward a set of policies to help Member States address rising labour shortages, based on the principles in the European Pillar of Social Rights Action Plan. In addition to skills and active ageing policies, the Commission Recommendation on Effective Active Support to Employment and the Council Recommendation on ensuring a fair transition towards climate neutrality provide policy guidance on managing labour market transitions, which supports structural change and improves the efficiency of matching in the labour market. The Directive on Adequate Minimum Wages and the European Care Strategy can both contribute to addressing labour shortages by improving working conditions. In the domain of migration, the Commission's recently proposed a Skills and Talent package provides the framework for supportive national policies to attract talent, which can ensure an effective right to mobility for third-country nationals and simplify admission procedures for all workers from non-EU countries. Financial support for national policies to tackle labour shortages

*Among EU actions that address labour shortages, there is a specific focus on addressing skills shortages and mismatches*

has been available from the Recovery and Resilience Facility and other EU instruments, such as the European Social Fund Plus and Invest EU.

The 2020 European Skills Agenda is the main EU policy framework to promote skills policies, which are crucial to address labour shortages. As part of this, the Council Recommendation on individual learning accounts can support the adaptation of workers to changes in their jobs and their re-training to fill shortage occupations. Furthermore, the recent Council Recommendation for an EU approach to micro-credentials for lifelong learning and employability holds promise to address skills shortages by facilitating the recognition of skills acquired during short and modular training. In the domain of migration, the Commission's recently proposed Skills and Talent package provides the framework for supportive national policies to attract talent. It will streamline and reinforce legal pathways for migration and establish channels for skilled labour migration to the EU. The 2023 European Year of Skills will further contribute to the promotion of policies to address the skills shortages underlying labour shortages.

*The EU and Member States took measures to foster the labour market integration of people displaced from Ukraine*

The Commission has put emphasis on the labour market integration and social inclusion of displaced people from Ukraine. The CARE and FAST CARE initiatives provide flexibility in the use of cohesion policy funding to support Member States hosting these people. EU guidance was also offered on access to the labour market, vocational education and training and adult learning. Moreover, several EU initiatives have been implemented to improve the matching between available jobs and skills. Member States have provided targeted support measures to facilitate the labour market integration of the beneficiaries of temporary protection, including the provision of counselling, job-search assistance and language courses, the validation of skills and recognition of qualifications, support to childcare as well as fast-track integration programmes.

# 1. GENERAL LABOUR MARKET CONDITIONS IN THE EU AND ITS MEMBER STATES

*Before Russia's war of aggression against Ukraine, the EU economy was on a solid footing. Even with the spread of new Covid-19 variants in winter 2021, the economy was remarkably resilient. Unemployment fell below the pre-pandemic rates and in February 2022 reached 6.2%, while job creation brought employment above pre-pandemic levels. Notwithstanding a slowdown in the second half of 2021 and in the first quarter of 2022, employment growth remained above 2% due to the strong momentum observed at the beginning of the year. Yet, in manufacturing job creation was particularly subdued due to the insufficient supply of goods and services by critical upstream providers.*

*In February 2021, when the war broke out, the EU labour market was benefitting from the reopening of the economy. In October 2022, the unemployment rate fell to the historical low rate of 6% (6.5% for the euro area). Job vacancies in many sectors hinted at some unfilled demand for labour.*

*Russia's invasion of Ukraine has brought hardship to Ukrainian people. It has also radically changed the EU economic outlook. It has increased substantially the price of commodities, including of gas. The war is affecting the labour market through its impact on trade, inflation and confidence.*

*The collapse of the EU trade with Russia is disrupting supply chains already strained by the strong economic rebound and China's lockdown measures. Its impact is relatively limited in light of the relatively small bilateral trade flows between Russia and the EU, with differences across countries. Depending on the country, some sectors (e.g., pharmaceuticals, air transport, and transport in general) are also more vulnerable.*

*The effects of the war on the costs of energy are compounded by the turbulence in the electricity markets related to the impact of droughts and extreme heat on electricity generation by hydropower and nuclear plants. These factors have made the price of electricity for final consumers more reactive to the price of natural*

*gas – a major input in electricity generation – and led to a sharp increase in its prices.*

*The EU has taken a number of measures to tackle the recent steep rise in energy prices. These measures aim at phasing out Russian fossil fuel imports, increasing storage levels, and accelerating the green transition. In addition, the Council agreed on an emergency intervention in EU energy markets to tackle the dramatic energy price increases. These measures are reducing the European dependence on Russian fossil fuels, the demand for gas, and its price. On 18 October, the Commission proposed an energy package to address high gas prices in the EU and ensure security of supply.*

*The high cost of energy entails risks for the labour market. It is primarily affecting energy-intensive manufacturing sectors (including coke, basic metals, chemicals and fertilisers, paper, other non-metallic mineral products, wood and food). These account for about 5% of total value added and 5% of total employment. Employment in energy-intensive manufacturing sectors is likely to be hit first. The effect on services might be delayed, but may involve a large number of workers.*

*The results of an empirical simulation based on historical data suggest that a doubling of the natural gas price, i.e. close to the increase observed between March and August 2022, might reduce output by 3% after one year and employment by 1.5%. This simulation does not take into account the effect of the policy response adopted to mitigate the effect of the shock.*

*By country, the drop in employment is not only related to gas intensity; it also depends on labour market features (e.g. the share of temporary contracts, the strictness of dismissal rules, wage flexibility, the use of short-time work schemes) that make employment more reactive to the economic cycle. Taking into account these factors and based on past evidence, there is still a negative relation across countries between gas intensity and employment after a gas price shock; Latvia, Bulgaria, Hungary and Czechia are countries where the high gas dependency may entail relatively larger job losses. Results based on past*

evidence should be interpreted with caution as empirical estimates do not capture the repercussions of a shock larger than those observed historically.

Persistently high prices for natural gas, key for electricity production, could prolong the increase in the electricity prices, weighing on the demand for labour. An increase in the relative price of electricity has a stronger impact on hours worked per worker than on employment, compared to gas. Estimates based on the historical relation between gas/electricity prices and employment suggest that an increase in the cost of gas for companies by almost 50% reduces the demand for labour by 2.5%, with no change in hours worked per worker. The same percentage increase in the cost of electricity would reduce the number of workers by 1% and hours worked per worker by 3.7%. This difference reflects the importance of gas as direct factor of production and as an input in the production of electricity. It highlights the importance of facilitating the adjustment of hours worked to mitigate the drop in employment in the presence of a shock to the price of gas.

Another consequence of the war is the large inflows of people fleeing from Ukraine into European countries. By mid-September 2022, around 10 million people have been registered crossing the border between Ukraine and the EU since the outbreak of the war. In the short term, their impact on employment is likely to be small. Integration challenges, medical and care assistance, and language barriers can be an obstacle to employment. However, employment opportunities may exist in the service sector where linguistic barriers and skills recognition are less prominent.

The medium-term prospects for labour market integration of people from Ukraine who wish to stay in the EU are quite favourable due to their relatively high educational attainment and employment in the Ukrainian labour market. The implementation of the Temporary Protection Directive <sup>(1)</sup> will contribute to their labour market integration. It is estimated that countries with a higher share of temporary protection registrations over total population benefitted from a reduction of labour shortages in services.

<sup>(1)</sup> Council Directive 2001/55/EU of July 2001.

For EU countries, the energy crisis represents a major common shock with asymmetric effects across countries and sectors. The policy response needs to be tailored to specific sectors and workers. In the short term, it is crucial that good job matches are preserved, i.e., avoiding labour shedding because of a temporary lack of energy sources or of their high costs. Short-time work schemes may be needed to preserve employment in otherwise viable firms, and to accompany potential restructuring and reskilling processes. Coherent policy packages can help to manage job transitions related to structural change and promote the green and digital transitions. Ensuring a fair transition towards climate neutrality will require equal access to quality and inclusive education, training and lifelong learning, fair tax-benefit and social protection systems and access to affordable essential services and housing.

## 1.1. THE EU LABOUR MARKET UNDER THE STRAIN OF GEOPOLITICAL TENSIONS

**Before Russia's military aggression against Ukraine, economic growth in the EU was on a solid recovery path from the Covid-19 crisis.** In 2021, the improvements of the epidemiological situation and supportive policies led to a V-shaped economic recovery. Job creation brought unemployment to an all-time low level and a sharp rise in job vacancies was reported in several Member States. In parallel, the global recovery led to a surge in commodity and energy prices, exacerbated by supply bottlenecks. <sup>(2)</sup> The price of oil, which collapsed during the pandemic, returned to its pre-pandemic levels in summer 2021. On the back of a strong recovery and rising energy prices, consumer price inflation increased sharply – from 0.2% in November 2020 to 5.3% in December 2021.

**The war has led to a more uncertain and gloomy economic outlook, further aggravating supply chain tensions and inflationary pressures.** Russia's invasion of Ukraine represents a negative supply shock with wide-ranging

<sup>(2)</sup> Low levels of gas storage have also contributed to the volatility of energy prices. The European Commission proposed a minimum storage obligation for Member States to reinforce security of gas supply - COM(2022) 135 final.

ramifications, which make its economic and labour market impact highly uncertain. The economic fallouts from the war depend on the duration and the extent of the war and its implications for the supply of energy, and commodities of which both Russia and Ukraine are key exporters, including wheat, nickel and fertilizers.

**The impact of the shock varies across countries and sectors.** Member States have different exposure to various energy sources and to the disruption of trade flows. The type of industrial specialisation makes some countries more vulnerable to bottlenecks in the supply of certain raw materials and energy inputs. Similarly, disruptions in the provision of gas and rising energy prices are felt more by countries with higher energy dependency from third countries. These differences in countries' exposure to the war-induced shock may result in different labour market outcomes.

**Russia's invasion of Ukraine has triggered a humanitarian crisis.** In response to a large-scale displacement of population, the European Commission has activated the Temporary Protection Directive. Its application has helped to address the humanitarian crisis and foster the integration of those fleeing Ukraine in the EU labour markets. The large inflow of people is an opportunity for the EU economy, as people deciding to stay may increase the labour supply. At the same time, the arrival of displaced people from Ukraine also involves labour market integration challenges related to the availability of childcare, education, housing, and related to language barriers and the transferability of skills.

**Against this background, this chapter discusses how the EU labour markets might respond to Russia's war of aggression against Ukraine.** Section 2 reviews the main labour market developments before the Russian invasion changed the economic outlook. Section 3 discusses the main mechanisms through which the war may affect the labour market. It investigates which sectors and countries are more likely to be impacted by the fallout from the Russia's invasion of Ukraine. It estimates the impact of soaring energy prices on employment. Section 4 discusses the effect of the large inflow of refugees on labour supply. Section 5 reviews the policy options to deal with the labour market challenges created by

the Russia's invasion of Ukraine and the policy response implemented at the Member State level. Section 6 summarises the main findings and draws policy implications.

## 1.2. GENERAL LABOUR MARKET CONDITIONS IN THE EU BEFORE RUSSIA'S WAR AGAINST UKRAINE

**In 2021 and in the first two months of 2022, a robust labour market recovery took place in the EU.** The strong economic recovery that followed the Covid-19 recession was accompanied by strong job creation (Graph 1.1) and a decline in the number of unemployed people.<sup>(3)</sup> In December 2021, the EU unemployment reached 6.4%, with the gap between the lowest unemployment rate in Czechia (2.2%) and the highest in Greece and Spain (13% and 13.4%) standing at around 11 pps.<sup>(4)</sup> By the end of the year, the labour market slack – a measure of *underutilisation of the labour force* – caused by the Covid-19 shock was re-absorbed (Graph 1.2); the indicator of slack decreased to 13% of the extended EU labour force in the fourth quarter of 2021, 2.7 pps below the rate recorded at the peak of the recession. In parallel with the increase in labour demand, the job vacancy rate rose from 2.3% of the last quarter of 2019 to 2.8% in the last quarter of 2021. In all Member States, many firms reported hiring difficulties notably in the sectors of health care, hospitality, construction, and ICT. In the first months of 2022, the unemployment rate continued to decline reaching in February 6.2%, the lowest rate since January 2000.

<sup>(3)</sup> EU employment expanded by 2.4 million, up by 1% compared to one year earlier, while the number of unemployed dropped by about 2 million (between January and December 2021). In the last three quarters, employment expanded year-on-year at 2%; this is the highest rate since the first quarter of 2008.

<sup>(4)</sup> This is the lowest gap since October 2008. The maximum difference (23.2%) was reached in July 2013.



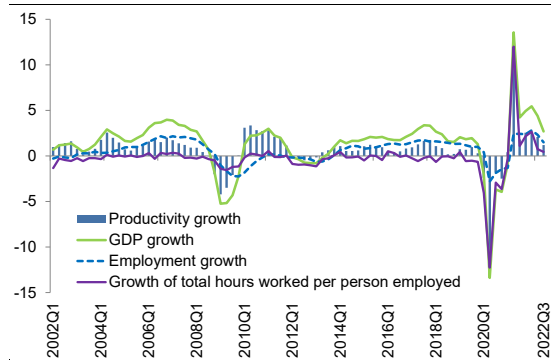
Table 1.1: Unemployment, compensation per employee and GDP growth in the euro area and the EU

	2020		Quarter over same quarter of previous year, % and pps										Quarter over previous quarter, % and pps									
	EA	EU	2020Q3	2020Q4	2021Q1	2021Q2	2021Q3	2021Q4	2022Q1	2022Q2	2022Q3	2020Q3	2020Q4	2021Q1	2021Q2	2021Q3	2021Q4	2022Q1	2022Q2	2022Q3		
Unemployment rate	EA	8	7.7	1.0	0.8	0.8	0.4	-1.0	-1.2	-1.4	-1.4	-0.9	0.8	-0.2	-0.1	-0.1	-0.6	-0.4	-0.3	-0.1	-0.1	
	EU	7.2	7.0	1.0	0.8	0.9	0.2	-0.9	-1.0	-1.3	-1.2	-0.7	0.6	-0.2	0.0	-0.2	-0.5	-0.3	-0.3	-0.1	0.0	
Unemployment	EA	3.1	-1.8	12.9	9.1	10.3	7.0	-10.7	-12.4	-14.5	-15.2	-10.4	12.2	-2.8	-1.0	-0.9	-6.3	-4.7	-3.3	-1.7	-1.0	
	EU	4.7	-1.5	14.3	10.9	12.4	6.0	-10.6	-12.5	-15.0	-15.2	-10.1	10.9	-2.6	-0.3	-1.6	-6.5	-4.6	-3.3	-1.7	-0.9	
Growth of nominal compensation per employee	EA	-0.7	4.1	2.1	1.6	2.2	11.7	3.0	3.6	5.1	4.2	2.7	10.8	-0.3	-0.4	1.5	2.2	0.3	1.0	0.7	0.7	
	EU	-0.3	4.2	2.2	1.7	2.4	11.6	3.2	3.8	5.2	4.6	3.3	10.2	-0.1	-0.2	1.6	1.8	0.6	1.1	1.0	0.7	
GDP growth	EA	-6.4	5.3	-3.8	-4.1	-0.8	14.2	3.9	4.8	5.5	4.2	2.3	12.4	-0.3	-0.1	2.0	2.3	0.5	0.6	0.8	0.3	
	EU	-5.9	5.3	-3.7	-3.9	-0.8	13.7	4.2	5.1	5.6	4.3	2.5	11.5	-0.1	0.2	1.9	2.2	0.7	0.7	0.7	0.4	
Employment growth	EA	-1.5	1.1	-2.0	-1.6	-1.5	2.3	2.4	2.4	3.0	2.6	1.8	1.1	0.6	-0.1	0.7	1.2	0.5	0.5	0.3	0.3	
	EU	-1.4	1.2	-1.9	-1.5	-1.3	2.4	2.4	2.4	2.8	2.4	1.5	1.0	0.6	0.0	0.8	1.0	0.5	0.4	0.3	0.2	

(1) EU-27 from 2020Q1. Seasonally adjusted data. For the unemployment rate, changes are in pps.

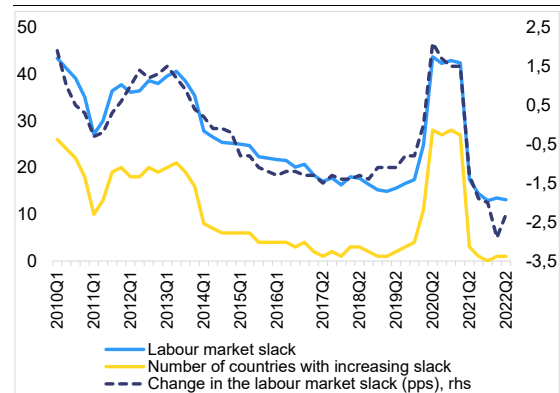
Source: Eurostat

Graph 1.1: Employment, GDP, hours worked and productivity in the EU



Source: Eurostat, National Accounts

Graph 1.2: Labour market slack in the EU



(1) Labour market slack sums the unemployed, part-time workers who want to work more hours, people who are available to work but are not looking for work, and people who are looking but are not immediately available as a share of the extended labour force. The latter sums the employed with the previous categories.

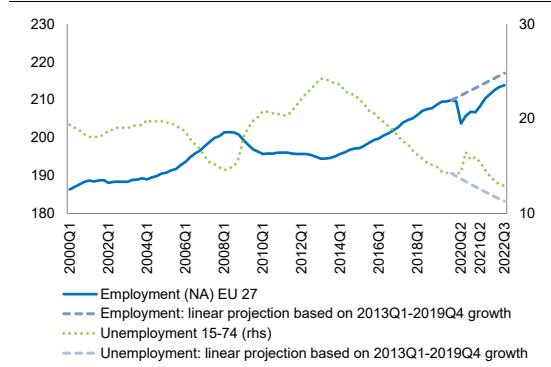
Source: Eurostat

### 1.2.1. General trends of post-pandemic employment recovery

**This good performance was broad-based across countries.** At the end of 2021, the labour market slack declined in all EU countries and remained at a very low level throughout the first half of 2022 (Graph 1.2 and Graph 1.A1.3 in the annex), hinting at a generalised drop in labour market tightness. Reductions larger than 5 pps were registered in Greece, Ireland, Finland, Italy, Austria, Latvia, and Croatia.

**The labour market remained resilient to the economic slowdown at the end of 2021.** The recovery was particularly strong in the first half of the year, but GDP growth decelerated in the second half (Table 1.1). Several factors contributed to this slowdown, including supply bottlenecks, the increase in the cost of energy and commodities, the broadening of inflation across sectors and renewed Covid-19 restrictions in some sectors or countries (e.g. China). Yet, the labour market continued to expand; employment reached its pre-pandemic level at the end of the year, amidst a tightening labour market in all Member States (Graph 1.2). After reaching 6.4% in December 2021, the unemployment rate dropped to 6.1% in April 2022 and hovered around 6% up to October. For comparison, it took nearly six years for the labour market to rebound after the 2008 recession.

Graph 1.3: **Employment and unemployment in the EU, 2001Q1-2022Q2 (millions)**



Source: Eurostat, National accounts and LFS, seas. adj. data

**In spite of the strong job creation, employment and labour supply were below what would be expected based on the buoyant pre-pandemic trend.** In the first half of 2022, the labour market was quite strong. Yet, in the second quarter of 2022, there was still a gap of 3 million jobs relative to the trend of the 2013-2019 period (Graph 1.3); similarly, the number of people unemployed was about 1.6 million higher. After the recession, many individuals re-entered the labour market; the activity rate increased from 70.7% in the second quarter of 2020 to 74% in the fourth of 2021. Yet, by the end of 2021, there were around 1.6 million more inactive persons than expected based on pre-pandemic trends.<sup>(5)</sup> The number of hours worked also picked up, but stayed below pre-pandemic levels. Employment remained below the pre-pandemic trends in more than half of the Member States - notably in Bulgaria, Cyprus, Czechia, Germany, Estonia, Spain, Croatia, Hungary, Italy, Latvia, Malta, Romania, Slovenia and Slovakia (Graph 1.A1.1). In the first quarter of 2022, the labour market slack increased only slightly from very low levels of labour underutilisation, which indicates a tight labour market.

### 1.2.2. Trends of post-pandemic employment recovery across sectors

**Employment growth varied within services.** The resurgence of the pandemic and on-and-off lockdowns to tackle the Omicron variant were felt strongly by contact-intensive sectors (Graph 1.5a).

<sup>(5)</sup> This may be due to a number of factors including remaining restrictions and poor working conditions in some jobs.

At the end of 2021, employment in such services – i.e., wholesale and retail, transport, accommodation, arts, and households’ activities – was 1.4% below the level of the last quarter of 2019. Conversely, in low contact intensive services it expanded rapidly and was 2.6% above the pre-crisis level.

**In parallel with the increase in employment, labour shortages reached new highs.** Throughout the pandemic, labour demand increased at a rapid pace also in industries that rely on face-to-face interactions but were less restrained by Covid-19 containment measures, such as construction, health and education. These increases in employment met rising constraints of labour supply. At the end of 2021, in the EU27 an estimated 23% of companies reported hiring difficulties in industry, 27% in services and 31% in construction. In spite of this differentiated pattern, labour shortages both in industries and services increased throughout the recovery. In services, the share of employers reporting labour as a factor limiting their business activities increased from 7% in the second quarter of 2020 to 29% in the second quarter of 2022 (Graphs 1.5f).<sup>(6)</sup>

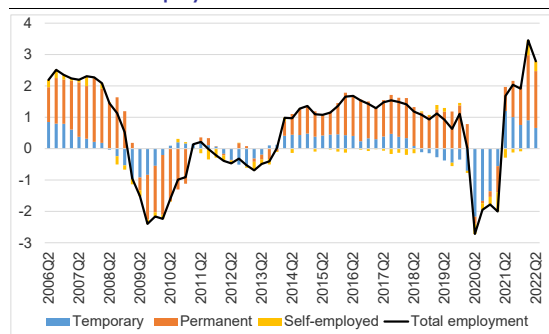
**In addition to rising labour shortages, bottlenecks in the availability of some intermediate inputs have weakened employment growth in manufacturing.** After a drop in the second quarter of 2020, labour shortages in industry increased sharply. In the last quarter of 2021, about 27% of employers reported lack of workers as a factor limiting production. The indicator continued to increase reaching 28% in the first quarter of 2022; about one year and a half earlier, it was less than 10%. This is a large change, but not comparable with the fivefold increase of shortages of material and equipment in industry (Graph 1.5 e). Thus, while demand for products was expanding rapidly, producers were struggling to source intermediate goods and services (such as semiconductors and transports).<sup>(7)</sup> Although employment had well recovered to pre-crisis level at the end of 2021, it was more than 2.5% below in manufacturing

<sup>(6)</sup> See Chapter 3 “Short- and long- term determinants of labour shortages”.

<sup>(7)</sup> This scarcity of supply of goods and services by crucial upstream suppliers has subtracted 5 pps from EU manufacturing output growth between January and October 2021 (Axioglou et al. 2022).

(Graph 1.5).<sup>(8)</sup> This gap was larger in about ten countries (Graph A1.3 in annex), including Germany and other countries with strong ties with its manufacturing sector (e.g., Czechia, Slovakia and Poland).

Graph 1.4: Contribution of temporary, permanent and self-employed to the growth of total employment



Source: Eurostat

**In 2021, employment in temporary jobs expanded more than in previous recoveries, despite weak growth in industries still affected by containment measures.** In previous recoveries, permanent employment accounted for the largest share of total employment growth (Graph 1.4). Between the first quarter of 2014 and the fourth quarter of 2017, temporary employment accounted on average for 30% of total yearly employment growth, while it represented about 60% of total employment growth between the second quarter of 2020 and the fourth quarter of 2021.<sup>(9)</sup> Indeed, during the recession, the decline in total hours worked by temporary workers occurred mainly through job losses, while for permanent workers it resulted from a drop in hours per worker. The increase in temporary employment during the recovery also reflects the impact of pent-up demand for services and non-durable goods caused by the restrictions introduced during the pandemic. The contribution of temporary employment to total employment growth dropped to 25% as the effect of pent-up demand gradually waned out. Yet, not all lost temporary jobs were recovered. Compared to the last quarter of 2019, there was a shortfall of about

1.2 million of temporary jobs in the last quarter of 2021, largely due to weak job creation in *manufacturing, accommodation and food, construction, wholesale and retail trade*.<sup>(10)</sup> Conversely, the demand for temporary jobs was quite strong in services such as *health, education and public administration* but also in the ICT sector that is at the core of the twin transition.

**Russia's invasion of Ukraine exacerbated the weaknesses that existed before the military aggression, notably supply bottlenecks and the high share of temporary jobs.** Pandemic-related shortages and the recovery have highlighted the importance of supply bottlenecks for the economy and the labour market. This is particularly evident for highly productive activities that are at the core of the twin transition, such as renewable energy production and ICT— the latter being also the sector with the most dynamic job creation post Covid-19. The good employment dynamics in accommodation, food and wholesale and retail trade contributed to a rise in employment to a level well above the pre-pandemic one. Without job creation in these sectors, EU employment would have been stuck below the peak reached in the last quarter of 2019. Nonetheless, the fact that temporary employment is high in these sectors is not without risks, including because it makes employment highly volatile over the cycle. The fact that many employed in these sectors are low-skilled and young is an additional element of concern.<sup>(11)</sup>

<sup>(10)</sup> These industries account for respectively 53.5%, 27.7%, 19.9% and 18.3% of the total gap of temporary employment in 2021Q4 relative to 2019Q4.

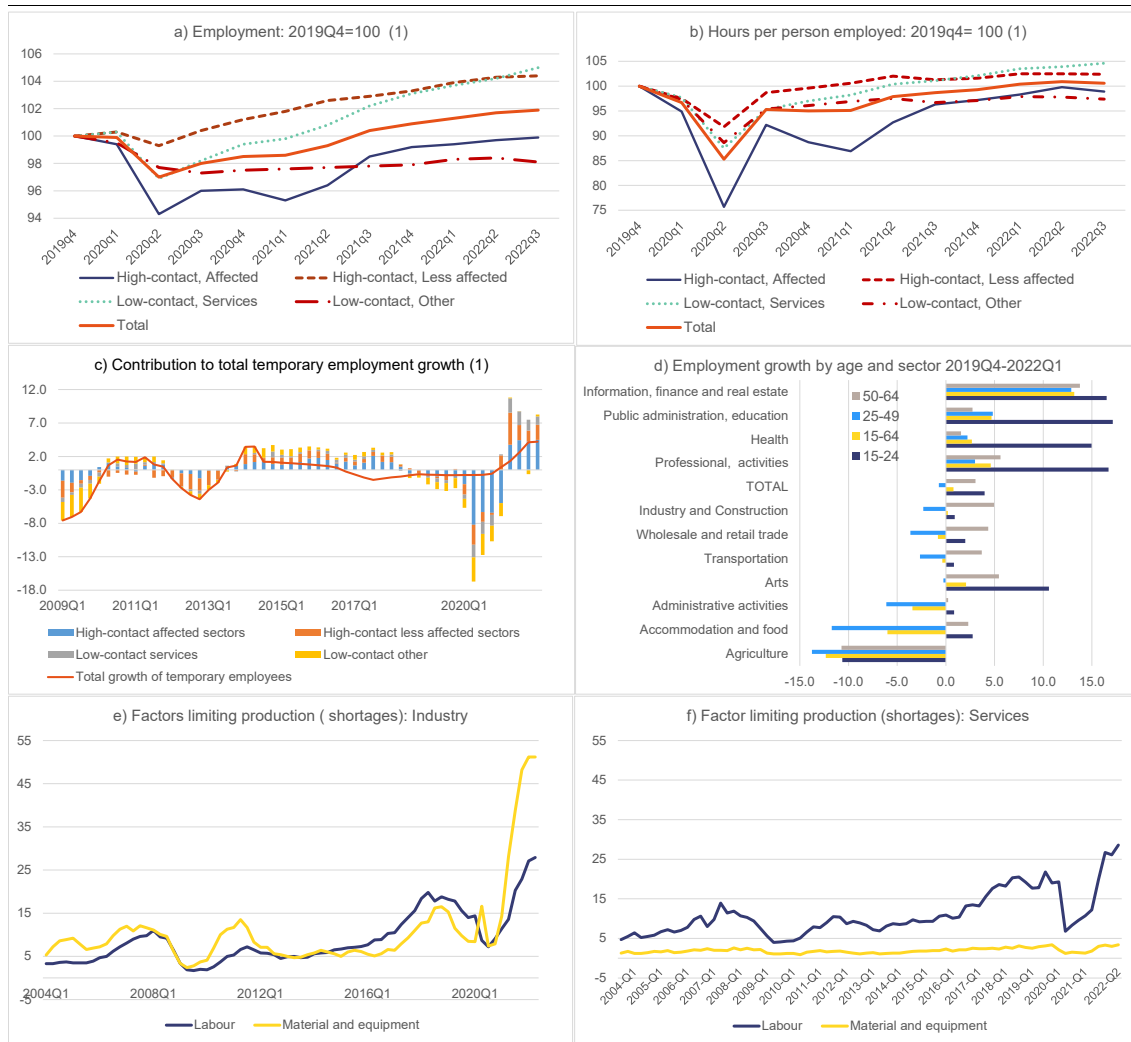
<sup>(11)</sup> While temporary contracts can facilitate the entry in the labour market of low skilled and young workers, there is a risk that they do not move to more stable and permanent jobs.

<sup>(8)</sup> In addition to supply chain disruptions, the Covid-19 recessions may have triggered job destruction in manufacturing, possibly of low-skilled occupations.

<sup>(9)</sup> A notable exception to this pattern is that of Spain where a massive shift of employment from temporary to permanent jobs was observed after the labour market reform of 2021.



Graph 1.5: Employment, hours by sector and age groups and labour shortages



(1) High-contact affected sectors: wholesale and retail; transports, accommodation, arts, households' activities. High-contact less affected sectors: construction, public administration, health, education. Low-contact services: information and communication, financial, professional activities, real estate. Low-contact other: manufacturing, mining, water and agriculture. For graph d, figures should be read with caution as in 2021 there is a break in Eurostat series following the entry in force from 1 January 2021 of Regulation (EU) 2019/1700. Except for a) and b) all data are from EU LFS.

**Source:** Eurostat and ECFIN - Business and Consumer Survey

### 1.3. LABOUR MARKET CONSEQUENCES OF THE WAR IN UKRAINE

**The Russian war against Ukraine has weakened the EU economic outlook.** In the first half of 2022, real GDP and employment growth were quite robust as consumers resumed spending following the easing of Covid-19 containment measures. In the third quarter of 2022, the effect of reopening faded away and the impact of higher energy prices started to be felt, with historically high inflation impacting negatively on consumer confidence. Although, on a yearly basis employment growth declined, on a quarter-on-quarter basis it remained quite resilient despite the weakening of economic activity (Table 1.1 and Graph 1.1). The European Commission Autumn forecast revised economic growth for 2023 downwards from 1.4% to 0.3%, while that for 2022 was slightly revised upwards from 2.7% to 3.3%, in the light of the stronger than expected growth in the second half of the year. Inflation has been revised upwards and is predicted to reach an all-time high rate of 9.3% in 2022, before receding to 7% in 2023 and 3% in 2024. In 2022, employment is expected to expand by 1.8% – well above the average growth of the 2013-2019 period. In 2023, employment growth is expected to almost come to a standstill (0.1%) before increasing again to 0.5% in 2024.

#### **The war hinders job creation through four main macroeconomic channels.**

*A direct trade channel.* Lower exports to Russia reduce output with potential negative repercussions on the demand for labour of exporting firms.

*An indirect trade channel.* The expansion of global value chains has tightened the links between intermediate trade and the flows of value added of the different countries. Output for final consumption is made of imports and reimported exports coming from bilateral or multilateral trade relationships. Russia and Ukraine are integrated into global value chains. Disruptions in upstream industries can cascade beyond bilateral trading relations and have a direct effect on the European economies and industries relying on their

imports. <sup>(12)</sup> By constraining productive capacity, they affect the demand for labour.

*An inflation channel.* At the outbreak of the war, gas imports from Russia accounted for about 40% of EU gas imports. This heavy dependence gave Russia a high leverage in influencing the price of energy, notably of electricity. The EU has taken a number of measures to reduce its dependence on Russia's gas supplies and to tackle the steep rise in energy prices. <sup>(13)</sup> These measures are reducing the demand for gas and its price. By late September 2022, the share of Russian gas in EU gas imports was down to 9%, while the natural gas price <sup>(14)</sup> was less than EUR 200 MWh, 45% below its peak in August. The rise in the cost of energy has brought consumer inflation to levels unseen in decades, heavily weighing on companies (in particular those in energy intensive sectors) and on their spending on energy, notably those in the low- and middle-income deciles. <sup>(15)</sup>

*A confidence channel.* The war has raised uncertainty about the duration of supply disruptions in the medium term, which may induce firms to delay hard-to-reverse decisions such as hiring and investment. Consumers may also postpone the purchase of durable goods.

The overall effect of these channels on the EU economy is difficult to assess and their importance might differ across countries. Yet, they all play out in the direction of reducing the demand of labour.

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<sup>(12)</sup> The effects can also travel back upstream to other suppliers whose (intermediate) goods are less in demand because there is no demand for the final products.

<sup>(13)</sup> These measures aim at phasing out Russian fossil fuel imports, increase storage levels and accelerate the green transition. See COM (2022) 230 final of 18 May 2022, Regulation (EU) 2022/0090 of the European Parliament and of the Council of 29 June 2022. On 14 September 2022, the Commission proposed emergency measures to alleviate the burden of high energy prices on households and firms, including a reduction in electricity consumption, a temporary revenue cap on infra-marginal electricity producers and a temporary solidarity contribution on excess profits generated from activities in fossil fuel activities.

<sup>(14)</sup> Natural gas EU Dutch Title Transfer Facility

<sup>(15)</sup> See Chapter 2.

### 1.3.1. The labour market impact

This sub-section discusses how the different macro-channels of the impact of Russia's invasion of Ukraine may affect the demand for labour. <sup>(16)</sup>

#### 1.3.1.1. The direct trade channel

**The bilateral trade flows between Russia and the EU are relatively small.** Before the war (2018, last available figure), exports to Russia accounted for less than 4% of total EU exports, while imports represented less than 7% of total EU imports. The trade flows with Russia, mostly in intermediate products, have also been falling after the sanctions introduced in 2014 in response to the Russian illegal annexation of Crimea (Graph 1.6) By looking at the exported value added generated by all domestic firms, the value added exported to Russia only accounts for 4% of total value added exported by the EU.

Graph 1.6: Trade flows of the EU with Russia (as % of total exports/imports):1995-2018



(1) Exports and imports come from the row sum of the international trade flows in the OECD Inter-Country Input-Output tables.

Source: TiVA, OECD

**Exposure appears to be limited to a few countries and key sectors.** Concerning exports, apart from Cyprus, differences across Member States are small. Yet, the Russian market remains more important for the Baltic countries and Finland. For some Member States, the risk of an interruption of trade with Russia involves several industries that account for significant shares of their total employment, notably in Bulgaria (42%), Cyprus (39%), Finland (28%) and the Baltic

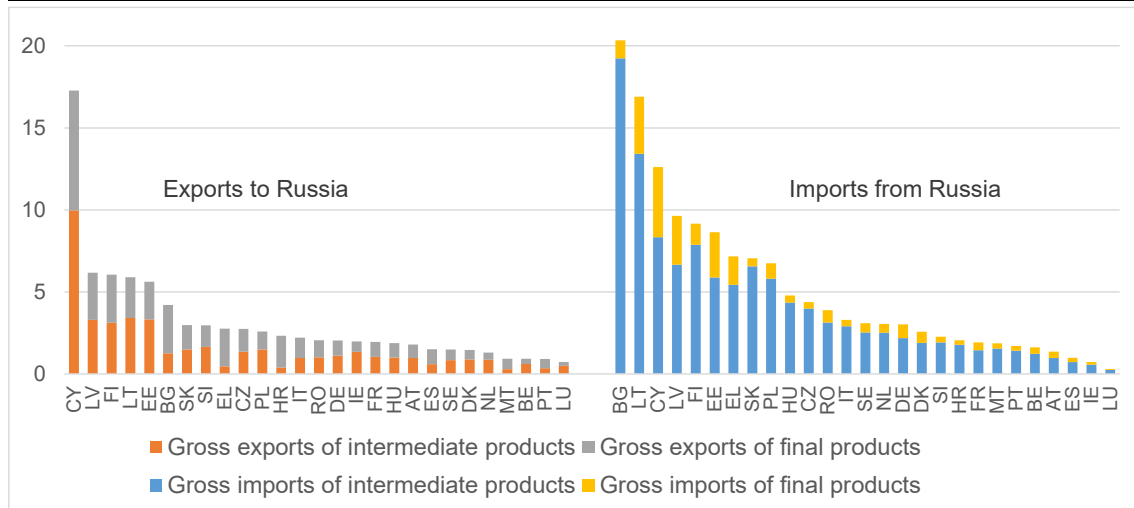
countries (26%) (Graph 1.6-1.8 in the Annex). <sup>(17)</sup> Differences in the share of imports from Russia are more prominent, mainly due to the imports of intermediate products. Also in this case, the Baltic countries and Finland are more exposed to the risks of a reduction of trade flows with Russia, notably of intermediate products.

**Only a small share of employment is dependent on Russian final demand, with differences across countries.** According to OECD data, less than 1% of EU employment is sustained by Russian final demand (Table 1.2). Yet, in some countries and sectors, the share of employment embedded in Russian final demand is slightly more important. For example, in the case of Cyprus 5% of total employment is directly linked to Russian final demand. The Baltics, Bulgaria and Finland have a higher dependency in some sectors, notably air transport, computer electronic and optical equipment, and chemical products (see Graphs 1.A1.6-1.A1.8 in the Annex). However, these direct links do not capture the effects of the disruption of important segments of the global value chains in which Russia is involved, which are discussed in the next section.

<sup>(17)</sup> This represents the share of employment of the five most exposed sectors measured in terms of the share of domestic employment embedded in Russian final demand with the most detailed available NACE classification of sectors. This relatively high share of employment linked to a relatively low share of imports is due to the latter being of intermediate products used in the final production. The more exposed industries vary across countries (see Graphs 1.6-1.8 in the Annex).

<sup>(16)</sup> Section 1.4 discusses the effect of the large inflow of refugees on the supply of labour in hosting countries.

Graph 1.7: Trade flows of Member States with Russia: 2018



(1) Gross exports and imports come from the row sum of the international trade flows in the OECD Inter-Country Input-Output tables. They are consistent with National Accounts estimates of total exports and imports of goods and services, adjusted for re-exports, as well as estimates for GDP.

Source: TIVA

Table 1.2: Share of domestic employment embedded in Russian final demand

	Total	Manufacturing	Electricity, gas, steam and air conditioning, Water supply	Construction	Business Sector Services
AT	0.8	1.4	0.8	0.2	1.1
BE	0.4	0.7	0.5	0.1	0.8
CZ	1.4	2.3	0.8	0.4	1.7
DK	0.5	0.9	0.4	0.2	0.8
EE	2.0	3.1	1.6	0.3	3.0
FI	1.6	3.0	1.7	0.3	2.4
FR	0.5	0.9	0.2	0.0	0.8
DE	0.7	1.3	0.6	0.2	1.0
EL	1.2	1.4	0.5	0.2	1.8
HU	1.0	1.8	0.7	0.1	1.3
IE	1.0	1.0	0.4	0.5	1.7
IT	0.6	1.2	0.4	0.2	0.8
LV	2.0	3.5	1.5	0.5	3.1
LT	2.1	3.0	1.4	0.6	3.2
LU	1.3	6.8	0.0	0.6	2.1
NL	0.7	1.0	0.5	0.1	1.2
PL	0.9	1.9	0.7	0.4	1.1
PT	0.4	0.9	0.4	0.1	0.5
SK	1.3	2.2	0.5	0.4	1.8
SI	1.4	2.2	0.9	0.7	1.9
ES	0.5	0.7	0.4	0.1	0.7
SE	0.5	1.5	0.6	0.1	0.7
BG	2.3	2.4	1.3	0.6	3.2
HR	0.9	1.2	0.4	0.3	1.3
CY	5.2	4.4	2.0	2.4	8.0
MT	0.7	0.7	0.0	0.0	1.1
RO	0.6	1.5	0.4	0.1	0.7
EU27	0.8	1.4	0.6	0.2	1.1

(1) Estimates of employment embodied in foreign final demand reveals the extent to which a country's workforce depends on its integration with another country. Indicators calculated using the 2021 edition of the OECD's Inter-Country Input-Output. Data not available for Ukraine.

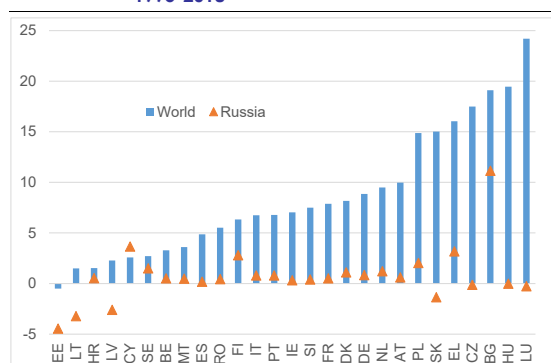
Source: OECD, Trade in Employment and Trade in Value added

### 1.3.1.2. Indirect trade channel

**The indirect effects are determined by the connection of European companies with global value chains of which Russian firms are a part.**

In particular, Russia is a major exporter of intermediate inputs widely used at an early stage of production of several European firms (Graphs 1.8 and 1.9). Bottlenecks in the supply of primary goods may affect more than one industry and cause systemic disruptions). For example, Russia is a major exporter of neon, gas, palladium and krypton, which are inputs in the production of semiconductors used in automotive and electronics, thereby affecting industries such as transport equipment and electronic appliances. Similarly, Russia's exports of crop fertilizers are relevant for agriculture.

Graph 1.8: **Growth of foreign value added (as % of gross exports) embedded in exports of EU countries: 1995-2018**



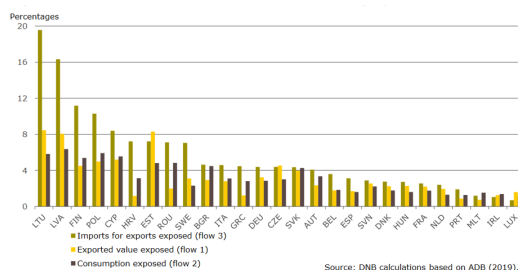
Source: OECD, Trade in Value added database

**The employment linked to intermediate exports of European countries to Russia is small.** The production fragmentation along global value chains makes the link between trade flows and employment less direct. Exports influence employment not only in the exporting sectors, but also in the rest of the economy. <sup>(18)</sup> The share of EU employment related to exports to Russia is relatively small, about 0.3% of its total employment (Table 1.3). Looking at individual Member States, France, Spain and Ireland or small and open economies such as Cyprus have a relatively high dependence on exports of intermediate goods and services to Russia. Usually, the largest share of employment contained in exports of intermediate products to Russia is in market services. <sup>(19)</sup>

<sup>(18)</sup> The employment content of exports and imports can be computed on the basis of input-output tables (see Box 1.A1.1 in the Annex for the methodology).

<sup>(19)</sup> In all countries mentioned, the largest share is in administrative and support services; wholesale and retail trade; repair of motor vehicles. A large share of employment is in professional, scientific and technical activities (Cyprus and Lithuania); IT and financial insurance services (Cyprus); land transport and transport via pipeline (Lithuania).

Graph 1.9: **Trade interconnectedness with Russia through global value chains**



Source: DNB calculations based on ADB (2019).

(1) Flow 1: exports to Russia and Ukraine of value added produced by European firms as % of total exports; Flow 2: import of Russian value added into European countries and foreign value added that flows via Russia in the EU as % of total foreign value added imported; Flow 3: imports in the EU of both Russian value added and foreign value added that flows in the EU via Russia and is used by European companies for export

Source: De Nederlandsche Bank

**The employment linked to intermediate imports from Russia is slightly larger than the employment impact of intermediate exports of European countries to Russia.** Table 1.5 shows the share of employment that is dependent on imports of intermediate products from Russia. <sup>(20)</sup> Compared to the share of employment linked to exports, imports from Russia activate a relatively larger share of employment (0.6% of total EU employment). In cross-countries comparison, imports of intermediate products from Russia are associated with higher shares of employment in Greece, Cyprus, Latvia, Lithuania and Bulgaria. By sector, the share of employment is the highest in wholesale and retail trade; administrative and support services; land transport and transport via pipelines (Graph 1.10). The same analysis has been conducted focusing only on intermediate imports from Russia of the electricity, gas, steam and air conditioning supply sector (there are no data for gas only). Differences with the results of Table 1.3 are negligible, suggesting that most of imports of intermediate goods are from this sector.

<sup>(20)</sup> See Box 1.A1.1 for the methodology.

Table 1.3: **Employment embedded in exports of intermediate products to Russia as % of total employment (2018)**

	Industry	Market services	Total
AT	0.2%	0.3%	0.5%
BE	0.1%	0.2%	0.3%
BG	0.1%	0.2%	0.3%
CY	0.4%	4.1%	4.6%
CZ	0.0%	0.0%	0.0%
DE	0.2%	0.2%	0.4%
DK	0.0%	0.0%	0.0%
EE	0.0%	0.0%	0.1%
EL	0.2%	0.5%	0.8%
ES	0.4%	1.1%	1.6%
EU	0.0%	0.1%	0.3%
FI	0.0%	0.1%	0.1%
FR	0.5%	1.3%	1.9%
HR	0.0%	0.0%	0.0%
HU	0.0%	0.0%	0.0%
IE	0.2%	1.2%	1.4%
IT	0.1%	0.1%	0.3%
LT	0.4%	1.3%	1.8%
LU	0.3%	0.3%	0.6%
LV	0.3%	0.9%	1.3%
MT	0.1%	0.3%	0.4%
NL	0.1%	0.5%	0.6%
PL	0.1%	0.1%	0.2%
PT	0.1%	0.1%	0.2%
RO	0.0%	0.0%	0.1%
SE	0.0%	0.0%	0.1%
SI	0.4%	0.4%	0.9%
SK	0.2%	0.2%	0.4%

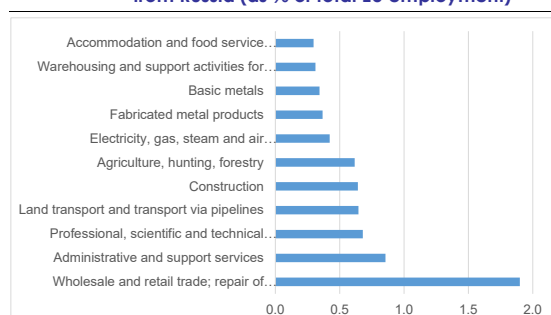
**Source:** Own calculations on OECD Input Output Tables. See Box 1.A1.1 for methodology

Table 1.4: **Direct employment activated by imports of intermediate products from Russia (2018): share in total employment**

	Industry	Market services	Total
AT	0.1%	0.2%	0.4%
BE	0.2%	0.3%	0.6%
BG	1.3%	1.6%	3.5%
CY	0.8%	3.7%	4.9%
CZ	0.0%	0.0%	0.1%
DE	0.2%	0.3%	0.6%
DK	0.0%	0.0%	0.1%
EE	0.1%	0.1%	0.1%
EL	1.5%	4.2%	7.8%
ES	0.3%	0.7%	1.2%
EU	0.2%	0.3%	0.6%
F	0.5%	1.2%	2.0%
FI	0.1%	0.1%	0.2%
HR	0.2%	0.0%	0.2%
HU	0.0%	0.0%	0.0%
IE	0.2%	0.2%	0.4%
IT	0.2%	0.3%	0.6%
LT	1.6%	1.7%	3.8%
LU	0.1%	0.2%	0.3%
LV	1.0%	1.2%	2.7%
MT	0.2%	1.1%	1.7%
NL	0.2%	0.4%	0.7%
PL	0.2%	0.2%	0.5%
PT	0.1%	0.1%	0.3%
RO	0.1%	0.1%	0.2%
SE	0.0%	0.1%	0.1%
SI	0.4%	0.6%	1.2%
SK	0.5%	0.5%	1.1%

**Source:** Own calculations on OECD Input Output Tables. See Box 1.A1.1 for methodology.

Graph 1.10: **Sectors with the highest share of employment embedded in imports of intermediate products from Russia (as % of total EU employment)**



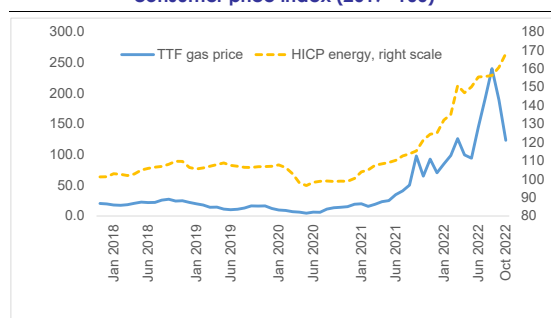
**Source:** Own calculations based on OECD Input – output tables. See Box 1.A1.1 for methodology.

### 1.3.1.3. The inflation channel

#### The major risks for the labour market come from the rise in energy and commodity prices.

The disruptions to international trade and Russia's role as a major exporter of fossil fuels have put renewed pressure on the energy price fuelling global inflation. While energy prices had already been on the rise since mid-2021 (as supply struggled to keep up with the strong global rebound from the Covid-19 pandemic), the war in Ukraine pushed natural gas prices to new highs. By the end of 2021, the price of natural gas had surged to EUR 70 per MWh, about six times the average price of the previous 10 years; in August 2022, it reached the record level of EUR 340 per MWh (Graph 1.11).

Graph 1.11: **Dutch TTF natural gas price and energy consumer price index (2017=100)**



(1) The Title Transfer Facility (TTF) is a virtual trading point for natural gas in the Netherlands. TTF serves as a pricing proxy for the overall European LNG import market.

**Source:** investing.com, Eurostat

**Price pressures have been broadening to various products, including food and non-energy industrial goods and services. In 2022, EU inflation continued to rise reaching in October**

11.5% year-on-year (10.6% for the euro area out of which 4.4 pps were due to the increase in energy prices and 2.4 pps due to the increase in food prices). These developments weigh on production costs and households' budgets. Moreover, while the price of oil corrected for inflation remains below the peaks of the 1970s, energy prices have reached all-time highs.

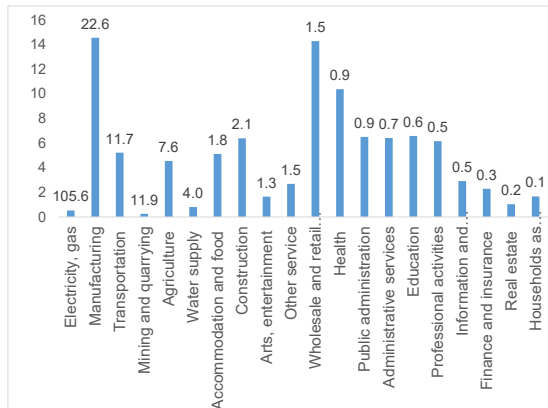
**There are important differences with the experience of the 1970s.** (21) At that time, large increases in the cost of oil and food prices were feeding into higher inflation expectations and rising wages led to persistent inflation and lower output and employment. Nowadays, the economy is more resilient to oil shocks than it was during the 1970s. Most studies conclude that the impact of oil has declined strongly over time, for various reasons. First, production has become more energy efficient. Second, the hard lessons learned from the oil crisis have led to less prevalent automatic backward-looking wage indexation mechanisms, in order to reduce the scope for wage-price spirals. Finally, the central banks' commitment to stable inflation has contributed to stabilising inflation expectations by giving to wage setters a clear framework for wage negotiations. These elements reduce the risks that large increases in the cost of raw inputs feed inflation expectations and wages, leading in turn to persistent inflation, lower output and employment.

**The share of employment is relatively high in sectors that are less intensive in the consumption of energy.** The five most energy-intensive sectors account for one quarter of total employment in the EU (Graph 1.12). These are: electricity, gas, steam and air conditioning supply; manufacturing; transportation and storage; mining and quarrying; agriculture, forestry and fishing. Within manufacturing, the seven most energy-intensive industries represent about one third of employment in the sector (see Graph 1.A1.9 in the Annex) and about 5% of total employment, half of which is in food and beverages. In addition, disruptions in the energy-intensive sectors may affect downstream industries that use their outputs as inputs of production.

(21) See Chapter 2.



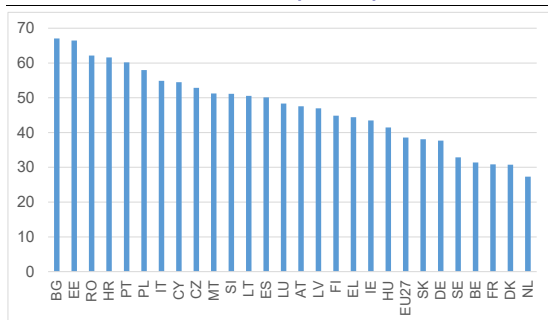
Graph 1.12: **Share of EU total employment by sector ranked according to the energy intensity, 2019**



(1) Number on the bars are the energy intensity measures as Terajoule [TJ] per value added.

Source: Eurostat

Graph 1.13: **Share of employment in the most energy-intensive sectors by country, 2019**



(1) Data show the share of employment in the sectors with a consumption of energy per value added above the median based on one digit industry classification.

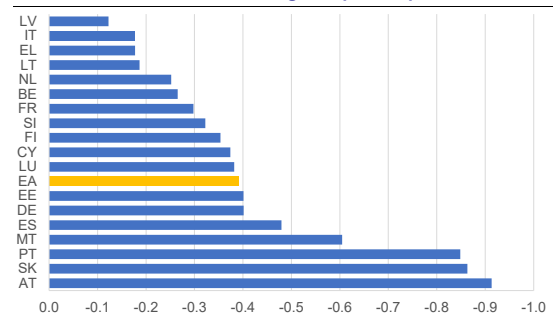
Source: Eurostat

**There are differences across countries in the share of employment in the most energy-intensive sectors.** In about half of the Member States, more than half of employment is in energy-intensive sectors (Graph 1.13). With more than 60% of total employment in energy-intensive sectors, Bulgaria, Estonia, Romania, Croatia and Portugal are the most vulnerable. For these countries, a high share of employment in energy-intensive sectors is in manufacturing and wholesale and retail trade and, only for Bulgaria and Romania, in agriculture. Conversely, most of the employed in the Netherlands, Denmark, France and Belgium are in less energy-intensive sectors. This difference across countries reflects not only the energy efficiency of production, but also the structure of the economy; for example, in the last group of countries, employment in manufacturing

represents between 8% and 10% of total employment compared to about 18% for Bulgaria, Estonia and Romania.

**Dependency on gas makes the EU economies more vulnerable to rationing or to increases in its prices.** Gas and other commodities play a larger role compared to the past, making the EU economy more vulnerable to interruptions in its distribution: the pipelines connecting Russia with the EU and the need to upgrade and increase the number of liquefied natural gas terminals make it more difficult to find substitutes for gas than for oil. In particular, while petroleum-based energy is the most consumed, mainly because of its role in the transport sector, natural gas is a key energy resource in the industrial sector and for households and non-transport services.

Graph 1.14: **Impact of a 10% cut in the gas supply on employment due to decline in gross value added according to input-output simulations**



(1) Impacts are obtained from the elasticity of employment to gross value added estimated by country over the period 2010Q1-2022Q1. Impact on valued added estimated by the ECB comparing the output derived from an input-output structure with full coefficients and the output derived from an input-output structure where the output of the electricity, gas, steam and air conditioning supply sector for production purposes in the euro area is 10% less (ECB, 2022).

Source: Own calculations based on ECB (2022)

**Simulations suggest that a gas rationing shock would translate into employment losses.** An ECB (2022) study estimates that the impact of a hypothetical 10% gas rationing shock would reduce output in the euro area by 0.7%.<sup>(22)</sup> It does not provide an employment impact; however, calculations based on the historical relation linking employment to output suggest that this reduction could translate into a drop of employment by 0.4%

<sup>(22)</sup> For Germany, a gas rationing might cause a reduction of GDP by 3.3% in the first year of rationing (Bundesbank, 2022); this calculation does not take into account that some of these effects can be reduced through imports.



(Graph 1.14).<sup>(23)</sup> This simple simulation does not incorporate the impact of a gas rationing on electricity prices and how this would affect relative prices. Restrictions to the deliveries of key energy products will further increase the price of energy and trigger a further downward adjustment of employment and GDP. Disruption in the gas supply from Russia may hit particularly hard those countries and sectors that are more dependent on the provision of gas from Russia.

**The increase in gas storage will help to mitigate the negative economic impact of the reduction in Russian gas supplies.** In line with the EU Gas Storage Regulation,<sup>(24)</sup> Member States had on average filled their storage facilities up to 86% by September 2022.<sup>(25)</sup> Member States<sup>(26)</sup> that had reached the 80% target set by the regulation accounted for more than 85% of EU GDP and employment.

**The impact of the high energy prices varies across sectors.** It has been larger in those sub-sectors with more energy dependent production processes (e.g., non-ferrous metals, ferro-alloys, fertilisers and glass producers) as well as the transport sector.<sup>(27)</sup> At the same time, the high energy costs have knock-on effects on most sectors, from chemicals and automotive industries to agri-food (via fertilisers), construction (via concrete, steel and wood) and other productive industries, to retail (via energy-intensive storage).

**The rest of this section will evaluate the response of employment to a change in the price of energy.**<sup>(28)</sup> The first part of the section

examines the evolution of employment over a one-year horizon in response to a shock in the price of natural gas and compares it to the price of other commodities. In the second part of the section, the response of the labour demand to an increase in the price of electricity and gas for companies will be estimated both at the aggregate and sectoral level.<sup>(29)</sup> This is done by looking at both employment and hours worked.

#### 1.3.1.4. *The dynamic response of employment to an energy shock*

**Energy price shocks exert a negative effect on employment and output.** This occurs through their impact on domestic demand and productivity<sup>(30)</sup>. The effects of an increase in the price of energy and other commodities has been evaluated with econometric techniques – see Box 1.1 for the methodology. Following an oil price shock, employment reacts with a delay of about two quarters, but its response is persistent. On average, a 10% increase in oil prices leads to a reduction of output by 0.5% after two years – in line with the literature (Bjornland 2022) –, while employment declines by 0.3%. The increase in nominal wages following the shock is smaller than the increase in inflation (i.e., real wages fall).

**A shock to the price of gas triggers a slightly more negative response of key macroeconomic variables than a shock to the oil price.** Graph 1.15 shows the estimated response after one year of EU employment, output, consumer prices and wages to a hypothetical shock to the price of natural gas, oil, energy, precious metals and to a measure of global supply chain tensions.<sup>(31)</sup> All shocks lead to a recession with a synchronised decline of output and employment and increase in

<sup>(23)</sup> This simulation is based assuming a drop by 10% of the output of the electricity, gas, steam and air conditioning sector, which is the largest direct consumer of gas and its activity largely consists of distributing natural gas and transforming it into electricity.

<sup>(24)</sup> Regulation (EU) 2022/1032 of 29 June 2022.

<sup>(25)</sup> According to the Aggregate Gas Storage Inventory published by Gas Infrastructure Europe.

<sup>(26)</sup> Belgium, Croatia, Czech Republic, Denmark, France, Germany, Italy, Netherlands, Poland, Portugal, Romania, Slovakia, Spain and Sweden.

<sup>(27)</sup> Fernández Cerezo and Prades (2022) Manufacturing in Spain: recent developments; Bank of Spain, “Quarterly report on the Spanish economy” for 2022Q3.

<sup>(28)</sup> An increase in the price of energy, or any other commodity, cannot be interpreted as a shock (i.e. an unexpected deviation of its price from the average value unrelated to changes in its demand), because energy demand varies over the cycle affecting its price. Statistical tools can help to identify shocks. An energy price shock

does not affect employment directly but through its impact on inflation, wages and output. This is done by modelling the contemporaneous relationship between six variables namely energy prices, GDP deflator, consumer, prices, output and employment.

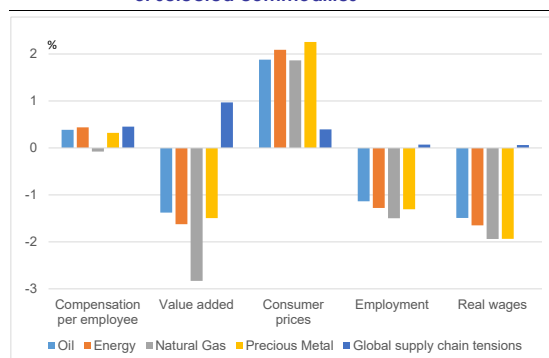
<sup>(29)</sup> Since price data are available only from 2007 and on a bi-annual basis, it is not possible to study the dynamic response of employment to a shock to the price of energy for non-households final consumers.

<sup>(30)</sup> When an energy shock causes an increase in the price of raw materials that complement labour and capital in production, also productivity falls. This causes a decline of profits and real wages that trigger a reduction of investment and of productivity (Bruno, 1982).

<sup>(31)</sup> The same analysis run on EU data has been conducted for each single Member State (Graph A1.6).

inflation and nominal wages. <sup>(32)</sup> Compared with other shocks, the impact of a natural gas price shock on output and employment is relatively larger. A doubling in the gas price, which corresponds to the increase observed between March and August 2022, would lead after one year to a drop of output and employment respectively by almost 3% and 1.5% – i.e., a drop of productivity by 1.5% – and to a decline in real wages by 2%. A gas price shock is more persistent than an oil price shock, with a faster reaction and steeper decline of employment. The gas price shock has a stronger impact on employment because it is less substitutable in production than oil. This simulation does not take into account the effect of the policy response adopted to mitigate the effect of the shock.

Graph 1.15: **Response of key EU macro variables one year after an hypothetical shock doubling the price of selected commodities**



(1) See Box 1.1. Energy includes crude oil, natural gas, coal and propane. Precious materials include palladium. Global supply chain pressures are measured with the GSCPI index created by the Federal Reserve bank of New York.

**Source:** Own calculations

**The employment impact of a gas price shock might differ across countries depending on their energy intensity.** <sup>(33)</sup> Graph 1.16 shows the relation between the total gas intensity and the drop in employment following an energy price shock. <sup>(34)</sup> Countries with higher gas intensity

<sup>(32)</sup> Since the size of the shock may differ for the different variables, each shock is rescaled so it doubles its level relative to historical mean.

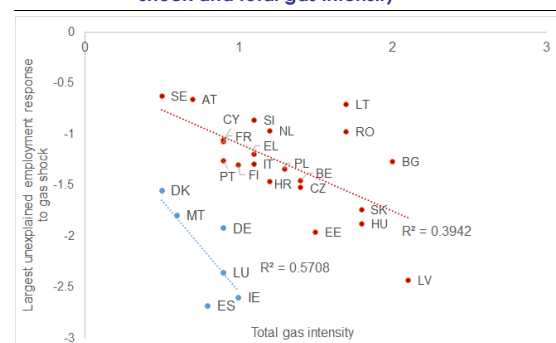
<sup>(33)</sup> Total energy intensity is the ratio of total gas to gross value added that is embodied in the global value chains of products purchased by residents for final use (i.e. consumption, investment and inventories), including through intermediate inputs, independently of where they were produced.

<sup>(34)</sup> This takes into account the response of employment to the change in output and real wages caused by the gas price shock.

have also a relatively high drop in employment. Graph 1.A1.10 in the Annex shows that a negative relationship exists also for an oil price shock. In the medium term, reducing the energy dependency would make the labour demand more resilient to energy shocks.

**A number of factors may explain these differences in the employment response to a gas price shock across countries.** First, labour markets with a high share of temporary contracts are more volatile over the business cycle. Second, a higher employment share of the manufacturing sector, which is usually also more energy-intensive, may explain why employment in some countries may fall more than in others. Finally, the openness of the economy may make certain countries relatively more exposed to the drop of GDP of their main trading/neighbouring partners.

Graph 1.16: **Relation between the largest negative employment response unexplained by the change in GDP and real wages to a gas price shock and total gas intensity**



(1) The horizontal axis shows the “largest” negative employment response following a gas shock, controlling for the response of value added and real wages. This is obtained as follows: 1) for each country, the response of value added, real wages and employment to an oil shock is simulated; 2) it is estimated the response of employment to an oil shock accounted by the response of real wages and value added to the same shock. The assumption is that an oil shock affects employment through the determinants of labour demand. The chart shows the response of employment unexplained by the change in real wages and value added, i.e. the “excess response” to the shock.

**Source:** Own simulations.

**An electricity price shock may have broader and more severe economic repercussions than a gas price shock.** While the impact of gas rationing would be asymmetric (affecting specific industries in specific Member States), possible spikes in electricity prices (and the risk of black-outs) could have wide-ranging economic repercussions.

**The rise in gas prices has led to a surge in electricity prices for final consumers.** In addition to the disruptions in gas supplies from Russia, the reduced capacity of French nuclear power plants (due to maintenance) as well as of hydroelectric plants (due to the drought) have increased the response of the price of electricity to the price of gas. In the second quarter of 2022, electricity prices increased everywhere in the EU. The increase in the gas price has been the main driver behind changing expectations of future electricity prices.

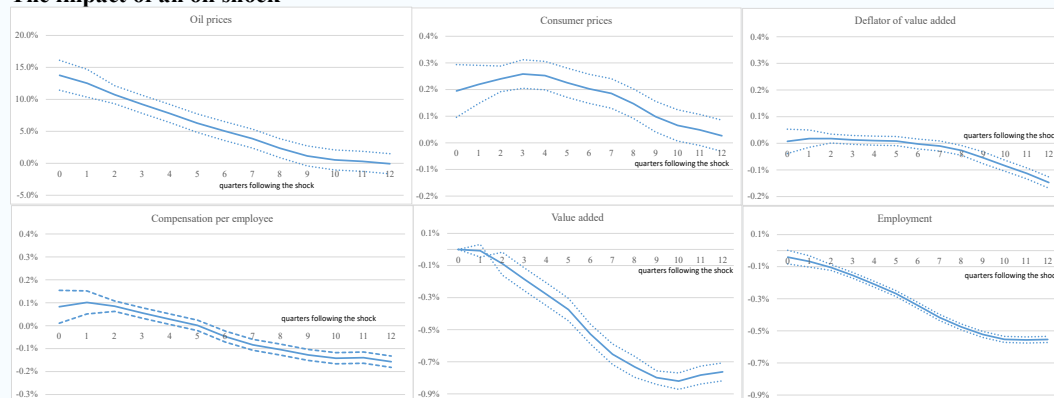
### Box 1.1: The macroeconomic impact of oil price shocks

**Oil shocks affect aggregate output and employment through various channels.** From the supply side, an increase in the oil price is transferred to other commodities, which then rises the costs of inputs that complement capital and labour. This reduces productivity, profits and real wages and triggers a reallocation of labour that could bring to higher unemployment. From the demand side, inflation reduces consumption and investments.

**This Box describes the method used to examine the effect of oil shock on prices, value added, employment and wages.** The response of the value added, employment and wages to a supply shock cannot be assessed in isolation from the interactions between them. Using econometric techniques it is possible to disentangle the change in the price of energy due to exogenous shocks and simulate its impact on key macroeconomic variables. The procedure consists in running a sequence of predictive regressions, where each variable is considered endogenous (so-called vector autoregressive model), for different prediction horizons, the so-called local projection method (Jordà, 2005). The estimation is made over the period 1996Q1-2021Q4. We track the effect of the oil price on five macro-economic variables up to 3 years (i.e. 12 quarters). The variables considered are the value added and its deflator, the harmonised consumer price index (HICP), compensation per employee and employment. Since the oil price responds also to demand shocks, it is not possible to interpret all of its changes as exogenous supply shocks. Hence, to evaluate the effect of price shocks it is necessary to isolate the component of price changes that is unrelated to fluctuations over the business cycle. A simple solution is to identify the shock as the price of oil unexplained by the variables above –i.e. an identification of the shocks *à la* Choleski (e.g. Blanchard and Gali 2007).

**An oil shock has persistent negative effects on output, the level of employment, and real wages.** Figure 1 shows the response to an increase in the oil price by 13%, (i.e. the size of the oil shock identified by the model which is close to the 14% one standard deviation shock identified by Bjørnland 2000). This is close to what found in the literature (Bjørnland 2020). Since all variables are in logs, the responses are interpreted as elasticities. The consumer price rises on impact by 0.2% reaching a maximum after one year before starting to decline to reach the pre-shock level at the end of the second year. On impact, wages increase only by 0.1%. During the first two years, the rise in consumer prices exceeds that of nominal wages, leading to a drop of real wages. Real wages start to recover only at the end of the second year, when the path of the decline in consumer prices becomes more pronounced. The value added responds with a lag of two quarters, but then starts decreasing significantly and persistently reaching a maximum after about two years, which is consistent with recent findings (e.g. Bjørnland, 2022). The drop of GDP is accompanied by a moderate decline of employment - by 0.5% after three years - i.e. a fall in labour productivity. Finally, the response of the value added deflator is quite muted while consumer prices increase; this leads to an increase of the profit margins (profits) during the adjustment to the shock. Chart 1.12 in the main text shows the values reached after 4 quarters following the shock. To give an order of magnitude to the recent increase in the oil price, a 30% increase such the one experienced so far will reduce EU GDP after 2 years by 1.4% and employment by 0.9%.

#### The impact of an oil shock



### 1.3.1.5. *The response of labour demand to a change in the price of electricity and gas*

**An increase in energy prices for companies reduces the labour demand.** The impact of energy prices (gas and electricity) on employment has been investigated estimating a demand for labour, whereby employment or hours worked are explained by the price of energy for non-households relative to the price of output, the cost of labour and GDP. <sup>(35)</sup> The objective is to explore the adjustment of the demand for labour – both at the intensive (hours worked per worker) and at the extensive (number of workers) margin – to an increase in the cost of electricity and gas for companies. <sup>(36)</sup>

**An increase in the cost of gas reduces the demand of labour only at the intensive margin, while both employment and hours worked change when the cost of electricity rises.** The results in Table 1.6 show that an increase in the cost of gas relative to the price of the output by 10% reduces employment by 0.5%, with no change in the hours worked per worker. Compared to gas, an increase in the relative price of electricity has a lower impact on total employment (0.2%). <sup>(37)</sup> However, the decline of hours worked is larger (0.9%); this is almost twice the effect of gas. <sup>(38)</sup> These estimations imply that an increase in the relative cost of gas by almost

50% – i.e., the increase observed between the last quarter of 2020 and the last quarter of 2021 – would reduce the demand for labour by 2.5%, with no change in the hours worked per worker. The same increase in the relative cost of electricity would reduce employment by 1% and hours worked by 3.7%.

**The effect differs across sectors, as electricity accounts for a different share of production costs.** <sup>(39)</sup> In manufacturing and services, a rise in electricity prices is mainly absorbed by a reduction in hours worked per worker. Following an increase in the cost of electricity, the drop of employment is larger in construction than in manufacturing or services. Relative to the drop of employment, hours worked decline more in manufacturing or services than in construction, reflecting the widespread use of short-time work schemes, especially in the former sector.

### 1.3.1.6. *The confidence channel*

**The war in Ukraine has drastically increased households' concerns about their financial situation.** In parallel with the surge of inflation and geopolitical tensions caused by the conflict, households have become more concerned about the erosion of their purchasing power and their savings due to high inflation and consequently have delayed their purchases of major goods. Households' intentions to make major purchases, on a downward trend since the peak of June 2021, plunged in March 2022 when Russia's invaded Ukraine; they continued to decline throughout the year as the energy crisis erupted. (Graph 1.17). <sup>(40)</sup> The deterioration in their expected financial situation occurred in a context of worsening unemployment expectations over the next twelve months.

<sup>(35)</sup> This ratio moves in the opposite direction of real unit revenues. Estimates are made to allow countries to have different employment levels to reflect their population size. The elasticity of labour demand to the relative price of energy is conditional on output. Data on the cost of energy for non-households are from Eurostat. They refer to the price of energy (including taxes and levies) for final users. Since prices are for different bands of consumption in Giga Joule, an average of the price for different bands is used in the estimate of the labour demand.

<sup>(36)</sup> The response of employment depends also on how wages and prices responds to the energy shock. All the interactions between the variables are considered in the analysis behind Graph 1.12 and Box 1.2 where the focus is on the impact of a shock to the price of key commodities.

<sup>(37)</sup> The different impact of gas and electricity prices depend on the pass-through from market gas prices to retail gas and electricity bills (e.g. European Commission (2022) Winter Forecast). It also depends on the structure of national and regional energy markets.

<sup>(38)</sup> This difference might be determined by gas being a primary source for the production of electricity, while the latter can be produced from various sources. The possibility to diversify energy sources may improve the resilience of the economy, and hence mitigate the impact on job destruction during recessions.

<sup>(39)</sup> According to 2018 input-output tables, spending on energy accounts for 7.7%, 1.2% and 1.9% of total output in, respectively, industry, construction and services. By sector, the share of intermediate consumption of energy differs across countries See Graph 1.A1.8 in the Annex.

<sup>(40)</sup> In the EU Business and Consumer Survey the question addressed to consumers is "In view of the general economic situation, do you think that now it is the right moment for people to make major purchases such as furniture, electrical/electronic devices, etc?". Therefore major purchases is interpreted as durable goods.

Table 1.5: **Elasticity of labour demand with respect to the relative price of gas and electricity (reduction in the demand for labour in % for an increase of the relative price by 1%)**

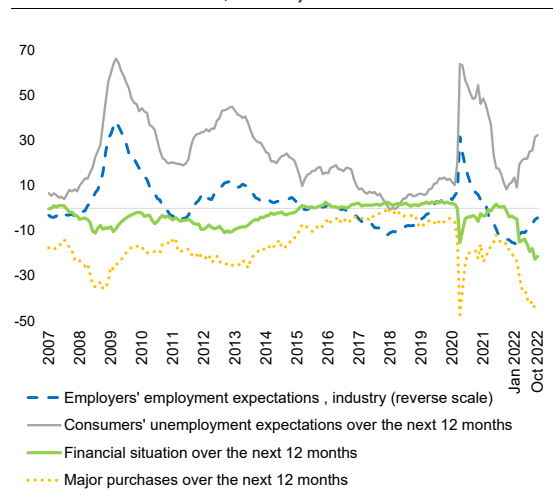
Price of gas for non households relative to price deflator				
	Construction	Manufacturing	Business sector services	Total economy
<i>Hours</i>	-0.1*** (0.02)	-0.06*** (0.008)	-0.03*** (0.009)	-0.05*** (0.008)
<i>Employment</i>	-0.08*** (0.015)	-0.04 (0.006)	-0.04*** (0.007)	-0.05*** (0.005)

Price of electricity for non households relative to price deflator				
	Construction	Manufacturing	Business sector services	Total economy
<i>Hours</i>	-0.1*** (0.02)	-0.09*** (0.01)	-0.03*** (0.01)	-0.09*** (0.01)
<i>Employment</i>	-0.12*** (0.02)	-0.04*** (0.009)	-0.01 (0.007)	-0.02*** (0.005)

(1) Estimates based on a panel of EU member States over the period 2008q1-2021q4. See table in the annex with whole estimates of the labour demand  
**Source:** Own calculation based on Eurostat

Graph 1.17: **Consumers' and employers' confidence indicators, January 2007-October 2022**



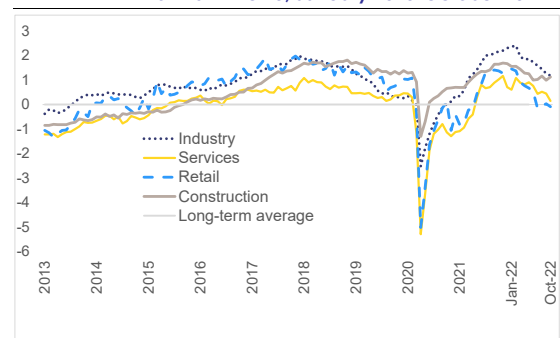
**Source:** European Business and Consumers Survey

**In an uncertain environment, employers' incentives to hire and keep workers weaken.**

Survey indicators hint at a weakening of firms' hiring intentions, albeit from historically high levels (Graph 1.18). In October, a deterioration in managers' appraisal of employment expectations is observed in all sectors, notably in services and industry. Relative to the peak reached in 2021, in October 2022 hiring intentions in retail declined in all Member States – notably in Poland, Denmark, Germany, Finland, Slovenia and Latvia. A large deterioration of employment expectations in industry is observed in almost all countries,

notably in Belgium, Germany, Denmark Estonia, Lithuania, Latvia, Czechia, Denmark and Greece. Labour demand in services is expected to be more resilient, except in Hungary, Greece, Germany, Finland and Ireland.

Graph 1.18: **Employment expectations over the next three months in the EU, January 2013-October 2022**



(1) Standardised data to correct for differences in means and standard deviations. The zero axis represents the long-term average  
**Source:** European Business survey

**1.4. THE IMPACT OF REFUGEES ON THE SUPPLY OF LABOUR**

**The inflow of people fleeing Ukraine can increase labour supply of receiving countries in the medium- to long-run.** Between February and mid-November 2022, around 12.5 million people have been registered crossing the border between Ukraine and the EU. This captures significant



circular cross-border movements by people arriving from Ukraine into neighbouring EU Member States: almost 7.8 million people have been registered crossing the border from the EU towards Ukraine. At the same time, many people are settling in the EU. In particular, around 3.8 million people have registered for temporary protection<sup>(41)</sup>. The majority of those fleeing the war in Ukraine are women, accompanied by children, elderly people and other vulnerable individuals. According to a survey of UNHCR conducted between May and September 2022<sup>(42)</sup>, in the near future, a large majority of them (63%) intend to stay in their current host country, with safety, family ties, asylum procedure and employment as the main reasons. Only 13% plan to return to Ukraine in the near future, yet this would change should the war end.

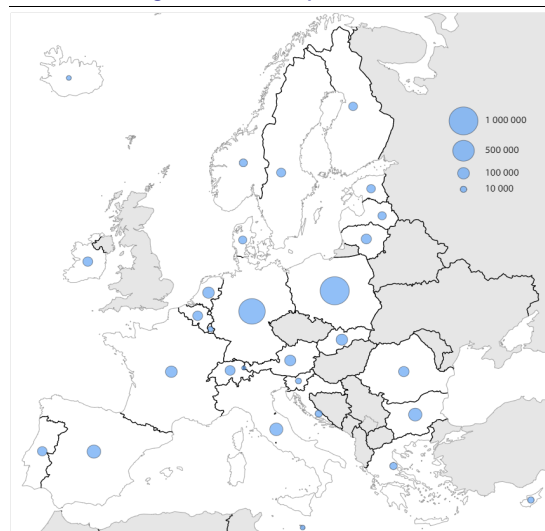
**The existence of Ukrainian communities had an influence on the distribution of refugees within the EU.** Poland, Germany and Czechia have recorded the largest number of registrations for temporary protection, while the rest of displaced persons are settling relatively evenly across the other Member States, albeit not proportionally to either population or GDP (see Graph 1.20). This pattern may have been driven by the pull of the existing Ukrainian community<sup>(43)</sup>. Geographical proximity seems to be a less relevant reason, with the exception of Poland, as there have been relatively fewer registrations in some of the bordering countries (Hungary, Romania and Slovakia).

<sup>(41)</sup> Information as of mid-November.

<sup>(42)</sup> [UNHCR Profiles, Needs and Intentions of Refugees from Ukraine](#). See also: UNHCR (2022): [Lives on Hold. Intentions and Perspectives of Refugees from Ukraine](#).

<sup>(43)</sup> In 2021, countries with the highest stocks of migrant population with Ukrainian citizenship were Italy, Czechia, Poland, Germany and Spain. Source: Eurostat and UN.

Graph 1.19: **Distribution of temporary protection registrations in Europe, October 2022**



(1) For CZ and HU data is not publicly available. This is because the data collection by Eurostat is carried out on a voluntary basis, so the completeness of data may vary. For DK, DE, IE, FR, HR, CY, LU, NL, PT, RO, SI, FI and SI data reported refers to September.

Source: Eurostat, [MIGR\_ASYTPSM].

**In the short run, the contribution of displaced persons from Ukraine to employment is likely to be small.** After a few months of leaving the country, many refugees will be unlikely to work due to trauma, lack of suitable accommodation, care facilities or schools.<sup>(44)</sup> Refugees also face other integration challenges, such as medical issues, language barriers, lack of overall information on options or legal and social support. They are also at risk of entering undeclared work.<sup>(45)</sup> They will need access to a broad range of supportive services to facilitate integration. The uncertainty about the duration of the war and their stay in hosting countries could also weigh upon their willingness to integrate. Unemployment can increase due to search frictions, while the costs of integrating people fleeing a war (typically higher than the costs of integrating migrant workers<sup>(46)</sup>) will have to be borne by the hosting countries. At the same time, the labour market integration of refugees can

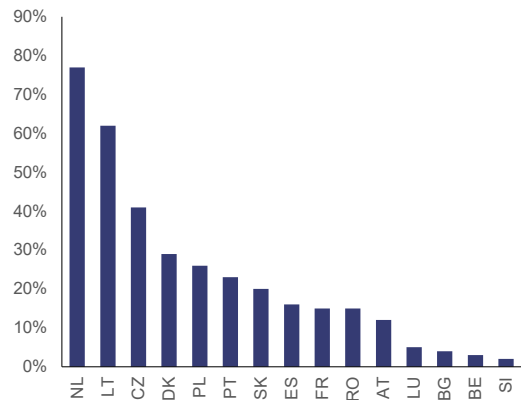
<sup>(44)</sup> Indeed, in Germany a major bottleneck hindering the employment of refugees will be the availability of places in childcare.

<sup>(45)</sup> Signs of the employment of refugees in the shadow economy have already been reported in some Member States (Germany).

<sup>(46)</sup> According to the OECD, the cost of processing and accommodating an asylum seeker is ca. EUR 10 000 in the first year, and declines 10% per year thereafter and can be lower in Eastern Member States (Astrov et al. 2022).

already in the short term alleviate some labour shortages.

Graph 1.20: **Employment rate of temporary protection beneficiaries**



(1) The value reported for the Netherlands is likely to be biased upwards, as it is based on the official numbers of registered exemptions from the work permit, declared by employers to the Dutch Employee Insurance Agency (UWV). This implies a possible double-counting of displaced persons who have multiple jobs or work for multiple employment agencies.

Source: Member States' reporting to the Commission, August 2022.

**In the medium term, several factors suggest that prospects of labour market integration of displaced persons who wish to stay in the EU are relatively favourable.** First, compared to the EU, the educational attainment of Ukrainian labour force in the pre-war period has been relatively high, although with differences in the structure of qualifications. A survey of UNHCR<sup>(47)</sup> at the borders of the EU finds that respondents (who are mostly women) hold higher levels of education (49% with university or higher education degrees and 27% vocational training) and have diverse professional experiences, particularly in services and trade related sectors, in education and in healthcare. Second, Ukrainian people in the EU had a high employment rate before the war. Third, since refugees can choose the countries where they would activate temporary protection, they move to those where existing networks of Ukrainians can ease their economic and social integration. Furthermore, the refugees are integrating into a labour market that is still relatively tight, with important labour shortages in certain sectors.

<sup>(47)</sup> [UNHCR Profiles, Needs and Intentions of Refugees from Ukraine.](#)

**Still some factors may temper the expectation of a rather smooth labour market integration of refugees.** In Ukraine before the war, labour market outcomes did not vary significantly across groups by educational attainment, signalling potential shortcomings of the quality of higher education and a mismatch between the skills of graduates and the needs of the Ukrainian economy. In the EU, the displaced workers might face additional barriers linked to the transferability of their skills, language barriers and differences in the recognition of qualifications. Refugees with higher qualifications may struggle to find posts matching their skills and end up in jobs for which they are overqualified.

**Moreover, experience suggests that immigrant women are less likely to find a job and more likely to be at risk of poverty, both compared to women born in the EU and to immigrant men.** In 2020, the employment gap between immigrant and native women was 14%, and on a rising trend since 2010. Similarly, the employment gap between male and female immigrants (18% in 2020, unchanged since 2010) exceeds the gender employment gap of natives (which decreased from 17% in 2005 to 11% in 2020). Moreover, employed immigrant women are more likely than immigrant men or native women to be in the bottom decile of the national income distribution. These patterns arise as immigrant women are likely to work in low-pay and low-skill occupations (in hospitality and care),<sup>(48)</sup> and are not explained by the level of education of these immigrant women (Fratini and Solmore, 2022).

**Current estimates point to a labour force participation of displaced persons from Ukraine around 23.5%, with large differences across countries.** As of the beginning of September, 54% of the beneficiaries of temporary protection are of working age (46% women and 8% men)<sup>(49)</sup>. Based on the information provided by (a subset of) Member States over the summer, the employment rate of beneficiaries of temporary protection (aged 18-64) ranged between more than 75% in the

<sup>(48)</sup> In Italy where a significant number of Ukrainian women were employed before 2022, the share of immigrant women in the bottom decile of the income distribution has reached 25% in 2020.

<sup>(49)</sup> As of end October, 64% of the beneficiaries of temporary protection are adults (e.g. working age or older) and 35% minors, 63% are female and 33% male (of all age groups).



Netherlands and more than 60% in Lithuania, to less than 5% in countries such as Bulgaria, Belgium and Slovenia. Overall, around 370 000 people were registered as employed in 15 Member States by August 2022. This information is based on administrative social security records, and hence it does not take into account possible informal activities. In view of past episodes of large migration flows, in the medium term the labour force participation rate of displaced persons can in general be expected to fall in a range between 25% and 55% – a level already reached in some Member States.<sup>(50)</sup> As discussed, refugees from Ukraine are expected to have better employment outcomes than previous refugee waves. Thus, on the basis of the current stock of refugees, the EU labour force could increase at least by 0.3% to 0.6%.

**In the long run, the integration of beneficiaries of temporary protection is expected to have a positive impact on GDP and employment in the EU.** Simulations suggest that an inflow of one million refugees, who would be spread across Member States in line with their respective population shares, is expected to increase GDP by 0.2% over a period of 20 years in a scenario of full integration (that is, with refugees attaining a similar pattern of skills as the native population, and their employment corresponding to their level of qualification).<sup>(51)</sup> While the employment of the refugees may put downward pressure on real wages in the medium term, average real wages should in principle return (close) to their pre-shock levels after some time with both a higher number of employees and capital stock.<sup>(52)</sup>

**The positive effect of the integration of refugees on GDP and employment depends on their skill level and on whether they occupy jobs that match their skills.** In a scenario where the level of qualifications of refugees is below that of

nationals, the average labour productivity is likely to fall, and the increased labour supply of lower educated people could exert a downward pressure on the wages of low skilled people.

**Refugees could alleviate labour shortages to some extent in sectors and occupations where barriers posed by language and skills transferability are the lowest.** One would expect these barriers to be lower in the services sector, where there are currently important shortages, notably in hospitality and in health care.<sup>(53)</sup> Regression analysis suggests that labour shortages in services have slightly declined in Europe linked to the inflow of refugees, but shortages in industry and construction have not been affected (see Table 1.6). The other current shortage occupations in the EU (software professionals, construction, and engineering craft workers) employ a larger share of men, with medium levels of qualifications (vocational qualifications in construction and engineering)<sup>(54)</sup>. Yet the majority of refugees are women, and their qualifications may not match those needed in these shortage occupations. Finally, the war in Ukraine also led to an increase in labour shortages in some countries and sectors, via the return of migrant male workers from Ukraine to their country due to mobilisation<sup>(55)</sup>.

Table 1.6: **Temporary protection registrations and the change in labour shortages**

Dependent variable: change in labour shortages in services <sup>(1)</sup>	
<i>TP status as % of population</i>	-4.41**
<i>Unemployment rate<sup>(2)</sup></i>	-1.23**
<i>Constant</i>	13.82***
Observations	26
R-squared	0.59

Dependent variable: change in labour shortages from Q1 to Q2 2022, April 2022

Source: EU-BCS, Eurostat and Commission

<sup>(50)</sup> Botelho (2022). The lower bound (25%) is based on the experience of labour market integration of previous refugees' waves in Europe within two years. The upper bound (55%) takes into account the participation rate of all working-age women with migrant background in the EU before the war.

<sup>(51)</sup> See Box 1.2 Chapter 1 of "Employment and Social Developments in Europe" (2022).

<sup>(52)</sup> An increase in the supply of labour reduces the capital-labour ratio, productivity and real wages. As firms reconstitute their desired capital-labour ratio, employment and real wages increase.

<sup>(53)</sup> Language and skills barriers are lower in hospitality than in health care.

<sup>(54)</sup> McGrath (2021).

<sup>(55)</sup> For instance, 10% of Ukrainian men working in Czechia before the war had departed by June 2022, according to the Czech Trade and Tourism Association. Also, in Poland, the departure of Ukrainian men is having the largest impact in the construction, manufacturing and transport sectors. As of beginning of April, around 90,000 workers in the construction sector had requested to return to Ukraine, according to the Polish Association of Construction Industry Employers.

## 1.5. POLICY MEASURES TO DEAL WITH THE LABOUR MARKET IMPLICATIONS OF THE WAR IN UKRAINE

**For EU countries, the war in Ukraine and its impact on energy markets is a major common shock with asymmetric effects across countries and sectors.** Public policies can contribute to: i) cushioning the economic impact of the war and of rising energy prices for companies in the EU; ii) mitigating the effect of rising inflation and energy prices on the financial situation of vulnerable households, and iii) managing the large inflow of displaced persons from Ukraine to the EU.

### 1.5.1. Measures to cushioning the economic impact of the war in Ukraine

**The economic impact of the Ukraine crisis calls for temporary and targeted measures.** In 2020, coordinated policy action at EU level allowed withstanding the shock of the Covid-19 pandemic and paved the way for a robust recovery in 2021. While different in nature, the Russia's aggression against Ukraine represents another major and external shock. While the support provided to the economy during the Covid-19 crisis was broad-based, the current crisis calls for temporary and targeted measures. Measures can help companies to deal with supply chain disruptions and potential gas shortages. For households, measures can ensure access to energy services in the short run, to support households most vulnerable to energy poverty amidst high energy price increases, and they can support a reduction in the demand for energy in the longer term.

**In 2022 Member States have implemented swift but largely untargeted actions to cushion the economic and social impact of increasing energy prices.** As reported in the 2023 Annual Sustainable Growth Survey<sup>(56)</sup>, these measures are currently expected to amount to 1.2% of GDP for the EU as a whole in 2022. While the measures have been implemented in a timely manner, more than 70% of them, such as lower VAT rates or excise duties, or changes to levies and subsidies on energy products, were not focused on vulnerable households and exposed firms and two thirds of them did not provide incentives to reduce energy demand. It is increasingly important for measures

<sup>(56)</sup> [Annual Sustainable Growth Survey 2023](#).

to focus on vulnerable households and exposed businesses and to remain temporary.

**Member States' support to companies can help to preserve jobs but needs to be targeted and in line with state aid rules<sup>(57)</sup> to protect the single market.** Member States have provided targeted financial support in the form of guarantees or subsidies to companies and specific sectors, under economic strain due to supply chain disruptions or rising energy prices. The Italian government has provided EUR 130 million in non-repayable grants to small and medium-sized enterprises that have suffered losses in turnover as a result of falling demand due to the war in Ukraine. Similarly, the French government has adapted the state-guaranteed loan scheme (PGE) to support companies with cash-flow difficulties. Some Member States, such as Italy and France, have introduced subsidies or tax credits targeting energy-intensive sectors, and companies with energy expenses above a certain threshold. Finally, several countries – including Belgium, Germany, Spain, France and Italy – have extended (or re-introduced) emergency short-time work support, to protect employment and support business activities in sectors most affected by the conflict.

**Member States are implementing temporary emergency measures in support of consumers to address the spike in energy prices.** Between September 2021 and September 2022, Member States have earmarked over EUR 280 billion for this purpose. Indeed, the current crisis aggravates the persistent problem of energy poverty in the EU, which affects not only low income, but also middle income households, and which is a multi-dimensional problem, with diverse situations across Member States.<sup>(58)</sup> The emergency schemes that complement structural measures to tackle energy poverty can be grouped into four broad categories: i) income support, ii) price regulation, iii) tax reductions of VAT on energy and of energy taxes, and iv) measures to ensure basic uninterrupted supply or other in kind

<sup>(57)</sup> The [State aid Temporary Crisis Framework](#) (adopted on 23 March 2022 and amended on 20 July and 28 October 2022) enables Member States to support the economy in the context of Russia's invasion of Ukraine, notably to provide compensation to companies for damages directly suffered due to the exceptional circumstances and to implement the measures outlined in the [REPowerEU Communication](#).

<sup>(58)</sup> An upcoming report of the Commission on access to essential services will analyse these issues in further detail.

benefits.<sup>(59)</sup> Chapter 2 discusses income support policies.

**A relatively large share of national policies implemented in the crisis can be categorised as price policies.** Price caps at retail price level have been introduced in Austria, Bulgaria, Croatia, France, Hungary, Malta, Romania, Slovenia, and Spain, at wholesale price level in France, Portugal and Spain and through a reduction in network and distribution costs in Estonia, Finland, Italy, Latvia, Luxembourg, Poland, Portugal, Slovakia and Spain. With a similar effect, reductions in VAT and in energy-related taxes are implemented in Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Finland, France, Germany, Greece, Italy, Ireland, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden. Such measures typically have a universal coverage and aim to reduce energy-related costs for all end users in the economy. These measures have been implemented in a timely way, and cushioned the general impact of the increase in energy prices for households and businesses. At the same time, they have been expensive, as most of them have not been sufficiently targeted to vulnerable households and exposed firms. Furthermore, it is increasingly important for these measures to be carefully designed to not undermine the goal of reducing energy demand (for example, by using caps on the amount of consumption at the reduced price).<sup>(60)</sup>

**Member States have also taken measures to reduce household expenditure on energy, including by mobilising investments into energy efficiency and renewable energy.** Member States have launched information campaigns to stimulate voluntary energy savings in line with the REPowerEU Plan, while some Member States put in place energy savings requirements for specific activities to reduce demand. Through financing of the Recovery and Resilience Facility, Member States invest a total of EUR 71.6 billion in energy efficiency (29% of expenditure under the green

transition pillar)<sup>(61)</sup> and EUR 34 billion in renewable energy and networks (14% under the green transition pillar), for instance through the renovation and rehabilitation of private and social housing (France) and energy efficiency programmes decarbonising the energy sector (Croatia).

**At EU level, several measures were taken to give Member States room to fight the economic consequences of the crisis and to address the impact of the war on energy supply and prices.**

The general escape clause of the Stability and Growth Pact, activated in 2020 during the pandemic, has been extended through 2023, to allow governments to support those most affected by rising energy prices and preserve public investment needed for the green transition while safeguarding the stability of public finances, in particular in high-debt Member States, and limiting the growth of current expenditure to avoid fuelling up inflation.<sup>(62)</sup> In addition, the funds under cohesion policy and the Recovery and Resilience Facility (RRF) remain a key tool to strengthen Member States' resilience, including by financing investments accompanied by to reduce the dependency on fossil fuels.<sup>(63)</sup> This objective has been further strengthened with the adoption of the *REPowerEU Plan*, which has put forward a set of actions to save energy, diversify supplies, and substitute fossil fuels by accelerating Europe's clean energy transition.<sup>(64)</sup> To address gas supply shortages and high increases in energy prices, the Commission Communication 'Save Gas for a Safe Winter' of 20 July 2022 has proposed a coordinated gas demand reduction plan, while on 30 September 2022, the Council adopted a Regulation on emergency market intervention to reduce the energy bills for Europeans.<sup>(65)</sup> On 18 October, the Commission proposed an energy package to address high gas prices in the EU and ensure security of supply, and on 22 November, it proposed a Market Correction Mechanism to protect EU businesses and households from episodes of excessively high gas prices in the

<sup>(59)</sup> Such measures are implemented by Romania and Portugal (measures to secure basic uninterrupted supply), by Romania, Denmark, Greece and Croatia (such as advice), and by Belgium, Denmark and Lithuania (solutions to defer the payment of energy bills and of other loans).

<sup>(60)</sup> Such caps need to be designed carefully, to take into account different dimensions of energy poverty, including situations when people have higher than average energy costs, yet not having the means to implement energy efficiency investments.

<sup>(61)</sup> For the 25 national plans adopted and with the information on the green dimension of measures so far.

<sup>(62)</sup> At the same time, as reported in the [2023 Annual Sustainable Growth Survey](#), an overall neutral fiscal stance in 2023 for the EU and the euro area as a whole appears appropriate in the current economic context.

<sup>(63)</sup> Additional information about the RRF can be found [here](#).

<sup>(64)</sup> Details about RepowerEU can be found [here](#).

<sup>(65)</sup> [COM/2022/360 final](#) and [COM/2022/473 final](#)

EU<sup>(66)</sup>. These measures will make gas prices more predictable, ensure solidarity between Member States in case of supply shortages and step-up energy efficiency. Furthermore, it also proposes a targeted flexible use of Cohesion Policy funding to tackle the impact of the current energy crisis on citizens and businesses, using up to 10% of the total national allocation for 2014-2020, worth close to €40 billion.<sup>(67)</sup>

### 1.5.2. Labour market integration of displaced persons from Ukraine

**The activation of the temporary protection Directive for Ukrainians eases their access to the EU labour markets.**<sup>(68)</sup> On this basis, Member States have adopted legislative measures in view of enacting temporary protection at the national level to provide immediate support to refugees. These measures include acts to simplify visa, residence and work permit procedures, to limit the administrative steps that refugees need to take to get access to the labour market. Accordingly, in many countries, Ukrainian citizens that have registered for temporary protection can access the labour market without having to apply for a work permit.<sup>(69)</sup>

**Member States started to provide specific support measures to ease the process of labour market integration of the beneficiaries of temporary protection.** These include the provision of counselling, job-search assistance and language courses, the validation of skills and recognition of qualifications, as well as fast-track integration programmes. Dedicated websites and job-offers portals provide access to the national labour market and targeted information to beneficiaries of temporary protection. In a number of countries, beneficiaries of temporary protection have access to the ‘standard’ services offered

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<sup>(66)</sup> [COM/2022/668 final](#)

<sup>(67)</sup> [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_22\\_6225](https://ec.europa.eu/commission/presscorner/detail/en/ip_22_6225)

<sup>(68)</sup> Council Implementing Decision (EU) 2022/382 of 4 March 2022 establishing the existence of a mass influx of displaced persons from Ukraine within the meaning of Article 5 of Directive 2001/55/EC, and having the effect of introducing temporary protection.

<sup>(69)</sup> In some Member States, additional procedural steps may apply, such as in [Austria](#), where displaced persons have to register also with the national public employment service. For an overview over the implementation of the temporary protection Directive by Member States, see [here](#).

either to all job-seekers (e.g. Belgium, Bulgaria, Cyprus, Germany, Estonia, Spain, Croatia, Italy and Poland), to other refugees and beneficiaries of international protection (Lithuania, the Netherlands), or to non-native speakers (Finland). Such services include individual counselling measures, including developing individual ‘career development plans’.<sup>(70)</sup> Persons under temporary protection may access education and training, including language courses. Around half of people arriving to Germany have been attending language courses, while participation has been lower in other Member States.<sup>(71)</sup> Furthermore, displaced persons from Ukraine also receive access to childcare for their children.

**While a large number of temporary protection beneficiaries has enrolled in language courses, participation in active labour market programmes has been more limited so far.** As knowledge of the host country’s language is key for a successful integration in society, migration authorities in several Member States offer dedicated cost-free courses for displaced persons. Participation in labour-market programmes (such as counselling or vocational training), is lower, as this generally requires being registered with the public employment services. The number of registrations, very low at the beginning, has been gradually increasing. In November, 342 000 displaced people from Ukraine were registered with the public employment services across 24 countries.<sup>(72)</sup>

**Member States also adopted measures for employers seeking to hire persons under temporary protection.** These included the establishment of dedicated portals and the provision of financial incentives. Companies across different Member States have announced job openings for Ukrainian refugees, while also providing food and accommodation. In some Member States, employers have set up projects to gather information about employment opportunities for displaced persons from Ukraine.

### Evidence on past policies to support the integration of refugees in Europe offers insights

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<sup>(70)</sup> As in the case of Slovenia for example. See case SI-2022-11/2274 of Eurofound Policywatch database.

<sup>(71)</sup> Member States reporting to the Commission, Summer 2022.

<sup>(72)</sup> Information from Public Employment Services.

**for the current situation.** Policies that support the employment of refugees in jobs that correspond to their skill levels are key to maximise the individual and societal economic gains of the labour market integration of refugees. Active labour market policies that provide training, information to refugees and employers, and support the recognition of qualifications can lead to better job matches. This is already promoted by Member States actions, supported by EU initiatives. . More specifically, the experience of the past refugee waves suggests that language training and on-the-job training are essential for labour market integration. . Availability of cheap housing could provide an incentive for displaced people to move away from agglomerations, yet lower costs of accommodation are also linked to worse local labour market conditions, and this may hence undermine the labour market integration of these people. Finally, welfare benefits should not be withdrawn too early, i.e. before the refugees possess sufficiently transferable skills for a successful labour market integration (Dustmann et al. 2022). Availability of affordable and quality childcare and of education can allow women with children to work.

**At EU level, the Commission stressed from the outset the importance of the labour market integration and social inclusion of displaced people from Ukraine.** The CARE initiative, provides additional flexibility in cohesion policy funding to support Member States hosting people fleeing from the war in Ukraine. <sup>(73)</sup> The FAST CARE initiative of 29 June 2022 further increases flexibility in the use of EU Cohesion Policy funds to channel resources towards actions addressing migratory challenges resulting from Russia's aggression against Ukraine. It also provides additional flexibility under the 2021-27 Multiannual Financial Framework. <sup>(74)</sup>

**EU initiatives provide guidance and support to Member States in view of facilitating the labour market integration of displaced persons from Ukraine.** On 14 June 2022, a Communication was adopted on guidance for access to the labour market, vocational education and training and

adult learning for people fleeing Russia's war against Ukraine. <sup>(75)</sup> It provides measures that can be taken by Member States, based on lessons learnt and best practices that have been gathered so far, and highlights EU funded projects in this area as an inspiration. Several initiatives have also been implemented to improve the matching of skills. The Commission has published new guidelines to facilitate the recognition of 'professional' qualifications obtained in Ukraine. <sup>(76)</sup> These qualifications give access to regulated professions such as doctors, nurses and architects. The European Training Foundation has created an information hub, through which displaced persons from Ukraine can get information about accessing training, education and the labour market in the EU. <sup>(77)</sup> Furthermore, the recent EU Talent Pool pilot online tool will help people fleeing Russia's invasion of Ukraine to successfully integrate into the EU labour market.

## 1.6. CONCLUSIONS AND POLICY IMPLICATIONS

**The strong economic recovery from the pandemic crisis hides differentiated patterns across sectors.** In the face of heightened uncertainty, the swift economic rebound from the Covid-19 recession and strong aggregate labour market performance are key factors of resilience of the EU economy in 2021 and 2022. This strength masked some differences across sectors. Job creation in activities more affected by risks of infections such as hospitality was lagging behind. In manufacturing, employment was also below the pre-pandemic peak on the back of bottlenecks in the supply of primary raw materials. Meanwhile, the dynamism of employment in less contact-intensive services, where tasks can usually be completed via IT tools as well as in health and education brought total employment above its pre-pandemic level and revealed important labour shortages.

**Russia's invasion of Ukraine has caused destruction and human suffering in Ukraine and a refugee crisis.** The response coordinated by the EU has been crucial to alleviate the burden of

<sup>(73)</sup> For instance, it extends the possibility of 100% EU co-financing for 2014-2020 cohesion policy funding will be extended for the accounting year 2021-2022. For further details, see [here](#).

<sup>(74)</sup> [COM\(2022\) 325](#).

<sup>(75)</sup> See [here](#).

<sup>(76)</sup> See [here](#).

<sup>(77)</sup> See [here](#).



forced displacement and promote a fast integration in the EU labour markets. Nonetheless, language barriers, the need for accommodation and childcare assistance and the recognition of qualifications continue to be obstacles for a fast labour market integration. Yet, in the medium-term, the relatively high educational attainment of the refugees and the presence of strong networks may assist migrants from Ukraine who wish to stay in the EU to find a job and contribute to alleviating labour shortages, especially in occupations where the above-mentioned barriers are less binding.

**Public employment services can play a key role in supporting the labour market integration of displaced people from Ukraine.** They can provide information on jobs, offer the necessary training and act as matchmakers between refugees and employers. Displaced people from Ukraine could be encouraged to seek help from PES. The active labour market policy offer of the PES can be further tailored to the needs and profile of Ukrainian displaced jobseekers and can be combined with flexible solutions for childcare.

**The war in Ukraine has exacerbated pre-existing supply bottlenecks and inflationary pressures.** This is having serious repercussions, which can hinder economic growth and job creation. The strong global rebound from the Covid-19 crisis was already causing a rapid increase in commodity and energy prices, aggravated by logistics and supply chain bottlenecks, which resulted in a drastic increase of consumer price inflation. Russia's invasion of Ukraine is now exacerbating these developments.

**Although trade flows between the EU and Russia are small, for some countries and sectors their decline might be more important.** The invasion of Ukraine, the sanctions to Russia and the withdrawal of private companies from that market have *de facto* closed Russia to European exporting firms. In light of the small share of final goods exported to Russia the effect on the EU labour demand is likely to be small. Yet, war-related trade disruptions may impact some Member States more than others (notably the Baltics, Bulgaria, Finland, Czechia, Slovakia, Slovenia and Poland). For these countries, sectors such as air transport, pharmaceutical and chemical products, computer, and IT services might be more

affected because of the relatively more important Russian final demand.

**Bottlenecks in the availability of inputs imported from Russia may weaken the demand for labour.** Russia and Ukraine provide key intermediate inputs to European companies. Analysis based on input-output tables suggests that the share of employment related to imports of intermediate goods and services from Russia accounts for 0.6% of total employment. For some countries (e.g., Greece, Cyprus, Bulgaria, Lithuania, Latvia), shortages in the provision of intermediate inputs can be more constraining for the labour demand.

**The war in Ukraine impacts the EU economy mainly through high energy prices and more generally, high inflation.** The sharp rise in the price of energy and other commodities caused a rise in consumer price inflation that had not been observed since the late 1970s. Rising inflation reduces the demand for labour because consumers delay or reduce their purchases and, in a context of high uncertainty, firms delay hiring and investment decisions. To put an end to Russia's influence on the cost of energy, the EU Gas Storage Regulation – proposed by the Commission in March 2022 and swiftly adopted by the Energy Council in May 2022 – requires the EU Member States to fill storage facilities to 80% of capacity by November this year and to 90% in the years after. The REPowerEU initiative sets out a series of measures to reduce dependency of Russian gas and oil and accelerate the green transition. In a similar spirit, the Commission put forward the 'Save Gas for a Safe Winter' initiative by asking Member States to reduce their gas demand by 15% until the next winter. These measures will reduce EU dependency on Russia's natural gas and ease the pressure on its price and on inflation more generally.

**Yet the rise in the cost of energy has brought consumer inflation to levels unseen in decades, with risks for the labour market.** Many European firms in energy-intensive sectors cannot pass on the full increase in energy prices to consumer prices, due to the deterioration in the terms of trade and overall reduction in demand. This constrains them to slow down or to fully shut down their production. This is likely to have a negative impact on employment. The simulations

reported in this chapter show that employment is likely to decline in response to the energy shock. The drop in employment is larger in the case of a natural gas shock than in the case of an oil shock. The increase in consumer inflation that follows from this shock would exceed the response of nominal wages, i.e., real wages would fall.

**The increase in the cost of energy may take a toll on labour demand.** An increase in the relative price of electricity has a stronger impact on hours worked per worker than on employment, compared to gas. Estimates based on the historical relation between gas/electricity prices and employment suggest that an increase in the cost of gas for companies by almost 50% reduces the demand for labour by 2.5%, with no change in hours worked per worker. The same percentage increase in the cost of electricity would reduce employment by 1% and hours worked per worker by 3.7%. This difference reflects the importance of gas as a direct factor of production and as an input in the production of electricity. It highlights the importance of facilitating the adjustment of the hours worked to mitigate the drop of employment in the presence of a shock to the price of gas. The labour demand in the most energy-intensive manufacturing sectors is likely to be hit first. The effect on services might be delayed, but may involve a large number of workers.

**The policy response needs to be targeted, temporary and tailored to specific sectors and workers.** <sup>(78)</sup> The increase in the price of energy, aggravated by the war in Ukraine, is taking a bigger toll on the most energy intensive industries, usually capital intensive and highly productive. The risk is that viable firms in these sectors suffer liquidity constraints that force them to reduce their capacity and employment permanently. In the short-term, it is crucial that good job matches are preserved, i.e. avoiding labour shedding because of the lack of energy sources or of their high costs. Short-time work schemes are an effective tool to reduce the volume of labour input, saving jobs in the most productive firms. They need to be complemented by coherent policy packages that support labour market transitions.

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<sup>(78)</sup> Chapter 2 discusses the policy options to alleviate the burden of inflation on households' incomes.

**Viable firms should be the main beneficiaries of these targeted measures.** The conflict in Ukraine has increased geopolitical risks and the tendencies to change the structure of supply chains in the direction of reshoring, which can also put upward pressure on consumer prices. The effects on the structure of the EU economy are difficult to predict, but they may entail some reallocation between sectors.

**In the spirit of the European Commission recommendation on an effective active support to employment <sup>(79)</sup>, coherent policy packages can help to manage job transitions** related to structural change, address skill shortages and thus promote the green and digital transitions. To complement this labour-market specific policy guidance with a broader policy outlook, the recommendation on ensuring a fair transition towards climate neutrality <sup>(80)</sup> also emphasizes equal access to quality and inclusive education, training and lifelong learning, fair tax-benefit and social protection systems and access to affordable essential services and housing. Financial support for the implementation of such policies is available from the Recovery and Resilience Facility (for those countries having included them in their national recovery and resilience plans) from the European Social Fund Plus, as well as the Just Transition Fund.

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<sup>(79)</sup> European Commission Recommendation (2021), C/ 1372.

<sup>(80)</sup> Council Recommendation of 16 June 2022, 2022/C 243/04.

# APPENDIX 1

## Annex to the chapter 1

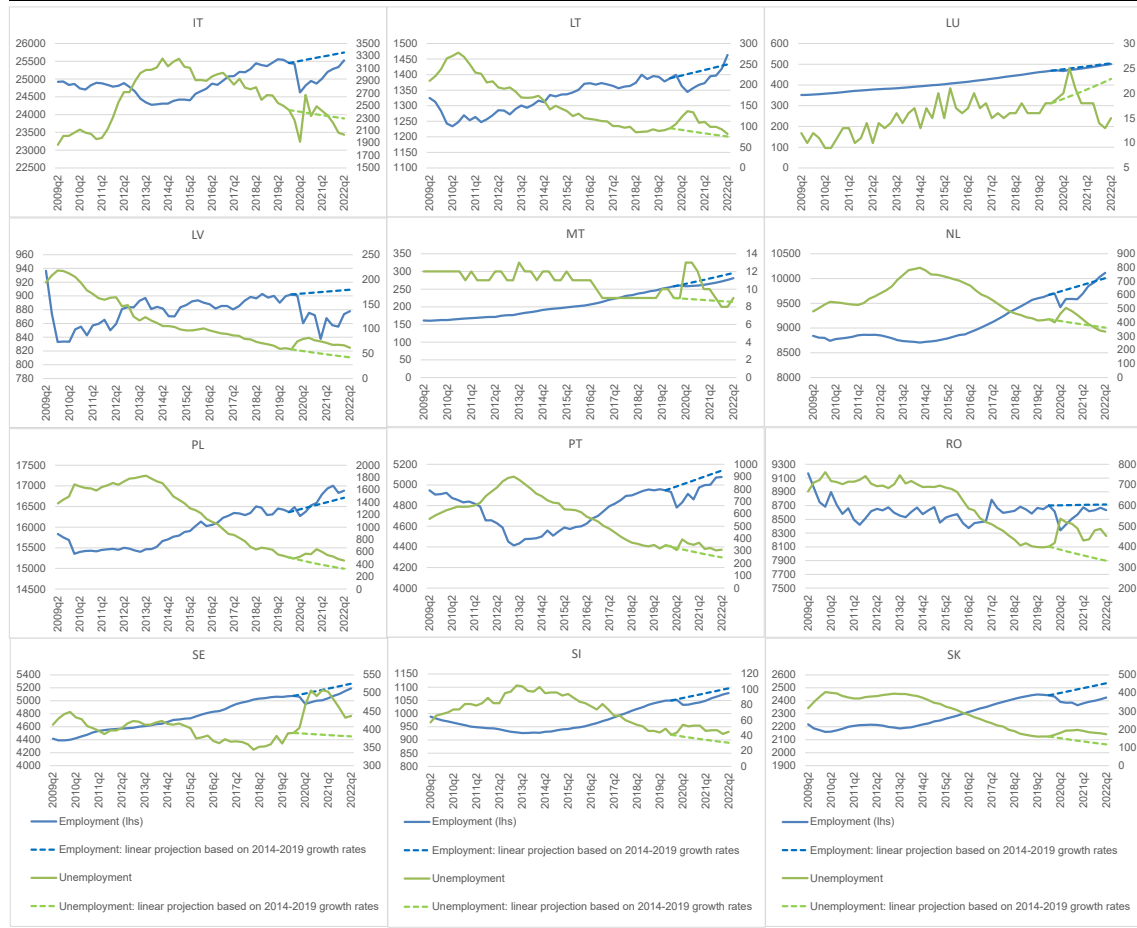
Graph I.A1.1: Employment and unemployment in the Member States, million persons, 2009Q1-2022Q2



Source: Eurostat, National accounts and LFS, seasonal adjusted data

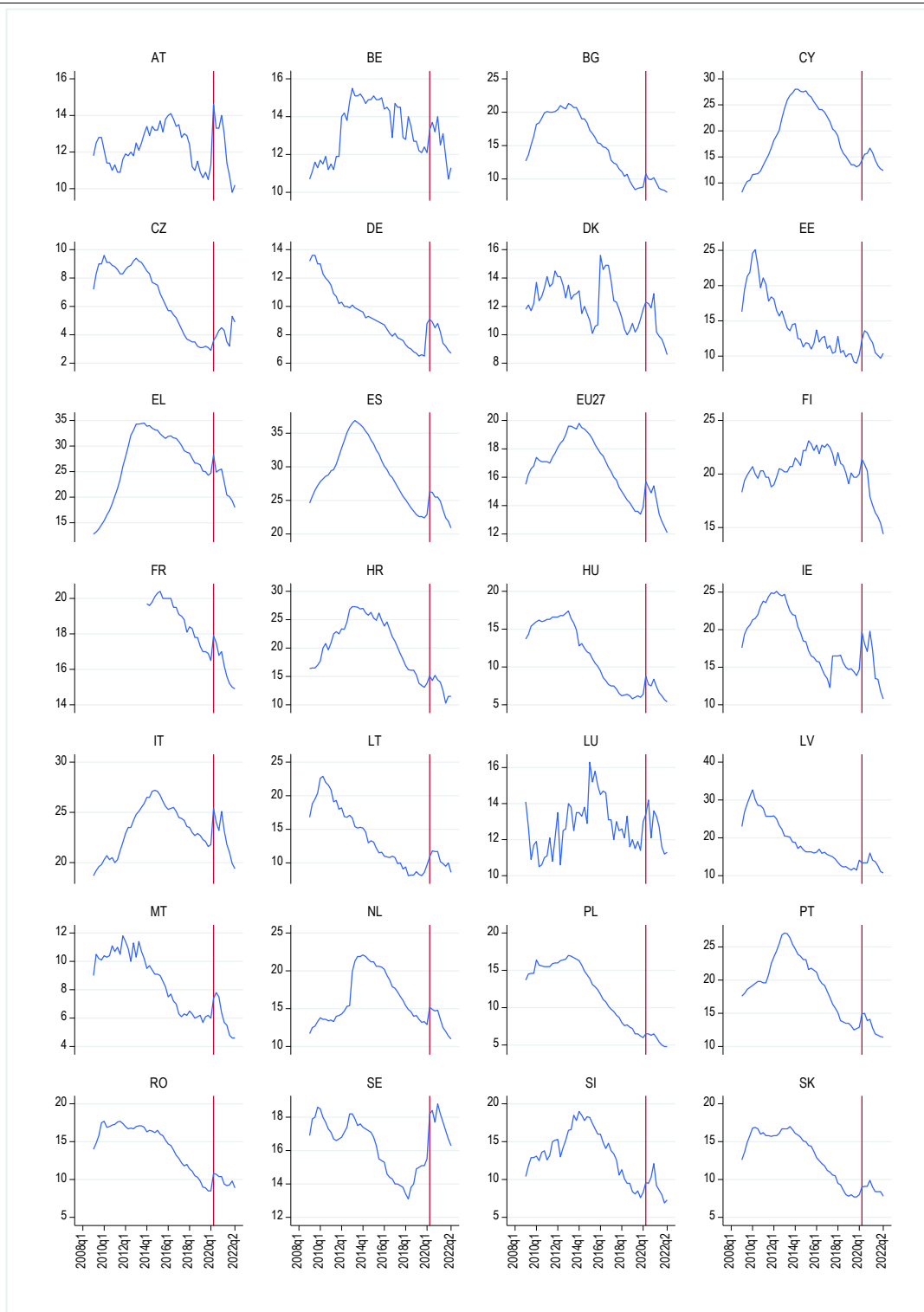


Graph I.A1.2: Employment and unemployment in the EU, million persons, 2009Q1-2022Q2



Source: Eurostat, National accounts and LFS, seasonal adjusted data

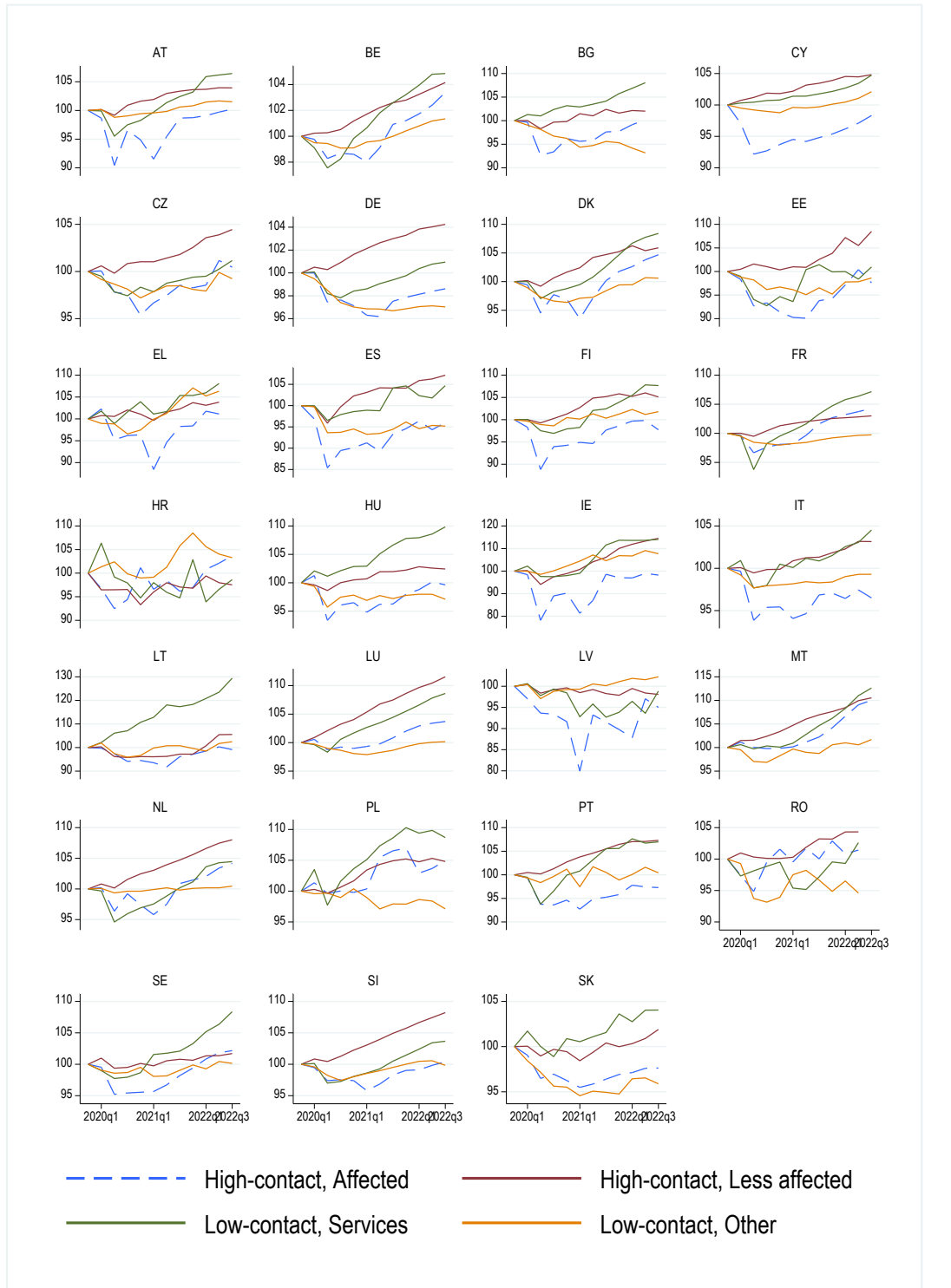
Graph 1.A1.3: Eurostat labour market slack indicator (as % of the extended labour force), 2008Q1-2022Q2



(1) According to Eurostat's definition, labour market slack is the sum of unemployed persons, underemployed part-time workers, persons seeking work but not immediately available and persons available to work but not seeking, expressed as a percentage of the 'extended labour force', which adds up the aforementioned sum and the employed persons

Source: Eurostat

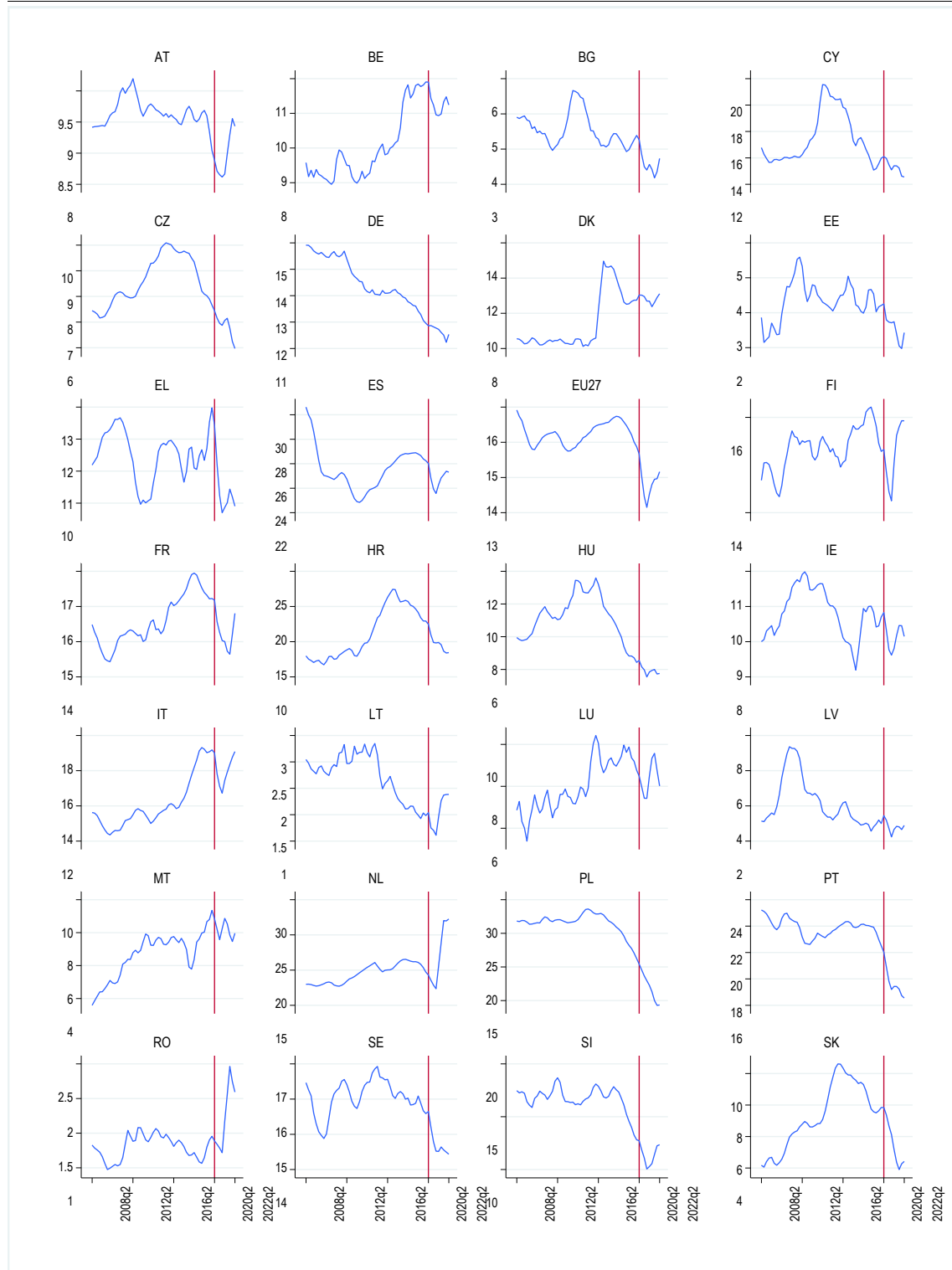
Graph 1.A1.4: Employment by sector group, index (2019Q4=100)



(1) High-contact affected sectors: wholesale and retail; transports, accommodation, arts, households' activities. High-contact less affected sectors: construction, public administration, health, education. Low-contact services: information and communication, financial, professional activities, real estate. Low-contact other: manufacturing, mining, water and agriculture.

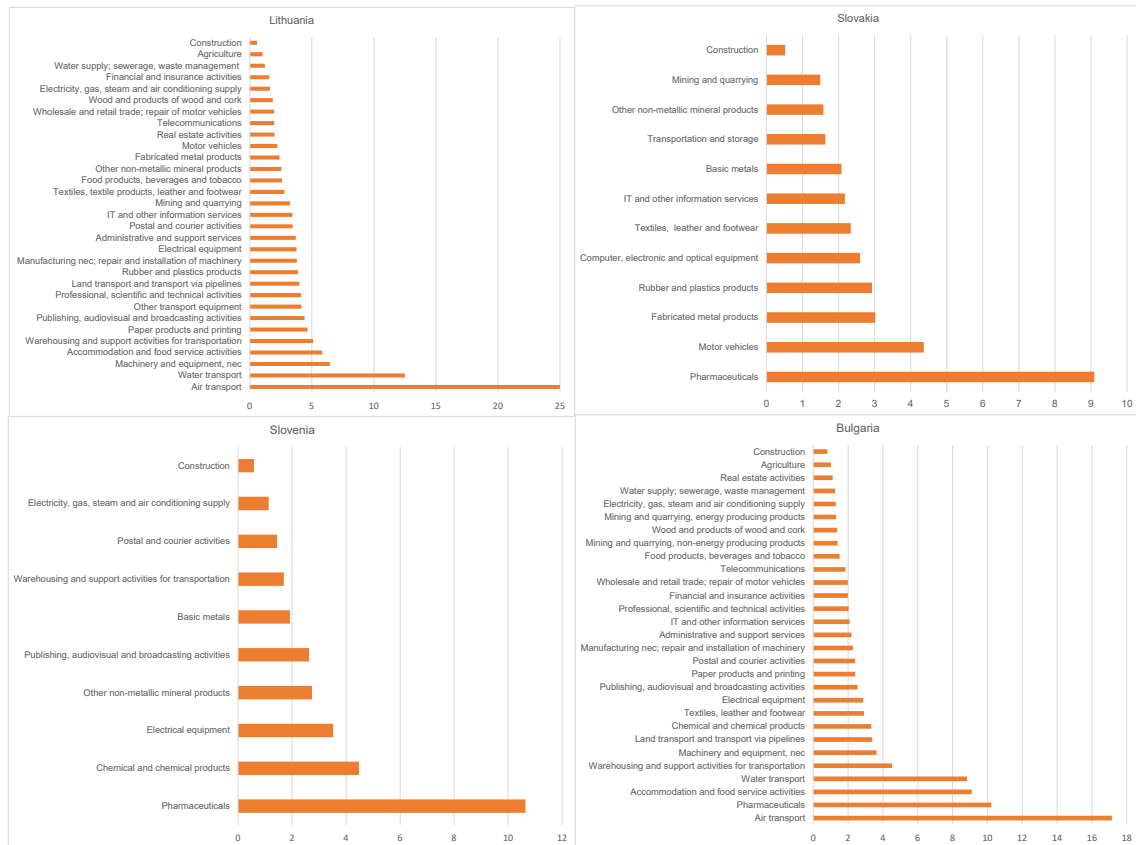
Source: Eurostat

Graph 1.A1.5: Temporary employment, shares on total employees, 2008Q1-2022Q2



(1) Moving average on seasonally adjusted data  
 Source: Eurostat

Graph 1.A1.6: Share of domestic employment by industry embedded in Russian final demand in most exposed countries (as % of total employment in each industry)



(1) The chart shows the share in total employment of the employment embedded in Russian final demand for sectors that have this share that is larger than the third quartile of the distribution of 41 sectors by country  
**Source:** Trade in Employment database, OECD

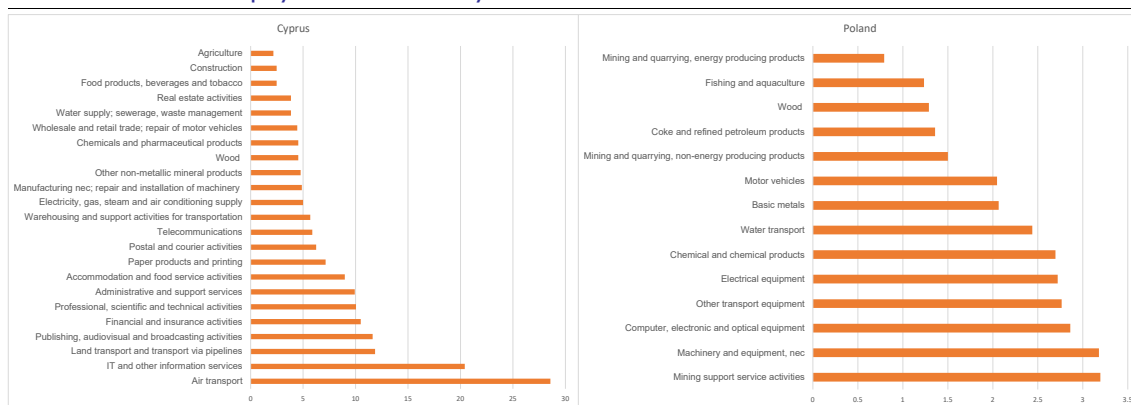
Graph 1.A1.7: Share of domestic employment by industry embedded in Russian final demand in most exposed countries (as % of total employment in each industry)



(1) The chart shows the share in total employment of the employment embedded in Russian final demand for sectors that have this share that is larger than the third quartile of the distribution of 41 sectors by country.

Source: Trade in Employment database, OECD

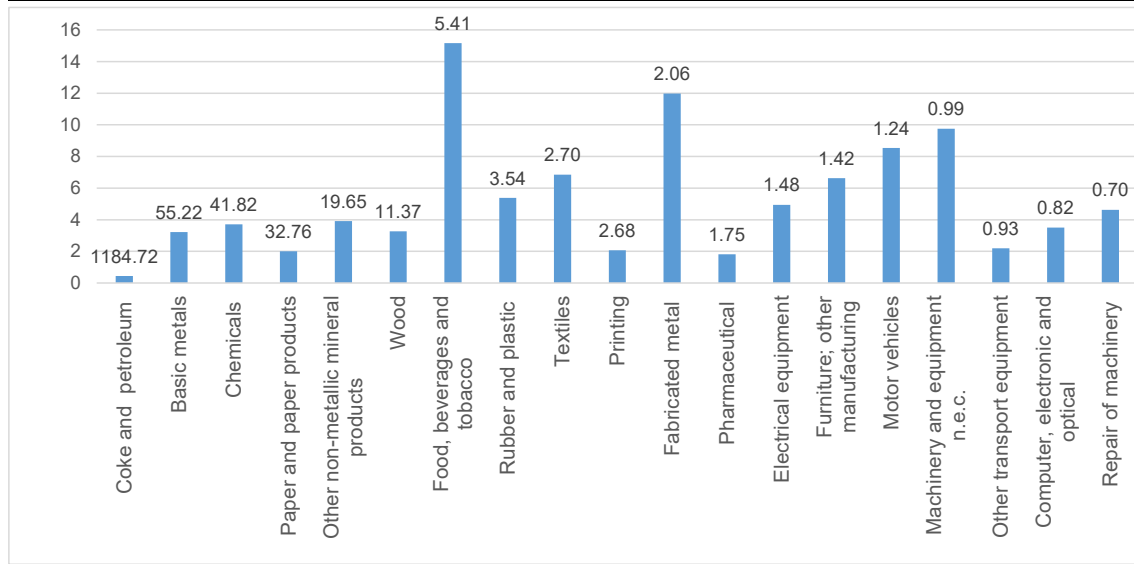
Graph 1.A1.8: Share of domestic employment by industry embedded in Russian final demand in most exposed countries (as % of total employment in each industry)



(1) The chart shows the share in total employment of the employment embedded in Russian final demand for sectors that have this share that is larger than the third quartile of the distribution of 41 sectors by country.

Source: Trade in Employment database, OECD

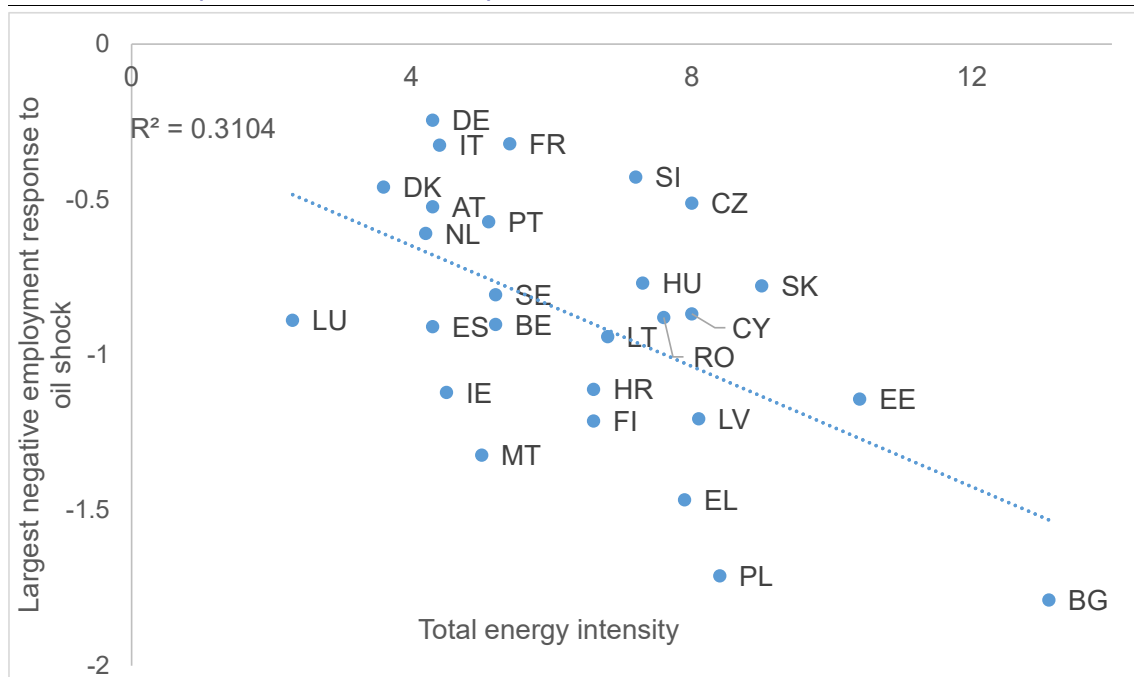
Graph 1.A1.9: Share of EU employment in manufacturing by industry ranked according the energy intensity, 2019



(1) Number on the bars are the energy intensity measures as TeraJoule per value added.

Source: Eurostat

Graph 1.A1.10: Relation between the largest employment response unexplained by the change in GDP and real wages to a oil price shock and total oil intensity

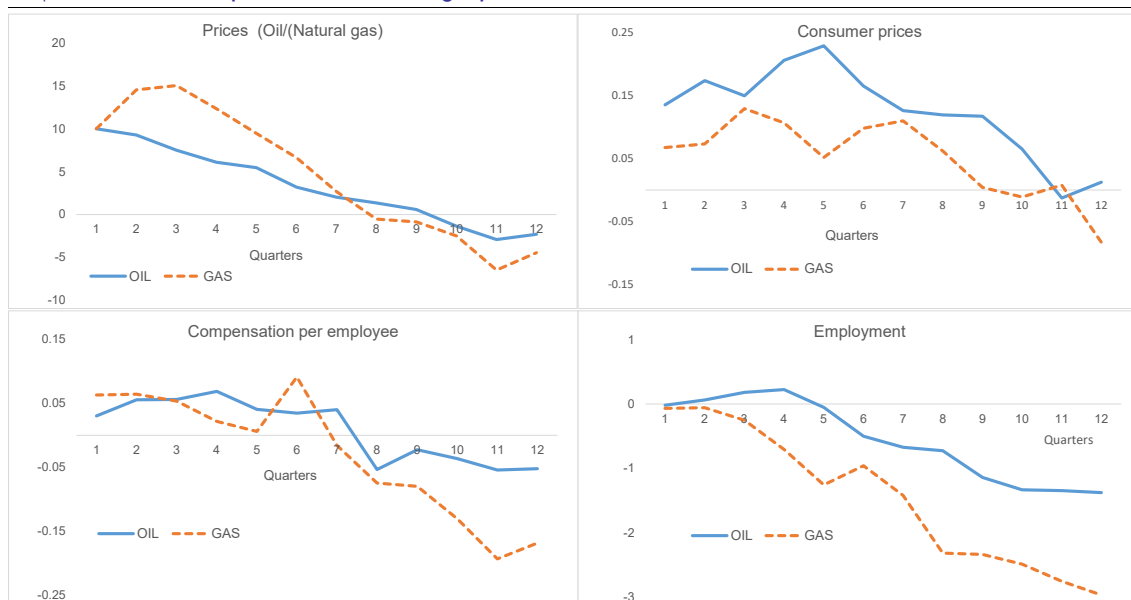


(1) The horizontal axis shows the "largest" negative employment response following an oil shock, controlling for the response of value added and real wages. This is obtained as follows: 1) for each country, the response of value added, real wages and employment to an oil shock is simulated; 2) it is estimated the response of employment to an oil shock accounted by the response of real wages and value added to the same shock. The assumption is that an oil shock affects employment through the determinants of labour demand. The chart shows the response of employment that is not explained by the change in real wages and value added, i.e. the "excess response" of employment to the shock.

Source: Own simulations



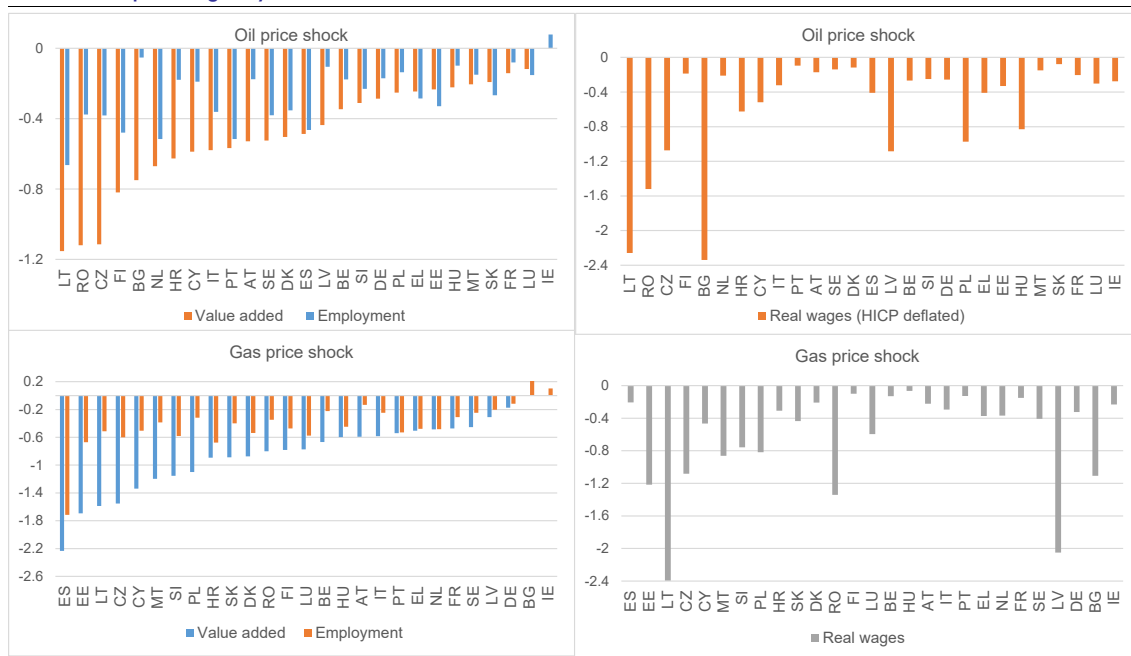
Graph 1.A1.11: **Response to a 10% oil and gas price shock**



(1) The chart shows the median response of the different variables computed over the response of all 27 Member States. Each response is computed with the local projection method (see Box 1.1)

Source: Own simulations

Graph 1.A1.12: **Largest response of value added, employment and real wages to a shock to the price of oil and the price of gas by 13%**



(1) The chart shows the largest response obtained by means of a local projection method from country specific VAR (Vector autoregression) models with variables the oil price, value added deflator, harmonised consumer prices, compensation per employee, value added and employment

Source: Own simulations

Table 1.A1.1: **Labour demand by sector**

sample 2008Q1-2021Q4

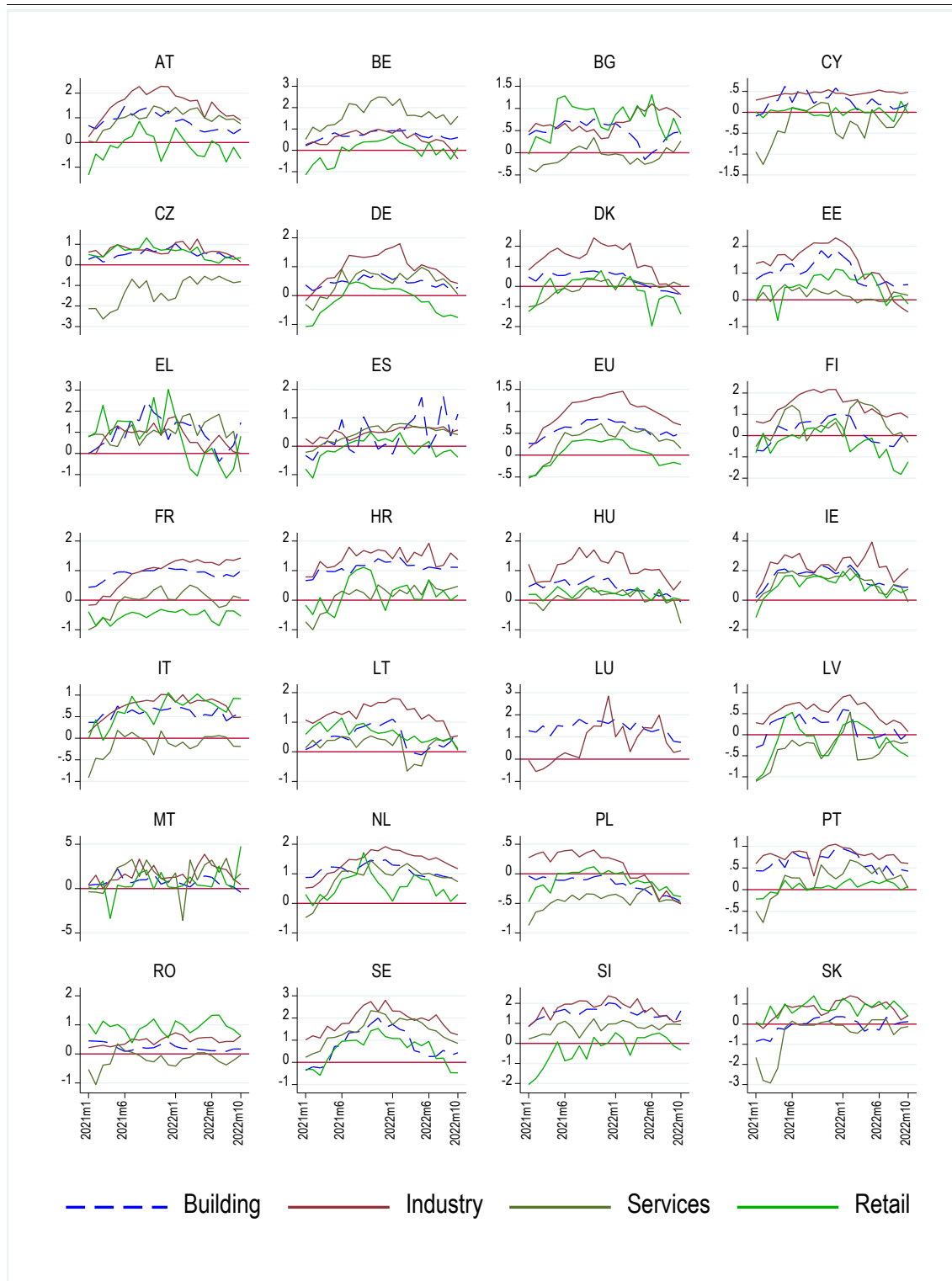
	<b>Dependent variable: Employment</b>			
	Construction	Manufacturing	Business sector services	Total economy
<i>Real labour costs</i>	-0.3*** (0.02)	-0.03*** (0.014)	-0.3*** (0.02)	-0.2*** (0.014)
<i>Value added at constant prices</i>	0.5*** (0.02)	0.3*** (0.011)	0.3*** (0.02)	0.3*** (0.014)
<i>Price of gas for non households relative to price deflator</i>	-0.08*** (0.015)	-0.04 (0.006)	-0.04*** (0.007)	-0.05*** (0.005)
<i>Country fixed effect</i>	Yes	Yes	Yes	Yes
<i>Period fixed effects</i>	Yes	Yes	Yes	Yes
Observations	1434	1434	1434	1434
R-squared	0.99	0.99	0.99	0.99

	<b>Dependent variable: Employment</b>			
	Construction	Manufacturing	Business sector services	Total economy
<i>Real labour costs</i>	-0.3*** (0.02)	-0.02* (0.01)	-0.3*** (0.02)	-0.4*** (0.01)
<i>Value added at constant prices</i>	0.5*** (0.014)	0.3*** (0.01)	0.3*** (0.02)	0.5*** (0.01)
<i>Price of electricity for non households relative to price deflator</i>	-0.12*** (0.02)	-0.04*** (0.009)	-0.01 (0.007)	-0.02*** (0.005)
<i>Country fixed effect</i>	Yes	Yes	Yes	Yes
<i>Period fixed effects</i>	Yes	Yes	Yes	Yes
Observations	1568	1568	1568	1568
R-squared	0.99	0.99	0.99	0.99

(1) Panel estimation on 26 EU countries

**Source:** Own estimates

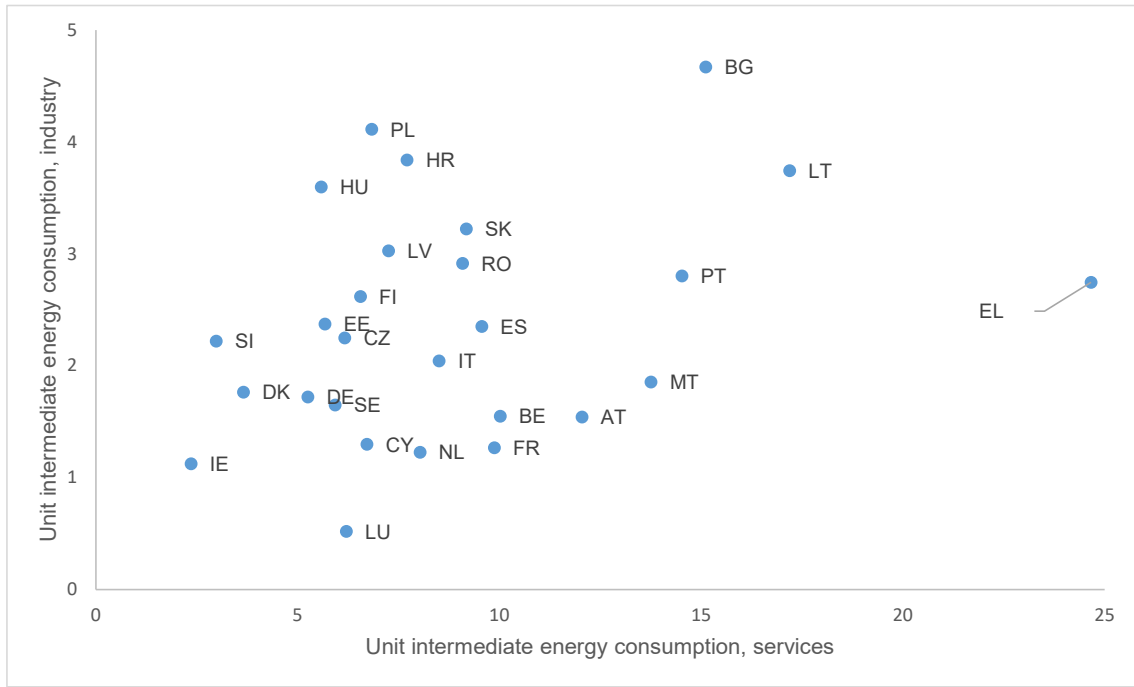
Graph 1.A1.13: Employment expectations over the next three months in the Member States, Jan. 2021 – Oct. 2022



(1) Standardised data, to correct for differences in means and standard deviations. The zero axis represents the long-term average.

Source: European business and consumer survey

Graph 1.A1.14: Intermediate consumption of energy (as % of total output), 2018



(1) Energy branches are: D05T06, D19 and D35

Source: Own computations on OECD Input-Output Tables (IOTs)2021 ed

**Box 1.A1.1: Estimating employment related to intermediate exports and imports to Russia**

Input-output tables at the world level connect all transactions between and within all industries and final users across all countries. This allows tracing the country of origin of intermediate goods exported or used by domestic firm and the domestic value added embodied in exports or imports of intermediate products from abroad. It is then possible to quantify the domestic employment embedded in trade in intermediate products with Russia (both exports and imports). In global trade, intermediate goods dominate compared to end products so that the demand for intermediate products plays a growing importance for the labour markets of the EU. This Box summarizes the methodology used to estimate with input-output tables the employment activated by intermediate exports/imports to Russia.

In the Leontief approach, national employment levels – to be properly understood as the direct and indirect labour demand embodied in the import or export of intermediate goods to Russia– is determined by the equation

$$EMP = L(I - A)^{-1}E$$

where L is a diagonal matrix of unit labour coefficients for all pairs country/sector;  $(I - A)^{-1}$  is the Leontief inverse, which is based on the A matrix of intermediate input coefficients; and E is the aggregated vector of the intermediate exports/imports to Russia. It is important to note that this computation assumes that labour input coefficients of exports/imports coincide with those at the production level.

Data are retrieved from the 2018 OECD Harmonised national Input-Output Tables, which quantify for 45 sectors the inter-industrial flows of goods and services produced domestically and imported in current prices. Sectoral employment levels, needed to derive the employment/output coefficients, were extracted from an auxiliary file - WIOD Socio Economic Accounts - of the 2016 WIOD release (Timmer *et al.* 2015)). WIOD (world input-output tables) is the outcome of a research project financed by the European Commission in the context of the 7<sup>th</sup> Framework Programme.

## 2. WAGES AND LABOUR COSTS DEVELOPMENTS IN THE EU AND ITS MEMBER STATES

*Inflationary pressures were fuelled by the strong recovery in 2021 and further boosted by the implications of Russia's war against Ukraine. Inflation in the EU reached 11.5% in October 2022, after 5.3% in 2021. The high inflation has been eroding the purchasing power of households.*

*Growth in nominal compensation per employee reached 4.0% in 2021, well above the pre-pandemic average of 1.9% from 2013 to 2019. This reflected the rebound in hours worked in 2021, after a collapse in 2020. Beyond the effect of hours worked, wage developments remained muted in 2021, despite the tightening of labour markets following the pandemic and an increased inflation. Such limited response of wages can be linked to the pace of wage negotiations, which experienced delays during the pandemic, as well as to the remaining uncertainty in some sectors due to the sanitary situation. In the first quarter of 2022 nominal wages started to accelerate more markedly, in a context of higher inflation and labour market tightening.*

*Real wages rebounded by 1.5% in 2021, after a decline by 0.8% in 2020, also driven by the recovery in hours worked. However, as inflation picked up, real wages have been decreasing significantly in the first three quarters of 2022. By the third quarter of 2022, nominal wages, although accelerating, fell short of inflation by 5.1% on a yearly basis.*

*Looking ahead, the prospects for wage developments are mixed. On the one hand, a higher and more persistent inflation is expected to contribute to higher wage growth. The possible losses in purchasing power associated with inflation can be expected to raise demands for higher wage increases in wage negotiations. On the other hand, wage growth may be restrained in most Member States by the deterioration of the economic situation and terms of trade, while inflation plays a lesser formal role in wage setting than in the past. The prospects for wage developments also vary across sectors. Activity, in particular in manufacturing, is constrained by rising input costs and persistent supply bottlenecks. Overall, whereas nominal wage growth is expected to be significantly above the*

*pre-pandemic average, real wages are set to decline significantly in 2022.*

*The fall in real wages entails social risks for many workers. Low wage earners are more likely to be affected since they spend a higher share of their income on energy and food, the two elements that are primarily driving the currently high inflation. In real terms, minimum wages have also been severely hit by inflation. In addition, the losses in purchasing power may have a negative impact on aggregate demand.*

*Whereas firms retain some ability to absorb wage increases by reducing their profit margins, they also face growing headwinds, notably in manufacturing. Against this background, general wage increases to offset losses in purchasing power due to inflation may affect firms' competitiveness. In this regard, in the first half of 2022, the growth of nominal compensation per employee has been sizably above labour productivity growth, leading to further increases in nominal unit labour costs in several Member States.*

*Some wage adjustment, notably for low wages, would help to cushion the impact of high inflation on workers' purchasing power with potentially limited effects on competitiveness and inflation. In particular, in some services sectors, where low-wage earners are relatively more represented, firms may have more room for increasing wages than in manufacturing sectors most exposed to cost pressures. Indeed, those firms are relatively less affected by current headwinds, and are also more able to raise consumer prices. By contrast, large wage increases aimed at recovering all or most of past inflation and applying to most wages could affect the competitiveness of some firms and could make inflation more persistent, with possible adverse macroeconomic consequences.*

*Since inflation started to pick up in mid-2021, Member States have adopted measures related to wages to protect the purchasing power of workers. In addition to wage policies, Member States have also supported the income of households through direct transfers and tax reductions and have implemented policies to limit the price that*

*households pay for energy. However, so far most of these non-wage policies are not sufficiently targeted and may reduce incentives to contain energy consumption and increase energy efficiency.*

## 2.1. INTRODUCTION

**After the pandemic recession, the strong recovery in aggregate demand has fuelled inflationary pressures.** The EU rebounded vigorously from the pandemic recession. However, the aggregate demand expanded at a higher pace than supply, which was hampered by shortages of raw material and basic inputs as well as supply chain bottlenecks. This started to fuel inflation in 2021. A sharp increase in energy demand pushed up energy prices, further exacerbating the price pressures. In March 2022, consumer price inflation reached 7.8%, compared to 2.2% in June 2021; this increase was strongly spurred by energy inflation, which rose from 2% in March 2021 to 16.8% in March 2022.

**Russia's war of aggression against Ukraine has boosted inflationary pressures.** Food, oil and many other commodity prices have soared globally since the start of the war in Ukraine. European gas and electricity prices have skyrocketed over the summer amidst gas supply disruptions, a shortfall of nuclear power, reduced hydropower generation linked to severe drought, and high demand. In August 2022, energy inflation reached 38.6% in the EU while headline inflation stood at 10.1%.

**For all Member States' economies, the increase in the price of energy represents a deterioration of the terms of trade.** Imported inputs become more expensive relative to the price at which output is exported. There is therefore a negative effect on national incomes and a transfer of purchasing power towards energy exporters.<sup>(81)</sup> Household income tend to be affected by this deterioration, notably in the sense that wages do not catch up with the high inflation, leading to a decline in their purchasing power. The profitability of firms is also affected, as they face higher

<sup>(81)</sup> The terms-of-trade decline is estimated to have curbed domestic income by 1.6 pps of GDP between the second quarter of 2021 and the first quarter of 2022 (European Central Bank, 2022b).

production costs, a slowdown in domestic demand and lose export markets to competitors in other jurisdictions. This raises the question of how wages might evolve over the coming months and the year ahead.

**Against this background, this chapter reviews wage developments in the current environment of high inflation.** Section 2.2 provides an overview of the recent developments in nominal and real wages, and looks into possible future developments in wages, amid a high uncertainty. Section 2.3 examines, on the one hand, the challenges brought by high inflation in terms of losses of purchasing power, particularly for low wage earners, and, on the other hand, the macroeconomic risks that large wage increases may trigger. It then discusses the possibility for wage increases to limit losses in purchasing power. Section 2.4 reviews the policies implemented by Member States to support workers' incomes.

## 2.2. WAGES IN THE EU: RECENT AND EXPECTED DEVELOPMENTS

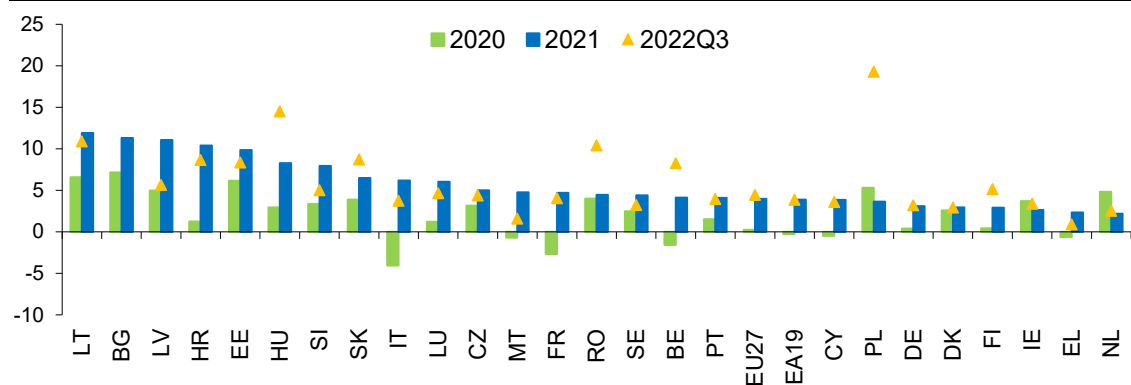
**This section describes recent wage developments and discusses their main drivers over the foreseeable future.** It first explains the apparent rebound in wages in 2021, but shows that overall, wage growth remained subdued in 2021 and have started to accelerate at the beginning of 2022. However, it falls significantly short of inflation. The section then underlines that, while inflation would contribute to higher nominal wage growth, real wages are expected to decrease significantly. The section also highlights some differences between the current energy shock and past oil shocks.

### 2.2.1. Recent nominal and real wage developments

**Growth in nominal compensation per employee in 2021 was well above the pre-pandemic average.** It reached 4.0% in the EU in 2021, well above the average of 1.9% from 2013 to 2019. Throughout 2021, nominal compensation per employee increased in all Member States (Graph 2.1). A growth rate above 6% was registered in Lithuania, Bulgaria, Latvia, Croatia, Estonia, Hungary, Slovenia, and Slovakia, consistent with the catching-up of their economies, as well as in



Graph 2.1: Nominal compensation per employee (annual % change, 2020, 2021, Q3 2022)



(1) Wages are measured by the indicator 'Nominal compensation per employee', which is calculated as a total compensation of employees divided by total number of employees. The total compensation is defined as the total remuneration, in cash or in kind, payable by an employer to an employee in return for work done by the latter during the accounting period and it has two components: i) Wages and salaries payable in cash or in kind; and ii) Social contributions payable by employers. (2) All the data used are national accounts data. The indicators are based on national currency values. (3) Countries are ranked in descending order of nominal wage growth in 2021. (4) For graph readability, BG value for 2022Q2 (22.7%) is dropped, and BG value for 2022(Q3) is not available.

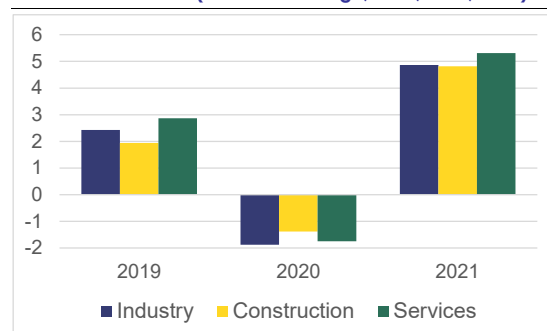
**Source:** European Commission, AMECO database. For Q3 2022: EMPL calculations based on Eurostat data

Italy and Luxembourg. By contrast, compensation per employee grew by less than 3% in seven Member States (the Netherlands, Greece, Ireland, Spain, Austria, Finland and Denmark).

**The increase in nominal compensation reflected the rebound in hours worked in 2021, after a collapse in 2020.** On an annual basis, hours rose in the EU by 2.1% in the last quarter of 2021, compared to a drop by 1.5% in the last quarter of 2020. Such a quick rebound was notably linked to the reopening of activity following the pandemic. It was also facilitated by the intensive use of short-time work schemes in 2020 and their subsequent phasing-out in 2021, in Austria, Belgium, France, Germany, Italy, the Netherlands, Portugal and Slovakia. The relaxation of restrictions linked to the pandemic also contributed to higher wages, notably in services. In services, nominal compensation per employee increased by 5.3% in 2021 after a decrease of 1.8% in 2020. As for industry (respectively construction), the growth rate in 2021 amounted to 4.9% (respectively 4.8%), while in 2020 a reduction of 1.9% (respectively 1.4%) was registered (Graph 2.2). <sup>(82)</sup>

<sup>(82)</sup> In Austria, Belgium, Germany, Italy and Slovakia, the swing in nominal compensation per employee was by contrast more evident in industry or construction, reflecting a wider use of job retention schemes and a less intense

Graph 2.2: Nominal compensation per employee per sector (annual % change, 2019, 2020, 2021)



(1) Wages are measured by the indicator 'Nominal compensation per employee', which is calculated as a total compensation of employees divided by total number of employees. The total compensation is defined as the total remuneration, in cash or in kind, payable by an employer to an employee in return for work done by the latter during the accounting period and it has two components: i) Wages and salaries payable in cash or in kind; and ii) Social contributions payable by employers.

**Source:** EMPL calculations based on Eurostat data

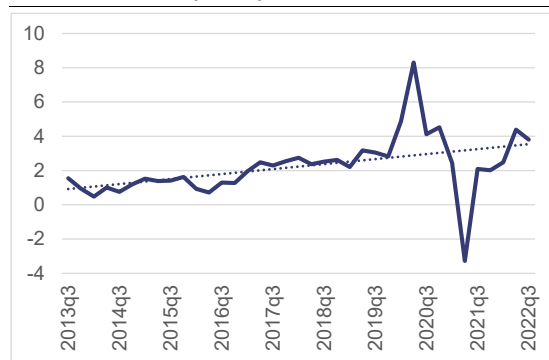
**Beyond the effect of hours worked, wage developments remained muted in 2021.** Until the last quarter of 2021, the strong rebound in labour demand following the pandemic, <sup>(83)</sup> record high

labour shedding in these sectors than in services (details by Member States are shown in Graph 2.A1.1 in Annex)

<sup>(83)</sup> Following the easing of the lockdown measures and the swift economic recovery, job vacancies started to rise again, getting closer to pre-pandemic levels in the second quarter of 2021.

labour shortages,<sup>(84)</sup> and an already increasing inflation did not lead to any noticeable acceleration in wages. This can be linked to the staggered nature of wage agreements, amplified during the pandemic by delays in negotiations and a reduction in the number of wage agreements being concluded,<sup>(85)</sup> and the remaining uncertainty in some sectors due to the sanitary situation. As the post-pandemic recovery stabilised, the effect of the rebound in hours worked on wages faded away, revealing trends in wage developments aligned with their historical trends. By the last quarter of 2021, average hourly wages in the EU grew by around 1.8% (on an annual basis), slightly below the pre-pandemic average of around 2% (Graph 2.3).

Graph 2.3: **Nominal compensation per hour worked, EU27, quarterly**



(1) Annual change, quarter to the same quarter of the previous year

Source: Own computations on Eurostat data

**In the first quarter of 2022 nominal wages started to accelerate more markedly.** This notably reflected the increase of inflation and the tightening of labour markets. At the beginning of the year, the effects of wage renegotiations for some sectors became visible, as well as updates of wage rates according to provisions foreseen in

<sup>(84)</sup> Labour shortages have a significant positive effect on nominal wages. At the same time, part of labour shortages are structural (see Chapter 3 for details on the regression and the characteristics of labour shortages). Higher structural labour shortages may not be accompanied by higher wages, as they can be associated with an underutilisation of labour and higher structural unemployment.

<sup>(85)</sup> Wage agreements are staggered in the sense that renegotiations take place at different points in time, while the related decisions on wages are valid for a certain period. For the effect of the pandemic, see Molina (2021).

existing contracts.<sup>(86)</sup> By the third quarter of 2022, nominal compensation per employee grew on a yearly basis by 4.4% in the EU. The increase was between 3% and 9% in a majority of Member States (Slovakia, Croatia, Estonia, Belgium, Latvia, Finland, Slovenia, Luxembourg, Czechia, Austria, France, Portugal, Italy, Cyprus, Ireland, Sweden and Germany). Nominal compensation grew by more than 9% in Bulgaria, Poland, Hungary, Lithuania and Romania, but by less than 3% in Greece, Malta, the Netherlands, Spain and Denmark (Graph 2.1).<sup>(87)</sup>

**Similarly, developments in negotiated wages have remained limited since early 2021 but started to accelerate in the first quarter of 2022.**

Negotiated wages<sup>(88)</sup> in the euro area, that are not sensitive to the number of hours worked and in some sectors represent a wage floor rather than the actual wage paid, increased in 2021 by 1.5%, slightly below the average of the period 2013-2020 (1.7%), despite the strong rebound in employment following the pandemic (Graph 2.5). In the first quarter of 2022, negotiated wages in the euro area grew by 2.8% in nominal terms on a yearly basis, after 1.6% in the fourth quarter of 2021. At Member States level,<sup>(89)</sup> sizable increases occurred in the first quarter of 2022 notably in Germany (yearly growth of 4.0%), Belgium

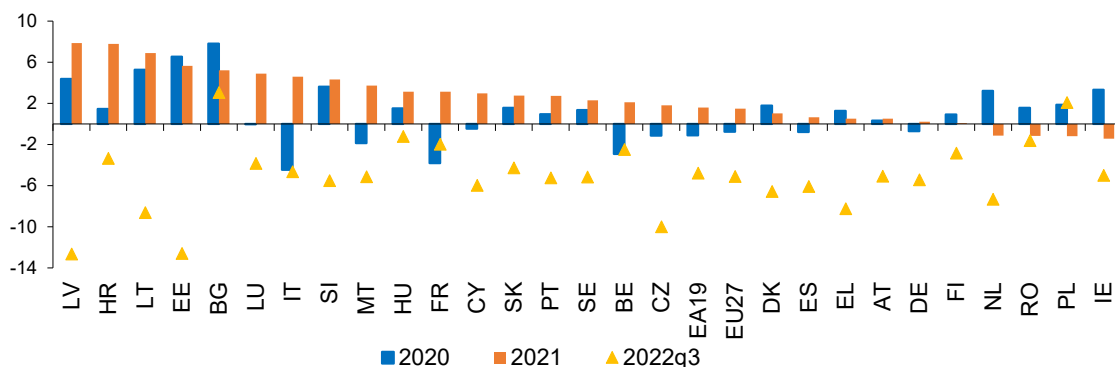
<sup>(86)</sup> See Molina (2022). Outside the regular renegotiations, contracts can contain clauses to update wages automatically, for instance to index wage growth to inflation or to update wages when inflation reaches a certain threshold.

<sup>(87)</sup> For Bulgaria, data refer to the second quarter of 2022 as data for the third quarter were not available yet. Data about nominal wages and salaries per worker by Member State are presented in annex.

<sup>(88)</sup> The ECB indicator of negotiated wages for the euro area represents a weighted average of national year-on-year growth rates of collectively agreed wages for most euro area countries. In contrast to other indicators like compensation per employee, it is in particular not affected by developments in hours worked. As a general rule, the indicator also excludes bonuses, overtime and other individual compensation that is not linked to collective bargaining, and in some Member States it represents a wage floor in some sectors rather than the actual compensation paid by firms. The index of negotiated wages has some caveats, including coverage across countries and methodology harmonisation, including the treatment of certain types of bonuses.

<sup>(89)</sup> The country specific data are based on national sources and definitions (not harmonized). National sources used include: Destatis (Germany), Banque de France (France), De Nederlandsche Bank (The Netherlands), and Oesterreichische Nationalbank (Austria), Ministerio de trabajo y economia social (Spain), ISTAT (Italy).

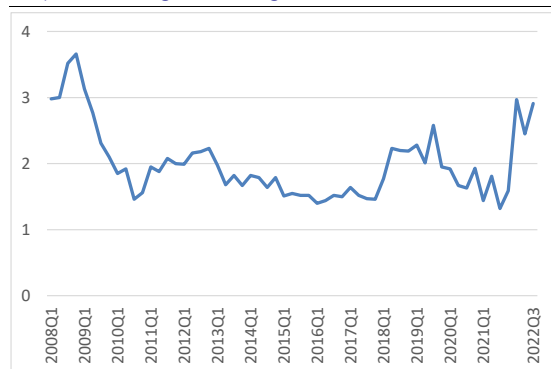
Graph 2.4: Real wages per employee, deflator GDP (annual % change; 2020, 2021 and Q3 2022)



(1) Real gross wages and salaries per employee, deflator private consumption (for annual data). For Q3 2022, deflator is HICP. **Source:** European Commission, AMECO database and own computations on Eurostat data.

(4.8%), France (around 3%), Austria (2.6%), Spain (2.6% in the second quarter of 2022), or the Netherlands (2.4%). By contrast, negotiated pay growth was muted in Italy (estimated around 0.6%). There were, however, disparities across sectors, with wage growth lower in high-contact services and industry in several Member States.

Graph 2.5: Negotiated wages in the euro area



**Source:** European Central Bank

**Real wages rebounded in 2021 in the EU as well as in most Member States but real hourly wages have been decreasing since end 2021.** For the EU, real wages per employee increased by 1.5% in 2021, after a decline by 0.8% in 2020. The rebound was particularly strong in Italy (+4.6% after -4.5% in 2020), France (+3.1% after -3.8% in 2020), Malta (+3.7% after -1.9% in 2020), and Belgium (+2.1% after -2.9% in 2020). In Estonia, Latvia, Lithuania, and Bulgaria, real wage growth increased by more than 4% both in 2020 and 2021. In 2021 real wages decreased only in Ireland, the Netherlands, Poland and Romania (Graph 2.4). However, in the second half of 2021, already

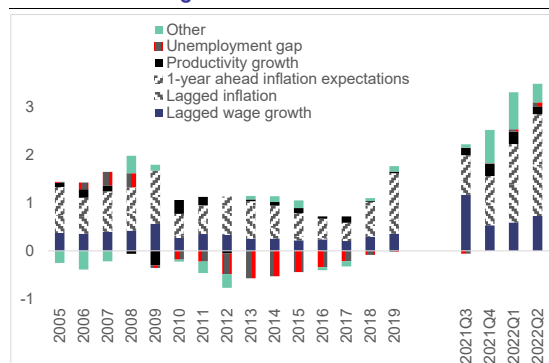
before the outbreak of the war in Ukraine, real hourly wages started to decrease on the back of an accelerated inflation. This decline in real wages was particularly pronounced in the last quarter of 2021, where inflation reached 4.6% while compensation per hour only grew by 2.1% (on a yearly basis). As concerns individual Member States, in the last quarter of 2021, real hourly wages decreased by more than 4% in Spain and the Netherlands (on a yearly basis), and about 3% in Germany and Italy.

**Russia's war of aggression against Ukraine has exacerbated inflation, leading to a significant decrease in real wages in the first half of 2022.** Inflation reached 11.5% in October 2022, after 5.3% in 2021, amplifying the decline in real wages. By the third quarter of 2022, wages fell in real terms in the EU (by 5.1% on a yearly basis), as well as in 25 Member States. Decreases larger than 6% (and up to 12.7%) were recorded in Latvia, Estonia, Czechia and Lithuania (despite high increases in nominal terms), as well as in Greece, the Netherlands, Denmark and Spain. Reductions were milder (below 2%) in Finland Belgium, France, Romania and Hungary, amid higher increases in nominal wages and somewhat less exacerbated inflation. By contrast, real wages increased in Poland and Bulgaria. It should be noted that in real terms the compensation per employee, which also includes non-wage and non-salary costs for firms, decreased more mildly in the EU (by 0.7% in the third quarter of 2022), and only in 21 Member States (Graph 2.A1.4 with details by Member States in Annex).

### 2.2.2. How nominal and real wage growth may react to the current macroeconomic conditions?

**A higher and more persistent inflation is expected to result in higher nominal wage growth.** Empirical evidence suggests that inflation (lagged and expected), productivity growth and unemployment developments (also taken as a measure of labour market tightness) explain well wage growth over time (see Graph 2.6, and Box 2.1 for details). With productivity gains expected to decrease and unemployment to remain broadly stable (despite the economic slowdown), inflation is set to be the main driver of wage growth in the foreseeable future. According to the Commission Autumn Forecast, inflation is projected to peak at the end of 2022 before gradually easing and reaching 3% for 2024. There are also factors that could contribute to a more persistent inflation, including energy shortages, higher commodity costs and broader price pressures.<sup>(90)</sup> The possible losses in purchasing power associated with inflation may contribute to raising demands for higher wage increases in wage negotiations.

Graph 2.6: Contribution to wage growth of actual changes in variables over time



Source: Own estimations

**By contrast, the deterioration of the economic situation and the increased uncertainty are expected to restrain wage growth in most Member States.** The growth slowdown is notably expected to weigh on the demand for labour, in turn limiting nominal wage growth. In an environment of heightened economic uncertainty, concerns about job security may also prevail over pay increases in wage deals, despite tight labour markets.

<sup>(90)</sup> Di Bella et al. (2022). See also Alvarez and Barret (2022).

**Furthermore, institutional factors will affect wage growth in most Member States.** This notably concerns the role of inflation in wage-setting and the pace and coverage of collective bargaining for wage setting. Automatic wage indexation is no longer common in the EU as it was in the 1970s. It affects only about 3% of private sector employees in the euro area and concerns a large share of the economy only in Belgium, Cyprus, Malta, and Luxembourg.<sup>(91)</sup> In some countries, inflation indexation is used for updating specifically statutory minimum wages (e.g., France), but usually this covers only a small part of employment. Beyond indexation mechanisms, inflation developments feeding formally into wage negotiations apply only to around 18% of private sector employees in the euro area, for instance in the form of an explicit inflation benchmark guiding negotiations.<sup>(92)</sup><sup>(93)</sup> Second, the pace of wage renegotiations may delay wage increases. In the EU, for a majority of firms wage renegotiations take place only once a year or less frequently, and it will take some time for new contracts to take into account the increase in inflation.<sup>(94)</sup> In this regard, the situation differs widely across Member States.<sup>(95)</sup>

<sup>(91)</sup> Usually in these regimes, the inflation measure is backward-looking and includes energy. In Belgium, the relevant inflation index excludes petrol, tobacco and alcohol.

<sup>(92)</sup> This concerns mostly forward-looking inflation measures that exclude energy, which in the current context limits the role of inflation. The most prominent example is Italy, where the Italian National Institute of Statistics' annual three-year forecast of the Consumer Price Index excluding energy is the central benchmark for wage agreements at sectoral level.

<sup>(93)</sup> The role of inflation in wage-setting has decreased over time (see Koester and Grapow, 2021). However, in a context of high inflation, wage negotiations may take into account such high inflation irrespective of its formal role. Nevertheless, in a context of high uncertainty, job security may prevail and that the absence of a formal role for inflation may ultimately weigh on wage developments.

<sup>(94)</sup> See Fabiani et al. (2010), information based on a survey.

<sup>(95)</sup> In Germany, about one quarter of the 45 million German employees have their contracts renewed in 2022, most of them in the last quarter of 2022. A number of sectors will not have wide negotiations in 2022, including the retail, hospitality and construction. In Italy, around 30% of contracts are expected to expire in the period between December 2021 and December 2022. In Spain, for 2022 and 2023, some of the negotiations concluded in 2021 settled on wage growth in line with pre-Covid-19 growth rates in some key sectors (e.g. manufacturing sector in Madrid or construction workers in Catalonia and Madrid). In Denmark, the last round of collective bargaining in the

**The prospects for wage developments also vary across sectors and Member States.** Activity, particularly in manufacturing, is constrained by rising input costs (in particular energy) and persistent supply bottlenecks,<sup>(96)</sup> associated with Russia's war of aggression against Ukraine, surges in Covid-19 infections in different parts of the world, and lockdowns in Asian ports. Such constraints are less prevalent in most services (although some may be energy-intensive, such as retail and hospitality). Moreover, in some services sectors (notably in IT-related services), persistent labour shortages are expected to contribute to higher wages. High and volatile energy prices also affect Member States to a various extent, and in particular to a greater extent those with a higher share of energy-intensive industries (notably Central and Eastern European Member States). Therefore, wage growth is expected to vary greatly across Member States, mainly reflecting differences in inflation and in some cases productivity gains. (details by Member States are presented in Graph 2.A1.2 in Annex).

**Overall, nominal wage growth is expected to be significantly above the pre-pandemic average over the forecast horizon.** The growth of nominal compensation per employee in the EU is set to remain well above its pre-pandemic average over the period 2013-2019. The Commission Autumn 2022 forecast estimated that wages would increase by 4.6% in 2022, 5.2% in 2023 and 3.9% in 2024, significantly above the yearly average of 1.7% over the period 2013-2019. At the same time, the forecast points to a high uncertainty for future wage growth, reflecting the overall economic uncertainty.

**Nevertheless, real wages are set to decline sizably in 2022 and 2023.** Nominal increases are expected to fall short of inflation, amidst a large deterioration in the terms of trade and business profits. According to the Commission Autumn

Forecast, in 2022 real wages would decline for all Member States but Bulgaria and Hungary (-3.0% at the EU level, from -0.5% in France to -8.8% in Slovenia). Decreases in real wages are expected to remain limited (below 2%) only in Belgium, France, Luxembourg, Malta and Portugal. In 2023, real wages are expected to decline at the EU level (by 1.1%), as well as in 18 Member States. Decreases are expected to be larger than 2% in Slovakia, Czechia, Hungary, Lithuania, Greece, Italy, Sweden, the Netherlands and Malta (details by Member States are presented in Table 2.A1.1 in Annex).

**Such expected developments in nominal and real wages are consistent with past oil shocks.** Past oil-price shocks (in 1973, 1978, 1990 and 2003) similarly resulted in a substantial decline in real wages for all sectors.<sup>(97)</sup> The 1970s' oil shocks were also accompanied by an elevated inflation and generalised high nominal wage growth, which resulted in negative feedback loops (so-called price-wage spirals) that prolonged the recession and hurt in particular vulnerable workers and households.

**However, the current energy crisis differs from past ones in several aspects, leading to a more limited reaction of nominal wages and at the same time lower losses in real wages.**<sup>(98)</sup><sup>(99)</sup> First, compared to the 1970s, the EU economies have become less energy dependent (including due to a lower share of industries and a higher energy efficiency); therefore the shock may affect the economy to a lesser extent than in the 1970s. This contributes to a lower effect on real wages. Second, the response of nominal wages to higher energy prices decreased over time. As mentioned above, the role of inflation in wage-setting is no longer prevalent in the EU. Expectations that the shock is temporary and the efforts of monetary policy to reduce inflation and keep inflation expectations well anchored may also limit demands for wage increases. For instance, the literature shows that the oil-price shock of 2003 got passed through to wages and non-energy prices much less than it has been the case in the 1970s (1973, 1978), in part because wage earners and

private sector ended in March 2020 and the next round will take place in 2023.

<sup>(96)</sup> Evidence indeed suggests a link between wage growth and global supply chain pressures, with some heterogeneity across sectors and countries. The link is negative and highly significant in both industry, services and construction (with heterogeneity across sectors) for the group of the 16 non-Central and Eastern European Member States. Supply chain bottlenecks may indeed affect production, lowering labour demand and affect profit margins, ultimately affecting wages.

<sup>(97)</sup> See Keane and Prasad (1996), based on US data.

<sup>(98)</sup> Blanchard and Gali (2007).

<sup>(99)</sup> Blinder and Rudd (2013). See also Bordo and Orphanides (2013).



trade unions were less inclined to try to maintain real wages, as they expected oil price increases to be temporary, contrary to the 1970s. <sup>(100)</sup>

**The current energy shock has also taken place during the strong post-pandemic recovery, which may smooth the effect of the shock.**

Evidence suggests that for the 2003 oil shock (compared to previous shocks), the relatively better cyclical macroeconomic environment when the shock occurred played a role in mitigating the adverse effects on inflation, and limited losses in real wages. <sup>(101)</sup>

### 2.3. THE CHALLENGES AHEAD AND THE ROOM FOR SOME WAGE INCREASES

**This section discusses the challenges raised by the recent and expected wage developments.** It first examines the social and economic challenges associated with the significant losses in purchasing power of workers. In turn, it underlines that potential wage increases aimed at compensating for real wage losses and supporting domestic demand need to be balanced with the risks that such increases may trigger for competitiveness and employment, as well as in terms of further inflationary pressures. The section then assesses the potential room for further wage increases. It highlights that it varies significantly across Member States and sectors. The section also presents the possible policy responses.

#### 2.3.1. The challenges

**The rapid erosion of the purchasing power of workers is raising social and economic challenges** Many workers can find themselves facing significant social risks to pay for essential goods and services, especially low wage earners. This situation could increase poverty and inequalities, and dampen domestic demand in particular from the first deciles of the income distribution.

**At the same time, excessive nominal wages increases may be counterproductive.** Wage growth aimed at fully offsetting the effect of

<sup>(100)</sup> For the 1990 oil-price shocks, the pass-through was higher in the US than in many EU Member States.

<sup>(101)</sup> Nordhaus (2007).

inflation for all wages may trigger losses in competitiveness and jobs, as well as a higher and more persistent inflation, hurting in particular vulnerable workers and households.

#### The losses in purchasing power of workers

**The fall in real wages entails social risks for many workers.** Workers are increasingly relying on savings or run into debt in order to cover current expenditure needs. Based on the European Business and Consumer Surveys, the proportion of workers reporting financial distress <sup>(102)</sup> increased for all Member States between August 2021 and August 2022, with the exception of Cyprus. More precisely, in August 2022 (latest available data) it stood at 14.1% for the EU i.e., 4.4 percentage points higher than one year ago (9.7%) and 2.3 percentage points higher than in the pre-pandemic period (11.8%). The highest increases of financial distress among workers between August 2021 and August 2022 were recorded in Belgium and Malta (14 percentage points), Estonia (13 percentage points), France (9 percentage points) and Greece (7 percentage points).

**Low wage earners are particularly affected depending on the overall income of the household they are part of.** Low-income households are expected to be proportionately more affected by the price increases, since they spend a higher share of their income on energy and food, the two elements that are primarily driving the current inflation. On average, in 2020 European households already devoted 25.4% of their total spending to food and 13.0% to energy provision. <sup>(103)</sup> With higher increases in the prices of these products compared to others, this share is set to have risen since. However, this share of expenditure is even much higher among low-income households. According to a study by the JRC, <sup>(104)</sup> low-income households spend on average 10.8 percentage points more on these items than the highest-income households. Between January and August 2022, the increase in

<sup>(102)</sup> Reported financial distress is defined as the need to draw on savings or to run into debt to cover current expenditures. For details on Business and Consumer Surveys, including consumer survey's question on the current financial situation of households, see [http://ec.europa.eu/economy\\_finance/db\\_indicators/surveys/index\\_en.htm](http://ec.europa.eu/economy_finance/db_indicators/surveys/index_en.htm)

<sup>(103)</sup> JRC calculations based on Eurostat data.

<sup>(104)</sup> Menyhart (2022).

the cost of living for the lowest income quintiles is also estimated to range from 7% in Malta to 31% in Estonia. The difference in the increase in the cost of living between the lowest and highest income quintiles is estimated at 1.1 percentage point in the EU, but it ranges between 3 and 5 percentage points in Estonia, Italy and Latvia. At the national level, large differences are mainly driven by the divergence in households' energy expenditure share.

**Minimum wages decreased in real terms in 2021 as well as in the first half of 2022.** In real terms, statutory minimum wages declined in 2021 in most Member States, where they exist. Minimum wages are indeed often updated annually, at the beginning of the year, and they were usually overtaken by the rising inflation throughout 2021. Such falls in real terms contrasted with the increase in average real wages in 2021 in all Member States except Ireland and the Netherlands. Between January and August 2022, statutory minimum wages in real terms also decreased due to the higher inflation in all the Member States where they exist, except Belgium, France, Greece, Hungary and Romania.<sup>(105)</sup> Section 2.4 provides further details on minimum wage developments in both nominal and real terms.

**In addition, in-work poverty increased in 2021 in some Member States, amplifying fairness concerns.** In 2021, eight Member States (Romania, Luxembourg, Spain, Italy, Greece, Portugal, Bulgaria and Estonia) recorded levels of in-work poverty equal to or larger than 10% (Graph 2.7).<sup>(106)</sup> While it has been on a downward trend between 2016 and 2021, from 9.8% in 2016 to 8.9% in 2021, in the post-pandemic period several countries are experiencing increases in in-work poverty, with the largest increases being recorded in Portugal (1.7 percentage points), Latvia and Luxembourg (1.6 percentage points), and Greece (1.2 percentage points). In the EU, in-work poverty slightly increased from 2020 to 2021 (0.1 percentage point) but increased more when considering households with a not-very-low work

intensity<sup>(107)</sup> and dependents (0.3 percentage points).<sup>(108)</sup>

**While the current crisis affects living standards for all workers, its impact on in-work poverty will vary across Member States.** In-work poverty depends inter alia on the respective developments of lower wages compared to the median wages. The majority of low wage earners works in the services sector, while industry employs a higher share of middle wage earners in most countries. As the energy crisis tends to hamper industry to a larger extent (hence potentially middle wages), the impact on in-work poverty may be limited. However, the share of low wage earners employed in industry is higher in some Central and Eastern European Member States,<sup>(109)</sup> which may lead to a higher effect of the crisis on in-work poverty in these countries.

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<sup>(107)</sup> Work intensity is considered as not very low when the adults of the household had a working time more than 20 % of their total combined work-time potential during the previous year. Such selection allows not to consider almost inactive households.

<sup>(108)</sup> Overall, income inequality (as measured by the Gini coefficient) increased in half of the Member States in 2021. The highest increases compared to 2020 were recorded in Portugal (1.8 percentage points), Latvia (1.2 percentage points), Greece, Spain and Croatia (1 percentage point). The pandemic also exacerbated pre-existing inequalities in the labour market, largely because the ability to work remotely is highly correlated with education, and hence with pre-pandemic earnings. Other measures of inequality include income ratios. In 2021 on average, the income received by the 20% of the population with the highest income was almost five times as high as the income received by the 20% of the population with the lowest income.

<sup>(109)</sup> European Commission (2020b).

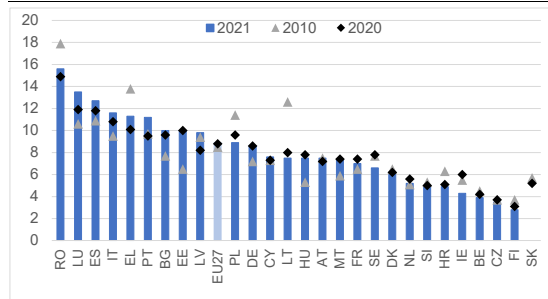
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<sup>(105)</sup> This includes the updates of minimum wages of January 2022.

<sup>(106)</sup> 2021 SILC data. Data on in-work poverty for a given year are based on income for the previous year.



Graph 2.7: **In-work poverty in EU Member States, 2020, 2021 (%)**



(1) Persons at risk of poverty are those living in a household with an equivalised disposable income below the risk-of-poverty threshold, set at 60% of the national median equivalised disposable income (after social transfers).

(2) For 2021, data missing for SK.

Source: Eurostat

**The literature points to mixed results regarding the effect of high inflation on overall wage inequality.** On the one hand, some empirical studies found that there is a non-linear relation (U-shaped link) between inflation and income inequality, suggesting that the current level of inflation may lead to a decrease in wage inequality at the EU level, while Member States with the highest inflation rates may experience increases.<sup>(110)</sup> On the other hand, other studies taking into account the specificities of past oil-price shocks suggest that the current crisis may result in an increase in wage inequality. While the past shocks resulted in a decline in real wages for almost all workers, the relative wage of skilled workers increased. As these workers are generally not at the bottom of the income distribution, this would increase wage inequality.<sup>(111)</sup> However, as underlined in the previous section, the current crisis differs from past oil-price shocks. Therefore, estimated effects based on past oil-price shocks may not apply now, and future developments in wage inequality would depend on the policy responses, notably with regard to minimum wages (see section 2.4).

<sup>(110)</sup> See Monnin (2014). The study is based on 10 OECD countries over the period 1970-2010. It finds that, as inflation goes up, inequality decreases, reaches a minimum with an inflation rate of about 13%, and then starts rising again. Other studies also highlight this non-linear relationship, see: Galli and van der Hoeven (2001); Bulir (2001); Auda (2010).

<sup>(111)</sup> See Keane and Prasad (1996). Other studies find that oil supply shocks may lead to higher income inequality in the short term, but possibly lower-income inequality in the medium and long terms, see Sheng and Gupta (2022).

**Losses in purchasing power for low wage earners have a larger effect on aggregate demand.**<sup>(112)</sup> As lower income households have a higher propensity to consume (at least for certain consumption categories), decreases in real wages at the lower end of the wage distribution tend to weigh to a larger extent on aggregate consumption.<sup>(113)</sup>

### The risks of wage increases in terms of competitiveness and inflationary pressures

**While wage adjustments to price developments would limit the losses in purchasing power, they may entail some economic risks.** First, wage increases entail higher costs for firms, which are already facing higher costs for energy and a deterioration in the terms of trade. As higher costs weigh on firms' profitability, competitiveness can be affected. The ability of firms to increase wages varies significantly across sectors and Member States. Furthermore, if the wage increases do not take sufficiently into account conditions at the firm level, some firms may need to decrease their labour demand, leading to employment losses. Second, while inflation can drive nominal wages up, wage increases can in turn feed inflationary pressures. Facing higher costs, firms may raise consumer prices if market conditions allow. The main risk would occur if inflation expectations become de-anchored. In turn, a higher and more persistent inflation can have adverse macroeconomic consequences, notably in terms of GDP, employment, and real wages, hurting the more vulnerable workers and households.

### The risks in terms of competitiveness and jobs

**In a context of limited productivity growth, unit labour costs have significantly increased in several EU Member States.** Overall, nominal compensation per employee has been accelerating, while productivity growth has remained in line with the yearly average over 2020 and 2021 and slightly above the pre-pandemic average over

<sup>(112)</sup> Aggregate demand consists of consumption, investment, government spending and net exports.

<sup>(113)</sup> This is only true ceteris paribus. If the wage increase at the lower end of the wage distribution leads to a loss in employment that has a stronger negative impact on aggregate demand than the positive impact resulting from the higher wage, the total effect on aggregate demand would be negative.

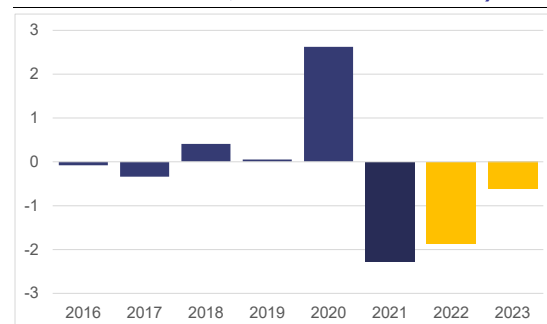
2013-2019 period (details by Member State in Graph 2.A1.2 in Annex). As a result, nominal unit labour costs (NULC) increased sizably in most Member States, and by more than 5% in the third quarter of 2022 (on a yearly basis) in Belgium, Bulgaria, Estonia, Finland, France, Croatia, Hungary, Lithuania, Luxembourg, Latvia, Poland, Romania and Slovakia (details by Member State in Graph 2.A1.3 in Annex). Such increases in NULC are significantly above the pre-pandemic average increase over 2013-2019, except for Romania. <sup>(114)</sup>

**Further wage increases to offset losses due to inflation may affect the cost competitiveness of some firms.** Higher growth rate of nominal wages would increase ULC further. In this context, firms which are less able to pass on higher wages to consumers through higher prices, notably in the tradable sector, may face decreasing profitability due to rising labour costs, notably if they are also affected by rising energy costs (e.g. in manufacturing). <sup>(115)</sup> Other firms that can pass wage increases on to consumer prices (notably in services) may also face a decline in demand, in a context of a diminishing purchasing power.

**Average prices have been growing at a higher pace than ULC, suggesting more room for some firms to increase wages depending on profitability.** Real unit labour costs (RULC, or the ratio of real labour costs to real labour productivity) have been decreasing since 2021. In 2022, RULC are expected to decline by 1.8% in the EU (1.7% in the euro area) (Graph 2.8, and details by Member States in Graph 2.A1.5 in Annex). Such decline in RULC suggests that some firms have more capacity to increase wages, although they may have also been following cautious wage policies in anticipation of decreasing profitability. Where the consumer prices for their products increase more than the cost of production, firms may have more room to increase wages. In the opposite situation (notably

in energy-intensive sectors), firms may face more difficulties to increase wages.

Graph 2.8: **Real Unit Labour Costs (annual % change, 2013-2021, forecasts for 2022 and 2023)**



(1) Ratio of compensation per employee to nominal GDP per person employed

Source: European Commission, AMECO database.

#### The risks in terms of inflationary pressures

**So far, second-round effects of wages on inflation have been limited.** Large second-round effects of wage increases on inflation, that may occur if firms translate higher wages into higher prices, could trigger a more persistent inflation, with adverse macroeconomic effects. Barro (2013) found that a protracted inflation may notably weigh on growth and investment, therefore on employment and productivity, ultimately worsening the purchasing power of workers, hurting most those already in vulnerable situations. <sup>(116)</sup> Similarly, Braumann (2000) underlined that high inflation tended to contract employment and lead to a significant decline in real wages, as well as to a real depreciation, all affecting purchasing power. <sup>(117)</sup> However, pass-through from prices to wages are so far moderate in the EU though the situation requires monitoring to avoid that risks materialise. <sup>(118)</sup>

**The main risk would materialize if large and generalised nominal wage growth leads to a de-anchoring of inflation expectations.** This in turn could feed a wage-price spiral, with a much more

<sup>(114)</sup> ULC has witnessed a mixed picture in 2021, after high rises in 2020 (see Graph 2.11). In 2021, ULC declined in nine Member States, by up to 9% Romania, an increased in seventeen Member States, by up to 7.3% in Lithuania (see Table 2.A1.2 in Annex). ULC has showed similar swings as nominal compensation per employee from 2020 to 2021, reflecting the swing in hours worked.

<sup>(115)</sup> Depending on the sector and how product markets work, wage increases can be passed on to consumer prices, but firms in the tradable sectors are generally less able to do so, as they are subject to international competition.

<sup>(116)</sup> Barro, R. J. (2013). Inflation and economic growth. *Annals of Economics & Finance*, 14(1). See also: Akinsola, F. A., & Odhiambo, N. M. (2017). Inflation and economic growth: A review of the international literature.

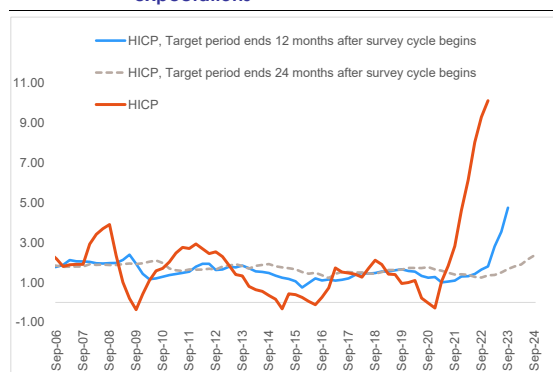
<sup>(117)</sup> See: Braumann, Benedikt, Real Effects of High Inflation (May 2000). IMF Working Paper No. 00/85. The study also corroborates contractionary effects on GDP and investment and employment.

<sup>(118)</sup> Commission Summer Forecast.

persistent inflation, as well as an increased downward real wage rigidity. <sup>(119)</sup> In such a case, an increase in inflation would imply lower output and higher unemployment (and likely also higher interest rates in response), hurting in particular those workers and households in already vulnerable positions.. A de-anchoring of inflation expectations depends, however, on a broad set of policies (including monetary and fiscal), and not only on wage developments.

**So far, there is no sign of a de-anchoring inflation expectations in the EU** (Graph 2.9). In the third quarter of 2022, the inflation expectations in the euro area for the third quarter of 2024 (2 years ahead) by the respondents to the ECB survey of Professional Forecasters stood at less than 2.4%, close to the 2% target.

Graph 2.9: **Inflation and short- and long-term inflation expectations**

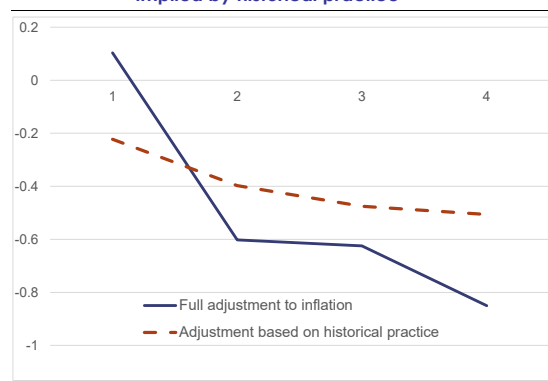


(1) The survey covers the euro area  
**Source:** ECB Survey of Professional Forecasters (SPF)

**A partial adjustment of wages to inflation may mitigate purchasing power losses with limited inflationary pressures.** Own simulations using a VAR model taking into account the interactions between wage developments and its key drivers (including inflation) suggests that adjusting wages to partially compensate for an inflationary shock would not lead to a much higher inflation, should this wage adjustment be consistent with the effect of inflation on wages in the past <sup>(120)</sup> (see Graph

2.11, left panel; Box 2.1 for details). By contrast, adjusting all wages to fully offset the current increases in inflation, <sup>(121)</sup> could lead to a sizably higher and more persistent inflation (see Graph 2.11, right panel). This may even entail the risk of triggering further decreases in real wages (see Graph 2.10). This may also affect inflation expectations, depending on whether wages are set with an expectation that prices will continue to grow, and on whether the overall macroeconomic conditions contribute to inflation. Ultimately this could set off a wage-price spiral. The next section looks in greater detail at such room to increase wages without triggering unintended inflationary pressures, notably by showing that inflation is currently not reflected in wages to the same extent as in the past.

Graph 2.10: **Response of growth of real wages to inflation shocks: full adjustment versus adjustment implied by historical practice**



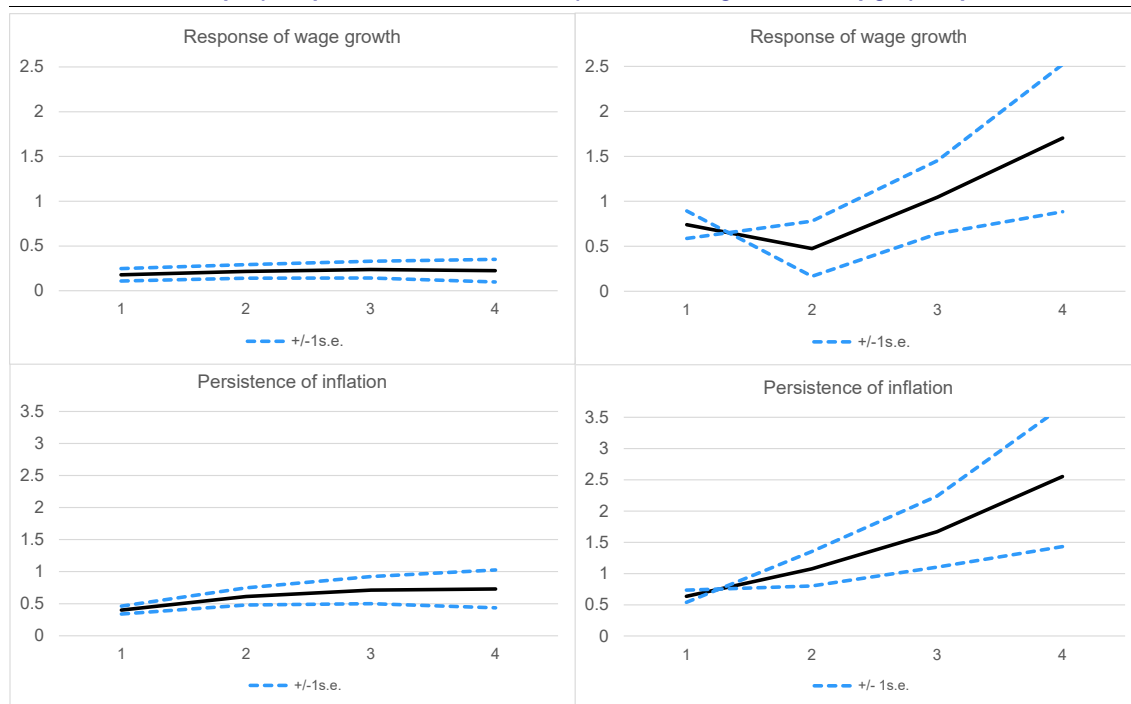
(1) The shock consists of a standard deviation of lagged and expected inflation.  
(2) The X-axis represents quarters. The Y-axis represents percentage changes.  
**Source:** Own calculations.

<sup>(119)</sup> Goette, L., Sunde, U., & Bauer, T. (2007). Wage rigidity: Measurement, causes and consequences. *The Economic Journal*, 117(524), F499-F507. See also: Chen, P., & Flaschel, P. (2005). Keynesian dynamics and the wage-price spiral: identifying downward rigidities. *Computational Economics*, 25(1), 115-142.

<sup>(120)</sup> i.e. same coefficients linking inflation and wages as in the past, while taking into account the currently higher inflation.

<sup>(121)</sup> Weights applied to lagged and forecast inflation are 80% and 20%, mimicking the 18% share of employees in the euro area with forward-looking inflation expectations officially considered in wage negotiations.

Graph 2.11: **Response of wages to a shock of inflation, and persistence of inflation, based on historical relations between variables (left panel) and on based on a full compensation of wages to inflation (right panel)**



(1) The shock consists of a standard deviation of lagged and expected inflation.

(2) The X-axis represents quarters. The Y-axis represents percentage changes.

Source: Own calculations

### 2.3.2. The room for further wage growth

**Wage growth is expected to stand significantly below the rate predicted based on macroeconomic fundamentals in almost all Member States in 2022, as well as in most Member States in 2023.** The growth of nominal compensation per employee<sup>(122)</sup> can be compared to a benchmark reflecting developments in inflation, productivity growth, and the changes in the unemployment rate, and considering past relations between those variables and wage developments.<sup>(123)</sup> In 2022, wage growth is

expected to be more than 2 percentage points below its benchmark in all Member States but Luxembourg (with a gap of less than 2 percentage points) and Bulgaria (with a sizable positive gap). For 2023, wage growth would remain below its benchmark in 21 Member States, with a gap of more than 2 percentage points in 13 Member States (Czechia, Germany, Greece, Croatia, Hungary, Ireland, Italy, Lithuania, Poland, Portugal, Romania, Sweden and Slovakia). Positive gaps are expected only in six Member States (Belgium, Bulgaria, Cyprus, Estonia, Luxembourg and Latvia). (Table 2.1).

<sup>(122)</sup> It includes, besides gross wages, employer contributions. This means that some tax reforms may affect wage growth. Absent changes in employer contributions, the growth rate of nominal compensation per employee will be the same as the growth rate of gross wages and salaries.

<sup>(123)</sup> The estimation proceeds in two steps. In the first step, wage levels are regressed on levels of prices and productivity as well as unemployment. This represents the long-term relationship between the wage levels and its drivers (price, productivity and unemployment). In the second step, wage growth is regressed on price inflation, productivity growth and the change in unemployment, as well as on a term that represents the deviation of wage level from its predicted level. This represents more short-term deviations of wages from their long-term trend. This

prediction is based on a panel regression of EU Member States estimated on yearly data over the period 2000 to 2019. The sample does not go beyond 2019 to avoid the disturbances due to the pandemic, and the fact that developments in unemployment were mild due to the intensive use of short-time work schemes.

Table 2.1: **Gap of wage growth relative to its benchmark**

	2021	2022	2023
AT	-1.1	-6.3	-0.6
BE	-2.3	-5.9	1.5
BG	7.1	4.7	4.6
CY	-2.5	-7.1	0.5
CZ	0.2	-8.7	-3.2
DE	-1.6	-4.9	-2.3
DK	-0.7	-4.2	-0.1
EE	2.0	-5.3	3.7
EL	-3.5	-9.4	-4.8
ES	-2.8	-8.3	-1.6
FI	0.5	-4.6	-1.8
FR	-0.4	-2.9	-0.9
HR	-0.8	-7.0	-2.9
HU	-1.3	-3.3	-3.3
IE	-5.8	-11.0	-5.1
IT	0.4	-6.2	-4.9
LT	4.8	-5.4	-3.4
LU	2.1	-1.1	3.2
LV	5.3	-2.8	1.1
MT	0.5	-3.7	-1.7
NL	-2.7	-9.8	-1.1
PL	-5.6	-5.6	-5.5
PT	0.8	-7.4	-3.1
RO	-0.5	-5.8	-3.4
SE	0.0	-5.7	-2.2
SI	2.0	-9.1	-1.5
SK	1.3	-4.4	-8.3

(1) Wage benchmark is predicted by developments in inflation, productivity and unemployment rate.

Source: Own calculations based on AMECO.

**This suggests some room for wage increases in many Member States, to mitigate losses in purchasing power while avoiding inflationary pressures.** The negative gap of wage growth relative to the wage benchmark indicates that the factors that have historically driven wage growth are currently not reflected as they were in the past. This mainly concerns the rising inflation in the current context. Higher wage growth better reflecting inflation developments would allow to mitigate losses in real wages, while not triggering large inflationary pressures (as shown in the previous section).

**The capacity to increase wages varies across firms and sectors.** It depends on whether firms can either absorb those wage increases by reducing profit margins, or raise product prices. Some firms may have some ability to absorb higher labour

costs by reducing profit margins, in particular where price increases preceded wage inflation, depending on profitability, and in sectors where firms have monopsony power. <sup>(124)</sup> Some firms are also able to pass higher production costs on to consumers through higher prices, though this would in turn contribute to inflation. This would be the case to a greater extent of firms in non-tradable sectors, notably services.

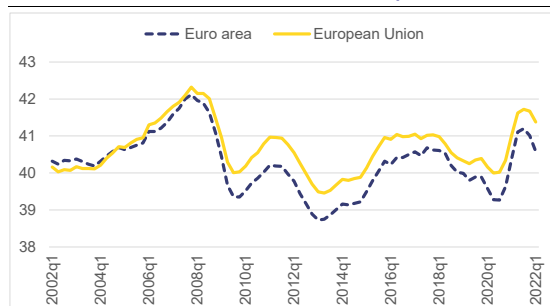
**Firms' profitability remained high in early 2022, suggesting some room for accommodating wage increases, but it is set to decline.** By the end of 2021, the aggregate profitability and debt positions of firms had recovered to pre-pandemic levels, thanks to the solid recovery seen in the second half of 2021. <sup>(125)</sup> Businesses' profitability still appeared strong at the beginning of 2022 (Graph 2.12). However, firms have been facing growing headwinds since then. Increases in production costs (notably energy) and persistent supply chain pressures may weigh on their profit margins, notably in the manufacturing sector. For producers, energy prices appear notably to increase more than the value added, which contributes to reduce their profit margins (Graph 2.13). The deterioration of the demand outlook is also set to weigh on companies' profit margins. <sup>(126)</sup> This challenging environment would limit the possibility for firms to absorb wage increases.

<sup>(124)</sup> International Monetary Fund (2022), p. 9. A monopsony occurs when there is a sole or a dominant employer in a labour market. This increases the employer's wage-setting power.

<sup>(125)</sup> See respectively: European Central Bank (2022c), chapter 1.3 and European Central Bank (2022a).

<sup>(126)</sup> For details, see European Commission 2022 Summer Forecast.

Graph 2.12: **Gross profit share of non-financial corporations in the euro area and the European Union**

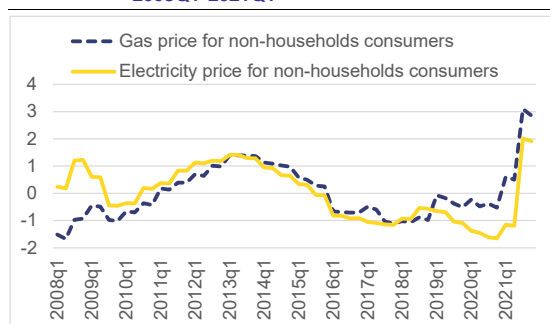


(1) Gross operating surplus as percentage of gross value added, based on four-quarter-cumulated sums

Source: Eurostat and ECB

**Against this background, there could be some room for further adjusting wages to price developments, notably for low wages, though the situation varies across sectors.** Low wage earners are more represented in services sectors, whose firms tend to be less affected by the current headwinds than in manufacturing. The situation is however sector-specific. For instance, firms in the hospitality or retail sectors can be energy intensive and also face high energy costs. By contrast, firms in the IT sector have also seen their activity increasing significantly since the pandemic and are particularly benefiting from the on-going digital transition.

Graph 2.13: **Real energy prices for non-consumers, 2008Q1-2021Q1**



(1) Ratio of gas and electricity prices for non-household consumers to GDP deflator. Variables are normalised.

Source: EMPL calculations based on Eurostat data.

**Labour shortages in some service sectors can lead to such wage adjustment, while reflecting sectoral conditions.** Sizable labour shortages are persistent in services, whereas there are signs of attenuation in manufacturing. <sup>(127)</sup> Wage increases

<sup>(127)</sup> See chapter 3 for details. See also: Duval et al. (2022).

in the services sector could contribute to improving the attractiveness of some essential occupations, such as in long-term care, thereby reducing labour shortages.



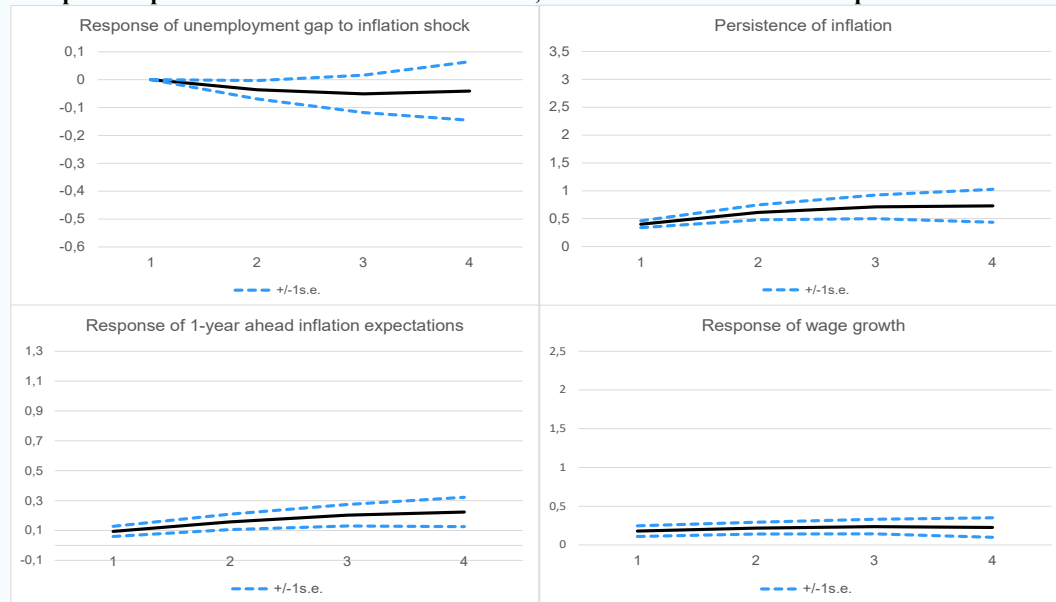
**Box 2.1: Wage growth and high inflation.**

**Wage growth can be affected by past and future inflation, wage inertia, labour market tightness and labour productivity.** In a low inflation environment, past wage growth may be a useful benchmark to strike an agreement without incurring in lengthy negotiations. The situation differs in a context of high inflation. Since wages are set for a specific duration, high inflation tends to erode the purchasing power, absent clause adjusting wages to inflation. Wage negotiations can then incorporate (past and/or expected) inflation developments. The strength of the labour market also influences the balance between social partners, with a tighter labour markets shifting the balance in favour of workers. Wage growth can also be affected by labour productivity developments, since they affect firms' profitability, hence their ability to provide higher wages.

**A standard relation linking wage growth to its determinants can be estimated, similar to the Philips curve** (Blanchard and Katz, 1999; Gali, 2011). Such estimates confirm that labour market tightness and productivity growth increase wage growth, respectively by 0.2% and 0.1%. In addition, a 1% increase in inflation expectations has a higher impact on wage growth than a 1% increase in lagged wage growth or lagged inflation (although wide 90% confidence intervals imply that both a small and a larger response may apply). The sum of the coefficients of lagged and expected inflation (0.4) suggests that only 40% of higher inflation is transferred into higher wages. However, these results give only a static perspective and discard the multiple feedbacks between the variables considered.

**Considering a dynamic perspective, the estimation of a VAR suggests that a correction of wages consistent with past practice could mitigate the loss in real wages, while not affecting much inflation.**<sup>(1)</sup> The effect of inflation shocks on the different variables estimated on the basis of the historical relationship linking them is shown in Graph 1. In response to a temporary inflation shock, wage growth and inflation expectations increase respectively by 0.2% and 0.1%. Inflation starts to decline from the fourth quarter. Throughout the adjustment, wage growth rises less than inflation which keeps the unemployment rate almost unchanged at its structural level (i.e. no change in unemployment due to the cycle).

**Graph 1 Response to a standard shock of inflation, based on historical relationship between variables**



Note: X-axis: quarters following the shock; Y-axis: percentage changes.

<sup>(1)</sup> A VAR considers the dynamic relationships among the variables and evaluates the dynamic response of each variable to an inflation shock taking into account the correlations between the variables. Shocks are identified with a Cholesky scheme with the following order: unemployment gap, inflation, inflation expectations, and wage growth. This order implies that each variable responds with a lag of one quarter to a shock in any variable that is preceding. However, an inflation shock in one quarter impacts inflation expectations and wage growth in the same quarter.

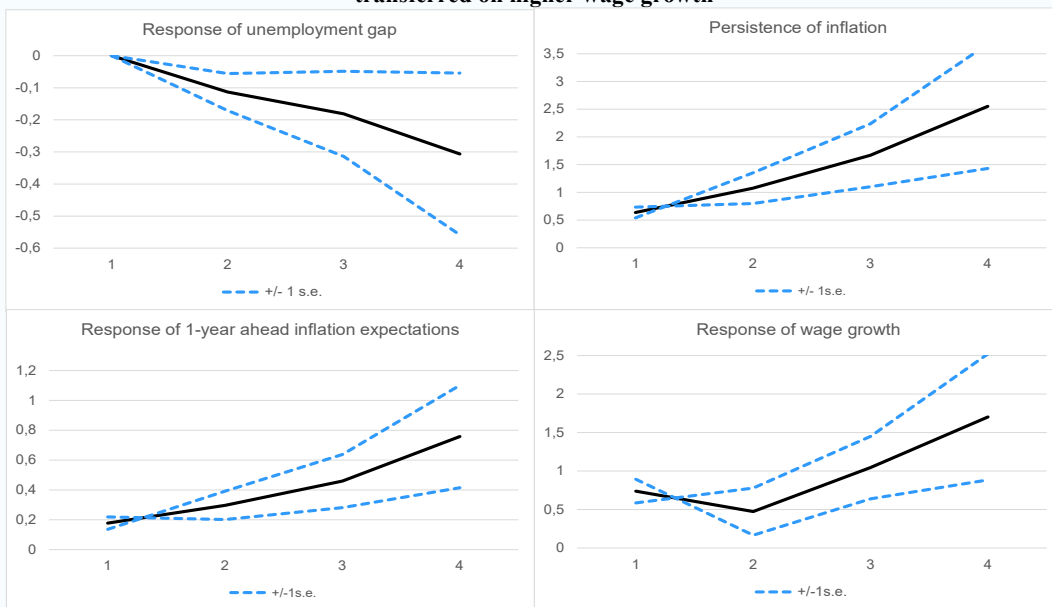
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Box (continued)

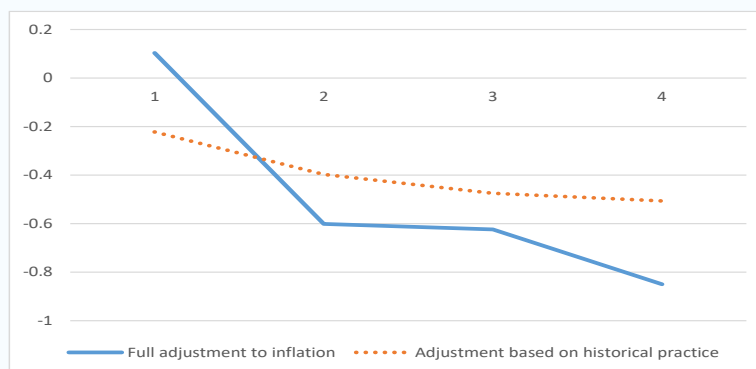
**By contrast, a full adjustment of wage growth to inflation can be self-defeating.** Graph 2 simulates the response to a shock modifying the historical relationship between the four variables, assuming that wage growth responds fully to a change in inflation and inflation expectations within two successive quarters. In this case, following a temporary shock to inflation, there is a stronger persistence of inflation and inflation expectations which lead to higher wage growth. Despite the temporariness of the inflation shock, the variables do not go back to the pre-shock average. As a consequence from the stronger persistent of inflation, from the third quarter after the shock, real wages decline more than when there is a partial adjustment of wages to inflation (Graph 3).

**Graph 2 Response to a standard shock of inflation, assuming lagged and expected inflation fully transferred on higher wage growth**



Note: X-axis: quarters following the shock; Y-axis: percentage changes.

**Graph 3 Response of real wages growth to an inflation shock**



Note: X-axis: quarters following the shock; Y-axis: percentage changes.

### 2.3.3. Policies to increase low wages – theoretical aspects

**Member States have different policy tools at their disposal to support low wages.** The most direct instrument for countries with a statutory minimum wage in place is minimum wage policy, which directly impacts the wages of minimum and low-wage earners. Strengthening collective bargaining on wage setting can support general wage developments, including low wages. As a direct employer, the public sector also needs to pay particular attention to low-wage earners.

#### Minimum wage policy

**Minimum wage protection can be provided via statutory minimum wages or through wages set by collective agreements.** Sound rules, procedures and effective practices for setting and updating statutory minimum wages are necessary to deliver adequate minimum wages.<sup>(128)</sup> This includes establishing clear criteria to set and update statutory minimum wages, regularly assessing their adequacy, establishing rules to update them on a regular basis and ensuring the timely and effective involvement of social partners. Moreover, in all Member States, the promotion of collective bargaining on wage setting (as well as the coverage thereof) can also contribute to more adequate minimum wage protection.

**An increase in the minimum wage can directly affect the lowest wages, and incentivise the inactive to enter the labour market.** Around 4% of employees in the EU earn wages close to minimum wage floors and can be directly affected by increases in minimum wages.<sup>(129)</sup> An increase in the minimum wage will also increase reservation wages for jobseekers (the minimum wage that the worker requires in order to participate in the labour market), thereby leading to increases in low wages somewhat beyond the minimum wage floor. Moreover, increasing minimum wages can increase incentives to work for the inactive.

#### Beyond low wages, increases in minimum wages also have the potential to affect other tranches

<sup>(128)</sup> See Directive 2022/2041 of 19 October 2022 on adequate minimum wages in the EU.

<sup>(129)</sup> Eurofound (2022).

**of wages through spill-over effects.** Minimum wage increases can play an important role as a general benchmark for sectoral wage agreements, though this may not be the case in a context of high inflation.<sup>(130)</sup> Analysis conducted by the European Commission shows that, across Member States between 2006 and 2014, minimum wage increases significantly affected the wages at the bottom of the wage distribution.<sup>(131)</sup> Evidence (in a lower inflation environment) shows that in some Member States, spill-overs could even extend to higher wage tranches, e.g. up to the third decile of the wage distribution in Ireland,<sup>(132)</sup> and up to the seventh decile in France.<sup>(133)</sup>

#### Strengthening collective bargaining

**Collective bargaining systems that cover a high share of workers not only support low wages, but also general wage developments.** Overall, Member States with high collective bargaining coverage tend to have higher wages than other Member States, as well as a lower share of low-wage workers and lower wage inequality. In particular, sectoral and multi-level collective bargaining systems are associated with wage inequality that is around 20-25 percent lower.<sup>(134)</sup> In addition, decreases in collective bargaining coverage have been found to have a negative, although transitory, effect on wage growth.<sup>(135)</sup>

**While the exercise of collective bargaining falls under the responsibility of social partners, there are some actions that national authorities can undertake to promote it.** Among others, Member States can set the conditions for collective bargaining to function well by supporting the capacity of social partners, guaranteeing that they have access to relevant information, and protect workers and trade union representatives against

<sup>(130)</sup> See Fougère, D., Gautier, E and S. Roux, “Wage floor rigidity in industry-level agreements: Evidence from France”, *Labour Economics*, Vol. 55, September 2018.

<sup>(131)</sup> European Commission (2018): “Labour market and wage developments in Europe, Annual Review 2018”, Directorate-General for Employment, Social Affairs and Inclusion, pp. 134-135.

<sup>(132)</sup> Redmond, P. (2020): Minimum wage policy in Ireland. Budget perspectives 2021 paper 2, May 2020.

<sup>(133)</sup> Aeberhardt, R., Givord, P., & Marbot, C. (2012). Spillover effect of the minimum wage in France: An unconditional quantile regression approach. *Document de travail de l'INSEE*, (G2012/07).

<sup>(134)</sup> OECD (2018).

<sup>(135)</sup> See European Commission (2018b), Chapter II.1.

any adverse consequences of their participation in collective bargaining. <sup>(136)</sup>

### Wages in the public sector

**Finally, another policy instrument through which national authorities can support wages is by adopting measures on public wages.** Public employment can represent a sizable share of total employment, with more than 20% in Sweden, Denmark, Finland, Croatia, Estonia, Lithuania and France, but less than 15% in Germany, the Netherlands, Luxembourg, Italy and Portugal. Increases in public sector wages can support the purchasing power of these employees, in particular the low wage earners. At the same time, they entail a cost for public finances, and can have spill-over effects on the private sector. In some Member States, public sector wages tend to lead wage developments in other sectors. <sup>(137)</sup> These factors need to be taken into account when deciding on pay rises in the public sector, notably in a context of tight public finances, inflationary pressures, and risks on competitiveness.

## 2.4. POLICY MEASURES TAKEN SO FAR TO SOFTEN THE IMPACT OF INFLATION ON WORKERS

### 2.4.1. Wage measures taken so far

**Since inflation started to pick up in mid-2021, Member States have adopted wage measures to protect the purchasing power of low wage workers.** Most Member States increased their statutory minimum wages, not only to react to inflation, but in some cases also more generally to support their adequacy, especially where minimum

wages were too low compared to other wages. Moreover, action was also taken in relation to public wages and collective bargaining frameworks.

**In more than half of the Member States with statutory minimum wages, inflation is taken into account directly or indirectly to update them.** In several countries, inflation (or, alternatively, changes in the cost of living), is set by law as a criterion to update statutory minimum wages. These countries are Belgium, Croatia, Cyprus, Czech Republic, France, Greece, Ireland, Lithuania, Luxembourg, Malta, Portugal, Poland, Spain, Slovenia and Slovakia. <sup>(138)</sup> In other Member States, the link between inflation and the statutory minimum wage is more indirect: for example, in the Netherlands or Germany, collectively agreed wages are taken into account for updating minimum wages, which means that in case the former react quickly to inflation developments, minimum wages will also reflect it. In most cases, the statutory minimum wages are updated only in January every year, without further interventions throughout the rest of the year.

**The EU Directive of 19 October 2022 on adequate minimum wages in the European Union <sup>(139)</sup> is expected to create a positive momentum for measures enhancing their adequacy and coverage.** This Directive establishes a framework for the adequacy of statutory minimum wages, promoting collective bargaining on wage setting, and enhancing the effective access of workers to minimum wage protection. It aims at improving the adequacy of minimum wages, among others by taking into account the cost of living as a criterion for updating statutory minimum wages (where they exist), in a timely manner, and by strengthening collective bargaining on wages in all countries. It will contribute to enhancing the predictability of minimum wage developments, which can be crucial to both workers and businesses. In the current context, a frontloaded implementation of the Directive would contribute to offering timely support to the most vulnerable. Moreover, next to minimum wage earners, the Directive is also expected to indirectly benefit other workers, in

<sup>(136)</sup> The Directive on adequate minimum wages includes requirements on the adequacy of statutory minimum wages as well as on the strengthening of collective bargaining. For additional details on the Directive, see Section 2.4.

<sup>(137)</sup> Camarero et al. (2014) tested for wage leadership across four macroeconomic sectors in 10 euro area Member States, based on data until 2011. It suggested that public sector wage developments tended to lead wage determination in the economy in Germany, Belgium and Greece. For 10 Central and Eastern European Member States, D'Adamo (2014) also showed that over the period 2000-2011, non-traded and public sector wages were often leaders in wage determination or at least affect traded sector wages in the short run. Telegdy (2018) also finds high spill-overs from public sector wages to private sector wages in Hungary.

<sup>(138)</sup> European Commission (2020b).

<sup>(139)</sup> Directive 2022/2041 of 19 October 2022 on adequate minimum wages in the European Union.

particular by supporting collective bargaining on wages and encouraging competition in the Single Market based on innovation and productivity.

**Between January 2021 and August 2022, Member States increased their statutory minimum wages.** The most substantial increases were recorded in those countries with the highest inflation rates. <sup>(140)</sup> The largest statutory minimum wage increase in nominal terms occurred in Hungary (19.5%), and considerable increases also took place in Lithuania (13.7%), Belgium (13.3%), Estonia (12%), Romania (10.8%), Croatia (10.3%), Greece (9.7%), Bulgaria (9.2%), France (8%), Poland (7.5%), and Germany (7.2%). Smaller but still significant increases were introduced in the Czech Republic (6.5%), Portugal (6%), Spain (5.3%), Luxembourg (5.1%), and Slovenia (5%). The lowest increases were recorded in the Netherlands (4.2%), Slovakia (3.7%), Ireland (3%), and Malta (1%). <sup>(141)</sup>

**In some countries, the increases reflect additional updates throughout the year on top of the annual update in January 2022.** <sup>(142)</sup> The most noteworthy case is Belgium, where three automatic updates of the statutory minimum wage were conducted throughout 2022 (namely in January, March and May), in addition to a substantial increase agreed by social partners in April. The Greek government decided to raise the statutory minimum wage by more than 7% in May 2022 (on top of the regular annual update of 2% in January 2022). The Netherlands also implemented an additional increase of 2% in July, on top of the automatic increase in January 2022. <sup>(143)</sup> Finally, the German government raised the statutory

minimum wage by around 7% in July 2022 (which was then complemented by a further increase of almost 15% in October 2022).

**In addition, a few Member States have already announced or are considering substantial minimum wage increases in late 2022 or early 2023.** For instance, Latvia has announced its intention to increase its statutory minimum wage by 40% as of 2023. The Netherlands has announced that the minimum wage will increase by 10.15% from 1 January 2023. In addition, the Spanish government is considering raising the statutory minimum wage by 10% in 2023, instead of 5% as initially envisaged. As for Romania, as of 1 January 2023, the minimum wage will be raised to 50% of the gross average wage.

**The increases in statutory minimum wages conducted or announced so far do not fully compensate for the high inflation.** In 2021, minimum wages in real terms had decreased in 14 out of the 21 EU countries with statutory minimum wages, increasing only in four countries (Latvia, Portugal, Slovenia and Slovakia) and remaining broadly stable in Bulgaria, France and Luxembourg. Inflation has continued to surge in 2022, reaching 10.1% in the EU as a whole in August 2022. Up to August 2022, declines of minimum wages in real terms took place in all countries except Belgium, Hungary, Greece and Romania, while in France it remained broadly unchanged. <sup>(144)</sup> While the largest decreases in real terms in 2022 have been registered in Latvia (14.7%), Malta (9.4%) and the Czech Republic (7.7%), decreases below 2% occurred in Croatia (0.4%), Lithuania (0.7%), Germany (1.2%) <sup>(145)</sup>, Portugal (1.6%) and Bulgaria (1.8%).

<sup>(140)</sup> This does not include the update of January 2021.

<sup>(141)</sup> In Hungary and Lithuania, the process to consult and negotiate with social partners to update the statutory minimum wage differed from previous years, as in both cases the government made a proposal for a sizable increase to social partners, instead of promoting negotiations between them as per usual practice. In the rest of the Member States, the procedures to update the statutory minimum wage remained in line with previous years.

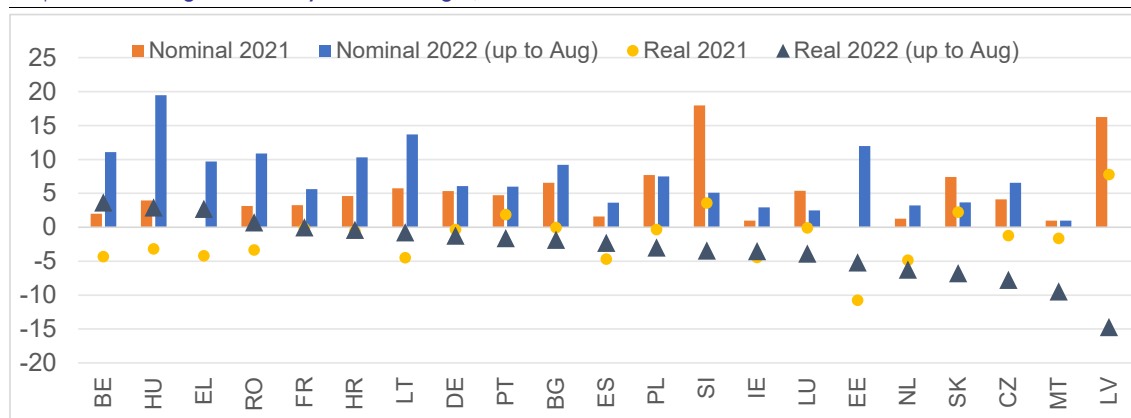
<sup>(142)</sup> Eurofound calculations using minimum wage data from Eurofound's Network of Correspondents and HICP data from Eurostat.

<sup>(143)</sup> France and Luxembourg also have automatic indexation mechanisms in place and that led to additional statutory minimum wage increases throughout 2022 to respond to inflation. However, in these countries no further discretionary updates were implemented.

<sup>(144)</sup> Eurofound calculations using minimum wage data from Eurofound's Network of Correspondents and HICP data from Eurostat.

<sup>(145)</sup> In the case of Germany, the statutory minimum wage is set to increase in real terms in October, after the statutory minimum wage was raised by almost 15% on 1 October.

Graph 2.14: Changes in statutory minimum wages, in real and nominal terms



(1) Member States are ranked in ascending order of the magnitude of the increase in statutory minimum wages in real terms in 2022.

**Source:** Eurofound own calculations using minimum wage data from Eurofound's Network of Correspondents and HICP data from Eurostat

**In addition to the increases in the levels of statutory minimum wages, some Member States have implemented or announced reforms to their minimum wage frameworks.** Most notably, Cyprus has decided to put in place a statutory minimum wage of EUR 940, which amounts to about 60% of the median gross wage and will apply as of January 2023. Another noteworthy reform was adopted in Romania, that has set an upper limit of 24 months to the period during which a worker may receive the minimum wage, a period after which a higher wage must be paid. In Croatia, the Minimum Wage Act has been amended in order to enhance the enforcement of the rules related to the statutory minimum wage, among others by amending the penalties for offenders and strengthening the control by inspection bodies. In Malta, the newly established Low Wage Commission is expected to issue its first recommendations for a new mechanism to update the minimum wage in 2023. Finally, Ireland has decided to put in place a living wage which will apply as of January 2023 and which has to amount to 60% of the median wage in any given year, and is considering the removal of variations that set lower statutory minimum wages for younger workers.

**Beyond minimum wages, some Member States have adopted measures to support public sector wages.** In France, a 3.5% pay increase for civil servants as of July 2022 has been decided, to cushion the impact of inflation (6.1% in July 2022) on the purchasing power. In Latvia, the

government has decided to allocate bonuses for social workers due to higher workload with Ukrainian refugees. In Croatia, the collective agreement for civil servants and civil employees was renewed in May 2022 notably to increase the salary base by 4% and revise upwards some allowances.

**Finally, some reforms of collective bargaining on wage setting have been or are about to be introduced.** Notably, Spain, as part of its labour market reform entering into force as of January 2022, has amended the Workers' Statute to i) give precedence to sector-level agreements over firm-level agreements in matters related to salary and allowances, and ii) establish that an expired agreement is extended indefinitely until a new one is negotiated. In addition, Germany plans to adopt a new set of laws to promote collective bargaining (dealing among others with the compliance of collective agreements and with public procurement).

#### 2.4.2. Other support measures and their interplay with the promotion of wage increases

**Beyond wage policies, Member States have used other policy tools to support households.** Some of these measures directly support income, thereby acting as a complement to wage policies, as is the case for income policies such as direct transfers or tax reductions. Further details on these measures are outlined below. At the same time, the majority

of support measures undertaken by EU countries consisted of price policies, regulating the prices of energy (e.g. through price caps) or reducing energy-related taxes for households, with the aim to reduce the final price that end users pay for energy during the present crisis. Overall, the large majority of those support policies are not targeted and may distort the price signal and reduce incentives to contain energy consumption and increase energy efficiency.<sup>(146)</sup> While price pressures are spreading beyond energy, and fiscal resources remain limited, it is increasingly important that support measures are targeted to vulnerable households and that they retain incentives to reduce energy consumption and promote energy efficiency.<sup>(147)</sup>

**When it comes to measures to improve the income of households, the policy tool that Member States have used more extensively are transfers.** They mostly take the form of cash transfers, but vouchers and in-kind benefits have also been used by some countries. All Member States but Bulgaria, Hungary and Slovakia have adopted measures to provide transfers to vulnerable households. While some of these actions target all households, others are specifically targeted to particular groups (for instance, low-income households or households with a particular household composition).

**Furthermore, Member States can support the income of vulnerable workers through taxation.** Tax-related measures included replacing flat personal income tax schemes with progressive ones (Czechia), increasing minimum thresholds for income tax exemption (Austria, Germany), tax breaks for specific groups (like families with children in Slovakia), and making the tax brackets

more inflation-neutral (as the tax system results in an increase of tax rates when nominal income rises) (Austria). These measures, however, were not restricted to workers, but tend to help them in particular, as labour income is generally the main source of income for vulnerable households that are in working age and not already tax-exempted.

**Measures aimed at supporting the income of households are not the only ones that Member States have put in place.** In terms of price policies, price caps at retail price or at wholesale price level, reductions in VAT and in energy-related taxes were swiftly introduced, but typically are not targeted (see Chapter 1 for details). Moreover, Member States have mobilised investments into energy efficiency and renewable energy, which will reduce household expenditure for energy in the medium and long term. Over the medium run, measures to improve productivity and increase energy efficiency can also help support purchasing power. Productivity-enhancing measures may increase firms' profitability, therefore providing them more room for wage increases. Measures related to energy efficiency may also reduce production costs for firms (as energy consumers), and energy bills for households (e.g. if housing is renovated and less energy-consuming). Details about price policies and policies to support the green transition in the field of energy can be found in Chapter 1 of this report.

**To guide action at national level, the EU has put forward several initiatives to mitigate the negative impacts for vulnerable households.** Notably, already in October 2021, the Commission issued a dedicated Communication that set out a toolbox of specific measures through which Member States can address the most immediate impact of the situation, in particular on the most vulnerable. It included measures such as emergency income support to households, state aid for companies, and targeted tax reductions. In March 2022, the Commission highlighted options to mitigate high energy prices with common gas purchases and storages obligations. As high energy prices continue to persist, and are further exacerbated by Russia's war of aggression against Ukraine, in May 2022 the Commission adopted the RePowerEU Plan, which set out measures to further reduce the EU's dependence on Russian fossil fuels, which will ultimately protect

<sup>(146)</sup> In 2022, roughly two thirds of energy measures adopted have been price measures. More than 70% of supporting measures have not been targeted. This lack of targeting concerns price policies to a larger extent than income support policies. See Annual Sustainable Growth Survey 2023, COM(2022) 780 final.

<sup>(147)</sup> Between September 2021 and September 2022, funding of measures to shield households and businesses from high energy prices are estimated to have ranged from 0.2% of GDP in Ireland up to 4.1% and 3.7% of GDP in Croatia and Greece respectively. Italy and Latvia dedicated over 3% of GDP to these measures, while Belgium, Estonia, Cyprus, Slovenia, Finland, Sweden and Ireland spent less than 1% of GDP. Fourteen Member States dedicated between 1% and 3% of GDP to these measures. For details of measures, see: Sgaravatti, Tagliapietra and Zachmann (2022).



households from large and unpredictable increases in their energy bills. More recently, on 30 September, the Council adopted a proposal initially put forward by the Commission which included a temporary solidarity contribution on excess profits made in the oil, gas, coal and refinery sectors to support energy consumers.

**Both wage and non-wage policies can be seen as complementary in supporting households in the short run.** The composition of policies notably depends on competitiveness as well as on the fiscal space of Member States. The more firms can increase wages, the less fiscal transfers (or reduced taxes) are needed to mitigate the losses in purchasing power of households. This depends in particular on productivity gains, as they can facilitate wage increases. By contrast, should firms have less room to increase wages, e.g. due to higher energy bills, then an income support to households help preserve their purchasing power without directly increasing labour costs. Such complementarity also depends on the time horizon. Indeed, transfers and tax reductions aimed at supporting households' purchasing power should be targeted, temporary and should not entail a permanent burden on public finances. Better targeting allows those measures to be effective in preventing energy poverty and poverty in general from rising, while not adding to inflation and limiting the budgetary impact. Moreover, measures that target disadvantaged groups perform better in terms of macroeconomic stabilisation. In the longer run, wages could catch up losses in purchasing power thanks to productivity increases. Overall, the mix of wage increases and fiscal support measures should be conducive to protecting low earners and vulnerable households, preserving incentives to reduce energy demand and avoiding fuelling inflation.

## 2.5. CONCLUSIONS AND POLICY IMPLICATIONS

**Wage growth has overall remained limited since the pandemic.** In 2021 growth in nominal compensation per employee stood well above the pre-pandemic levels. However, this mainly reflected the rebound in hours worked in 2021, after a collapse in 2020. At the same time, inflation started increasing in 2021, as a result of a vigorous rebound in demand and supply still being

hampered by different factors, including shortages of raw material and basic inputs, as well as logistic disruptions. As a result, real wages already decreased in the second half of 2021. In turn, nominal wages started accelerating more markedly in the first quarter of 2022, in a context of higher inflation and labour market tightening.

**Looking ahead, nominal wage growth is set to increase but to stay well below inflation in 2022.** Nominal wage growth is expected to stay significantly above the pre-pandemic average in 2022 and 2023, driven by a higher and more persistent inflation. However, wage growth is expected to fall short of inflation, as it is constrained, notably by a challenging economic environment, high energy prices and the fact that profit levels in some companies and sectors are under stress. As a result, real wages are set to decline further in 2022, leading to significant losses in purchasing power.

**While all workers stand to be affected by the higher cost of living, low-wage earners are significantly more vulnerable.** They spend a higher share of their income on energy and food. In 2021, minimum wages in real terms decreased, as updates tended to occur at the beginning of the year, while inflation increased throughout the year. In 2022, some Member States implemented large updates of their minimum wages, but the latter still fell in real terms in almost all Member States, as a result of the high inflation.

**The analysis presented in this chapter suggests that there could be some room for further increasing wages, notably low wages, though the situation varies across sectors.** While wage increases play a major role in mitigating the losses in purchasing power, their impacts in terms of both competitiveness losses and inflationary pressures, have to be considered. First, firms have still room to absorb such wage increases, notably in some services sector as they tend to face less headwinds than in the manufacturing sector and have more capacity to pass on higher wages to consumer prices. They also employ a higher share of low wage earners. In addition, wage increases could contribute to addressing high and persistent labour shortages in some sectors. The situation varies however significantly across sectors and Member States. Second, moderate adjustments of wages to



inflation do not risk triggering inflationary pressures.

**Policies to promote wage adjustments should be well calibrated.** Member States have different policy tools at their disposal to support wages (and notably low wages). This includes the minimum wage policy, notably for countries with a statutory minimum wage in place, as well as policies to support public wages (in particular for low earners) and those aimed at strengthening collective bargaining. While the latter have only an indirect effect on wage developments (as wages are merely negotiated by social partners or at the individual level), minimum wages and public wages can have spill-over effects on other wage tranches or sectors, which need to be considered carefully. If not well calibrated, these wage-related measures risk failing to meet their objective of protecting the bottom deciles of the income distribution against the detrimental impacts of high inflation, affect overall employment levels, lead to further deteriorations in terms of trade and competitiveness, and potentially fuel higher energy prices and overall inflation. This calls for policies that are country- and sector-specific and are combined with other support policies for firms and workers.

**Member States have taken measures to bolster wage growth for low earners, as well as other measures that can mitigate the losses in purchasing power for households.** With regard to wage policies, Member States have notably increased their minimum wages, although this does not offset the elevated inflation. In this regard, the EU Directive on adequate minimum wages is expected to create a positive momentum for measures enhancing their adequacy and coverage. Some Member States have also adopted measures to support public sector wages or to strengthen mechanisms that can support wages under collective bargaining. In addition, Member States have implemented other income and price policies to protect the purchasing power of households. These consist of a range of tools, including income and prices policies. While many of these measures do not concern workers only, some de facto affect them in particular, e.g., those related to direct taxation. In addition, transfers that usually targeted the inactive, now also concern broader categories of households, as they become vulnerable and are

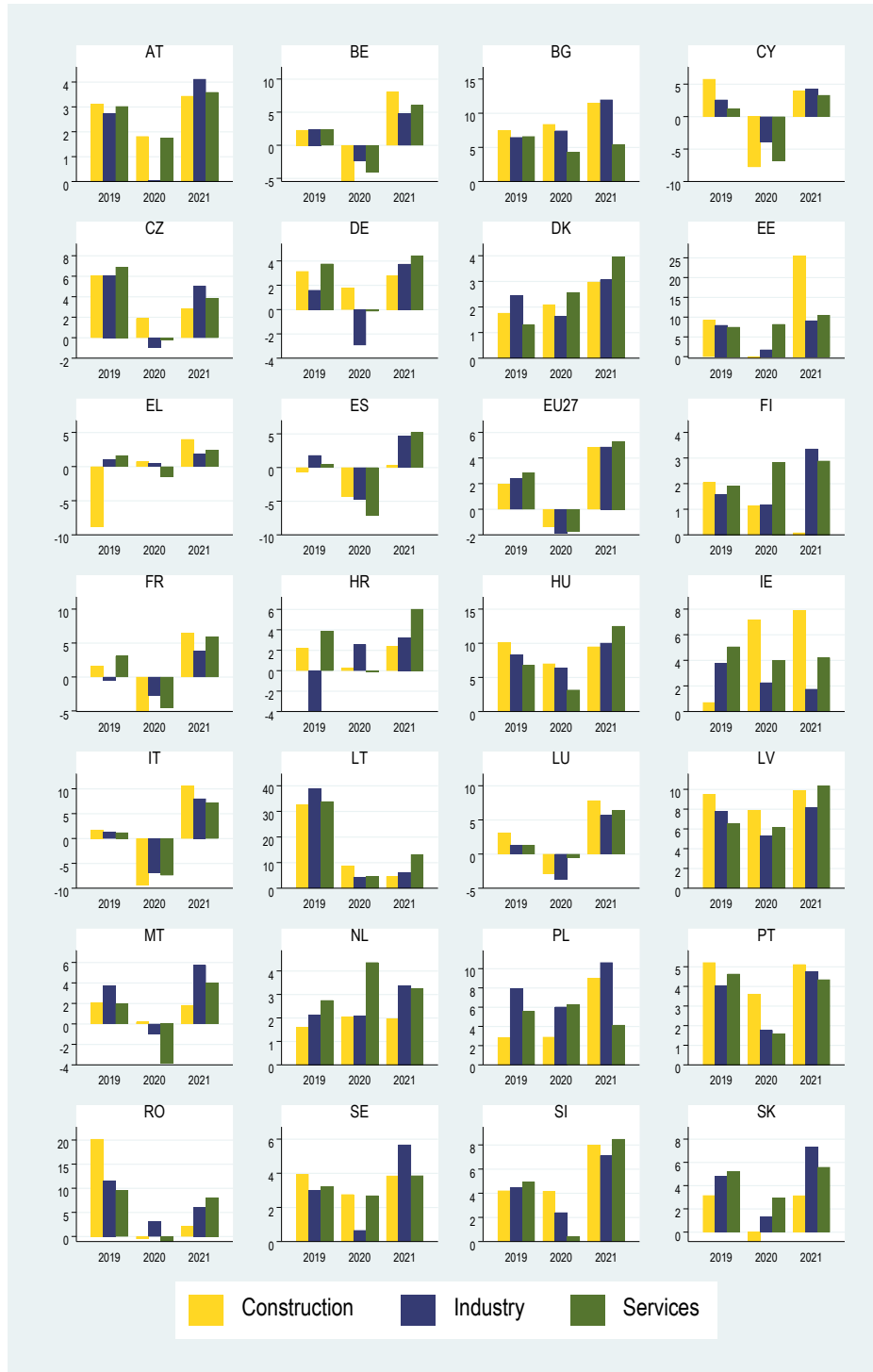
struggling with the effects of the high and persistent inflation.

**Both wage and non-wage policies to support households' purchasing power need to be well articulated.** They can be seen as complementary in supporting households, notably in the short run. The composition of policies notably depends on competitiveness of firms, as well as on the fiscal space of Member States. In some Member States, lagging productivity and high public debt make policy choices more challenging. In addition, income support and price policies aimed at supporting households' purchasing power should be targeted and temporary. As a whole, so far policies have not been well targeted, and may reduce incentives to contain energy consumption and increase energy efficiency. They should not entail a permanent burden on public finances and should preserve incentives to reduce energy consumption. Overall, while it is important that fiscal and wage policies operate in a coordinated manner to contain inflation, complementing the efforts of monetary policy to reduce inflation and keeping inflation expectations well anchored, it is also important to protect the purchasing power of low earning workers and households. Furthermore, in a context of low productivity gains, over the medium run productivity-enhancing measures (including those related to energy efficiency) can increase the firms' ability to provide higher wages, thereby supporting the purchasing power of workers.

# APPENDIX 1

## Annex to the chapter 2

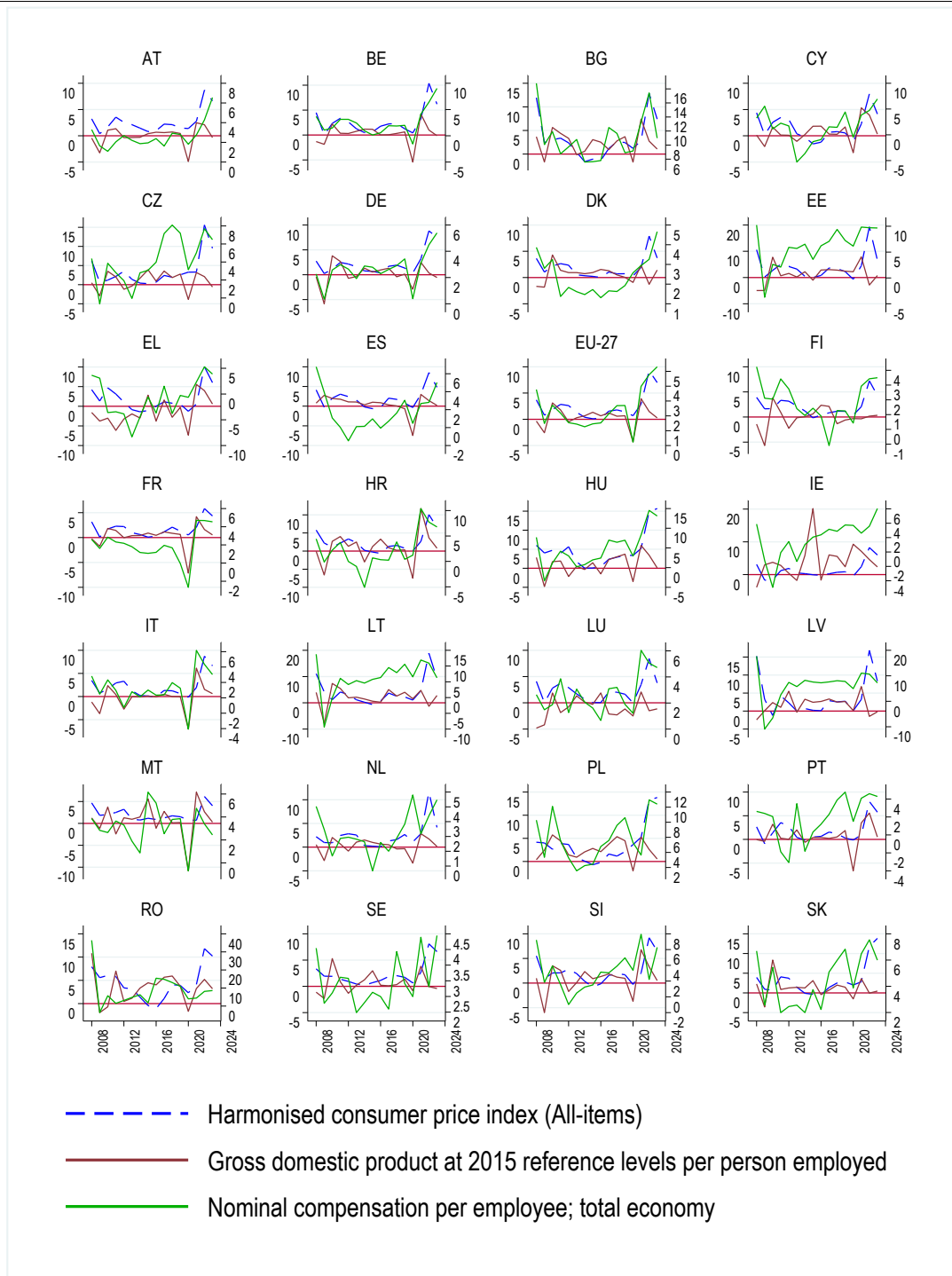
Graph 2.A1.1: Wage and salaries per employee, by sectors, annual changes (%)



(1) Wages are measured by the indicator 'Nominal compensation per employee', which is calculated as a total compensation of employees divided by total number of employees. The total compensation is defined as the total remuneration, in cash or in kind, payable by an employer to an employee in return for work done by the latter during the accounting period and it has two components: i) Wages and salaries payable in cash or in kind; and ii) Social contributions payable by employers. (2) All the data used are national accounts data. The indicators are based on national currency values.

Source: Own computations on Eurostat

Graph 2.A1.2: Nominal compensation per employee, productivity growth, inflation, by Member States (annual % change), 2013 - 2021, forecasts 2022 and 2023



(1) Nominal compensation per employee is calculated as a total compensation of employees divided by total number of employees. The total compensation is defined as the total remuneration, in cash or in kind, payable by an employer to an employee in return for work done by the latter during the accounting period and it has two components: i) Wages and salaries payable in cash or in kind; and ii) Social contributions payable by employers. (2) All the data used are national accounts data. The indicators are based on national currency values.

Source: European Commission, AMECO database

Table 2.A1.1: Real gross wages and salaries and real compensation per employee by Member States (annual % change, 2019-2021, forecasts for 2022 and 2023)

	Real gross wages and salaries per employee, deflator private consumption					Real compensation per employee, deflator GDP				
	2019	2020	2021	2022*	2023*	2019	2020	2021	2022*	2023*
AT	1.2	0.3	0.5	-4.1	-0.1	1.2	-0.7	0.8	-1.7	0.7
BE	0.7	-2.9	2.1	-1.7	3.6	0.2	-3.0	1.2	-0.3	3.9
BG	4.7	7.8	5.2	4.0	1.4	1.6	2.8	3.9	2.8	4.6
CY	3.0	-0.5	3.0	-4.2	2.0	3.1	0.8	1.0	0.1	2.5
CZ	4.3	-1.1	1.8	-7.2	-4.5	3.2	-1.1	1.6	-1.4	-1.5
DE	1.7	-0.7	0.2	-2.0	-1.2	1.3	-1.4	0.0	-0.8	-1.3
DK	0.8	1.8	1.0	-6.0	-0.3	0.9	0.0	0.2	-0.1	0.3
EE	4.9	6.5	5.6	-7.4	2.8	3.9	6.7	3.6	-4.0	2.6
EL	0.1	1.3	0.5	-3.5	-2.5	-0.5	0.2	1.0	-3.4	-1.6
ES	1.2	-0.8	0.7	-7.5	-1.6	1.6	-0.7	0.4	-0.6	0.7
FI	0.6	0.9	0.1	-3.1	-0.5	-0.2	-1.0	0.4	-1.8	-0.2
FR	1.3	-3.8	3.1	-0.5	0.2	-1.3	-5.3	3.3	1.9	-0.4
HR	-0.4	1.5	7.8	-2.1	0.3	-1.6	0.5	8.2	2.1	0.5
HU	3.2	1.5	3.1	1.2	-3.6	2.1	-3.2	1.9	4.9	2.8
IE	1.7	3.3	-1.4	-2.4	0.2	0.2	5.3	2.0	-5.6	0.6
IT	0.4	-4.5	4.6	-2.9	-2.4	0.3	-5.6	5.6	1.2	-0.3
LT	33.7	5.3	6.9	-6.7	-2.6	7.7	4.7	5.1	-4.8	-2.4
LU	0.8	0.0	4.9	-1.7	1.0	0.5	-3.3	-0.1	-0.6	0.5
LV	4.0	4.4	7.9	-5.3	-1.0	5.1	4.0	3.9	-0.3	0.9
MT	2.2	-1.9	3.7	-2.0	-2.1	1.4	-2.2	2.9	-1.5	-1.6
NL	-0.1	3.2	-1.1	-3.4	-2.1	-0.2	2.8	-0.3	0.0	-0.5
PL	6.3	1.9	-1.2	-3.5	-1.9	5.4	1.0	-1.3	-1.6	0.1
PT	3.8	1.0	2.7	-1.3	0.4	3.0	-0.5	2.7	1.0	-0.8
RO	6.1	1.6	-1.2	-3.5	-1.7	3.8	-0.1	-0.9	-2.9	-1.3
SE	0.9	1.4	2.3	-5.0	-2.2	0.4	0.5	1.4	-3.3	-0.7
SI	3.6	3.6	4.3	-8.8	-1.0	2.6	2.1	5.2	-4.1	0.0
SK	3.4	1.6	2.8	-4.5	-6.7	4.2	1.5	4.0	0.0	-5.5

(1) The nominal compensation per employee includes, besides gross wages, employer contributions. Absent changes in employer contributions, the growth rate of nominal compensation per employee will be the same as the growth rate of gross wages and salaries.

Source: European Commission, AMECO database.

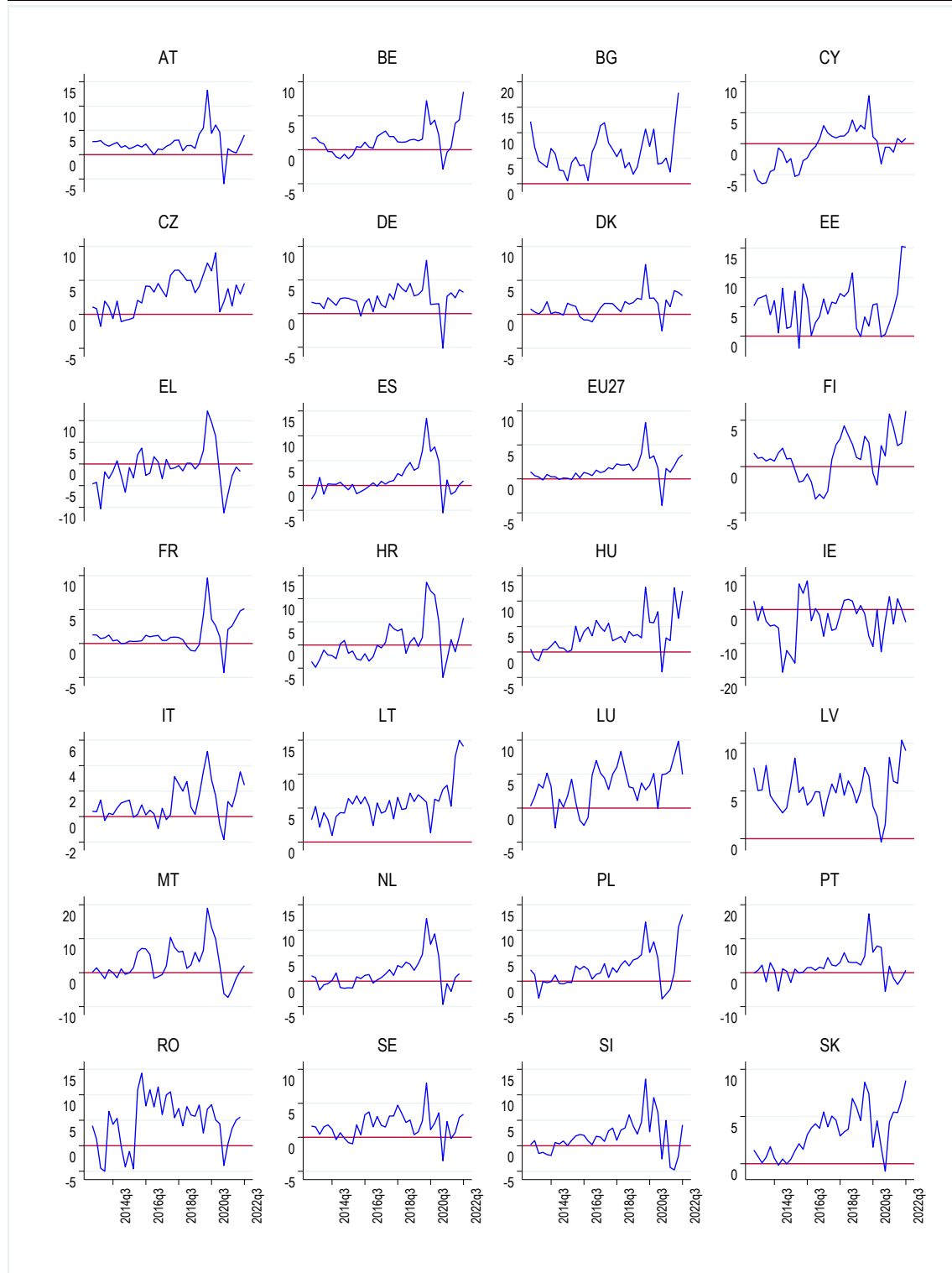
Table 2.A1.2: **Nominal compensation per employee, productivity growth, unit labour costs, inflation (annual % change, 2021)**

	Compensation per employee	Labour productivity	NULC, per person	GDP deflator
LT	11.9	4.7	6.8	6.5
LV	11.1	6.8	4.0	6.9
BG	11.3	7.4	3.6	7.1
HU	8.3	6.0	2.1	6.3
EE	9.8	7.9	1.8	6.0
IT	6.2	6.1	0.0	0.5
SK	6.5	3.6	2.8	2.4
RO	4.4	3.2	1.2	5.4
HR	10.4	11.7	-1.2	2.0
SI	7.9	6.8	1.1	2.6
FR	4.7	4.2	0.5	1.3
LU	6.0	2.1	3.9	6.2
PL	3.6	5.3	-1.6	5.1
CZ	5.0	3.2	1.8	3.3
MT	4.8	7.2	-2.2	1.8
CY	3.8	5.3	-1.4	2.9
SE	4.4	3.8	0.5	3.0
BE	4.1	4.2	-0.1	2.9
PT	4.1	3.5	0.6	1.4
DE	3.1	2.5	0.6	3.1
AT	2.8	2.5	0.3	1.9
DK	2.9	2.3	0.6	2.8
FI	2.9	-0.3	3.3	2.5
ES	2.7	3.0	-0.3	2.3
IE	2.6	7.1	-4.2	0.7
NL	2.2	2.8	-0.6	2.5
EL	2.3	5.6	-3.1	1.3

(1) Countries are ranked in descending order of compensation per employee. (2) The growth of nominal unit labour costs per person (NULC) is the difference between the growth of nominal compensation per employee and the growth of labour productivity.

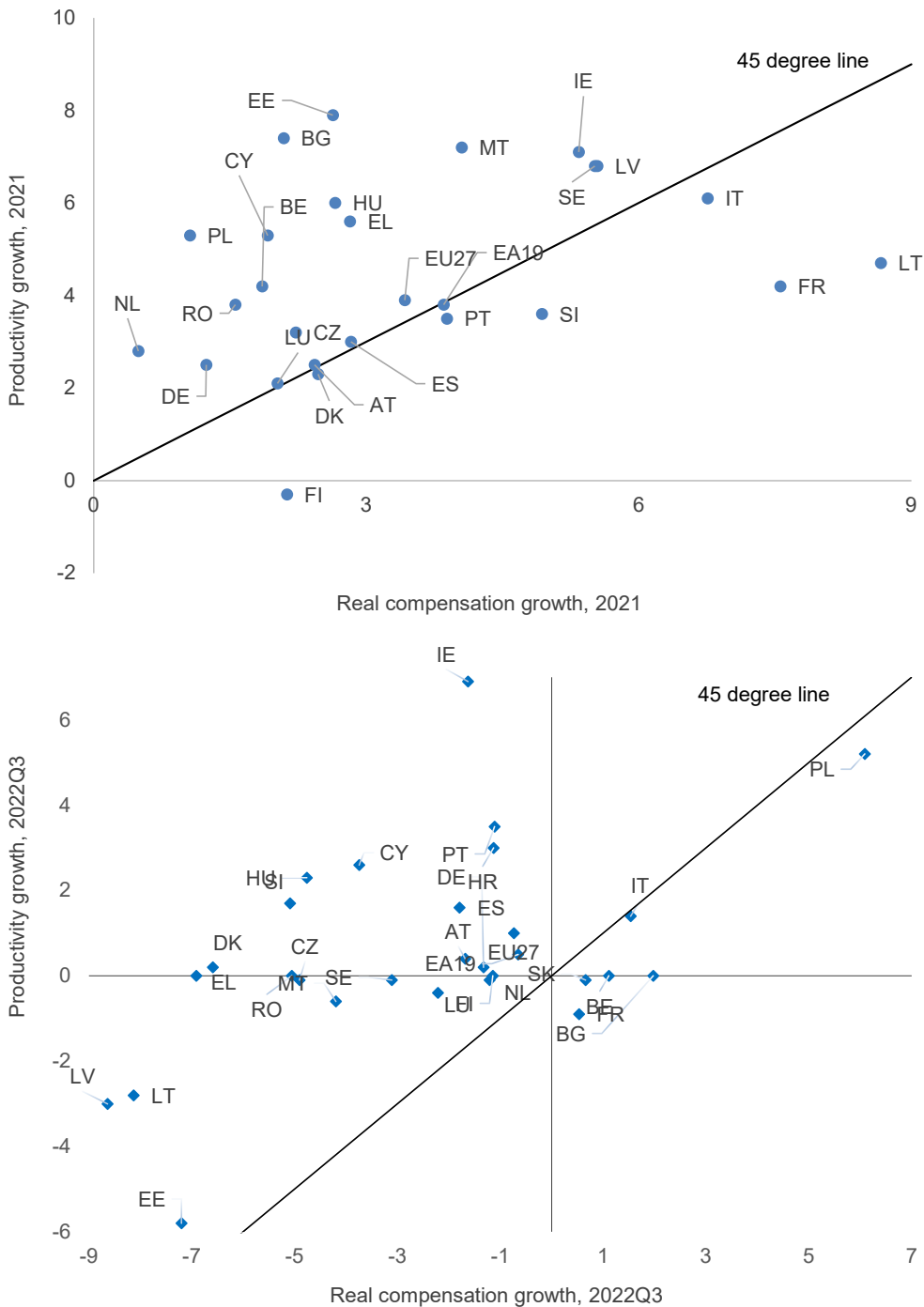
**Source:** Eurostat, National Accounts, and ECB

Graph 2.A1.3: Nominal unit labour cost on persons



(1) Year-over-year changes  
Source: Eurostat

Graph 2.A1.4: Developments in productivity versus real compensation per employee, 2021 and Q3-2022

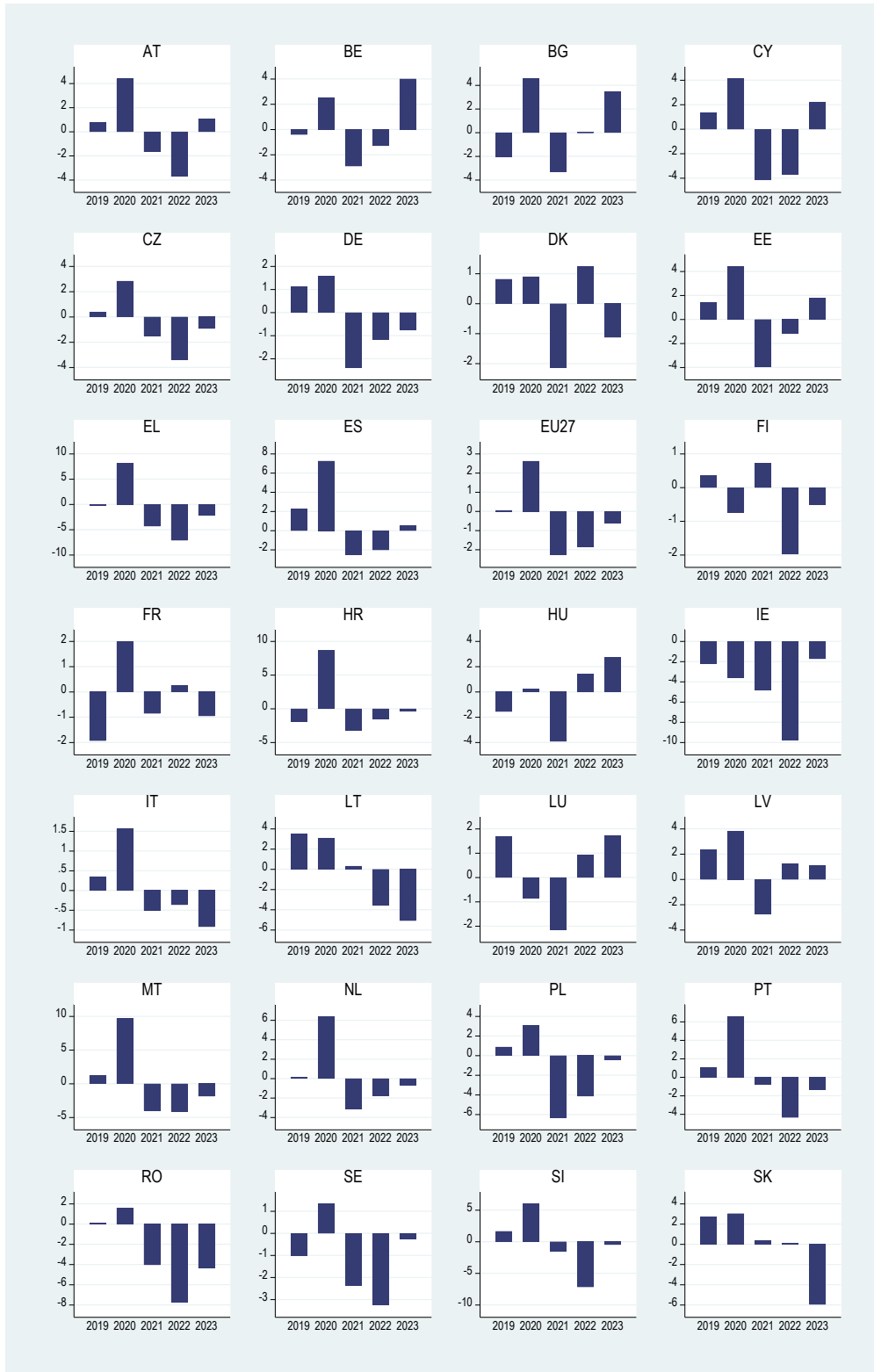


(1) Real compensation is nominal compensation per employee deflated with the GDP deflator. (2) On the 45 degree line, real wage growth equals productivity growth. Points above (below) the line represent countries where productivity growth is above (below) real wage growth. For graph readability, RO value for 2021 (16.5% for productivity growth, 1.9% for real compensation growth) is dropped.

Source: European Commission, Eurostat data.

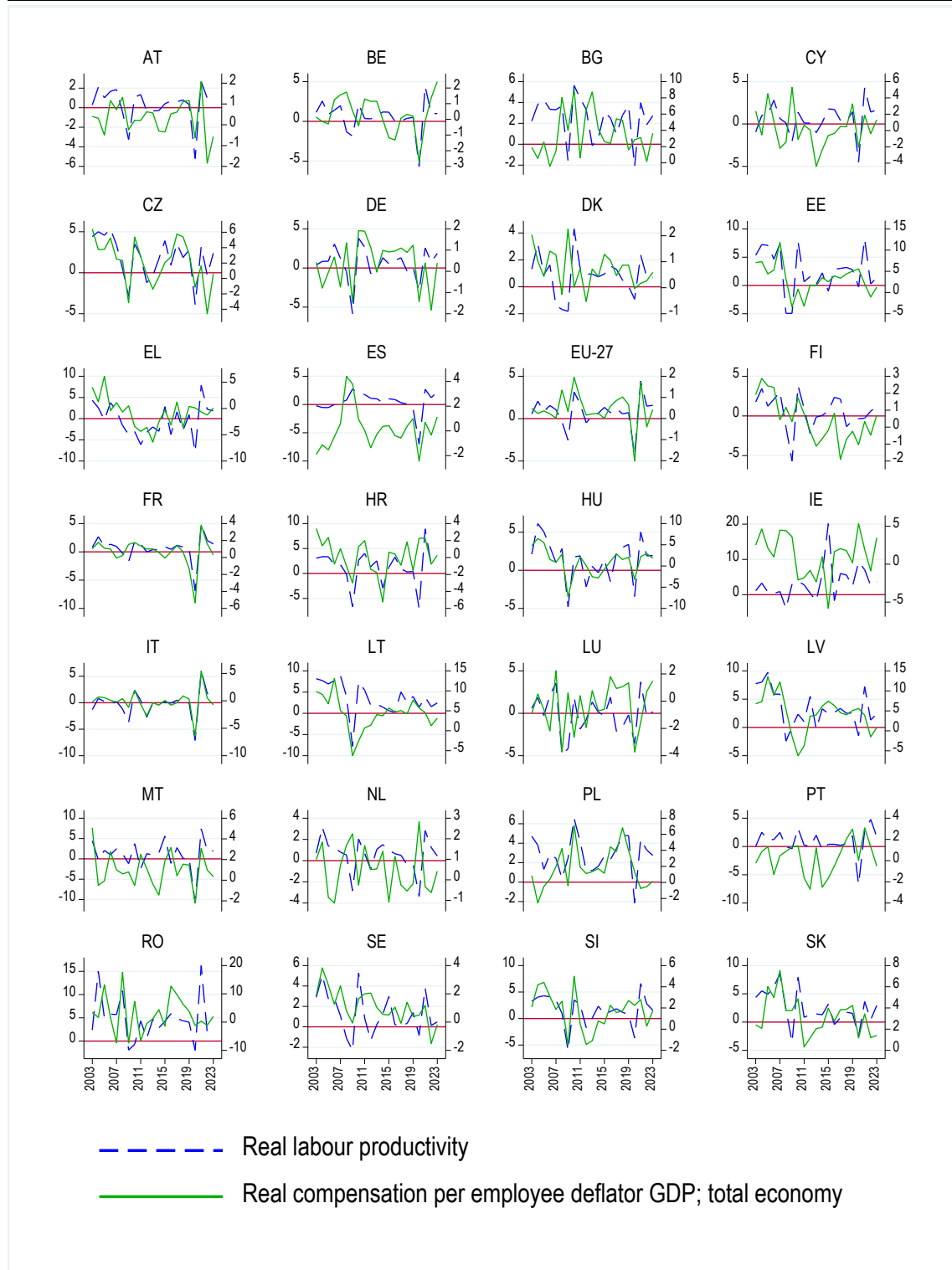


Graph 2.A1.5: Real Unit Labour Costs by Member States (annual % change, 2020, 2021, forecasts for 2022 and 2023)



(1) Ratio of compensation per employee to nominal GDP per person employed  
Source: European Commission, AMECO database.

Graph 2.A1.6: Real wages growth and productivity growth (annual % change, 2003-2021, forecasts for 2022 and 2023)



Source: European Commission, AMECO database.

### 3. SHORT- AND LONG-RUN DETERMINANTS OF LABOUR SHORTAGES

*With the swift economic recovery in 2021, labour shortages re-emerged quickly. This is not a new phenomenon, as high shortages were reported already in 2019, and their decline in the pandemic was only temporary, due to the restrictions to economic activity linked to the containment measures. By the end of 2021, labour shortages reached or even exceeded pre-pandemic levels in several EU countries. After the start of Russia's aggression against Ukraine, shortages in the EU kept rising, especially in services, with some signs of lessening in industry.*

*Labour and skills shortages are the most severe in a few sectors and occupations, such as health care, hospitality, in particular restaurants and accommodation, construction and ICT. In 2021, the main occupational groups with shortages in the EU have been in healthcare-related occupations, software professionals, construction, and engineering craft workers.*

*While shortages have been on the rise in the post-pandemic recovery, the efficiency of job matching has not deteriorated, and so far no increase in structural unemployment can be observed at the EU level. This suggests that the economic cycle plays a strong role in driving up shortages. However, in some Member States (Spain and Greece), the steep rise in shortages has taken place at relatively higher levels of unemployment and labour market slack.*

*The cross-country and cross-sectoral patterns of labour shortages in the recovery have followed pre-pandemic trends, suggesting that next to the cyclical drivers, long-term factors have shaped shortages already before the pandemic. These factors include ageing, skills shortages driven by the twin transitions and other ongoing structural changes, changes to the patterns of labour mobility, migration as well as poor working conditions in some sectors and occupations. Among skills shortages, the availability of digital skills is of particular relevance for labour shortages.*

*The Covid-19 pandemic accelerated digitalization and modified consumer and employee preferences, triggering reallocation pressures. It temporarily*

*reduced labour mobility. The uncertainty of business continuity and the health risks of high-contact occupations led to increasing shortages on top of the low attractiveness of some occupations with already poor working conditions (e.g., in hospitality and health care).*

*Russia's invasion of Ukraine and its geopolitical repercussions including on energy markets could lead to a decline in production in the EU and labour demand, which can in turn dampen labour shortages. Moreover, in the medium to long run, the inflow of displaced persons fleeing the war in Ukraine may help ease shortages in sectors with the lowest barriers to skills transferability. Still, the inflow of people fleeing the war is unlikely to solve the underlying structural problems that strongly influence shortages in the EU.*

*Policies tackling the structural causes of shortages are necessary to ensure that growth prospects and innovation are not limited in the medium and long run. Moreover, they should support labour market transitions to improve the efficiency of job matching and anticipate potential skills imbalances stemming from the twin transition. Activation and skills policies as well as the enforcement of labour law can help reduce shortages. In addition, labour mobility and migration policies can also contribute to reducing skill shortages.*

*EU policies, in particular under the European Pillar of Social Rights Action Plan and the European Semester and EU instruments such as the Recovery and Resilience Facility, the European Social Fund Plus and the Invest EU support a broad range of policies that can be used to reduce labour shortages.*

#### 3.1. INTRODUCTION: WHY SHOULD POLICY MAKERS BE CONCERNED ABOUT LABOUR SHORTAGES?

**Labour shortages exist when employers cannot find the workers they need to fill vacancies.**

They occur when the demand for labour exceeds the available supply for a given skill set, at the particular level of wages and working conditions,

at a specific location, and point of time.<sup>(148)</sup> It is useful to distinguish quantitative from qualitative shortages. In the former case, the total supply of labour (i.e., for all sectors and occupations) is below the total demand for labour. Qualitative shortages occur if labour demand exceeds labour supply in a specific sector, occupation, or at a specific skill level. Skill shortages are a major driver of labour shortages. Labour shortages can have a seasonal pattern (e.g., in services or agriculture). Geographical imbalances between labour demand and supply can also drive labour shortages.

**There is an increasing evidence of labour shortages in the EU.** The European Business and Consumer Surveys (EU-BCS) collects quarterly data from employers in manufacturing, services and construction, asking whether labour shortages are a major factor limiting their production.<sup>(149)</sup><sup>(150)</sup> According to the EU-BCS, shortages reached a peak at the end of the past decade. This trend was interrupted by the pandemic, but it has reappeared forcefully thereafter. Labour shortages have emerged increasingly on the policy agenda, amid concerns by policy makers and social partners about their effects on employment and economic growth.

**Persistent labour shortages may have several negative economic consequences.** Skills mismatches can worsen with the recruitment challenges. Firms can find it increasingly difficult to meet regulatory and quality requirements.

<sup>(148)</sup> Barnow, Trutko and Piatak, 2013

<sup>(149)</sup> The question posed to employers is of the type: “what main factors are currently limiting your production?” and respondents can indicate, among others, “shortage of labour force”. The coverage is all EU Member States and the five candidate countries. Information from this survey can be used to proxy the information on vacancies as well

<sup>(150)</sup> There are other sources of information available on labour shortages as well. Next to the EU-BCS, the chapter relies also on job vacancy statistics by the Eurostat ([Job vacancies - Labour Market \(incl. LFS\) - Eurostat \(europa.eu\)](https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&plugin=1)), published since 2010. Other surveys on labour shortages exist beyond the EU-BCS, yet each are less well-suited than the EU-BCS at the current moment to provide a comprehensive and timely update on labour shortages. Eurofound’s European Company Survey (ECS) is carried out every four years, its latest wave is from 2019. The ManpowerGroup Talent Shortage Survey provides timely information, yet it does not cover all EU Member States. The OECD Skills for Jobs database is not survey-based, it quantifies skill shortages based on objective criteria, and provides a single year cross-sectional dataset published in 2018.

Countries with labour and skills shortages may face competitiveness challenges and be less attractive places for investment. Lack of workers in specific occupations could worsen the quality of the services provided, most prominently in health care. At the individual level, labour shortages can represent an opportunity for improvements in wages and working conditions. At the same time, employees may also face higher work intensity and work-life balance conflicts. While employers and employees have a crucial role to play in tackling labour shortages, public policies can provide information to economic actors, support coordination among them and address the structural causes of labour shortages.

**This chapter focuses on the determinants of labour shortages and discusses the implications for policies.** The chapter is structured as follows. First, it provides an overview of ongoing trends and developments in labour shortages across the EU and Member States. Second, it analyses the influence of the short- and long-term determinants of labour shortages, also based on findings from regression analysis. Third, it discusses the links between labour shortages and wages at the current juncture. Fourth, it reviews recent developments in EU policies addressing labour shortages and reflects on the consequences of the Russian invasion of Ukraine.

### 3.2. THE EVOLUTION OF LABOUR SHORTAGES

**The economic recovery from the Covid-19 pandemic has been characterised by a steep rise in labour shortages across most EU economies.** Prior to the pandemic, labour shortages had been increasing in the course of the economic expansion and were at a historical peak across the EU. In the course of the years 2013 to 2019 as the employment rate in the EU rose from 67.5% to 73.2%, there was an increasing evidence of labour shortages. The proportion of businesses indicating that labour shortages were a factor limiting production increased fivefold in construction, quadrupled in industry and more than doubled in the service sector. The unmet demand for labour, as expressed by the job vacancy rate, rose over the same period to 2.3% in the EU – reaching its

highest value since 2006. <sup>(151)</sup> Shortages rose both in Central and Eastern European Member States as well as in North-West EU countries, while Southern European Member States were less affected (Darvas and Raposo, 2018). In 2020, shortages fell in almost all Member States. Containment measures linked to the pandemic and the resulting economic disruptions led to a decline in labour shortages as many firms withdrew their job openings, although the decline was not as pronounced as during the 2008-2009 economic and financial crisis. With the swift economic recovery, due to the rapid rise in labour demand, labour shortages re-emerged quickly. While Spain, Greece and Italy seem to have lower levels of reported shortages across almost all sectors, <sup>(152)</sup> the shortages are comparatively high given the extent of underutilized labour force in these economies. This can be indicative of some underlying skills and geographical mismatches in these Member States. By the second quarter of 2022, the job vacancy rate in the EU, which measures the proportion of total posts that are vacant, reached 3%.

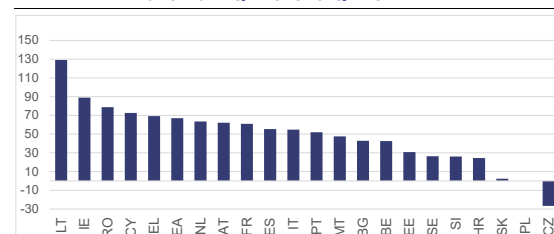
**After a steep rise in 2021, in 2022 labour shortages in the EU exceed their pre-pandemic levels and their pattern follows pre-pandemic trends.** Vacancy to unemployment ratios, quantifying the number of vacancies available per unemployed, increased from the first quarter of 2020 to the first quarter of 2022 in the large majority of EU Member States (Graph 3.1). Albeit the growth of labour shortages slowed down somewhat in the second half of 2022, its level is still relatively high: in the fourth quarter of 2022, 26% of employers in industry, 30% in services and 31% in construction (EU-BCS) state that labour shortages are one of the main factors hampering their business activity (Graph 3.2). During 2021, labour shortages rose faster in manufacturing and

construction, while in services, more severely hit by the Covid-19 lockdowns, shortages increased more slowly. However, by the end of 2021, shortages exceeded their pre-pandemic levels on average in all three macro-sectors. Across countries and sectors, the 2021 levels of shortages show a strong positive correlation with their pre-pandemic levels, suggesting that processes that have shaped shortages already before the pandemic are still driving the patterns.

**In the post-pandemic recovery, labour shortages have been increasing in a context of significant decreases in unemployment.**

In the second quarter of 2022, the unemployment rate in the EU reached 6.1% of the labour force (6.6% in the euro area, for the age group 20-64), below pre-pandemic levels (6.5% and 7.3%, respectively, in the last quarter of 2019). At the same time, the employment rate of people aged 20 to 64 stood at 74.8% of the total population in the EU and at 74.3% in the euro area (age group 20-64, seasonally adjusted data). These indicators are better than any time in the last decade. Labour market slack, the indicator to better capture the unmet need for employment, which includes next to the unemployed also the part-time workers who want to work more, people who are available to work but do not look for work, and people who are looking for work but are not immediately available, also decreased, at 12.1 % of the extended labour force (age 15-74) in the EU and at 13.5% in the euro area in the second quarter of 2022 (compared to 13.4% in the last quarter of 2019 in the EU and 15% in the euro area).

Graph 3.1: **The change of the vacancy-unemployment ratio from Q1 2020 to Q1 2022**



(1) Data on LU an outlier (above 400%) and hence not included in the chart. (2) Some elements of data missing on other countries not included, not allowing for the calculation of the change. (3) In CZ, as an exception in the EU, the vacancy-unemployment ratio before the pandemic exceeded the current ratio, as the CZ labour market was exceptionally tight in 2019.

**Source:** Eurostat job vacancy statistics (jvs\_q\_nace2) and Eurostat LFS (une\_rt\_q), own calculations

<sup>(151)</sup> [Employment and Social Developments in Europe: Quarterly Review March 2019](#).

<sup>(152)</sup> In the second quarter of 2022, in manufacturing, 5% of employers reported labour shortages in Italy, 8% in Spain and 7% in Greece, compared to the EU average of 27%. In services, 13% of employers reported labour shortages in Italy, 11% in Spain and 9% in Greece, compared to the EU average of 29%. In construction, 11% of employers reported labour shortages in Italy, 12% in Spain and 42% in Greece, compared to the EU average of 31%. Shortages in services rose in each of these countries in the third quarter of 2022 and started to decline by the fourth quarter. In Greece, shortages in construction remained high in the second half of 2022.

Graph 3.2: Labour shortages in the EU by sector and by country



In the EU-BCS, the category 'services' excludes wholesale and retail trade and public services.  
Y axis: the % of employers who report that the availability of labour is a factor limiting production.  
**Source:** European Commission, EU-BCS

**While labour shortages have been rising, labour market matching has not deteriorated in the EU as a whole.** The efficiency of labour market matching (i.e., the process linking vacant jobs to unemployed people) can be assessed using the Beveridge curve. The Beveridge curve plots unemployment and job vacancies (as proxied by labour shortages based on the EU-BCS). A rise in vacancies coupled with a decline in unemployment is indicative of the emergence of quantitative labour shortages, likely of a cyclical nature. On the other hand, rising vacancies coinciding with rising unemployment (or, remaining the same) could be indicative of emerging matching problems.<sup>(153)</sup>

<sup>(153)</sup>In some cases vacancies and unemployment may move in the same direction temporarily, without a deterioration of matching efficiency. This is because vacancies/shortages react rapidly to changes in the business cycle, while

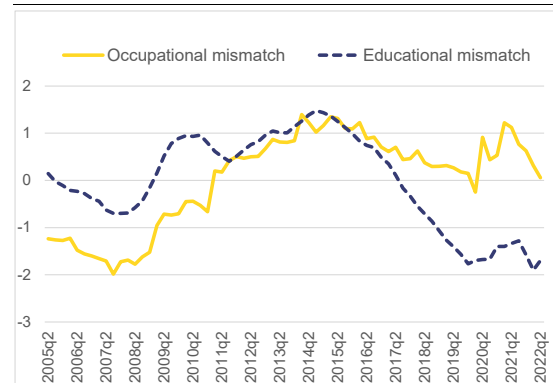
Graphs 3.A1.1 and 3.A1.2 show the Beveridge curves based on labour shortages in industry, while Graphs 3.A1.3 and 3.A1.4 show the Beveridge curves based on labour shortages in services by Member State. Since 2013, in most Member States, developments in labour shortages and unemployment rates have gone in opposite directions: between 2013 and the pandemic, as well as following the pandemic, unemployment decreased while labour shortages increased.<sup>(154)</sup> During the pandemic, unemployment increased while labour shortages decreased. Since the pandemic, labour shortages have increased again

unemployment reacts only with a time lag – in particular, it takes time to fill newly created vacancies.  
<sup>(154)</sup>Denmark is an exception, with an almost vertical segment in the Beveridge curve over the last quarters both in industry and services.

while unemployment has declined (albeit with a delay). While many factors may interplay, this suggests that there is no evident signal of rising structural unemployment at the current juncture. The econometric analysis of Kiss, Turrini and Vandeplas (2022) reaches the same conclusion.

**Indicators of skills mismatch also show no deterioration linked to the current rise of labour shortages.** Mismatch indicators measure the discrepancy between the skills of the population and the skills required by the labour market (macroeconomic skills mismatch<sup>(155)</sup> and those required by their occupation (occupational mismatch). Box 3.1 provides further details about the calculations of these indicators and the data sources. The two indicators displayed similar, yet slightly different trends over the past decades. Up to the 2008 financial crisis, both mismatch indicators declined. Between 2008 and 2010, the skills mismatch rose and remained unchanged until the end of 2013, while the occupational mismatch kept rising. During the 2013-2019 recovery, both mismatch indicators improved before deteriorating during the pandemic (Graph 3.3). The increase in occupational mismatch was particularly steep, which is consistent with the heterogeneous occupational impact of the pandemic. However, this increase was only temporary and, by the end of 2021, occupational mismatch started to decline, suggesting that the efficiency of labour market matching did not worsen as a consequence of the Covid-19 shock.

Graph 3.3: **The evolution of macroeconomic skills and occupational mismatch in the EU (2005Q1 - 2022Q2)**



(1) See Box 3.1 for a definition of the mismatch indicators.

**Source:** Own calculations based on Eurostat, LFS

<sup>(155)</sup>Kiss, A., and Vandeplas, A. (2015). Measuring skills mismatch. DG EMPL Analytical webnote, 7, 2015.



**Box 3.1: The calculation of the macroeconomic and occupational skills mismatch indicators**

The **macroeconomic skill mismatch indicator** (SMI) is a measure of the relative dispersion of employment share across the three skill groups as proxied by ISCED education levels. It is calculated as the sum, over three skill groups, of the absolute difference between the share of a skill group in employment and their share in the working age population.

Thus, macroeconomic skills mismatch can be calculated as  $SMI = \sum_{i=1}^3 \left| \frac{E_i}{E_T} - \frac{P_i}{P_T} \right|$ , where  $E_i$  and  $P_i$  are respectively the number of individuals with skill level  $i$  in employment and in the population;  $E_T$  and  $P_T$  are the total employment and the total population. Skill groups are proxied by educational attainment: low skills are defined as pre-primary, primary and lower secondary education (ISCED levels 0-2), medium skills as upper secondary and post-secondary non-tertiary education (levels 3 and 4), while high skills are defined as tertiary education (levels 5 and 6). The indicator is low if the skill composition of the employed reflects the population's skill composition, while the indicator is high if the education groups that are highly represented in the population are not in terms of employment, and vice versa.

The **occupational mismatch indicator** (OMI) can be calculated in a similar way, it is a measure of the relative dispersion of the employment share across the nine occupational groups (based on ISCO). It is calculated as the sum, over nine occupational groups, of the absolute difference between the share of an occupational group in employment and their (potential) share in the working age population.

In symbols,  $OMI = \sum_{j=1}^9 \left| \frac{O_j}{O_T} - \frac{P_j}{P_T} \right|$ , where  $O_j$  and  $P_j$  are respectively the number of individuals with occupation  $j$  in employment and in the population and  $O_T$  and  $P_T$  total employment and total population.

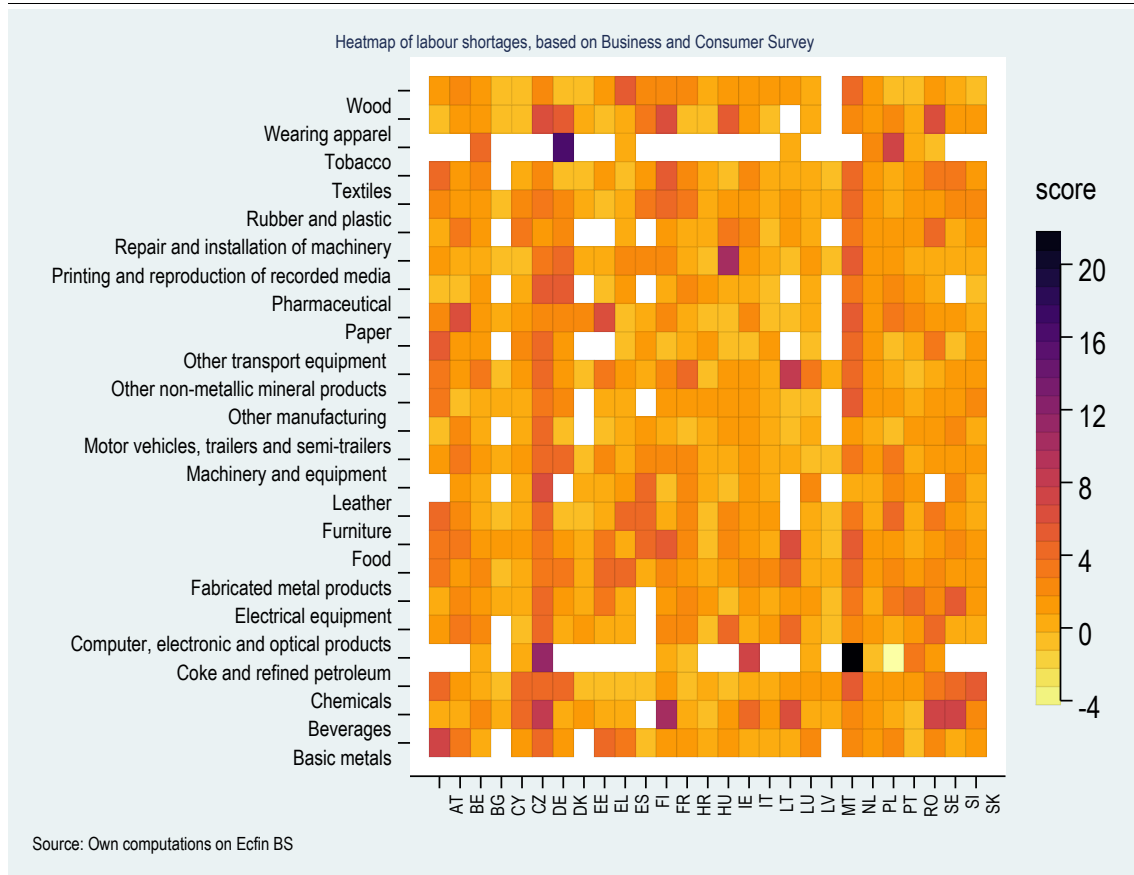
Unfortunately, data do not quantify the population with occupation  $j$  (e.g. the number of potential managers in the population).

This is estimated assuming that the population of skill level  $i$  ( $P_i$ ) is distributed among the different occupational categories proportionally to the share of employment in occupation  $j$  with skill level  $i$  in total employment with skill level  $i$ ,  $P_j = \sum_{i=1}^3 P_i \frac{O_{ji}}{O_i}$ , where  $O_{ji}$  is the number of individuals employed in occupation  $j$  and with skill levels  $i$ . Putting together the last two expressions gives  $OMI = \sum_{j=1}^9 \left| \sum_{i=1}^3 \left( \frac{E_i}{E_T} - \frac{P_i}{P_T} \right) \frac{O_{ji}}{O_i} \right|$ .

Thus, the potential share is computed as a weighted sum of the share of each skill group in the working age population, with weights equal to the share of individuals employed with that specific skill level in each occupational category, in employment with this specific level of education. E.g. the share of 'potential' managers equals the sum of three components: 1) the share of low skilled in the population, multiplied by the share of those low skilled in employment who actually are managers, plus 2) the share of medium skilled, multiplied by the share of those medium skilled in employment who are managers, plus 3) the share of high skilled, multiplied by the share of those high skilled in employment who are managers.

It can be shown that by construction OMI is always smaller than SMI. Occupational groups are defined based on the international standard classification of occupation (ISCO).

Graph 3.4: Heatmap of labour shortages in industry, 2022Q4



(1) Colouring suggests the severity of shortages. Date for cells in white are missing. Labour shortages scores are normalised, in terms standard deviations, with means the historical averages (2000Q1-2021 Q4).

Source: Own computations on European Commission EU – BCS data

**Across the EU, the largest labour and skills shortages are concentrated in a few sectors and occupations.** According to the country reports of the European Centre of Expertise,<sup>(156)</sup> these sectors include health care (Germany, Denmark, Belgium, France, Croatia, Romania, Sweden), hospitality (Germany, Croatia, Cyprus, Spain) and in particular restaurants and accommodation (HORECA sector), as well as construction (Ireland, Luxembourg, Poland) and ICT (Germany, Spain, Poland). The main occupation groups in the EU in 2021 with shortages have been healthcare-related occupations, software professionals,

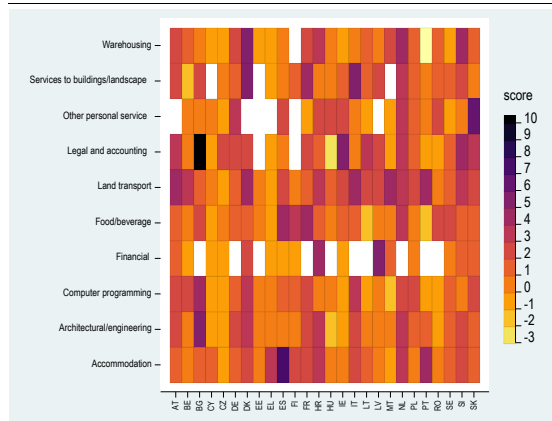
construction, and engineering craft workers.<sup>(157)</sup> Occupations in healthcare and ICT are showing a high magnitude of shortages, with the lack of workers representing more than 3% of employment in both occupations. Occupations with shortages employ workers with a medium level of education (among them with vocational qualifications in construction and engineering) and a larger share of men (with the exception of shortages in healthcare occupations, as some have a larger share of women).<sup>(158)</sup>

<sup>(156)</sup> This chapter relies on the country reports of the 2022 Thematic Review of the European Centre of Expertise (ECE) in the field of labour law, employment and labour market policies, on 'Skills shortages and structural changes in the labour market during the Covid-19 pandemic and in the context of the digital and green transition'. Country examples across the chapter, if not indicated otherwise, are quoted from these reports.

<sup>(157)</sup> McGrath (2021): Report on labour shortages and surpluses. European Labour Authority, 2021. These four occupational groups account for 21 of the 28 identified shortage occupations in the report.

<sup>(158)</sup> McGrath (2021).

Graph 3.5: **Heatmap of labour shortages in services, top 10 subsectors, 2022Q4**



Colouring indicates the severity of shortages. Data for cells in white are missing. Labour shortage scores are normalised, in terms standard deviations, with means the historical averages (2000Q1-2021Q4).

In the EU-BCS, the service sector excludes trade and the public sector. The ten sub-sectors in this graph are the sub-sectors with the highest share from total employment (based on national accounts data), and represent 18.5% of total employment in the EU (36.6 mn).

**Source:** Own computations on European Commission EU – BCS data.

### 3.3. THE SHORT- AND LONG-TERM DETERMINANTS OF LABOUR SHORTAGES

**Labour shortages are determined by an interaction of short-term (cyclical) and long-term (structural) factors.** The increase in labour shortages may derive from changes in economic activity over the business cycle. In addition, long-term trends, not influenced by the business cycle, may increase the level of unfilled vacancies. These long-term drivers of shortages include (i) a decline in the labour force related to ageing, (ii) skills shortages and sectoral or occupational mismatches linked to the twin transitions and to the possible structural impact of the pandemic, (iii) the influence of labour mobility and migration, and (iv) poor working conditions, which make people refrain from accepting some jobs. <sup>(159)</sup> This section discusses how each of these short- and long-term trends influences labour shortages. The section also discusses how the pandemic has shaped the drivers of shortages and how the invasion of Ukraine may influence them and concludes by

<sup>(159)</sup> While working conditions are likely to have an influence on labour and skills shortages, data that would allow to quantify their influence is lacking.

examining the links between labour shortages and wages.

**The cyclical and the structural determinants of labour shortages can interact.** Employers typically encounter more challenges to recruit the "right" workers at times of economic growth. The employment of low-qualified workers tends to be more sensitive to the economic business cycle than the employment of the high-qualified. Empirical evidence supports the view that employers adjust wages upwards and/or recruitment standards (such as minimum qualification levels for hiring) downwards during economic upturns when job applications become scarcer (Devereux, 2002; Büttner et al., 2010). This allows them to adjust to cyclical changes, but the options for employers to adjust to shortages caused by structural factors are much more limited.

**The influence of short- and long-term determinants on labour shortages is estimated using a panel regression.** The dependent variables are the labour shortages (the share of firms indicating that the availability of labour is a factor limiting production) in manufacturing, construction and services, using data from the EU-BCS. The explanatory variables are the deviation of sectoral value added from trend, the sectoral labour productivity, the share of low skilled in employment, the age dependency ratio and employment in low routine task intensity occupations relative to high routine intensity occupations. <sup>(160)</sup> To allow for robust inference with sufficient degrees of freedom, estimation is performed on a panel of EU countries. Since labour shortages across EU countries exhibit persistent differences possibly attributable to country-specific factors which may not be captured in available statistics and indicators, fixed effects are included. For the regression output, see Table 3.1 [and Table 3.A1.2 in the Annex]. The description of the regression findings across the chapter, if not stated otherwise, rely on specification (6).

<sup>(160)</sup> These explanatory variables do not explain fully the observed labour shortages. Even accounting for all of them, there are countries that in 2021 had labour shortages above the level predicted based on these variables. (Graph 3.A1.6). It is clear that this 'excess' of labour shortages is larger in manufacturing than in services.

### 3.3.1. The role of the business cycle in driving shortages

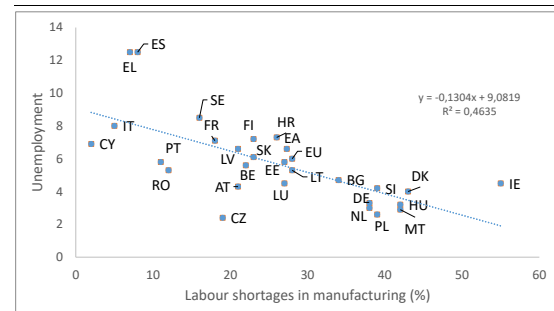
**The recent rise of labour shortages in the recovery is partly due to the strong increase in demand after the end of the Covid-19 related lockdown.** This expansion arrived after a downturn in which short-time work schemes allowed firms to maintain their firm-specific human capital in house, which was clearly in their interest after a period of intense labour shortages leading up to the pandemic. The post-pandemic surge in labour demand was fast, and the rise in vacancies preceded a drop in unemployment and labour market slack.

**Labour shortages in industry and construction are more responsive to the business cycle than shortages in services.** Graph 3.6 depicts this association between unemployment and labour shortages in industry.<sup>(161)</sup> The weaker link between shortages and unemployment in services suggests that the relative role of cyclical drivers of shortages, as compared to structural drivers, may be the least relevant in services. Given that services have the largest share of employment across EU economies, this observation underpins the importance of orienting policies towards addressing the structural causes of labour shortages. Furthermore, regression analysis confirms that labour shortages in manufacturing are most responsive to the business cycle, followed by construction. Graph 3.7, based on specification (6) of the regression analysis, shows that in manufacturing, upswings in the business cycle led to increases in shortages, both prior to the pandemic and in the recovery. This has also been the case in construction prior to the pandemic.

**Other short-term pandemic-related factors have also shaped labour shortages in the recovery besides the increase in demand.** In 2021, due to remaining border restrictions and selective lockdown, intra-EU mobility remained low, causing vacancies in certain sectors to remain unfilled. For instance, in Member States such as Greece, the harvesting and planting season was disrupted in 2020, as seasonal workers could not reach their destinations due to the travel

restrictions. Moreover, since containment measures and policy support were only gradually phased out, the incentives for job-to-job transitions may have increased less than what would have otherwise been the case. Finally, health concerns kept people from returning to work; this concerned mostly the high-contact sectors and occupations for which telework is not possible (such as for example hospitality).

Graph 3.6: Labour shortages and their link to unemployment in industry (Q2 2022)



Source: European Commission, EU-BCS

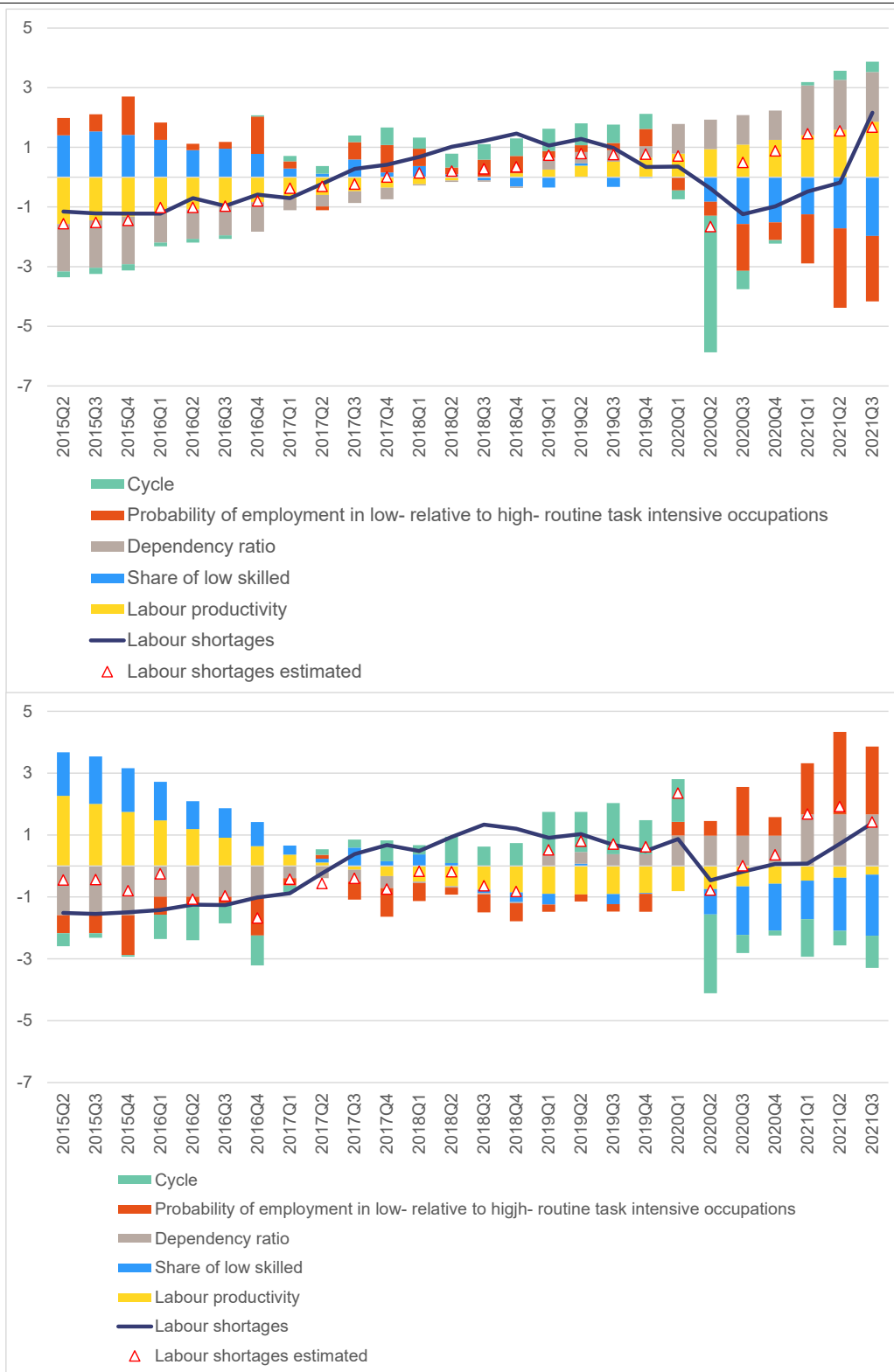
### 3.3.2. The role of long-term trends in driving shortages

**Population ageing contributes to a decline in the labour force and drives up shortages.** The old-age dependency ratio (compiled as the ratio between the number of persons aged 65 and over and the number of persons aged between 15 and 64) increased in the EU from 26.3 in 2010 to 32.5 in 2021.<sup>(162)</sup> It reached high levels in Italy (37), Finland (36.8), Greece (35.6), Portugal (35), as well as in Germany (34.2), Bulgaria (34.1) or France (33.6). According to the regression analysis, an increase in the dependency ratio is linked to rising labour shortages in all three economic sectors, as potential output growth is constrained by a shrinking labour force. Ageing has contributed to the increase in labour shortages in the main economic sectors in the recovery (Graph 3.7).

<sup>(162)</sup> According to the 2021 Ageing Report of the EU, the old-age dependency ratio is expected to reach 62.5% by 2070 (63.7% in the euro area).

<sup>(161)</sup> This relationship in construction and services is depicted in Graphs 3.A1.6 and 3.A1.7 in the Annex. The link between labour market slack and shortages across sectors reveals the same pattern.

Graph 3.7: The contribution of short- and long-term drivers to labour shortages in industry (top) and construction (bottom)



Source: Own calculations based on European Commission, EU-BCS

Table 3.1: **The determinants of labour shortages – panel estimation**

Specifications	Manufacturing		
	4	5	6
Value added cyclical component	23.4*** (3.9)	27.1*** (4.3)	12.3*** (5.6)
Labour productivity trend	10.6*** (2.5)	11.9*** (3.7)	22.6* (14.1)
Share of low skilled	0.1*** (0.05)	0.1** (0.05)	0.2* (0.14)
Share of low skilled*occupational mismatch		0.01** (0.004)	
Age dependency ratio	0.2*** (0.06)	0.3*** (0.07)	0.4** (0.20)
Probability of employment in low RTI occupations relative to high RTI occupations (lagged)			-0.05** (0.02)
Country fixed effect	Y	Y	Y
Period effects	Y	Y	Y
Observations	2122	1807	692
R-squared- adjusted	0.62	0.65	0.82

(1) Further details on the estimation are included in the Annex, in Table 3.A1.2.

**Source:** Own calculations based on EU-BCS and Eurostat

**Labour shortages increase with productivity, but only in manufacturing.** As a sector becomes more efficient, in principle one would expect that the number of workers needed for a given level of demand would decrease. However, with skill-biased technological change and wage rigidity, the increase in productivity can be accompanied by a shift of employment towards high-skilled workers, and this can in turn raise labour shortages and skills mismatches. The regression analysis finds a positive effect of trend productivity on labour shortages in manufacturing but not for construction or services: this is consistent with the literature suggesting that skill-biased technical progress plays a role in skill-intensive sectors, in industry.

**The availability of a skilled workforce can reduce the extent of labour shortages in all sectors.** At the macroeconomic level, the decline in the share of low-skilled employees and the increase in the share of workers employed in non-routine tasks are both indicators of an improvement of the average skill level of the workforce. Estimates suggest that these processes reduce labour shortages, especially in construction, but also in services. Furthermore, a relatively low skilled workforce exacerbates the impact of occupational mismatches on firms' reported labour shortages, as specification (5) in Table 3.A1.2 indicates. On the other hand, the results show that Member States with a higher labour productivity (and better overall skills levels) also exhibit higher

needs for skilled labour and are experiencing skills shortages when the supply of these skilled workers is insufficient. <sup>(163)</sup>

**Skills shortages were observed already before the pandemic and are strongly influenced by the availability of digital skills.** According to Eurofound's European Company Survey, <sup>(164)</sup> in 2019 managers of a large share of companies across the EU indicated that at least 60% of their newly recruited employees did not have the required skills for their jobs (Graph 3.8). Skills shortages measured this way were higher in construction (39%) and smaller in manufacturing (28%) and services (22%). Across the EU the share of employers who reported in 2019 to have difficulties finding workers with the required skills ranged from about 10% in Denmark to 46% in Romania. Furthermore, smaller companies appear to have more difficulties to find workers with the right skills as compared to larger establishments. In Member States with a larger share of the workforce with above basic digital skills, a lower share of employers reported difficulties finding workers with the right skills. Furthermore, digital skills needs are not homogenous: labour shortages can be reduced by an overall increase in basic digital skills, accompanied by an increase of higher level IT and programming skills. Box 3.2 offers further insights on the links between labour shortages and the evolution of digital skills. <sup>(165)</sup>

<sup>(163)</sup> Vandeplas and Thum-Thysen (2019): [Skills mismatch and productivity in the EU](#). European Economy, Discussion Paper 100, July 2019.

<sup>(164)</sup> [European Company Surveys | Eurofound \(europa.eu\)](#) The survey is conducted every four years and its latest round provides information on 2019.

<sup>(165)</sup> Based on the country reports of the 2022 Thematic Review of the European Centre of Expertise (ECE) in the field of labour law, employment and labour market policies, on 'Skills shortages and structural changes in the labour market during the Covid-19 pandemic and in the context of the digital and green transition'.

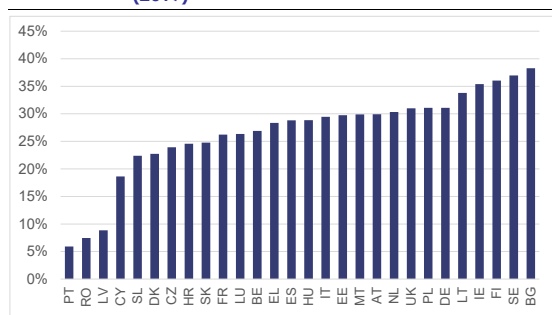


**Box 3.2: Labour shortages and digital skills**

**Digital skills are particularly relevant to support the digital transition, yet related skills shortages are spreading beyond the ICT sector.** In Belgium, experts report that there is an increased demand for a highly skilled labour force with digital skills in construction and related to green innovations. In Bulgaria, relatively high wages of the export-oriented ICT related sector are drawing employees with IT skills away from other occupations, where these skills are reported to be missing. In Cyprus, digital skills shortages are reported in the industry and manufacturing sector, the food sector, the services industry, the marketing and advertisement sector, the tourist and recreational sector. In Germany, the demand for ICT has increased during the pandemic, to improve infrastructure for online sales and to support companies to implement mobile working infrastructure. Digital skills are also increasingly needed for workers in mechanical engineering. In Austria, the low participation of older workers in trainings contributes to a lack of knowledge for programming more modern applications.

**The future labour force will have more digital skills, which may reduce the gap between digital skills demand and supply.** Whereas the share of individuals with above basic level of digital skills is below 20% across the EU for retired and inactive people, it is above 60% in more than half of the EU Member States for students. In the entire EU, 65.5% of students have above basic level of digital skills against 37.4% of employees and self-employed and only 9% of the retired and inactive. The fact that the share of students having above basic digital skills is close to twice as high as this share in the current labour force suggests that the future labour force will be better equipped to meet the demand for digital skills. This may reduce the gap between digital skills demand and supply. However, due to ageing, the size of the younger cohorts is relatively smaller.

Graph 3.8: **The share of managers indicating that 60% or more of their newly recruited employees did not have the required skills needed in the job (2019)**



Source: Own calculations based on the European Company Survey (ECS), Eurofound

**The determinants of skills shortages are multi-dimensional.** Experts from fifteen Member States have reported some degree of mismatch between the skills provided by the national education and training system and the needs of the labour market. <sup>(166)</sup> In certain countries, a relatively small

take-up of vocational education and training (VET) contribute to skills shortages. A mismatch between skills supply and demand may start developing already in secondary education where students do not receive adequate vocational guidance and information on the needs of the labour market. Vocational schools' graduates may lack certain basic practical skills. In some countries, the design of tertiary education is also contributing to a mismatch of skills supply and demand. Skills mismatches may rise among others due to a low participation rate in training and adult learning. The older generation of workers may have difficulties to adapt to digitalization.

**The impacts of labour mobility on labour shortages are country-specific.** As many of the most widespread and most severe occupational shortages described in Section 2 are common across Member States, <sup>(167)</sup> the potential of mobility to address labour shortages is limited in these areas. This can be one factor explaining why

<sup>(166)</sup> These examples from the ECE thematic review represent recent opinions of Member States' experts. A detailed analysis of how Member States' education and training

systems contribute to skills shortages is beyond the scope of this note. <sup>(167)</sup> McGrath (2021)



the regression analysis did not find any significant links between changes in intra-EU labour mobility and the evolution of labour shortages in the main economic sectors.<sup>(168)</sup> Furthermore, in the medium to long term, ongoing wage convergence within the EU will gradually weaken the incentives to move from low- to high-income countries.

**Immigration can also contribute to addressing labour shortages.** The 2021 report of the European Labour Authority on labour shortages and surpluses conducted a preliminary exploration of the link between migration and labour shortages. It looked at the share of workers with a migrant background<sup>(169)</sup> in the four main skills groups associated with shortage occupations across Europe, in countries/regions which reported no shortages, some or severe shortages. According to this analysis, in the four main skills groups associated with labour shortages, workers with a migrant background are more likely to be employed in countries/regions with no shortages or with limited (not severe) shortages. This pattern may be due to various factors which suggests that further analysis in the role of immigrants in alleviating shortages is warranted.<sup>(170)</sup> Section 3.3.4. further looks into the labour market integration of displaced persons from Ukraine and its potential impact on shortages.

### 3.3.3. The influence of the pandemic on the long-term drivers of shortages

**The ongoing digital and green transitions imply a need for the reallocation of labour, potentially amplifying skills mismatches.** In the pandemic, the increased demand for information and communication work has boosted the demand for digital skills, both in the ICT sector and in other sectors. While the twin transition would lead to competitiveness gains, the speed and effectiveness of such reallocation depends on the adaptability of the skills of workers. These structural changes require transitions between sectors, which may pose more important challenges in terms of skills

needs than transitions between occupations within the same sectors. This could entail a slower reallocation, increased skills mismatches and lead to disruptions of the process linking vacant jobs to jobless people. The structural weaknesses in the adult learning systems of most Member States risk amplifying those skills mismatches. In turn, the skills mismatches triggered by the twin transition can lead to longer unemployment spells and eventually a higher structural unemployment, slowing down the transition itself. These risks should be anticipated and addressed by policies, with an increased focus on the provision of the skills needs of the twin transition and on the management of labour market transitions.

**The pandemic had some persistent effects in terms of economic restructuring, potentially contributing to a rise in labour shortages.** The effects of the pandemic on consumers' preferences and labour supply have proven lasting in some sectors. In services, notably high-contact occupations, a part of the workforce may have reconsidered returning to their previous jobs, due to concerns of contracting the virus and uncertainties of business continuity in case of new lockdowns. These new developments added to the problem of low wages in some service sub-sectors, worsening further their attractiveness.<sup>(171)</sup> Activity in manufacturing has also been less resilient in some Member States (including Germany), reducing the related labour demand and contributing to labour reallocation to other activities. Once employed in a new activity, employees are less likely to return to their previous occupations.<sup>(172)</sup>

**The pandemic is likely to have exacerbated poor working conditions in some occupations and created new demands for job quality in others.** Worsening working conditions in health care reduced the supply of labour that was already previously insufficient.<sup>(173)</sup> They drove health

<sup>(168)</sup> Hence, mobility has not been retained as an explanatory variable for the estimation specifications included in this chapter.

<sup>(169)</sup> Residents of the reporting country who were not born in the reporting country.

<sup>(170)</sup> The forthcoming 2022 ELA report on labour shortages and surpluses will provide further in-depth analysis of this issue.

<sup>(171)</sup> Due to travel restriction and closures of restaurants and bars, parts of the labour force have been driven out of the hospitality sector in Belgium, Denmark, Italy, Sweden or the Netherlands.

<sup>(172)</sup> In the Italian hospitality sector (hotel, restaurants), the increased uncertainty about the possibility of work during the pandemic has incentivised workers to search an occupation in other sectors. This caused a shortage of staff after the restriction were lifted.

<sup>(173)</sup> Eurofound (July 2021), [Tackling labour shortages in EU Member States | Eurofound \(europa.eu\)](https://www.eurofound.europa.eu/publications/working-conditions-in-health-care)

care workers out of their profession for example in Denmark and Croatia. During lockdowns, when activities in the hospitality sector (hotels, restaurants and catering) were interrupted, part of the employees of the sector switched jobs, and in the recovery, they were not attracted to return, also due to poor working conditions, and due to the available opportunities elsewhere in the tight labour markets of Europe. Poor working conditions have also been reported in the IT sector in Spain, where ICT specialists often lack upskilling or reskilling opportunities, and in Germany, where IT specialists reported challenges in terms of work intensity.<sup>(174)</sup> Yet the new global trend of the ‘great resignation’, in which employees quit their jobs in search of job quality, flexibility and better work-life balance, does not affect a sizeable part of the workforce in the EU at the current juncture. Such resignation has been reported only in some sectors and some Member States, for example in the construction sector in Italy (with voluntary quits driven by the search for a better work-life balance, including the possibility of teleworking, and for better career development options). Altogether, the movement of workers out of occupations and sectors with poor working conditions may contribute to increasing skills imbalances.

### 3.3.4. The outlook on shortages amid the arrival of Ukrainian refugees in the EU

**The impact of the Russian invasion of Ukraine could lead to an economic downturn which may in turn reduce labour shortages.** Supply chain bottlenecks, trade disruptions, rising energy and commodity prices affect production and labour demand negatively. Energy prices already started to increase before the war, and supply chain shortages emerged after the pandemic. The Ukraine conflict aggravated these problems, especially due to its impact on energy prices. The deterioration of the economic situation can, at least in the short run, dampen labour shortages.

**The EU is experiencing an unprecedented inflow of refugees, which can in principle increase the labour supply in some Member States.** By mid-September, around 10 million

people had fled the Russia’s war of aggression against Ukraine,<sup>(175)</sup> with close to 4.2 million people having registered for temporary protection. Ukrainian refugees can travel without visa for 90 days before the issuance of their residence permit under the Temporary Protection Directive (TPD). Thus they can choose the Member State in which they want to trigger their rights attached to temporary protection. Once they have received the temporary protection status, they have immediate access to the labour market of the host Member State and labour mobility does not apply. Refugees with temporary protection can be employed or self-employed and should receive equal treatment with nationals in terms of pay and other working conditions.

**However, the access of Ukrainian refugees to the EU labour market may involve multiple challenges.** Early employment can have a positive impact on the lives of the newly arrived, allowing them to be economically independent and to integrate into the local community, while at the same time reducing the economic burden in the hosting communities. A smooth integration into regular employment can reduce the risk that the refugees resort to undeclared work (as a temporary solution), which would increase their vulnerability and expanding the share of the black economy in the Member States in the longer term. Yet the majority of the refugees are women, accompanied by children, elderly people and other vulnerable individuals. Many beneficiaries of temporary protection will unlikely be able to work in the short run due to trauma, lack of suitable accommodation, care facilities or schools. They will face also other integration challenges, such as language barriers, medical issues, barriers in recognition of qualifications, skills mismatches, lacking overall information on options, or legal, social support. The uncertainty about the duration of the war and their potential return to Ukraine may also affect their willingness to integrate.

**Refugees could alleviate labour shortages to some extent in sectors and occupations where barriers posed by language and skills transferability are the lowest.** One would expect these barriers to be lower in the services sector, where there are currently important shortages in

<sup>(174)</sup> E.g. a larger share of employees in IT than in other types of services perceive that the tasks they were given were often or very often not doable within the given time frame.

<sup>(175)</sup> This information is based on all border crossings, which includes circular movements between the EU and Ukraine.

health care and in hospitality. The regression analysis presented in Chapter 1 suggests that labour shortages in services have slightly declined in Europe linked to the inflow of refugees, but shortages in industry and construction have not been affected. At the same time, the war in Ukraine has also led to an increase in labour shortages in some countries and sectors, via the return of migrant male workers from Ukraine to their country due to mobilisation.

### 3.3.5. Labour shortages and wage developments

**Chapter 2 of the report provides a detailed analysis of wage developments in the EU.** This section provides additional insights on the links between wage developments and labour shortages.

**The emerging labour shortages may put pressure on employers to increase wages and offer better working conditions.** Wage hikes, improvements to the quality of workplaces or investments in training can help firms attract or retain employees. While in the private sector it may be possible to meet such demands, this could be more difficult in the public sector due to more rigid recruitment and staff management policies. However, until the first half of 2022, the tightening labour market has not triggered noticeable wage increases. This has been due to a lagged response of wages to changing labour market conditions.

**Regression analysis reveals a link of wage growth with labour shortages in industry and in construction in Central and Eastern Europe** [see Table 3.2]. The link is positive and highly significant in construction, as well as in manufacturing for the group of the eleven Central and Eastern European Member States, where the labour market is tighter on average. However, the link is not significant in manufacturing for the group of the sixteen non-Central and Eastern European Member States. In addition, while structural drivers may keep labour shortages high in some countries and sectors, notably in services, the economic slowdown may ease labour shortages in manufacturing. This suggests that while labour shortages may trigger increases in wages in services and possibly construction in some Member States, it is less likely to happen in manufacturing.

Table 3.2: **Wage growth and labour shortages - regression analysis**

Dependent variable:	Manufacturing		Construction	
	EU11 1	EU16 2	EU11 3	EU16 4
Nominal wage growth				
Inflation	1.01*** (0.07)	0.78*** (0.08)	0.95*** (0.13)	0.76*** (0.14)
Global supply chain pressure index	-2.0 (0.55)	-0.7*** (0.19)	-0.3 (0.7)	-0.7*** (0.26)
Labour shortages	0.2*** (0.02)	0.02 (0.03)	0.2*** (0.03)	0.03*** (0.009)
Observations	952	1148	884	1010
R-squared	0.49	0.11	0.17	0.09

**Source:** Eurostat and national accounts, own calculations.

## 3.4. POLICIES TO ADDRESS LABOUR SHORTAGES

### 3.4.1. Policies at the EU level

**EU policies and instruments support a broad range of measures that can be used to reduce labour shortages.** Such measures include among others active labour market policies to increase labour force participation, policies addressing skills shortages and mismatches that cause labour shortages, support to transitions in the labour market, policies to improve working conditions, and actions facilitating labour mobility and migration. The main EU level actions are encompassed in the European Pillar of Social Rights Action Plan. Guidelines for the employment policies of the Member States<sup>(176)</sup> and the country-specific recommendations under the European Semester, in line with the Annual Sustainable Growth Survey 2023<sup>(177)</sup>, promote policies that have an influence also on labour shortages, notably in the areas of activation measures that increase the participation of women and vulnerable groups, flexible retirement policies that contribute to labour force participation and skills policies.

**The European Skills Agenda constitutes a concerted effort to help individuals and businesses develop more and better skills and to put them to use.** Large scale efforts to match skills demands to skills supply should target the entire working age population with a view to

<sup>(176)</sup> [Council Decision \(EU\) 2022/2296 of 21 November 2022 on guidelines for the employment policies of the Member States](#)

<sup>(177)</sup> [Annual Sustainable Growth Survey 2023](#)

ensuring they have the skills needed for their current job or transitions to future employment, while paying particular attention to those most in need. As part of the Skills Agenda, the Pact for Skills provides for a shared engagement model for skills development in Europe, with companies, workers, national, regional and local authorities, social partners, cross-industry and sectoral organisations, education and training providers, chambers of commerce and employment services working together towards this shared objective. The Council Recommendation on individual learning accounts <sup>(178)</sup> adopted in May 2022 can support the re-training of workers to fill shortage occupations. Short and modular training leading to micro-credentials have a huge potential to address skills shortages and enhance employability. A Council Recommendation for an EU approach to micro-credentials for lifelong learning and employability was adopted in June 2022. <sup>(179)</sup> Within Member States, the Public Employment Services, employers and trade unions could step up their cooperation at the local and sectoral level to identify and organise up- and reskilling solutions to address labour shortages. <sup>(180)</sup> The 2023 European Year of Skills will further contribute to the promotion of policies to address the skills shortages underlying labour shortages.

**The Commission Recommendation on Effective Active Support to Employment <sup>(181)</sup> (EASE) remains relevant to help manage reallocation pressures, also related to the twin transition.** In the course of 2021, Member States took up the suggestions of EASE. <sup>(182)</sup> The RRF has provided an important contribution to these policy developments. The measures promoted by the EASE recommendation are still appropriate for addressing ongoing labour market reallocation, to stimulate job creation and to facilitate job-to-job transitions. They can also contribute to addressing some of the structural drivers of labour shortages,

<sup>(178)</sup> [Council Recommendation on individual learning accounts](#)

<sup>(179)</sup> Council recommendation on a European approach to micro-credentials for lifelong learning and employability

<sup>(180)</sup> A conclusion of the PES Network Stakeholder Conference, 7-8 April 2022.

<sup>(181)</sup> Commission Recommendation (EU) 2021/402 on an effective active support to employment following the Covid-19 crisis (EASE)

<sup>(182)</sup> Chapter 3 of the 2021 Labour Market and Wage Developments report of DG EMPL provides a detailed overview of the measures that have been implemented by Member States.

and the new reallocation pressures generated by reshoring in the energy crisis. In June 2022, the Commission adopted a proposal for the Council Recommendation on ensuring a fair transition towards climate neutrality, <sup>(183)</sup> which together with the resources of the RRF, aims to support Member States' policies and investments that facilitate the adaptation of the labour market to the green and digital transitions.

**Financial support for EU and national policies with an impact on labour shortages is available from the EU budget.** Namely, the policies discussed above can benefit from support from the Recovery and Resilience Facility (RRF) and from cohesion policy funds, including the European Social Fund Plus, the Just Transition Fund and Invest EU, which, as highlighted by the Annual Sustainable Growth Survey 2023, all aim to support fair and inclusive growth in the EU. **Labour law and its enforcement, including by current EU initiatives, could effectively address poor working conditions.** In the healthcare sector, the European Care Strategy <sup>(184)</sup> could contribute to improved job quality. Furthermore, actions in the domain of occupational health and safety, supported by the EU strategic framework on health and safety at work 2021-2027 also contribute to ensure safe working conditions. The Directive on adequate minimum wages <sup>(185)</sup> can support wage increases for low wage earners, thereby increasing their living standards, and hence contributing to addressing some labour shortages.

**Labour mobility can contribute to reducing skill shortages.** The European Labour Authority and EURES aim to ensure that people who wish to move from one Member State to another do not encounter any obstacles in light of the right of free movement and can benefit from the system of social security coordination. The revised Posting of Workers Directive as well as the Transparent and Predictable Working Conditions Directive support intra-EU labour mobility, by ensuring that

<sup>(183)</sup> Proposal for a COUNCIL RECOMMENDATION on ensuring a fair transition towards climate neutrality COM/2021/801 final

<sup>(184)</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the European care strategy, [COM \(2022\) 440](#), Brussels, 7.9.2022.

<sup>(185)</sup> [Directive 2022/2041 of 19 October 2022](#) on adequate minimum wages in the European Union.

mobile workers enjoy comparable working conditions as other local workers and are fully informed about their rights and obligations.<sup>(186)</sup> The implementation of the Directive on the recognition of professional qualifications could be reviewed, to assess whether changes to this Directive would be needed to support labour mobility to fill labour shortages across the EU.

**Migration policy can address ageing and skills shortages in the European labour market by filling the gaps with workers from outside the EU.** Currently, third-country nationals do not have the same rights as EU nationals to move and reside in other Member States and experience issues with validation or recognition of skills acquired through formal or informal learning. The Skills and Talent package<sup>(187)</sup> will streamline and reinforce legal pathways for migration and establish channels for skilled labour migration to the EU. Furthermore, the EU Talent Partnerships<sup>(188)</sup> will promote cooperation with third countries in this domain. The Skills OVATE tool<sup>(189)</sup> can support the potential of third country workers to fill sectoral and regional labour and skills shortages.

**In the short and medium run, the EU and the Member States will work intensively on supporting the employment of Ukrainian refugees in the EU.** In its Communication adopted on 23 March,<sup>(190)</sup> the Commission recommends

that Member States interpret the rights granted by the Temporary Protection Directive to access the EU labour market in the broadest possible way, applying exceptions to free movement in the internal market only in duly justified circumstances. The Commission has been mobilising its networks, including for instance the European Network of Public Employment Services, to ensure effective support to those on the ground and share good practices.

**EU initiatives provide guidance and support to Member States in view of facilitating the labour market integration of displaced persons from Ukraine.** On 14 June 2022 a Communication was adopted on guidance for access to the labour market, vocational education and training and adult learning for people fleeing Russia's war. It provides measures that can be taken by Member States, based on lessons learnt and best practices that have been gathered so far, and highlights EU funded projects in this area as an inspiration. Several initiatives have also been implemented to improve the matching of skills. The Commission has published new guidelines to facilitate the recognition of 'professional' qualifications obtained in Ukraine. These qualifications give access to regulated professions such as doctors, nurses and architects. Furthermore, the European Training Foundation has created an information hub, through which displaced Ukrainians can get information about accessing training, education and the labour market in the EU. The recent EU Talent Pool pilot online tool will help people fleeing Russia's invasion of Ukraine to successfully integrate into the EU labour market.

**These policies should be accompanied by the provision of services to support the employment of Ukrainian refugees.** Policies could support the access of refugees to housing. Language classes, trainings and services could support their integration in the society, and childcare, education, elderly care and medical assistance can ensure their participation both in these trainings and also in employment.

**The Commission increased the flexibility in the use of EU funds, in particular the European Social Fund, to support the integration of**

<sup>(186)</sup> Directive (EU) 2018/957 of the European Parliament and of the Council of 28 June 2018 amending Directive 96/71/EC concerning the posting of workers in the framework of the provision of services and Directive (EU) 2019/1152 of the European Parliament and of the Council of 20 June 2019 on transparent and predictable working conditions in the European Union.

<sup>(187)</sup> The [package](#), proposed by the Commission on 27 April 2022, builds on the New Pact on Migration and Asylum adopted on 23 September 2020 and is complementary to earlier initiatives, such as the revision of the 'Blue Card' Directive, governing entry and residence conditions for highly qualified non-EU nationals. It will consist of a communication on Skills and Talent, including options for developing an EU Talent Pool, a recast of the single permit Directive, a recast of the Directive on long-term residents and the digitalisation of visa procedures.

<sup>(188)</sup> [https://ec.europa.eu/home-affairs/policies/migration-and-asylum/legal-migration-and-integration/talent-partnerships\\_en](https://ec.europa.eu/home-affairs/policies/migration-and-asylum/legal-migration-and-integration/talent-partnerships_en)

<sup>(189)</sup> [Skills-OVATE](#) offers detailed information on the jobs and skills employers demand based on online job advertisements in EU countries.

<sup>(190)</sup> Welcoming those fleeing war in Ukraine: Ready to meet the needs. Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social

Committee and the Committee of the Regions, [COM\(2022\) 131 final](#), Brussels, 23 March 2022.



**displaced persons from Ukraine into the European labour market.** The CARE initiative has provided additional flexibility in cohesion policy funding to support Member States hosting people fleeing from the war in Ukraine. The FAST CARE initiative of 29 June 2022 further increases flexibility in the use of EU Cohesion Policy funds to channel resources towards actions addressing migratory challenges resulting from Russia's military aggression against Ukraine. The 2021-27 Multiannual Financial Framework is also available to finance such measures.

### 3.4.2. Policies at the Member State level

**Member State measures that can influence labour shortages are embedded in a framework of effective policy coordination at the European level.** As discussed in section 3.4.1, the Recovery and Resilience Facility, integrated in the European Semester of economic and employment policy coordination, remains key for supporting the reform and investment agendas in the years ahead. Together with cohesion policy, InvestEU and other funding programmes such as Horizon Europe or Digital Europe, it is accelerating the twin green and digital transition, boosting social and territorial cohesion and thereby strengthening Member States' resilience. This includes the forthcoming introduction of dedicated REPowerEU chapters into the recovery and resilience plans to tackle immediate energy-related priorities, in addition to actions supported by cohesion policy and other national or EU funds. At the same time, the Operational Programmes supported by the European Social Fund Plus, under cohesion policy, contribute to the financing for skills policies, activation, support to labour market transitions, all crucial for tackling labour shortages. This section provides further details on those national policies that have the potential to reduce labour shortages in the short, medium or longer term, notably education, training, mobility, migration, activation, and measures to improve working conditions.

**National education and vocational education and training systems (VET) are important pillars to tackle labour and skills shortages.** Reforms of VET systems should be aligned with labour market changes and respond to changing labour market demands. Moreover, social partners, the Public Employment Services, the chambers of commerce also play a crucial role in providing

training for working-age people. Work-based learning and apprenticeships are particularly effective approaches to ensure VET's relevance for the labour market. VET programmes should be personalised and flexible to suit individual needs. Additionally, VET programmes should make use of innovative and modern learning environments focussing on digitalisation. Training and education systems should enable and promote pathways between VET, general school education, higher and adult education. Life-long learning, the implementation of short courses targeted at the needs of the labour market are seen as crucial elements to address labour shortages across most Member States. Finland has recently re-oriented its training offer, to better focus on short courses and on the skills needs in bottleneck sectors. The digital strategies of Bulgaria and Czechia include updating and modernizing the national education and VET systems.

**Through integrated national strategies, Member States adapt their training and education systems to improve digital skills of the workforce.** More than one third of the Member States has adopted national digitalization strategies, in order to equip young students with digital skill through national education systems, and to up- and reskill the existing workforce.<sup>(191)</sup> These plans provide for the inclusion of digital skills related courses into the national VET and education programmes. Since 2020, the Czech government is implementing a new education policy, which pays particular attention to the development of digital skills of pupils as well as teachers. Some national digital strategies (e.g. Ireland and Austria) include a particular focus on skills related to science, technology, engineering and mathematics (STEM), both in initial education and training and in adult learning.<sup>(192)</sup> Other Member States, such as Greece or Luxembourg, developed strategies that aim to teach digital skills to the broader population. Access to training is either provided through courses provided free of charge to all citizens<sup>(193)</sup> or through tailor made training plans for employees in companies that

<sup>(191)</sup>Including digital growth and digital transformation strategies. See [here](#).

<sup>(192)</sup>See here for the respective countries: [Austria](#), [Belgium](#) and [Ireland](#).

<sup>(193)</sup>As in the case of the [Greek digital skills academy](#) initiated by the Greek Ministry of Digital Governance.

undergo digital transformation organised by the national PES. <sup>(194)</sup>

**Sector specific initiatives promote skills needed to advance the green transition.** The construction sector plays a pivotal role in greening the economy - new innovations to promote energy efficiency of buildings increase the need for specific skills of construction workers. Member States support specific training opportunities to develop skills needed for energy efficient construction. These trainings mostly focus on the current workforce, including actors along the entire value chain, for instance in Luxembourg, Malta and Sweden. <sup>(195)</sup> Trainings are oftentimes provided by national construction associations (Latvia, France) or through private public partnerships. In the framework of the Action Programme for Construction Quality and Energy Transition, the French Ministry of Housing supported the skills development of the labour force. <sup>(196)</sup> Among other aims, this programme financially supports regional governments and training organisations to organise trainings related to environmentally friendly construction. In Austria, the promotion of qualifications of specialists to advance the national climate strategy is part of an environmental protection initiative, called ‘Klimaaktiv’. <sup>(197)</sup> Furthermore, Austria also supports the labour market integration of people with a migrant background while aiming to meet its green transition objectives. Migrant people and refugees are recruited into vocational education and training, to provide them with formal green economy qualifications. These trainings are financed by the government and businesses.

**Labour mobility and migration can contribute to reducing labour shortages in the EU labour market.** Member States have enacted measures to support intra-country geographical mobility. For example, commuting allowances support commuters, either provided by the government through tax allowances for example, for instance in Austria and Germany, or by employers as a part of

a benefit package. <sup>(198)</sup> Employers provide assistance in the preparation of tax return, cover transportation costs or provide commuting premia. <sup>(199)</sup> Potential further measures to promote within-country inter-regional mobility could involve relocation subsidies, along with temporary and targeted subsidies to companies recruiting workers from regions with a higher unemployment. In relation to labour mobility within the EU, Member State measures include the provision of information for mobile workers about accommodation, medical services and childcare, or also assistance with administrative procedures during resettlement, as in the case of the Austrian ‘Welcome Tyrole’ service for instance. <sup>(200)</sup> More recently, Member States have also focused on return mobility, aiming to incentivize emigrated nationals to return to their country of origin. These programs provide assistance to reintegrate into the labour market and financial incentives in the form of tax breaks for instance. To anticipate the impact of ageing on labour shortages, Member States aim to attract foreign talents. Germany and Finland are implementing policies to attract skilled workers in the global competition for talents and to ensure that these workers stay in their country in the long run. For highly qualified third country workers, expatriate tax breaks are available in some Member States. To cover seasonal peaks Member States have set up simplified procedures and cooperation agreements to attract short-term (seasonal) workers from third countries. <sup>(201)</sup>

**National measures focus on the activation of underutilized resources.** Low participation rates of disadvantaged groups may be due to a lack of support or discrimination, or be related to work-life balance conflicts. Measures focus on the one hand on updating skills of the workers, as well as providing for the necessary possibilities to improve their work-life balance. With the transposition of the Work-life balance directive, <sup>(202)</sup> Member

<sup>(194)</sup> [Luxembourg Digital Skills Bridge](#)

<sup>(195)</sup> European Construction Sector Observatory (2020): [Improving the human capital basis](#).

<sup>(196)</sup> [Programme d’Action pour la qualité de la Construction et la Transition Énergétique - PACTE](#)

<sup>(197)</sup> [Klimaaktiv](#)

<sup>(198)</sup> For more detail in Austria, see [here](#) and for Germany, see [here](#).

<sup>(199)</sup> See the [survey](#) of Deloitte

<sup>(200)</sup> See Annual report on Intra- EU Labour mobility 2021.

<sup>(201)</sup> European Migration Network (2020). Attracting and protecting the rights of seasonal workers in the EU and the United Kingdom – Synthesis Report. Brussels: European Migration Network.

<sup>(202)</sup> Directive (EU) 2019/1158 of the European Parliament and of the Council of 20 June 2019 on work-life balance for parents and carers and repealing Council Directive 2010/18/EU.



States have taken action to increase the possibilities for parental leave. For instance, in Spain, parental leave is increased to 16 weeks for both, mother and fathers, and will be non-transferrable between the parents.<sup>(203)</sup> Other measures aim to facilitate the integration of workers with limited capacities to work or who had dropped out of the labour market due to disability or long-term illness. Related actions may include individual counselling, setting up an individual action plan and finding appropriate public measures to support the workers and employers in the reintegration process.<sup>(204)</sup> The Netherlands aims to encourage increasing working hours among the part-time workers. Hungary provides a temporary wage subsidy to firms recruiting disadvantaged people and also provides training to them.

**Member States are enacting policies to improve working conditions, which can in turn also have an influence on labour shortages.** This includes ensuring fair wages, as well as appropriate benefits, including compensation for overtime, pension and health benefits. Member States took action in the health care sector, where working conditions were aggravated due to the pandemic.<sup>(205)</sup> For instance, the Romanian government introduced a temporary increase of wages for medical personnel as well as for administrative staff of hospitals. German authorities, together with social partners and civil society developed a concerted action plan to increase the attractiveness of the health sector, including elements on pay and collective bargaining.<sup>(206)</sup> Additionally, adapting working times, by increasing flexibility, adds to the attractiveness of the sector.<sup>(207)</sup> Telework can make an important contribution to increasing working time flexibility, in sectors where telework can be enacted. Telework has the potential to increase productivity and to enhance the work-life balance of workers.<sup>(208)</sup> However, it has to be ensured that telework remains a choice of the worker, having the right to disconnect.

<sup>(203)</sup> Under Royal Decree-Law 6/2019.

<sup>(204)</sup> As in the case of the Austrian [Fit2Work](#) initiative.

<sup>(205)</sup> See [here](#).

<sup>(206)</sup> GEO no. 131/2020 Art. 1

<sup>(207)</sup> OECD (2020), *Who Cares? Attracting and Retaining Care Workers for the Elderly*, OECD Health Policy Studies, OECD Publishing, Paris.

<sup>(208)</sup> See [OECD](#).

**Employment services can coordinate various policy actions to tackle labour shortages.** Public employment services can provide information and advice to firms and employees, to broaden their search options, and to propose a broad range of adjustment options, such as for example lowering the skills requirements of vacancies by recruiting for entry-level positions and filling positions requiring more experience within the firm. They can collect timely information on up- and re-skilling needs, and support both jobseekers and companies in meeting these, with organizing trainings and also with supporting training participation. Artificial intelligence could be relied upon to augment guidance and counselling. France is already implementing such an approach. Next to public employment services, private employment services also have a role to play, and the actions of these organizations would need to be coordinated. In some Member States, the Public Employment Services have better information on the low- and medium-skilled segment of the labour force. In these cases, the PES could improve their outreach to other segments of the labour market, to improve the underlying information basis to guide skills intelligence.

**Through collective bargaining, social partners address shortages, in addition to individual employer initiatives.** In several Member States, such as Italy, Slovenia, Czech Republic and Germany for example, social partners form part of national initiatives to promote vocation education and training. They provide their expertise in national labour observatories, which conduct work for the anticipation and identification of skills needs<sup>(209)</sup> and provide information to workers and employers in view of improving skills matching.<sup>(210)</sup> Social partners promote training activities and up- and retraining of workers by managing dedicated funds.<sup>(211)</sup> They promote VET and training through sectoral collective bargaining agreements and by providing expertise in view of updating curricula of VET and education systems to meet the current needs of the

<sup>(209)</sup> ETUC Promoting Social Partnership in Employee Training – [France Country Report](#)

<sup>(210)</sup> Notably in NL, where among others the FNV trade union and the AWVN employer organisation are part of the *House of skills* in the Amsterdam Metropolitan Area.

<sup>(211)</sup> Examples for the funds are: *Fund Fonarcom*; *Fondo For.te* or *Fondimpresa*. For further details, see ECE thematic review Italy country report.

labour market. German social partners have committed to promoting apprenticeships and hiring apprentices at the end of their training.<sup>(212)</sup> In France, social partners were involved in the creation of personal training accounts (*compte professionnel de formation*) allowing workers to participate in funded vocational training activities.<sup>(213)</sup>

**To address the reduction of the labour force due to ageing, automation and robotisation can also be supported.** This could involve investments in labour saving technologies. Automation and robotisation can replace routine-intensive tasks, especially in manufacturing.<sup>(214)</sup> Such adjustments entail the risk of job losses and of rising skills mismatches.<sup>(215)</sup> However, combined with re-skilling, they could ease the pressure in the labour market in those sectors and occupations where automation and robotisation are less feasible.

**Most national actions to address the structural causes of labour shortages will have a delayed impact.** This is the case especially for policies that target the labour market relevance of initial education and training. Yet it is important to implement both policies with a short-term impact (such as PES actions to improve matching, migration policies or short training courses), in line with structural policies with a long-term impact on labour shortages, including structural policies affecting the provision of adult learning.

### 3.5. CONCLUSIONS

**To a large extent, the current labour shortages are not new: their patterns closely follow those of the pre-pandemic period, and they have important underlying structural drivers.** These include, inter alia, ageing, the influence of skills shortages and mismatches, the ongoing digital and green transitions, migration and poor working conditions in some sectors and occupations. While

the pandemic reduced labour shortages due to its negative cyclical economic impact, it accelerated digitalisation, created new pressures for reallocation by influencing consumers' and employees' preferences, and thereby increased the likelihood for skills mismatches triggered by transitions between sectors. It had an impact on labour supply by reducing labour mobility and migration, and it led to a worsening of working conditions in some sectors. In the coming years, the implementation of the Recovery and Resilience Plans and of the cohesion policy funds, including the European Social Fund Plus and the Just Transition Fund may on the one hand boost labour demand in some sectors including green and digital ones, and can on the other hand provide support to up- and re-skilling and to increasing labour supply via active labour market policies.

**At the current juncture, the European economy is threatened by a steep rise of energy prices and high inflation, with an economic downturn looming on the horizon.** As highlighted in the Autumn 2022 Economic Forecast,<sup>(216)</sup> these macroeconomic developments may dampen shortages but not lead to a significant increase in unemployment in the short term. At the same time, in the medium to long run, the inflow of Ukrainian displaced persons can increase the labour supply and help to ease shortages in sectors with the lowest barriers to skills transferability such as services. Still, in light of the broad needs of the EU, the inflow of people fleeing the war in Ukraine is insufficient to solve the underlying structural problems that strongly influence shortages in the EU. Yet policies should continue to address the structural drivers of labour shortages, regardless of whether an economic downturn temporarily alleviates them. This can ensure that in the short run, the positive impact of shortages on wages and working conditions prevails, and that in the medium to long run, shortages (of workers and skills) do not constrain innovation and growth prospects.

**Policies at the national level, supported by EU initiatives and funding, can effectively address the main causes of labour shortages.** Activation policies could help reduce shortages and also reduce potential additional wage pressures, thereby

<sup>(212)</sup> [Tarifabschluss IG Metall 2021](#)

<sup>(213)</sup> Perez, C. and A. Vourc'h (2020).

<sup>(214)</sup> European Commission: Employment and Social Developments in Europe 2018, [Chapter 2](#). A new labour market with new working conditions: future jobs, skills and earnings.

<sup>(215)</sup> European Commission: Labour Market and Wage Developments in Europe 2019, [Chapter 4](#): The relationship between polarisation and skills mismatches.

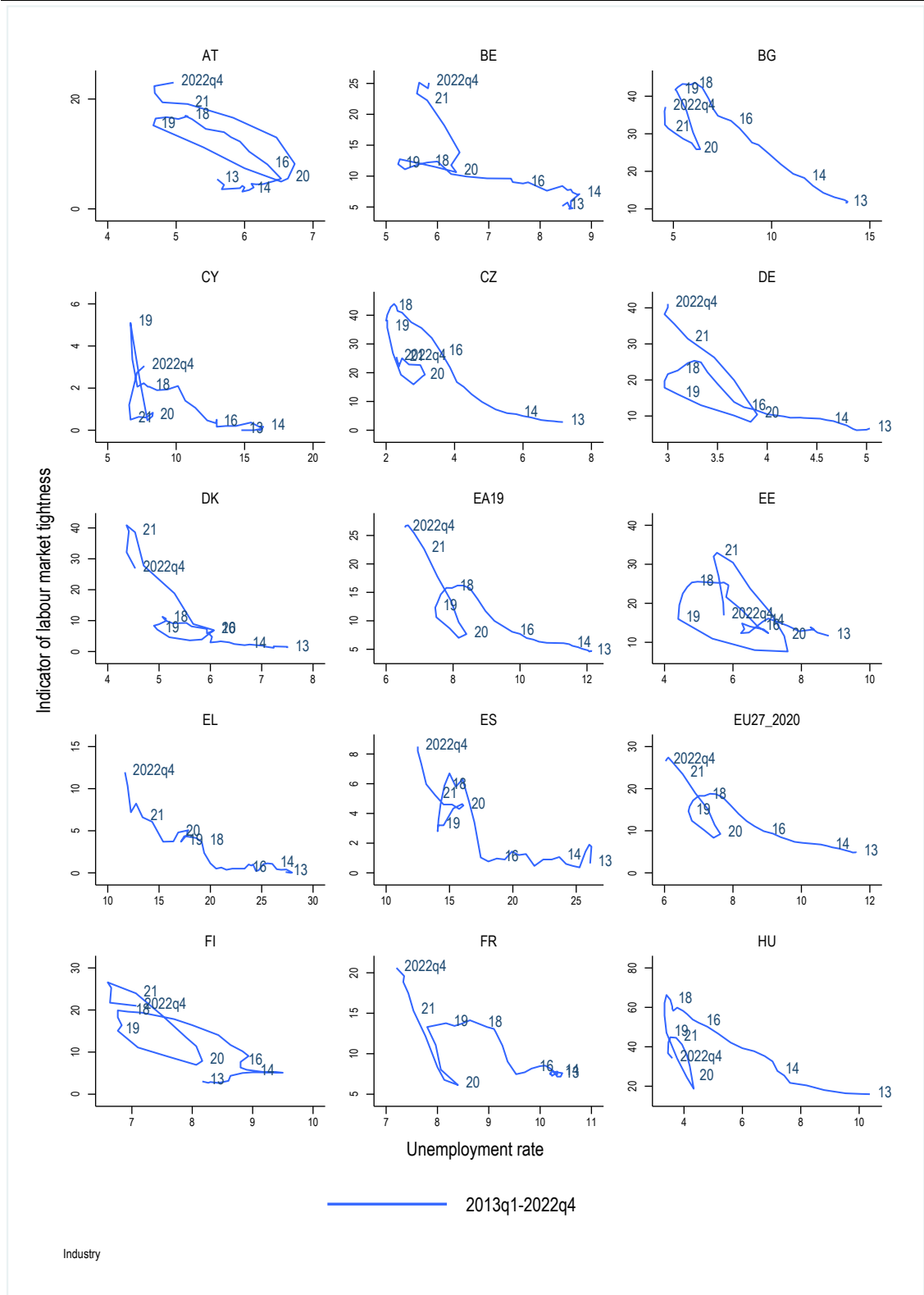
<sup>(216)</sup> [Autumn 2022 Economic Forecast of the European Commission](#).

alleviating the potential risk of shortages contributing to inflationary pressures or competitiveness losses. Skills policies could address the main root causes of labour shortages, with the contribution of migration policies. There is scope to step up policies supporting transitions in the labour market and promoting quality of work. Labour mobility can contribute to addressing labour shortages to some extent. In the domain of migration, the Commission's recently proposed Skills and Talent package provides the framework for supportive national policies to attract talent, which can ensure an effective right to mobility for third-country nationals and simplify admission procedures for all workers from non-EU countries. Finally, in line with the activation of the Temporary Protection Directive by the Council on 4 March, a broad range of measures (language and training policies, access to education, care and healthcare services, targeted labour market measures such as profiling, counselling, and employment subsidies and measures to prevent undeclared work) could support the integration of displaced persons from Ukraine into the labour market of their host societies. Improved policy coordination between the different policy domains affecting labour shortages (activation policies, education and training, mobility and migration policies) could contribute to better addressing this macroeconomic challenge.

# APPENDIX 1

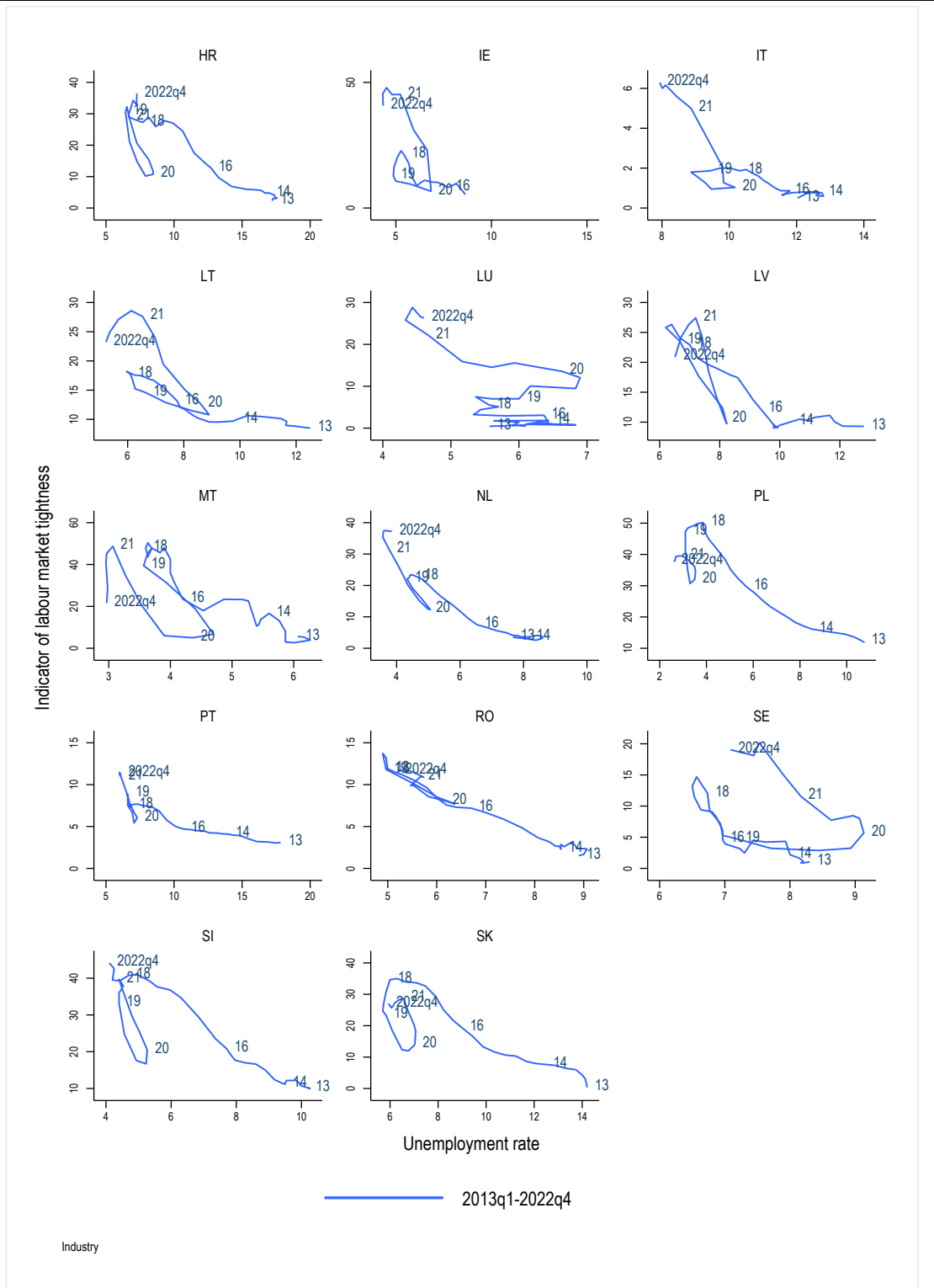
## Annex to the chapter 3

Graph 3.A1.1: The Beveridge curve in EU Member States, 2013Q1-2022Q4, quarterly data, industry



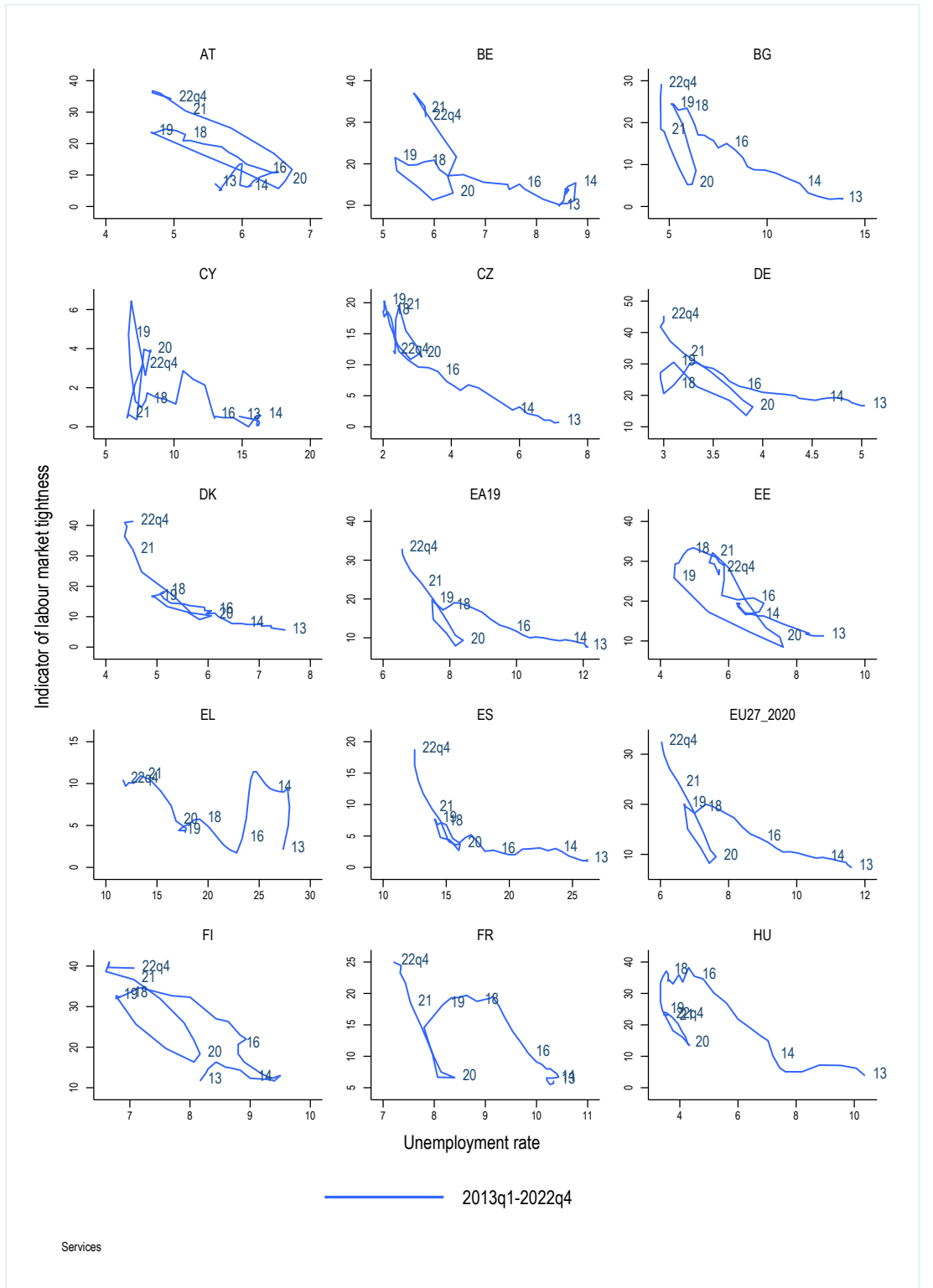
(1) Share of manufacturing firms indicating that labour is a "factor limiting production"  
**Source:** European Commission based on Eurostat data and EU-Business and Consumer Survey

Graph 3.A1.2: The Beveridge curve in EU Member States, 2013Q1-2022Q4, quarterly data, industry, cont.



(1) Share of manufacturing firms indicating that labour is a "factor limiting production"  
**Source:** European Commission based on Eurostat data and EU-Business and Consumer Survey

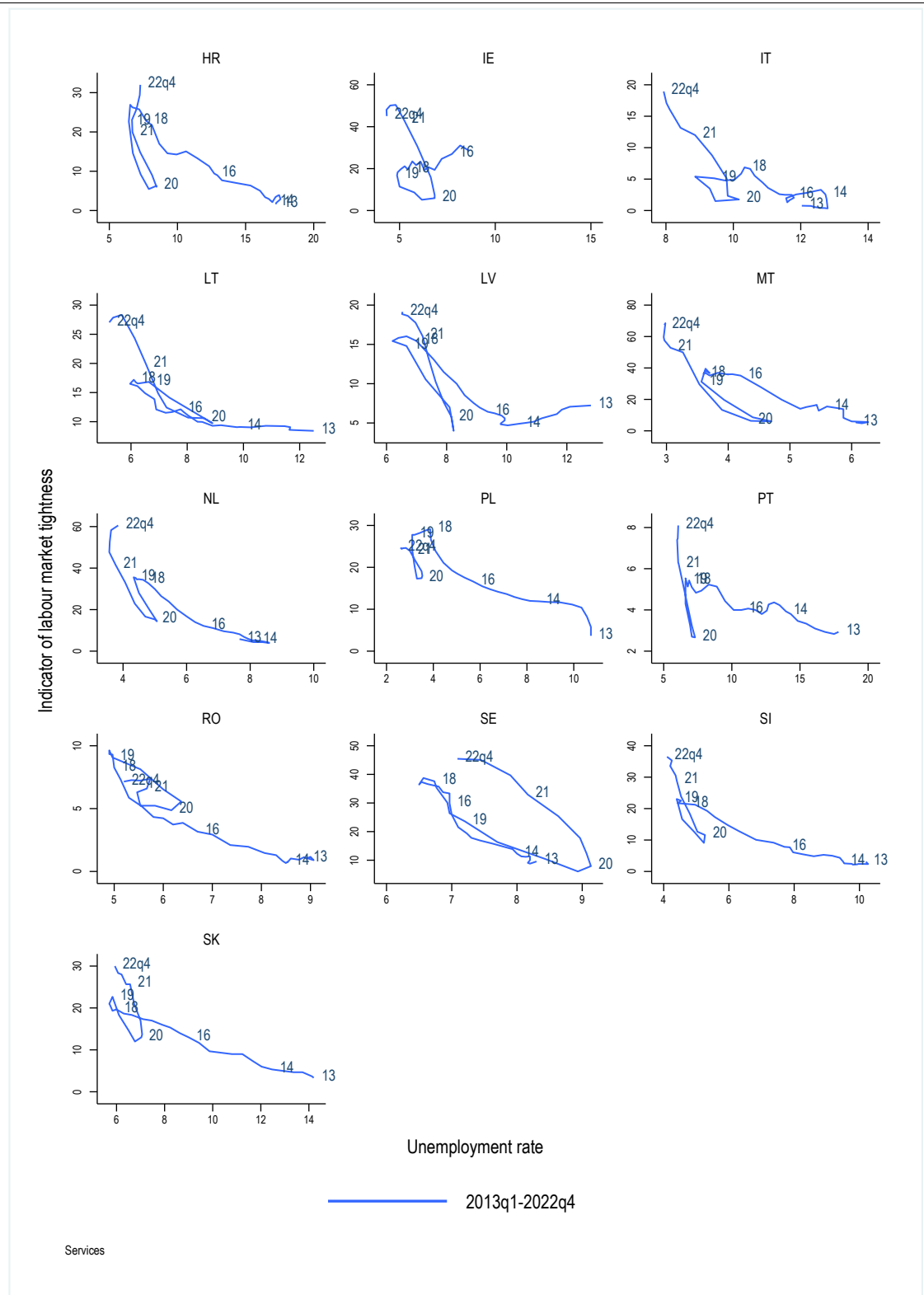
Graph 3.A1.3: The Beveridge curve in EU Member States, 2013Q1-2022Q4, quarterly data, services



(1) Share of services firms indicating that labour is a "factor limiting production"

Source: European Commission based on Eurostat data and EU-Business and Consumer Survey

Graph 3.A1.4: The Beveridge curve in EU Member States, 2013Q1-2022Q4, quarterly data, services, cont

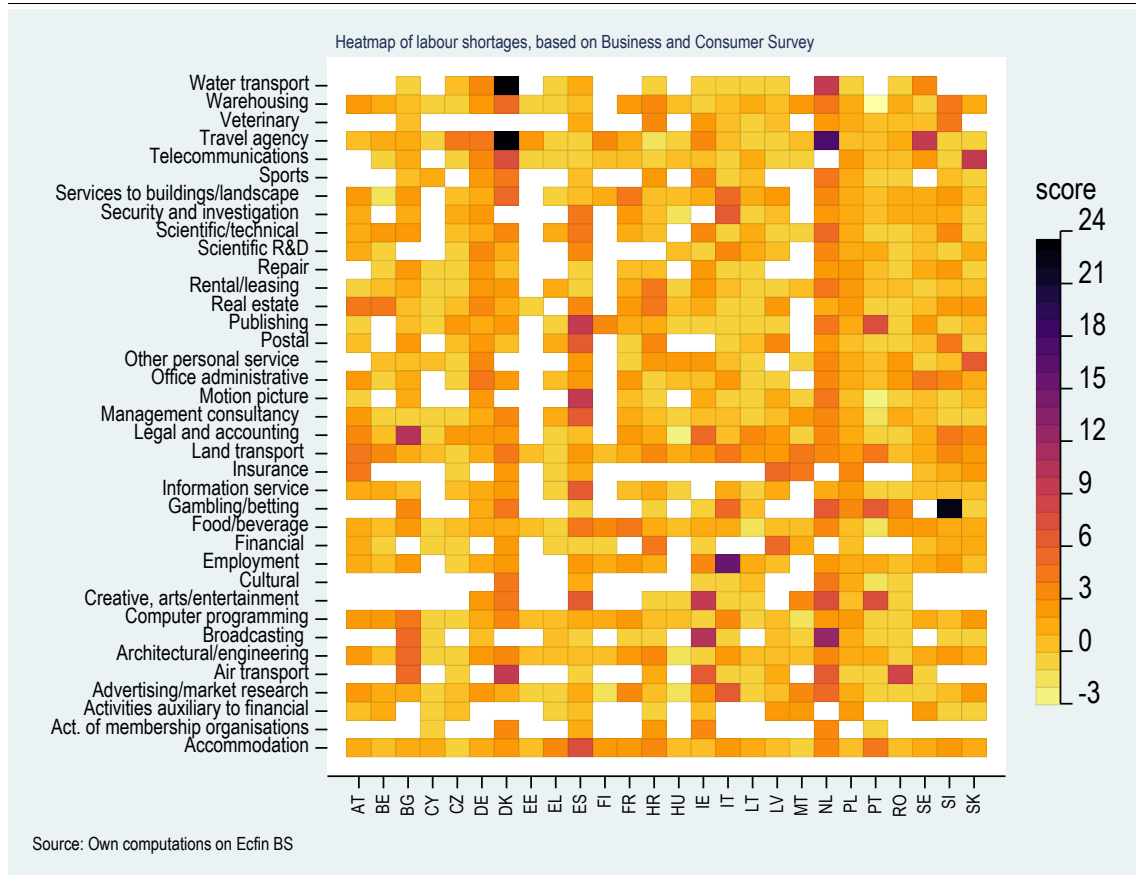


(1) Share of services firms indicating that labour is a "factor limiting production"

Source: European Commission based on Eurostat data and EU-Business and Consumer Survey



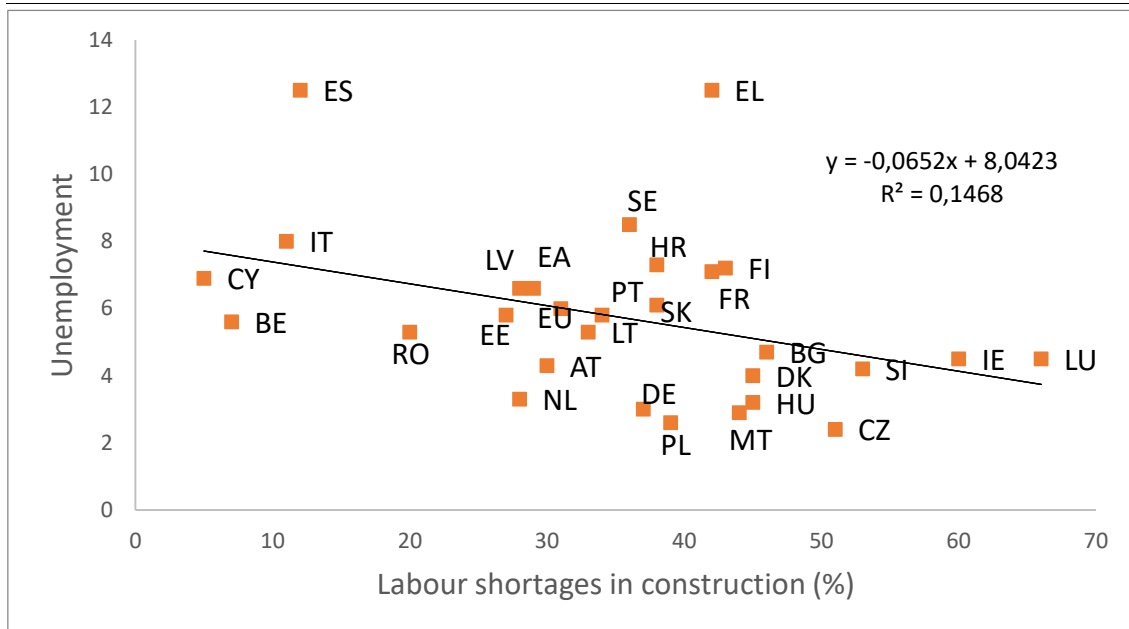
Graph 3.A1.5: Heatmap of labour shortages in services, 2022Q4



(1) Colouring is based on the severity of shortages. Data for cells in white are missing. Labour shortage scores are normalised, in terms of standard deviations, with means corresponding to the historical averages (2000Q1-2021Q4). Outliers are replaced by missing.

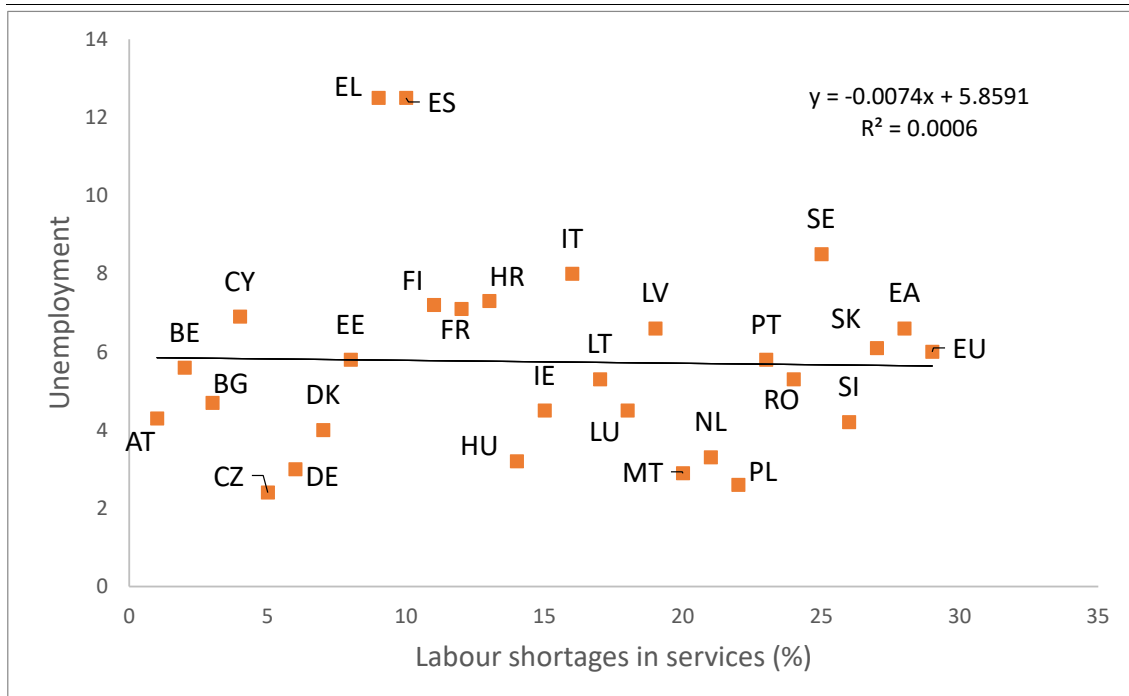
Source: Own computations on European Commission EU – BCS data

Graph 3.A1.6: Labour shortages and their link to unemployment in construction (Q2 2022)



Source: European Commission, EU-BCS

Graph 3.A1.7: Labour shortages and their link to unemployment in services (Q2 2022)



Source: European Commission, EU-BCS

Table 3.A.1.1: Indicators of sectoral labour shortages: year-on year changes in employment, hours worked and the compensation of employees between Q1 2021 and Q1 2022.

Sectoral trends are compared to economy-wide trends. Colouring reflects the number of indicators (0,1,2 or 3) that have grown faster than the economy-wide trend, indicating potential labour shortages.

	Agriculture	Industry	Manufacturing	Construction	Trade	ICT	Finance	Real estate	Professional services	Public sector	Arts, entertainment
AT											
BE*											
BG											
CY											
CZ											
DE											
DK											
EE											
EL											
ES											
FI											
FR*											
HR											
HU											
IE											
IT											
LT											
LU											
LV											
MT											
NL											
PL											
PT											
RO											
SE											
SI											
SK											
EU27											
EA19											

(\*) For BE, data missing for Q1 2022 on hours worked. For FR, data missing for Q1 2022 on the compensation of employees.

Source: Eurostat.

Table 3.A1.2: The main determinants of labour shortages.

	Construction						Manufacturing						Services					
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Value added cyclical component	19.3*** (3.3)	19.3*** (3.3)	19.1*** (3.9)	19.1*** (3.1)	20.6*** (3.3)	14.2*** (4.7)	27.8*** (3.5)	24.6*** (3.8)	24*** (3.9)	23.4*** (3.9)	27.1*** (4.3)	12.3*** (5.6)	41.9*** (6.5)	37*** (6.4)	41.8*** (6.3)	41.8*** (6.3)	42.2*** (8.8)	-11.7 (13.2)
Labour productivity trend	0.32 (1.7)	-2.6 (1.9)	-3.4* (2.0)	-1.2 (2.5)	-10.7** (4.8)	-10.7** (4.8)	10.7*** (2.3)	10.6*** (2.5)	8.9*** (2.5)	10.6*** (2.5)	11.9*** (3.7)	22.6* (14.1)	11.9*** (2.5)	10.6*** (2.1)	11.9*** (2.1)	11.9*** (2.1)	0.7 (1.2)	-19.7*** (7.4)
Share of low skilled	0.5*** (0.08)	0.5*** (0.08)	0.5*** (0.08)	0.5*** (0.08)	0.5*** (0.07)	0.6*** (0.17)	0.6*** (0.17)	0.6*** (0.17)	0.6*** (0.17)	0.6*** (0.17)	0.6*** (0.17)	0.6*** (0.17)	0.6*** (0.17)	0.6*** (0.17)	0.6*** (0.17)	0.6*** (0.17)	0.6*** (0.17)	0.3* (0.2)
Share of low skilled*occupational mismatch	0.02*** (0.006)	0.02*** (0.006)	0.02*** (0.006)	0.02*** (0.006)	0.02*** (0.006)	0.02*** (0.006)	0.02*** (0.006)	0.02*** (0.006)	0.02*** (0.006)	0.02*** (0.006)	0.02*** (0.006)	0.02*** (0.006)	0.02*** (0.006)	0.02*** (0.006)	0.02*** (0.006)	0.02*** (0.006)	0.02*** (0.006)	0.018*** (0.05)
Age dependency ratio	-0.2*** (0.06)	-0.2*** (0.06)	-0.2*** (0.06)	-0.2*** (0.06)	-0.2*** (0.06)	0.4*** (2.65)	0.4*** (2.65)	0.4*** (2.65)	0.4*** (2.65)	0.4*** (2.65)	0.4*** (2.65)	0.4*** (2.65)	0.4*** (2.65)	0.4*** (2.65)	0.4*** (2.65)	0.4*** (2.65)	0.4*** (2.65)	0.6*** (0.2)
Probability of employment in low RTI occupations relative to high RTI occupations (lagged)						-0.01 (0.03)	-0.01 (0.03)	-0.01 (0.03)	-0.01 (0.03)	-0.01 (0.03)	-0.01 (0.03)	-0.05** (0.02)	-0.05** (0.02)	-0.05** (0.02)	-0.05** (0.02)	-0.05** (0.02)	-0.05** (0.02)	-0.03 (0.02)
Country fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Period effects	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	2079	2079	2045	2045	1772	693	2167	2167	2122	2122	1807	692	1736	1736	1727	1727	1681	665
R-squared- adjusted	0.60	0.60	0.60	0.60	0.62	0.79	0.60	0.61	0.62	0.62	0.65	0.82	0.62	0.63	0.64	0.64	0.65	0.77

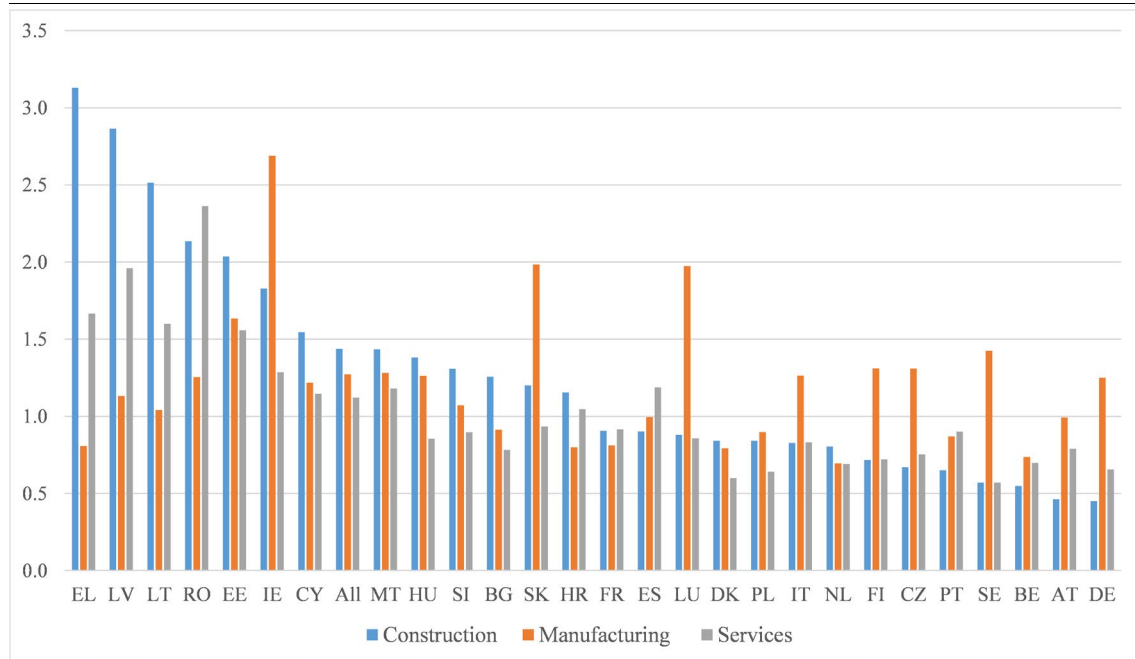
Estimation: fixed-effects OLS with robust standard errors (in parenthesis). Sample period: 2000q1-2021q3, for services 2001q2-2021q3.

\*\*\* stand for statistical significance at the 10%, 5% and 1% level.

Age dependency ratio: population 0 to 19 years and 60 years or over, to population 20 to 59 years. RTI stands for routine task intensity.

Source: Own calculations based on Eurostat.

Graph 3.A1.8: The response of labour shortages to the cyclical component of value added



(1) The chart shows the standardised coefficient of the regression in the table above obtained by multiplying the estimated coefficients by the standard deviation of the cyclical component of value added in construction, manufacturing and services.

**Source:** Regression analysis, see output in Table 3.A1.2

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# Statistical annex

# APPENDIX 1

## Statistical annex

<b>Belgium</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1 - Population (LFS, total, 1000 pers.)</b>	11375	11427	11489	11544	11589	0.4 %
<b>2 - Population (LFS, working age:15-64, 1000 pers.)</b>	7266	7289	7307	7326	7345	0.3 %
(% of total population)	63.9	63.8	63.6	63.5	63.4	-0.1 pps
<b>3 - Labour force (15-64, 1000 pers.)</b>	4940	5000	5044	5022	5118	1.9 %
<i>Male</i>	2652	2664	2681	2670	2718	1.8 %
<i>Female</i>	2289	2335	2362	2352	2400	2.0 %
<b>4 - Activity rate (% of population 15-64)</b>	68.0	68.6	69.0	68.6	69.7	1.1 pps
Young (15-24)	28.1	29.6	31.0	28.4	30.3	1.8 pps
Prime age (25-54)	84.8	85.0	84.8	84.5	85.4	0.9 pps
Older (55-64)	51.3	52.6	54.3	55.6	57.1	1.5 pps
Nationals (15-64)	68.3	69.0	69.6	69.2	70.1	0.9 pps
Non-nationals (15-64)	65.8	66.0	65.0	63.7	66.7	2.9 pps
<i>Male</i>	72.8	72.8	73.1	72.6	73.7	1.1 pps
Young (15-24)	30.6	31.4	32.5	30.3	32.2	1.9 pps
Prime age (25-54)	90.0	89.6	89.3	88.7	89.7	1.0 pps
Older (55-64)	56.9	57.9	59.8	61.5	62.5	1.0 pps
<i>Female</i>	63.2	64.3	64.9	64.5	65.7	1.2 pps
Young (15-24)	25.4	27.8	29.4	26.5	28.2	1.7 pps
Prime age (25-54)	79.6	80.3	80.3	80.3	81.1	0.8 pps
Older (55-64)	45.8	47.4	48.9	49.8	51.8	1.9 pps
<b>5 - Employment rate (% of population 15-64)</b>	63.1	64.5	65.3	64.7	65.3	0.6 pps
Young (15-24)	22.7	25.0	26.6	24.1	24.8	0.7 pps
Prime age (25-54)	79.5	80.4	80.8	80.3	80.7	0.5 pps
Older (55-64)	48.3	50.3	52.1	53.3	54.5	1.1 pps
Low-skilled (15-64)	35.5	35.5	36.0	34.8	34.0	-0.7 pps
Medium-skilled (15-64)	65.1	66.6	67.6	65.9	64.4	-1.5 pps
High-skilled (15-64)	82.2	83.4	83.8	83.5	84.0	0.5 pps
Nationals (15-64)	64.1	65.4	66.3	65.8	66.2	0.4 pps
Non-nationals (15-64)	56.6	57.9	58.2	57.1	59.2	2.1 pps
<i>Male</i>	67.5	68.2	68.9	68.4	68.7	0.4 pps
Young (15-24)	24.4	26.4	27.3	25.6	25.8	0.2 pps
Prime age (25-54)	84.4	84.5	84.7	84.2	84.6	0.4 pps
Older (55-64)	53.8	55.1	57.3	58.7	59.3	0.7 pps
<i>Female</i>	58.7	60.7	61.7	61.0	61.8	0.8 pps
Young (15-24)	20.9	23.5	25.8	22.5	23.7	1.2 pps
Prime age (25-54)	74.6	76.2	76.8	76.4	76.9	0.5 pps
Older (55-64)	42.8	45.6	47.0	48.0	49.6	1.6 pps
<b>6 - Employed persons (15-64, 1000 pers.)</b>	4587.2	4699.4	4770.7	4740.6	4794.7	1.1 %
<b>7 - Employment growth (% , National accounts)</b>	1.6	1.5	1.6	0.0	1.8	1.8 pps
Employment growth (% , 15-64, LFS)	1.0	2.4	1.5	-0.6	1.1	1.8 pps
<i>Male</i>	1.2	1.4	1.2	-0.4	0.8	1.2 pps
<i>Female</i>	0.9	3.7	1.8	-0.9	1.5	2.4 pps
<b>8 - Self employed (15-64, % of total employment)</b>	13.1	12.7	12.9	13.4	13.0	-0.3 pps
<i>Male</i>	16.3	15.8	16.1	16.8	16.4	-0.4 pps
<i>Female</i>	9.3	9.1	9.2	9.4	9.2	-0.2 pps
<b>9 - Temporary employment (15-64, % of total employment)</b>	10.4	10.7	10.8	10.1	10.3	0.2 pps
<i>Male</i>	9.7	9.8	10.2	9.6	9.5	-0.1 pps
<i>Female</i>	11.2	11.7	11.5	10.7	11.1	0.4 pps
<b>10 - Part-time (15-64, % of total employment)</b>	24.5	24.5	24.9	24.4	24.1	-0.3 pps
<i>Male</i>	10.2	10.0	10.5	10.5	10.4	-0.1 pps
<i>Female</i>	41.2	41.0	41.0	40.1	39.5	-0.6 pps
<b>11 Involuntary part-time (15-64, % of total employment)</b>	1.9	1.7	1.4	1.1	5.2	4.0 pps
<b>12 - Unemployment rate (harmonised:15-74)</b>	7.2	6.0	5.5	5.8	6.3	0.5 pps
Young (15-24)	19.3	15.8	14.2	15.3	18.2	2.9 pps
Prime age (25-49)	6.2	5.4	4.8	5.0	5.5	0.5 pps
Older (55-64)	5.9	4.3	4.1	4.2	4.6	0.4 pps
Low-skilled (15-64)	14.8	13.3	12.2	12.3	14.7	2.4 pps
Medium-skilled (15-64)	7.2	6.0	5.3	5.8	7.0	1.2 pps
High-skilled (15-64)	4.3	3.5	3.2	3.5	3.6	0.1 pps
Nationals (15-64)	6.2	5.2	4.8	5.0	5.6	0.6 pps
Non-nationals (15-64)	14.0	12.2	10.3	10.4	11.2	0.8 pps
<i>Male</i>	7.2	6.4	5.9	6.0	6.6	0.6 pps
<i>Female</i>	7.1	5.6	5.0	5.5	5.9	0.4 pps
<b>13 - Long-term unemployment (% of total unemployment)</b>	48.8	48.7	43.5	41.6	42.5	0.9 pps
<b>14 - Worked hours (full-time, average actual weekly hours)</b>	39.3	39.3	39.3	38.4	37.8	-1.6 %
<i>Male</i>	38.8	38.9	38.8	38.9	37.4	-3.9 %
<i>Female</i>	38.7	38.8	38.7	37.6	36.9	-1.9 %
<b>15 - Sectoral employment growth (% change)</b>						
Agriculture	-1.3	0.3	0.8	0.7	1.5	0.8 pps
Building and construction	0.9	2.5	1.1	1.2	1.8	0.6 pps
Services	1.8	1.6	1.7	-1.0	2.1	3.1 pps
Manufacturing industry	0.7	0.7	0.7	-0.6	0.3	0.9 pps
<b>16 - Indicator board on wage developments (% change)</b>						
Compensation per employee	1.9	1.8	2.0	-1.5	4.2	5.7 pps
Real compensation per employee based on GDP	0.1	0.3	0.2	-2.7	-0.1	2.6 pps
Labour cost index (compens. of employees plus taxes minus subs.)	1.2	1.6	2.0	1.6	1.2	-0.4 pps
Labour cost index (wages and salaries, total)	1.9	2.2	2.6	1.5	1.2	-0.3 pps
Labour productivity (GDP/person employed)	0.1	0.4	0.5	-5.7	4.4	10.1 pps



<b>Bulgaria</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- Population (LFS, total, 1000 pers.)	7076	7025	6976	6934	6889	-0.6 %
<b>2</b>	- Population (LFS, working age:15-64, 1000 pers.)	4595	4531	4474	4417	4383	-0.8 %
	(% of total population)	64.9	64.5	64.1	63.7	63.6	-0.1 pps
<b>3</b>	- Labour force (15-64, 1000 pers.)	3278	3240	3276	3190	3155	-1.1 %
	<i>Male</i>	1751	1737	1755	1714	1689	-1.4 %
	<i>Female</i>	1526	1503	1521	1477	1466	-0.7 %
<b>4</b>	- Activity rate (% of population 15-64)	71.3	71.5	73.2	72.2	72.0	-0.2 pps
	Young (15-24)	26.3	23.7	23.9	21.9	20.0	-1.9 pps
	Prime age (25-54)	84.3	84.3	85.8	84.7	84.7	0.0 pps
	Older (55-64)	61.8	63.7	66.9	67.1	67.9	0.8 pps
	Nationals (15-64)	71.4	71.5	73.3	72.2	72.0	-0.2 pps
	Non-nationals (15-64)	57.8	55.9	56.0	59.4	55.2	-4.2 pps
	<i>Male</i>	75.4	75.9	77.6	76.8	76.2	-0.5 pps
	Young (15-24)	30.5	27.9	27.6	25.3	24.2	-1.1 pps
	Prime age (25-54)	88.0	88.3	90.0	89.1	88.4	-0.7 pps
	Older (55-64)	66.8	69.1	72.0	72.6	73.5	0.9 pps
	<i>Female</i>	67.1	67.0	68.7	67.6	67.7	0.1 pps
	Young (15-24)	21.8	19.3	20.0	18.2	15.5	-2.7 pps
	Prime age (25-54)	80.5	80.2	81.4	80.1	80.7	0.6 pps
	Older (55-64)	57.3	58.7	62.2	62.0	62.7	0.7 pps
<b>5</b>	- Employment rate (% of population 15-64)	66.9	67.7	70.1	68.5	68.1	-0.3 pps
	Young (15-24)	22.9	20.7	21.8	18.8	16.8	-2.0 pps
	Prime age (25-54)	79.4	80.1	82.3	80.5	80.4	-0.1 pps
	Older (55-64)	58.2	60.7	64.4	64.2	64.8	0.6 pps
	Low-skilled (15-64)	33.4	34.8	38.4	35.2	34.0	-1.2 pps
	Medium-skilled (15-64)	71.7	72.4	74.6	72.7	71.5	-1.2 pps
	High-skilled (15-64)	85.5	86.1	88.5	87.6	88.7	1.1 pps
	Nationals (15-64)	66.9	67.8	70.1	68.5	68.2	-0.3 pps
	Non-nationals (15-64)	53.2	53.9	56.0	0.0	55.2	55.2 pps
	<i>Male</i>	70.6	71.5	74.1	72.5	72.0	-0.5 pps
	Young (15-24)	26.5	24.2	25.0	21.7	20.3	-1.3 pps
	Prime age (25-54)	82.8	83.5	86.0	84.4	83.9	-0.5 pps
	Older (55-64)	62.5	65.4	69.2	69.4	69.9	0.5 pps
	<i>Female</i>	63.1	63.9	66.0	64.3	64.2	-0.1 pps
	Young (15-24)	19.1	17.0	18.4	15.7	13.1	-2.6 pps
	Prime age (25-54)	75.8	76.5	78.3	76.4	76.7	0.3 pps
	Older (55-64)	54.3	56.4	59.9	59.4	60.1	0.7 pps
<b>6</b>	- Employed persons (15-64, 1000 pers.)	3073.4	3068.9	3136.3	3024.3	2986.7	-1.2 %
<b>7</b>	- Employment growth (% , National accounts)	1.8	-0.1	0.3	-2.3	0.2	2.5 pps
	Employment growth (% , 15-64, LFS)	4.0	-0.1	2.2	-3.6	-1.2	2.3 pps
	<i>Male</i>	4.4	-0.1	2.3	-3.3	-1.5	1.8 pps
	<i>Female</i>	3.6	-0.2	2.0	-3.9	-1.0	2.9 pps
<b>8</b>	- Self employed (15-64, % of total employment)	10.8	10.6	9.9	10.1	10.1	0.0 pps
	<i>Male</i>	13.5	13.4	12.5	12.8	12.6	-0.2 pps
	<i>Female</i>	7.6	7.3	6.9	7.1	7.3	0.2 pps
<b>9</b>	- Temporary employment (15-64, % of total employment)	4.4	4.0	4.3	3.5	3.4	-0.1 pps
	<i>Male</i>	4.9	4.4	4.6	3.9	3.9	0.0 pps
	<i>Female</i>	3.9	3.7	4.0	3.1	2.9	-0.2 pps
<b>10</b>	- Part-time (15-64, % of total employment)	2.2	1.8	1.9	1.8	1.6	-0.2 pps
	<i>Male</i>	2.0	1.7	1.7	1.6	1.3	-0.3 pps
	<i>Female</i>	2.4	2.0	2.1	2.1	1.8	-0.3 pps
<b>11</b>	- Involuntary part-time (15-64, % of total employment)	1.3	1.0	1.0	1.0	0.8	-0.2 pps
<b>12</b>	- Unemployment rate (harmonised:15-74)	7.2	6.2	5.2	6.1	5.3	-0.8 pps
	Young (15-24)	12.9	12.7	8.9	14.2	15.8	1.6 pps
	Prime age (25-49)	5.9	5.0	4.1	4.9	5.0	0.1 pps
	Older (55-64)	5.9	4.6	3.9	4.3	4.5	0.2 pps
	Low-skilled (15-64)	18.3	15.7	13.2	14.2	16.3	2.1 pps
	Medium-skilled (15-64)	5.3	4.6	3.4	4.8	5.0	0.2 pps
	High-skilled (15-64)	3.1	2.4	1.9	2.5	2.0	-0.5 pps
	Nationals (15-64)	6.2	5.3	4.3	5.2	5.3	0.1 pps
	Non-nationals (15-64)	0.0	0.0	0.0	0.0	0.0	0.0 pps
	<i>Male</i>	7.4	6.7	5.6	6.5	5.5	-1.0 pps
	<i>Female</i>	6.9	5.6	4.8	5.7	5.0	-0.7 pps
<b>13</b>	- Long-term unemployment (% of total unemployment)	55.0	58.5	57.1	45.3	49.5	4.2 pps
<b>14</b>	- Worked hours (full-time, average actual weekly hours)	40.4	40.2	39.9	39.7	39.6	-0.3 %
	<i>Male</i>	40.6	40.5	40.2	40.0	39.9	-0.3 %
	<i>Female</i>	40.0	39.9	39.7	39.4	39.6	0.5 %
<b>15</b>	- Sectoral employment growth (% change)						
	Agriculture	6.4	-6.1	-4.4	-0.2	-6.1	-5.9 pps
	Building and construction	0.1	5.2	6.0	-1.7	1.8	3.5 pps
	Services	0.6	1.3	1.7	-3.9	1.3	5.3 pps
	Manufacturing industry	1.1	0.5	-0.8	-4.8	0.9	5.7 pps
<b>16</b>	- Indicator board on wage developments (% change)						
	Compensation per employee	10.5	9.7	6.9	7.2	9.5	2.4 pps
	Real compensation per employee based on GDP	5.4	5.2	1.6	2.8	3.1	0.3 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	12.4	7.1	11.3	6.3	7.7	1.4 pps
	Labour cost index (wages and salaries, total)	12.3	6.8	11.1	6.3	8.3	2.0 pps
	Labour productivity (GDP/person employed)	1.0	2.8	3.7	-2.1	4.0	6.1 pps

<b>Czechia</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- Population (LFS, total, 1000 pers.)	10590	10626	10669	10700	10697	0.0 %
<b>2</b>	- Population (LFS, working age:15-64, 1000 pers.)	6917	6879	6856	6838	6810	-0.4 %
	(% of total population)	65.3	64.7	64.3	63.9	63.7	-0.3 pps
<b>3</b>	- Labour force (15-64, 1000 pers.)	5248	5267	5259	5224	5216	-0.1 %
	<i>Male</i>	2912	2915	2914	2909	2898	-0.4 %
	<i>Female</i>	2336	2352	2345	2315	2318	0.1 %
<b>4</b>	- Activity rate (% of population 15-64)	75.9	76.6	76.7	76.4	76.6	0.2 pps
	Young (15-24)	31.7	30.4	29.7	27.3	27.0	-0.3 pps
	Prime age (25-54)	89.1	89.3	89.1	88.7	88.7	0.0 pps
	Older (55-64)	63.6	66.5	68.0	69.6	71.6	2.0 pps
	Nationals (15-64)	75.7	76.4	76.5	76.2	76.4	0.2 pps
	Non-nationals (15-64)	82.0	83.6	83.9	83.0	82.8	-0.2 pps
	<i>Male</i>	82.9	83.3	83.4	83.3	83.3	0.0 pps
	Young (15-24)	36.5	34.4	33.4	32.9	31.8	-1.0 pps
	Prime age (25-54)	95.7	95.9	95.9	95.8	95.8	0.0 pps
	Older (55-64)	73.2	75.3	76.2	76.5	78.1	1.5 pps
	<i>Female</i>	68.7	69.6	69.8	69.2	69.6	0.4 pps
	Young (15-24)	26.6	26.2	25.8	21.4	21.9	0.5 pps
	Prime age (25-54)	82.1	82.3	81.8	81.1	81.1	0.0 pps
	Older (55-64)	54.5	58.0	60.1	62.8	65.2	2.4 pps
<b>5</b>	- Employment rate (% of population 15-64)	73.6	74.8	75.1	74.4	74.4	0.0 pps
	Young (15-24)	29.1	28.4	28.0	25.1	24.8	-0.3 pps
	Prime age (25-54)	86.7	87.5	87.4	86.5	86.3	-0.2 pps
	Older (55-64)	62.1	65.1	66.7	68.2	69.9	1.7 pps
	Low-skilled (15-64)	26.1	26.5	28.1	27.6	25.7	-1.9 pps
	Medium-skilled (15-64)	78.9	80.1	80.7	80.0	79.7	-0.3 pps
	High-skilled (15-64)	84.2	85.6	84.9	83.9	84.8	0.9 pps
	Nationals (15-64)	73.5	74.7	75.0	74.2	74.2	0.0 pps
	Non-nationals (15-64)	79.9	81.8	81.9	80.7	80.5	-0.2 pps
	<i>Male</i>	80.9	81.8	81.9	81.4	81.3	0.0 pps
	Young (15-24)	33.8	32.2	31.6	30.5	29.4	-1.1 pps
	Prime age (25-54)	93.7	94.4	94.5	93.8	93.8	0.0 pps
	Older (55-64)	71.7	74.0	74.7	75.2	76.5	1.3 pps
	<i>Female</i>	66.2	67.6	68.1	67.1	67.1	0.1 pps
	Young (15-24)	24.3	24.3	24.3	19.4	19.9	0.4 pps
	Prime age (25-54)	79.3	80.1	80.0	78.8	78.4	-0.4 pps
	Older (55-64)	53.0	56.6	58.9	61.3	63.3	2.0 pps
<b>6</b>	- Employed persons (15-64, 1000 pers.)	5093.9	5146.8	5151.0	5086.9	5066.1	-0.4 %
<b>7</b>	- Employment growth (% , National accounts)	1.5	1.3	0.2	-1.7	0.4	2.1 pps
	Employment growth (% , 15-64, LFS)	1.6	1.0	0.1	-1.2	-0.4	0.8 pps
	<i>Male</i>	1.3	0.7	0.0	-0.7	-0.4	0.3 pps
	<i>Female</i>	1.8	1.5	0.1	-1.9	-0.4	1.5 pps
<b>8</b>	- Self employed (15-64, % of total employment )	16.1	16.0	15.7	15.8	15.1	-0.7 pps
	<i>Male</i>	19.8	19.9	19.5	19.4	18.6	-0.8 pps
	<i>Female</i>	11.6	11.1	11.1	11.2	10.6	-0.6 pps
<b>9</b>	- Temporary employment (15-64, % of total employment)	9.6	8.4	7.8	7.0	6.5	-0.5 pps
	<i>Male</i>	7.8	6.5	6.2	5.9	5.3	-0.6 pps
	<i>Female</i>	11.7	10.6	9.6	8.2	7.9	-0.3 pps
<b>10</b>	- Part-time (15-64, % of total employment )	6.2	6.3	6.3	5.7	5.7	0.0 pps
	<i>Male</i>	2.4	2.6	2.8	2.4	2.5	0.1 pps
	<i>Female</i>	10.9	10.9	10.6	9.9	9.6	-0.3 pps
<b>11</b>	- Involuntary part-time (15-64, % of total employment)	0.6	0.4	0.4	0.3	1.0	0.7 pps
<b>12</b>	- Unemployment rate (harmonised:15-74)	2.9	2.2	2.0	2.6	2.8	0.2 pps
	Young (15-24)	7.9	6.7	5.6	8.0	8.2	0.2 pps
	Prime age (25-49)	2.7	2.0	1.8	2.4	2.6	0.2 pps
	Older (55-64)	2.4	2.0	2.0	2.0	2.4	0.4 pps
	Low-skilled (15-64)	13.3	10.8	10.9	10.7	13.2	2.5 pps
	Medium-skilled (15-64)	2.7	2.1	1.8	2.4	2.7	0.3 pps
	High-skilled (15-64)	1.5	1.2	1.0	1.5	1.4	-0.1 pps
	Nationals (15-64)	2.9	2.3	2.0	2.6	2.9	0.3 pps
	Non-nationals (15-64)	2.6	2.1	2.5	2.8	2.8	0.0 pps
	<i>Male</i>	2.3	1.8	1.7	2.2	2.3	0.1 pps
	<i>Female</i>	3.6	2.8	2.4	3.0	3.4	0.4 pps
<b>13</b>	- Long-term unemployment (% of total unemployment)	35.0	30.6	30.0	22.0	27.6	5.6 pps
<b>14</b>	- Worked hours (full-time, average actual weekly hours)	40.2	40.1	40.0	38.7	39.1	1.0 %
	<i>Male</i>	41.7	41.4	41.4	39.7	40.1	1.0 %
	<i>Female</i>	38.8	38.9	38.7	37.8	38.2	1.1 %
<b>15</b>	- Sectoral employment growth (% change)						
	Agriculture	0.5	1.3	-3.1	0.8	-0.7	-1.5 pps
	Building and construction	0.0	1.2	1.2	-1.2	0.4	1.6 pps
	Services	1.5	1.4	0.4	-2.0	0.2	2.1 pps
	Manufacturing industry	1.5	0.8	-0.6	-3.7	-0.1	3.6 pps
<b>16</b>	- Indicator board on wage developments (% change)						
	Compensation per employee	7.2	8.1	7.2	3.1	5.0	1.9 pps
	Real compensation per employee based on GDP	5.8	5.4	3.2	-1.1	1.6	2.8 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	7.8	7.7	7.9	4.7	4.5	-0.2 pps
	Labour cost index (wages and salaries, total)	7.8	7.8	7.7	6.8	3.7	-3.1 pps
	Labour productivity (GDP/person employed)	3.6	1.9	2.8	-3.9	3.2	7.1 pps

Denmark		2017	2018	2019	2020	2021	2020-2021
1	- Population (LFS, total, 1000 pers.)	5765	5794	5817	5830	5854	0.4 %
2	- Population (LFS, working age:15-64, 1000 pers.)	3684	3695	3704	3700	3690	-0.3 %
	(% of total population)	63.9	63.8	63.7	63.5	63.0	-0.4 pps
3	- Labour force (15-64, 1000 pers.)	2870	2892	2930	2921	2938	0.6 %
	Male	1501	1514	1534	1528	1536	0.5 %
	Female	1369	1378	1395	1393	1402	0.6 %
4	- Activity rate (% of population 15-64)	77.9	78.2	79.1	79.0	79.6	0.7 pps
	Young (15-24)	60.4	60.1	61.1	60.2	60.4	0.2 pps
	Prime age (25-54)	85.8	86.1	86.5	86.3	87.1	0.8 pps
	Older (55-64)	70.9	71.8	73.8	74.6	75.3	0.8 pps
	Nationals (15-64)	78.6	78.9	79.8	79.5	80.0	0.5 pps
	Non-nationals (15-64)	70.8	71.3	71.6	74.0	76.2	2.2 pps
	Male	80.7	81.1	82.0	81.8	82.6	0.8 pps
	Young (15-24)	59.6	59.4	60.5	60.1	60.9	0.8 pps
	Prime age (25-54)	89.3	89.6	90.1	89.7	90.5	0.8 pps
	Older (55-64)	75.0	76.5	78.4	79.1	79.8	0.7 pps
	Female	75.1	75.3	76.1	76.0	76.6	0.5 pps
	Young (15-24)	61.2	60.8	61.8	60.4	59.9	-0.4 pps
	Prime age (25-54)	82.2	82.6	82.8	82.9	83.7	0.8 pps
	Older (55-64)	66.7	67.2	69.3	70.1	70.9	0.8 pps
5	- Employment rate (% of population 15-64)	73.2	74.1	75.0	74.4	75.5	1.1 pps
	Young (15-24)	52.9	53.7	55.0	53.2	53.9	0.6 pps
	Prime age (25-54)	81.4	82.2	82.6	82.1	83.5	1.4 pps
	Older (55-64)	68.2	69.2	71.3	71.4	72.3	0.9 pps
	Low-skilled (15-64)	52.9	52.9	53.2	52.1	53.6	1.5 pps
	Medium-skilled (15-64)	78.3	79.4	79.9	78.6	79.4	0.8 pps
	High-skilled (15-64)	85.5	86.1	87.2	87.1	87.4	0.3 pps
	Nationals (15-64)	74.3	75.2	75.9	75.2	76.1	1.0 pps
	Non-nationals (15-64)	62.1	62.9	65.1	66.6	69.4	2.8 pps
	Male	76.0	76.9	78.0	77.3	78.4	1.1 pps
	Young (15-24)	51.9	52.4	54.2	52.5	54.3	1.8 pps
	Prime age (25-54)	85.0	85.9	86.3	85.8	86.8	1.0 pps
	Older (55-64)	72.2	73.8	75.8	75.8	76.4	0.6 pps
	Female	70.5	71.3	72.0	71.4	72.6	1.2 pps
	Young (15-24)	53.9	55.2	55.8	54.0	53.4	-0.6 pps
	Prime age (25-54)	77.7	78.5	78.8	78.3	80.0	1.7 pps
	Older (55-64)	64.4	64.6	66.9	67.1	68.3	1.1 pps
6	- Employed persons (15-64, 1000 pers.)	2698.1	2739.3	2779.1	2752.8	2786.9	1.2 %
7	- Employment growth (% , National accounts)	1.5	1.5	1.4	-1.1	2.4	3.5 pps
	Employment growth (% , 15-64, LFS)	1.1	1.5	1.5	-0.9	1.2	2.2 pps
	Male	1.0	1.6	1.6	-1.0	1.0	1.9 pps
	Female	1.3	1.5	1.3	-0.9	1.5	2.5 pps
8	- Self employed (15-64, % of total employment)	7.4	7.2	7.4	7.5	7.7	0.2 pps
	Male	10.0	9.7	9.9	10.0	10.3	0.3 pps
	Female	4.5	4.3	4.7	4.8	4.9	0.0 pps
9	- Temporary employment (15-64, % of total employment)	12.3	10.7	10.8	10.9	10.9	0.0 pps
	Male	11.2	9.3	9.6	9.3	9.4	0.1 pps
	Female	13.4	12.0	12.0	12.5	12.5	0.0 pps
10	- Part-time (15-64, % of total employment)	24.7	23.9	24.2	23.4	23.9	0.5 pps
	Male	15.3	14.5	15.3	14.8	15.2	0.4 pps
	Female	35.0	34.3	33.9	32.9	33.5	0.6 pps
11	- Involuntary part-time (15-64, % of total employment)	3.3	2.8	2.6	2.7	2.2	-0.5 pps
12	- Unemployment rate (harmonised:15-74)	5.8	5.1	5.0	5.6	5.1	-0.5 pps
	Young (15-24)	12.4	10.5	10.1	11.6	10.8	-0.8 pps
	Prime age (25-49)	5.1	4.5	4.5	4.9	4.2	-0.7 pps
	Older (55-64)	3.7	3.6	3.4	4.2	4.0	-0.2 pps
	Low-skilled (15-64)	10.0	8.9	8.7	9.7	8.8	-0.9 pps
	Medium-skilled (15-64)	4.8	4.2	4.2	4.9	4.5	-0.4 pps
	High-skilled (15-64)	4.7	4.3	4.2	4.7	4.0	-0.7 pps
	Nationals (15-64)	5.5	4.7	4.8	5.4	4.8	-0.6 pps
	Non-nationals (15-64)	12.3	11.8	9.1	9.9	8.9	-1.0 pps
	Male	5.6	4.9	4.8	5.3	5.0	-0.3 pps
	Female	6.1	5.3	5.3	6.0	5.2	-0.8 pps
13	- Long-term unemployment (% of total unemployment)	20.9	19.6	16.9	16.7	19.9	3.2 pps
14	- Worked hours (full-time, average actual weekly hours)	39.0	38.6	38.2	38.1	38.7	1.6 %
	Male	40.1	39.7	39.3	39.1	39.7	1.5 %
	Female	37.3	37.1	36.6	36.7	37.3	1.6 %
15	- Sectoral employment growth (% change)						
	Agriculture	1.0	-1.9	-0.8	-2.6	-1.8	0.8 pps
	Building and construction	3.5	3.4	1.8	1.4	4.6	3.2 pps
	Services	2.4	1.8	1.5	-2.0	2.3	4.2 pps
	Manufacturing industry	1.2	1.5	1.8	-3.0	1.4	4.4 pps
16	- Indicator board on wage developments (% change)						
	Compensation per employee	1.7	1.6	1.9	2.6	2.9	0.4 pps
	Real compensation per employee based on GDP	0.5	0.9	0.9	0.0	0.2	0.2 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	1.9	2.2	2.1	1.8	4.0	2.2 pps
	Labour cost index (wages and salaries, total)	1.6	2.2	2.1	2.5	2.7	0.2 pps
	Labour productivity (GDP/person employed)	1.3	0.5	0.1	-0.9	2.3	3.2 pps

<b>Germany</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- <b>Population</b> (LFS, total, 1000 pers.)	82657	82906	83093	83161	83196	0.0 %
<b>2</b>	- <b>Population</b> (LFS, working age:15-64, 1000 pers.)	53797	53524	53545	53229	52967	-0.5 %
	(% of total population)	65.1	64.6	64.4	64.0	63.7	-0.3 pps
<b>3</b>	- <b>Labour force</b> (15-64, 1000 pers.)	42094	42094	42427	41806	41674	-0.3 %
	<i>Male</i>	22504	22485	22619	22241	22179	-0.3 %
	<i>Female</i>	19590	19609	19809	19565	19495	-0.4 %
<b>4</b>	- <b>Activity rate</b> (% of population 15-64)	78.2	78.6	79.2	78.5	78.7	0.1 pps
	Young (15-24)	49.9	50.3	51.4	51.8	52.3	0.4 pps
	Prime age (25-54)	87.3	87.7	88.0	87.3	87.4	0.1 pps
	Older (55-64)	72.6	73.6	74.7	74.0	74.1	0.1 pps
	Nationals (15-64)	79.8	80.1	80.6	79.9	80.3	0.4 pps
	Non-nationals (15-64)	68.2	70.0	71.6	70.6	69.9	-0.7 pps
	<i>Male</i>	82.4	82.9	83.5	82.5	82.7	0.2 pps
	Young (15-24)	51.3	52.5	54.2	53.7	55.1	1.5 pps
	Prime age (25-54)	91.9	92.3	92.7	91.8	91.6	-0.3 pps
	Older (55-64)	77.9	78.7	79.5	78.1	78.6	0.4 pps
	<i>Female</i>	74.0	74.3	74.9	74.5	74.6	0.1 pps
	Young (15-24)	48.3	47.8	48.4	49.9	49.2	-0.7 pps
	Prime age (25-54)	82.5	82.9	83.3	82.6	83.1	0.5 pps
	Older (55-64)	67.5	68.6	70.0	69.8	69.7	-0.2 pps
<b>5</b>	- <b>Employment rate</b> (% of population 15-64)	75.2	75.9	76.7	75.4	75.8	0.4 pps
	Young (15-24)	46.5	47.2	48.5	48.1	48.7	0.5 pps
	Prime age (25-54)	84.2	84.9	85.4	84.0	84.5	0.4 pps
	Older (55-64)	70.1	71.4	72.7	71.7	71.8	0.2 pps
	Low-skilled (15-64)	47.6	48.3	49.4	49.4	50.4	1.0 pps
	Medium-skilled (15-64)	79.5	80.2	80.8	79.4	79.9	0.5 pps
	High-skilled (15-64)	88.1	88.5	89.0	87.0	87.8	0.8 pps
	Nationals (15-64)	77.3	77.8	78.4	77.4	77.9	0.4 pps
	Non-nationals (15-64)	62.7	64.8	66.7	64.0	64.5	0.6 pps
	<i>Male</i>	78.9	79.7	80.5	78.9	79.3	0.4 pps
	Young (15-24)	47.4	48.8	50.6	49.6	51.1	1.5 pps
	Prime age (25-54)	88.4	89.0	89.6	88.0	88.2	0.2 pps
	Older (55-64)	75.0	76.1	77.1	75.5	75.9	0.4 pps
	<i>Female</i>	71.5	72.1	72.8	71.9	72.2	0.3 pps
	Young (15-24)	45.5	45.4	46.1	46.5	46.1	-0.5 pps
	Prime age (25-54)	80.0	80.6	81.1	79.9	80.7	0.7 pps
	Older (55-64)	65.4	66.9	68.4	67.8	67.8	-0.1 pps
<b>6</b>	- <b>Employed persons</b> (15-64, 1000 pers.)	40481.6	40635.7	41065.1	40155.2	40153.7	0.0 %
<b>7</b>	- <b>Employment growth</b> (% , National accounts)	1.4	1.4	0.9	-0.8	0.1	0.9 pps
	Employment growth (% , 15-64, LFS)	0.8	0.4	1.1	-2.2	0.0	2.2 pps
	<i>Male</i>	0.8	0.3	0.9	-2.4	0.1	2.5 pps
	<i>Female</i>	0.7	0.5	1.2	-2.0	-0.1	1.9 pps
<b>8</b>	- <b>Self employed</b> (15-64, % of total employment)	9.1	8.8	8.5	7.8	7.6	-0.1 pps
	<i>Male</i>	11.2	10.9	10.7	9.7	9.6	-0.1 pps
	<i>Female</i>	6.6	6.3	6.1	5.7	5.5	-0.2 pps
<b>9</b>	- <b>Temporary employment</b> (15-64, % of total employment)	12.9	12.6	12.0	10.8	11.4	0.6 pps
	<i>Male</i>	13.0	12.9	12.3	10.8	11.6	0.8 pps
	<i>Female</i>	12.9	12.4	11.7	10.8	11.2	0.4 pps
<b>10</b>	- <b>Part-time</b> (15-64, % of total employment)	26.9	26.8	27.2	27.8	27.9	0.1 pps
	<i>Male</i>	9.7	9.6	9.9	10.2	10.6	0.4 pps
	<i>Female</i>	46.4	46.3	46.7	47.8	47.4	-0.4 pps
<b>11</b>	- <b>Involuntary part-time</b> (15-64, % of total employment)	3.0	2.7	2.5	2.1	2.0	-0.1 pps
<b>12</b>	- <b>Unemployment rate</b> (harmonised:15-74)	3.6	3.2	3.0	3.7	3.6	-0.1 pps
	Young (15-24)	6.8	6.2	5.8	7.1	6.9	-0.2 pps
	Prime age (25-49)	3.5	3.2	3.0	3.7	3.3	-0.4 pps
	Older (55-64)	3.4	2.9	2.7	3.1	3.0	-0.1 pps
	Low-skilled (15-64)	9.7	9.0	8.1	9.4	7.9	-1.5 pps
	Medium-skilled (15-64)	3.4	2.9	2.8	3.3	3.2	-0.1 pps
	High-skilled (15-64)	2.0	1.9	1.9	2.6	2.5	-0.1 pps
	Nationals (15-64)	3.2	2.9	2.6	3.1	3.0	-0.1 pps
	Non-nationals (15-64)	8.1	7.5	6.9	9.4	7.7	-1.7 pps
	<i>Male</i>	3.9	3.6	3.3	4.0	3.9	-0.1 pps
	<i>Female</i>	3.1	2.8	2.6	3.3	3.2	-0.1 pps
<b>13</b>	- <b>Long-term unemployment</b> (% of total unemployment)	41.9	41.3	38.1	29.3	32.5	3.2 pps
<b>14</b>	- <b>Worked hours</b> (full-time, average actual weekly hours)	41.0	40.8	40.7	39.5	39.5	0.0 %
	<i>Male</i>	41.8	41.6	41.4	40.2	40.3	0.2 %
	<i>Female</i>	39.7	39.7	39.6	37.9	38.2	0.8 %
<b>15</b>	- <b>Sectoral employment growth</b> (% change)						
	Agriculture	-1.3	-1.1	-1.6	-3.0	-3.3	-0.3 pps
	Building and construction	1.2	1.5	1.4	1.6	1.0	-0.6 pps
	Services	1.5	1.3	0.5	-1.7	-0.3	1.4 pps
	Manufacturing industry	0.8	1.6	0.6	-2.5	-1.3	1.2 pps
<b>16</b>	- <b>Indicator board on wage developments</b> (% change)						
	Compensation per employee	2.6	2.9	3.4	0.4	3.1	2.7 pps
	Real compensation per employee based on GDP	1.1	0.9	1.2	-1.4	0.4	1.8 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	3.3	2.8	2.7	2.2	1.2	-1.0 pps
	Labour cost index (wages and salaries, total)	3.0	2.7	2.8	2.3	1.2	-1.1 pps
	Labour productivity (GDP/person employed)	1.3	-0.4	0.1	-2.9	2.5	5.4 pps

<b>Estonia</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- Population (LFS, total, 1000 pers.)	1401	1401	1393	1393	1393	0.0 %
<b>2</b>	- Population (LFS, working age:15-64, 1000 pers.)	839	836	837	836	833	-0.4 %
	(% of total population)	59.8	59.7	60.1	60.0	59.8	-0.2 pps
<b>3</b>	- Labour force (15-64, 1000 pers.)	657	659	657	659	659	0.0 %
	<i>Male</i>	339	340	339	341	340	-0.6 %
	<i>Female</i>	318	318	318	317	319	0.6 %
<b>4</b>	- Activity rate (% of population 15-64)	78.4	78.7	78.5	78.8	79.1	0.3 pps
	Young (15-24)	44.0	46.2	43.5	41.9	40.3	-1.7 pps
	Prime age (25-54)	88.3	88.2	87.5	87.8	88.8	0.9 pps
	Older (55-64)	72.2	72.4	74.9	76.5	76.6	0.1 pps
	Nationals (15-64)	78.2	78.7	78.4	78.5	79.2	0.6 pps
	Non-nationals (15-64)	79.0	79.0	78.5	80.3	78.8	-1.4 pps
	<i>Male</i>	81.8	82.1	81.4	81.8	81.4	-0.4 pps
	Young (15-24)	45.8	47.4	44.2	42.9	40.6	-2.3 pps
	Prime age (25-54)	92.9	93.1	92.1	92.5	91.9	-0.5 pps
	Older (55-64)	71.9	70.6	72.6	74.3	76.0	1.7 pps
	<i>Female</i>	75.0	75.4	75.5	75.8	76.8	1.0 pps
	Young (15-24)	42.1	45.1	42.7	41.0	40.0	-1.0 pps
	Prime age (25-54)	83.6	83.0	82.6	83.0	85.4	2.4 pps
	Older (55-64)	72.3	73.9	76.7	78.5	77.0	-1.5 pps
<b>5</b>	- Employment rate (% of population 15-64)	73.7	74.4	74.8	73.2	74.0	0.9 pps
	Young (15-24)	38.7	40.6	38.4	34.2	33.5	-0.7 pps
	Prime age (25-54)	83.6	84.0	83.9	82.5	84.0	1.4 pps
	Older (55-64)	67.9	68.5	71.9	71.3	71.6	0.3 pps
	Low-skilled (15-64)	45.1	45.9	42.3	39.5	40.1	0.5 pps
	Medium-skilled (15-64)	75.9	77.2	78.0	76.5	76.0	-0.5 pps
	High-skilled (15-64)	85.4	85.4	86.4	84.6	87.1	2.5 pps
	Nationals (15-64)	74.1	75.0	75.2	73.3	74.7	1.3 pps
	Non-nationals (15-64)	71.0	71.2	72.5	72.0	70.0	-2.0 pps
	<i>Male</i>	76.5	77.5	78.0	75.8	75.6	-0.2 pps
	Young (15-24)	39.0	41.3	39.2	35.0	33.1	-2.0 pps
	Prime age (25-54)	88.0	89.0	89.1	87.0	86.6	-0.4 pps
	Older (55-64)	66.3	65.6	69.1	68.4	70.2	1.8 pps
	<i>Female</i>	70.9	71.4	71.6	70.5	72.3	1.9 pps
	Young (15-24)	38.2	39.9	37.5	33.5	34.0	0.5 pps
	Prime age (25-54)	79.2	78.8	78.5	77.8	81.1	3.3 pps
	Older (55-64)	69.2	70.8	74.3	74.0	72.9	-1.0 pps
<b>6</b>	- Employed persons (15-64, 1000 pers.)	617.8	622.4	626.0	611.5	616.1	0.8 %
<b>7</b>	- Employment growth (% , National accounts)	2.7	0.9	1.3	-2.7	0.1	2.8 pps
	Employment growth (% , 15-64, LFS)	1.8	0.7	0.6	-2.3	0.8	3.1 pps
	<i>Male</i>	1.2	1.5	1.0	-2.5	-0.4	2.1 pps
	<i>Female</i>	2.5	0.0	0.1	-2.1	1.9	4.1 pps
<b>8</b>	- Self employed (15-64, % of total employment )	9.7	10.2	10.6	10.5	10.6	0.1 pps
	<i>Male</i>	13.2	13.9	14.4	14.5	14.8	0.3 pps
	<i>Female</i>	6.0	6.2	6.6	6.2	6.3	0.1 pps
<b>9</b>	- Temporary employment (15-64, % of total employment)	3.2	3.5	3.2	2.8	1.7	-1.1 pps
	<i>Male</i>	3.4	3.6	3.1	2.8	1.8	-1.0 pps
	<i>Female</i>	2.9	3.4	3.2	2.9	1.6	-1.3 pps
<b>10</b>	- Part-time (15-64, % of total employment )	9.6	11.0	11.3	12.3	12.2	-0.1 pps
	<i>Male</i>	6.0	7.1	7.1	8.1	7.6	-0.5 pps
	<i>Female</i>	13.4	15.2	15.9	16.8	16.9	0.1 pps
<b>11</b>	- Involuntary part-time (15-64, % of total employment)	0.7	0.6	0.7	0.8	1.9	1.1 pps
<b>12</b>	- Unemployment rate (harmonised:15-74)	5.8	5.4	4.5	6.9	6.2	-0.7 pps
	Young (15-24)	12.2	12.1	11.7	18.5	16.7	-1.8 pps
	Prime age (25-49)	5.3	4.7	4.0	6.0	5.4	-0.6 pps
	Older (55-64)	5.9	5.4	4.0	6.7	6.4	-0.3 pps
	Low-skilled (15-64)	11.3	10.9	10.2	13.8	15.0	1.2 pps
	Medium-skilled (15-64)	6.7	5.7	4.9	7.6	7.1	-0.5 pps
	High-skilled (15-64)	3.4	3.5	2.8	4.9	3.6	-1.3 pps
	Nationals (15-64)	5.3	4.7	4.1	6.6	5.7	-0.9 pps
	Non-nationals (15-64)	10.1	9.7	7.6	10.3	11.2	0.9 pps
	<i>Male</i>	6.3	5.6	4.1	7.1	6.8	-0.3 pps
	<i>Female</i>	5.1	5.2	4.8	6.6	5.6	-1.0 pps
<b>13</b>	- Long-term unemployment (% of total unemployment)	34.5	23.8	20.3	17.4	25.1	7.7 pps
<b>14</b>	- Worked hours (full-time, average actual weekly hours)	40.3	39.7	39.9	39.2	39.0	-0.5 %
	<i>Male</i>	40.9	40.7	40.7	40.0	39.1	-2.3 %
	<i>Female</i>	39.6	38.8	39.1	38.5	38.4	-0.3 %
<b>15</b>	- Sectoral employment growth (% change)						
	Agriculture	-9.0	-0.4	-3.2	-10.2	-13.0	-2.8 pps
	Building and construction	3.1	5.5	2.4	0.8	-4.3	-5.1 pps
	Services	6.1	-0.3	1.6	-5.7	0.4	6.1 pps
	Manufacturing industry	3.5	0.1	-1.2	-2.5	-1.3	1.2 pps
<b>16</b>	- Indicator board on wage developments (% change)						
	Compensation per employee	7.1	9.4	7.2	6.2	9.8	3.7 pps
	Real compensation per employee based on GDP	3.4	4.4	5.1	5.6	2.0	-3.5 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	7.7	5.6	7.2	1.5	6.3	4.8 pps
	Labour cost index (wages and salaries, total)	7.9	5.7	7.1	1.8	6.1	4.3 pps
	Labour productivity (GDP/person employed)	3.0	2.8	2.4	2.2	7.9	5.7 pps

<b>Ireland</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- Population (LFS, total, 1000 pers.)	4802	4861	4927	4980	5019	0.8 %
<b>2</b>	- Population (LFS, working age:15-64, 1000 pers.)	3141	3176	3219	3254	3277	0.7 %
	(% of total population)	65.4	65.3	65.3	65.3	65.3	0.0 pps
<b>3</b>	- Labour force (15-64, 1000 pers.)	2282	2316	2358	2339	2444	4.5 %
	<i>Male</i>	1227	1241	1264	1253	1289	2.9 %
	<i>Female</i>	1055	1075	1094	1086	1155	6.3 %
<b>4</b>	- Activity rate (% of population 15-64)	72.7	72.9	73.3	71.9	74.6	2.7 pps
	Young (15-24)	46.7	46.7	47.1	43.7	50.2	6.5 pps
	Prime age (25-54)	82.9	83.2	83.5	82.5	84.3	1.8 pps
	Older (55-64)	62.0	63.3	64.1	64.4	66.4	2.0 pps
	Nationals (15-64)	72.0	72.0	72.5	71.2	73.9	2.7 pps
	Non-nationals (15-64)	76.1	78.0	77.2	75.1	77.9	2.8 pps
	<i>Male</i>	78.8	78.8	79.2	77.7	79.4	1.7 pps
	Young (15-24)	47.8	48.4	48.2	44.3	50.4	6.1 pps
	Prime age (25-54)	90.1	90.0	90.6	89.5	90.2	0.7 pps
	Older (55-64)	70.8	72.1	72.5	72.7	73.6	0.8 pps
	<i>Female</i>	66.6	67.1	67.4	66.2	69.9	3.7 pps
	Young (15-24)	45.5	45.0	45.9	43.1	50.0	6.9 pps
	Prime age (25-54)	75.9	76.7	76.7	75.6	78.5	2.9 pps
	Older (55-64)	53.3	54.7	55.9	56.4	59.5	3.1 pps
<b>5</b>	- Employment rate (% of population 15-64)	67.7	68.6	69.5	67.7	69.8	2.1 pps
	Young (15-24)	40.0	40.3	41.2	37.0	42.9	5.9 pps
	Prime age (25-54)	78.0	79.2	80.1	78.7	80.0	1.4 pps
	Older (55-64)	58.4	60.4	61.8	61.8	62.8	1.0 pps
	Low-skilled (15-64)	37.0	37.0	37.7	35.4	36.0	0.6 pps
	Medium-skilled (15-64)	67.5	69.4	70.3	66.3	67.8	1.5 pps
	High-skilled (15-64)	84.2	84.6	85.2	83.8	85.0	1.2 pps
	Nationals (15-64)	67.1	67.9	68.9	67.4	69.4	2.0 pps
	Non-nationals (15-64)	70.4	72.6	72.7	69.6	72.1	2.5 pps
	<i>Male</i>	73.0	74.1	75.0	73.2	74.3	1.1 pps
	Young (15-24)	40.2	41.2	41.4	37.5	43.1	5.6 pps
	Prime age (25-54)	84.5	85.7	86.7	85.3	85.5	0.2 pps
	Older (55-64)	66.5	68.5	69.9	69.6	69.4	-0.1 pps
	<i>Female</i>	62.4	63.3	64.2	62.4	65.5	3.1 pps
	Young (15-24)	39.7	39.4	41.0	36.5	42.8	6.2 pps
	Prime age (25-54)	71.7	72.9	73.6	72.2	74.7	2.5 pps
	Older (55-64)	50.3	52.3	53.9	54.3	56.3	2.0 pps
<b>6</b>	- Employed persons (15-64, 1000 pers.)	2125.1	2180.0	2238.5	2203.9	2289.0	3.9 %
<b>7</b>	- Employment growth (% , National accounts)	2.8	2.8	3.0	-2.8	6.0	8.8 pps
	Employment growth (% , 15-64, LFS)	2.8	2.6	2.7	-1.5	3.9	5.4 pps
	<i>Male</i>	2.7	2.6	2.5	-1.4	2.2	3.6 pps
	<i>Female</i>	3.1	2.5	2.9	-1.7	5.8	7.5 pps
<b>8</b>	- Self employed (15-64, % of total employment )	13.4	12.9	12.5	12.3	11.3	-1.0 pps
	<i>Male</i>	19.1	18.3	17.5	16.7	15.6	-1.1 pps
	<i>Female</i>	6.8	6.8	6.6	7.2	6.6	-0.7 pps
<b>9</b>	- Temporary employment (15-64, % of total employment)	9.1	9.9	9.7	9.0	9.4	0.4 pps
	<i>Male</i>	8.8	9.5	8.9	8.4	9.0	0.6 pps
	<i>Female</i>	9.4	10.4	10.4	9.5	9.8	0.3 pps
<b>10</b>	- Part-time (15-64, % of total employment )	20.1	19.5	19.7	18.2	19.8	1.6 pps
	<i>Male</i>	10.9	10.6	10.1	9.6	11.0	1.4 pps
	<i>Female</i>	30.6	29.9	30.6	28.2	29.6	1.4 pps
<b>11</b>	- Involuntary part-time (15-64, % of total employment)	4.7	3.5	3.2	2.5	2.5	0.0 pps
<b>12</b>	- Unemployment rate (harmonised:15-74)	6.7	5.8	5.0	5.9	6.2	0.3 pps
	Young (15-24)	14.4	13.8	12.5	15.3	14.5	-0.8 pps
	Prime age (25-49)	5.8	4.8	4.1	4.6	5.0	0.4 pps
	Older (55-64)	5.8	4.6	3.6	4.0	5.5	1.5 pps
	Low-skilled (15-64)	12.6	10.8	9.7	9.1	11.6	2.5 pps
	Medium-skilled (15-64)	8.6	7.1	6.1	7.1	8.0	0.9 pps
	High-skilled (15-64)	4.1	3.8	3.2	4.2	4.3	0.1 pps
	Nationals (15-64)	6.8	5.7	4.9	5.5	6.1	0.6 pps
	Non-nationals (15-64)	7.5	6.9	5.7	7.3	7.3	0.0 pps
	<i>Male</i>	7.1	5.8	5.2	5.8	6.3	0.5 pps
	<i>Female</i>	6.3	5.7	4.7	5.9	6.2	0.3 pps
<b>13</b>	- Long-term unemployment (% of total unemployment)	46.4	37.1	33.0	23.7	29.8	6.1 pps
<b>14</b>	- Worked hours (full-time, average actual weekly hours)	41.6	41.9	41.7	40.8	40.5	-0.7 %
	<i>Male</i>	42.5	42.8	42.5	41.6	41.3	-0.7 %
	<i>Female</i>	37.1	37.6	37.2	36.4	37.0	1.6 %
<b>15</b>	- Sectoral employment growth (% change)						
	Agriculture	-1.7	-3.0	-4.3	-0.2	4.7	4.9 pps
	Building and construction	8.7	11.2	2.5	-7.9	2.5	10.4 pps
	Services	2.6	3.1	3.1	-4.2	5.4	9.6 pps
	Manufacturing industry	1.3	-1.1	2.0	2.7	6.9	4.2 pps
<b>16</b>	- Indicator board on wage developments (% change)						
	Compensation per employee	3.2	2.9	3.8	3.7	2.6	-1.1 pps
	Real compensation per employee based on GDP	2.0	1.8	0.2	5.3	2.0	-3.4 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	2.2	3.1	3.7	-3.6	4.2	7.8 pps
	Labour cost index (wages and salaries, total)	2.2	3.4	3.4	3.4	4.5	1.1 pps
	Labour productivity (GDP/person employed)	6.0	5.6	2.4	9.3	7.1	-2.2 pps

<b>Greece</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- Population (LFS, total, 1000 pers.)	10755	10733	10722	10710	10669	-0.4 %
<b>2</b>	- Population (LFS, working age:15-64, 1000 pers.)	6886	6831	6771	6719	6678	-0.6 %
	(% of total population)	64.0	63.6	63.1	62.7	62.6	-0.1 pps
<b>3</b>	- Labour force (15-64, 1000 pers.)	4701	4657	4634	4526	4492	-0.8 %
	<i>Male</i>	2605	2590	2571	2514	2486	-1.1 %
	<i>Female</i>	2096	2068	2063	2013	2006	-0.3 %
<b>4</b>	- Activity rate (% of population 15-64)	68.3	68.2	68.4	67.4	67.3	-0.1 pps
	Young (15-24)	25.1	23.3	22.5	21.2	20.7	-0.5 pps
	Prime age (25-54)	85.0	85.0	85.4	84.0	83.1	-0.9 pps
	Older (55-64)	46.7	48.5	49.8	50.8	54.4	3.6 pps
	Nationals (15-64)	68.0	68.0	68.2	67.2	67.2	0.0 pps
	Non-nationals (15-64)	71.9	70.9	72.1	70.7	68.3	-2.4 pps
	<i>Male</i>	76.4	76.6	76.7	75.5	75.0	-0.5 pps
	Young (15-24)	26.2	25.1	23.9	23.1	22.6	-0.5 pps
	Prime age (25-54)	93.0	93.2	93.2	91.6	90.6	-1.0 pps
	Older (55-64)	59.8	61.4	63.8	64.5	66.5	2.0 pps
	<i>Female</i>	60.3	59.9	60.4	59.4	59.6	0.3 pps
	Young (15-24)	23.9	21.5	21.0	19.3	18.8	-0.5 pps
	Prime age (25-54)	77.0	76.7	77.6	76.3	75.4	-0.9 pps
	Older (55-64)	34.9	36.8	37.3	38.6	43.6	5.0 pps
<b>5</b>	- Employment rate (% of population 15-64)	53.5	54.9	56.5	56.3	57.2	1.0 pps
	Young (15-24)	14.1	14.0	14.6	13.8	13.4	-0.4 pps
	Prime age (25-54)	67.4	68.9	70.8	70.4	71.1	0.7 pps
	Older (55-64)	38.3	41.1	43.2	44.6	48.3	3.7 pps
	Low-skilled (15-64)	39.8	39.9	39.0	37.7	38.9	1.2 pps
	Medium-skilled (15-64)	51.8	53.1	55.1	54.8	55.0	0.1 pps
	High-skilled (15-64)	70.8	73.3	75.2	74.5	75.1	0.6 pps
	Nationals (15-64)	53.6	55.1	56.7	56.6	57.5	0.9 pps
	Non-nationals (15-64)	51.9	51.8	53.0	50.4	52.1	1.7 pps
	<i>Male</i>	62.7	64.7	65.9	65.2	66.4	1.2 pps
	Young (15-24)	15.9	15.9	15.9	15.9	15.6	-0.3 pps
	Prime age (25-54)	77.5	79.6	80.8	79.7	80.8	1.1 pps
	Older (55-64)	49.6	53.3	56.1	57.0	60.7	3.7 pps
	<i>Female</i>	44.4	45.3	47.3	47.5	48.2	0.7 pps
	Young (15-24)	12.4	12.0	13.2	11.7	11.1	-0.6 pps
	Prime age (25-54)	57.2	58.2	60.8	61.1	61.3	0.2 pps
	Older (55-64)	28.0	30.0	31.6	33.5	37.3	3.7 pps
<b>6</b>	- Employed persons (15-64, 1000 pers.)	3682.7	3751.1	3824.6	3780.3	3822.8	1.1 %
<b>7</b>	- Employment growth (% , National accounts)	-0.5	4.6	0.9	-1.2	0.5	1.7 pps
	Employment growth (% , 15-64, LFS)	2.0	1.9	2.0	-1.2	1.1	2.3 pps
	<i>Male</i>	2.2	2.4	0.9	-1.8	1.4	3.2 pps
	<i>Female</i>	1.7	1.1	3.5	-0.3	0.7	1.0 pps
<b>8</b>	- Self employed (15-64, % of total employment)	29.4	29.1	27.9	27.9	27.8	-0.1 pps
	<i>Male</i>	34.4	34.0	32.9	32.9	33.2	0.3 pps
	<i>Female</i>	22.4	22.1	21.1	21.2	20.6	-0.6 pps
<b>9</b>	- Temporary employment (15-64, % of total employment)	11.4	11.3	12.6	10.1	10.2	0.1 pps
	<i>Male</i>	9.9	9.5	10.9	8.8	8.3	-0.5 pps
	<i>Female</i>	13.3	13.5	14.5	11.7	12.4	0.7 pps
<b>10</b>	- Part-time (15-64, % of total employment)	9.7	9.1	9.1	8.6	8.2	-0.4 pps
	<i>Male</i>	6.6	6.1	5.9	5.5	5.0	-0.5 pps
	<i>Female</i>	14.1	13.2	13.5	12.7	12.5	-0.2 pps
<b>11</b>	- Involuntary part-time (15-64, % of total employment)	6.8	6.4	6.0	5.6	4.6	-1.1 pps
<b>12</b>	- Unemployment rate (harmonised:15-74)	21.8	19.7	17.9	17.6	14.7	-2.9 pps
	Young (15-24)	43.6	39.9	35.2	35.0	35.5	0.5 pps
	Prime age (25-49)	20.7	18.9	17.1	16.2	14.4	-1.8 pps
	Older (55-64)	18.1	15.3	13.4	12.2	11.1	-1.1 pps
	Low-skilled (15-64)	24.8	22.8	21.6	19.8	17.4	-2.4 pps
	Medium-skilled (15-64)	24.0	21.9	19.7	18.6	17.1	-1.5 pps
	High-skilled (15-64)	16.6	14.3	12.3	12.2	11.2	-1.0 pps
	Nationals (15-64)	21.2	19.0	16.8	15.7	14.5	-1.2 pps
	Non-nationals (15-64)	27.8	26.9	26.5	28.7	23.7	-5.0 pps
	<i>Male</i>	18.2	15.8	14.4	14.6	11.4	-3.2 pps
	<i>Female</i>	26.4	24.7	22.4	21.5	18.9	-2.6 pps
<b>13</b>	- Long-term unemployment (% of total unemployment)	72.7	70.3	70.0	66.5	62.7	-3.8 pps
<b>14</b>	- Worked hours (full-time, average actual weekly hours)	43.4	43.3	42.9	42.1	42.0	-0.2 %
	<i>Male</i>	44.0	43.7	43.5	42.9	42.4	-1.2 %
	<i>Female</i>	42.3	42.2	41.1	40.7	40.4	-0.7 %
<b>15</b>	- Sectoral employment growth (% change)						
	Agriculture	0.7	0.8	-1.8	-2.6	6.4	9.0 pps
	Building and construction	-3.3	1.6	-0.5	-2.0	1.3	3.3 pps
	Services	-0.6	6.8	1.5	-2.5	-1.1	1.5 pps
	Manufacturing industry	-1.5	6.6	1.5	0.7	5.0	4.3 pps
<b>16</b>	- Indicator board on wage developments (% change)						
	Compensation per employee	1.5	-3.8	0.6	-0.7	1.4	2.2 pps
	Real compensation per employee based on GDP	1.2	-3.6	0.4	0.1	-0.6	-0.7 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	2.5	2.5	3.3	4.0	2.0	-2.0 pps
	Labour cost index (wages and salaries, total)	1.4	2.0	2.1	4.0	2.1	-1.9 pps
	Labour productivity (GDP/person employed)	1.6	-2.8	0.9	-7.9	7.8	15.7 pps



<b>Spain</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- <b>Population</b> (LFS, total, 1000 pers.)	46533	46729	47105	47354	47327	-0.1 %
<b>2</b>	- <b>Population</b> (LFS, working age:15-64, 1000 pers.)	30531	30671	30909	31110	31066	-0.1 %
	(% of total population)	65.6	65.6	65.6	65.7	65.6	-0.1 pps
<b>3</b>	- <b>Labour force</b> (15-64, 1000 pers.)	22558	22607	22804	22475	22906	1.9 %
	<i>Male</i>	12064	12089	12145	11961	12081	1.0 %
	<i>Female</i>	10495	10518	10659	10513	10825	3.0 %
<b>4</b>	- <b>Activity rate</b> (% of population 15-64)	73.9	73.7	73.8	72.2	73.7	1.5 pps
	Young (15-24)	33.3	33.0	33.0	29.9	31.5	1.6 pps
	Prime age (25-54)	87.0	86.9	87.0	85.5	87.1	1.6 pps
	Older (55-64)	59.6	60.5	61.6	62.5	64.4	1.9 pps
	Nationals (15-64)	73.5	73.4	73.5	72.1	73.6	1.5 pps
	Non-nationals (15-64)	76.8	76.1	75.9	73.5	74.8	1.3 pps
	<i>Male</i>	78.9	78.8	78.5	76.9	77.8	0.9 pps
	Young (15-24)	35.1	35.1	35.1	32.2	33.1	0.9 pps
	Prime age (25-54)	92.0	91.9	91.7	90.1	91.3	1.1 pps
	Older (55-64)	67.9	68.4	69.2	69.6	70.9	1.2 pps
	<i>Female</i>	68.8	68.6	69.0	67.6	69.7	2.1 pps
	Young (15-24)	31.5	30.8	30.7	27.5	29.9	2.4 pps
	Prime age (25-54)	82.0	81.8	82.3	80.8	83.0	2.2 pps
	Older (55-64)	51.8	52.9	54.4	55.7	58.3	2.6 pps
<b>5</b>	- <b>Employment rate</b> (% of population 15-64)	61.1	62.4	63.3	60.9	62.7	1.8 pps
	Young (15-24)	20.5	21.7	22.3	18.5	20.6	2.1 pps
	Prime age (25-54)	73.2	74.7	75.8	73.1	75.4	2.3 pps
	Older (55-64)	50.5	52.2	53.8	54.7	55.8	1.1 pps
	Low-skilled (15-64)	49.6	51.3	52.2	49.5	48.9	-0.6 pps
	Medium-skilled (15-64)	59.8	60.6	61.1	57.6	59.1	1.5 pps
	High-skilled (15-64)	79.4	80.1	80.3	78.2	79.7	1.5 pps
	Nationals (15-64)	61.4	62.8	63.7	61.8	63.5	1.7 pps
	Non-nationals (15-64)	58.5	59.5	60.7	55.3	57.5	2.2 pps
	<i>Male</i>	66.5	67.9	68.7	66.1	67.5	1.4 pps
	Young (15-24)	21.2	22.7	24.3	20.3	21.8	1.5 pps
	Prime age (25-54)	79.2	80.8	81.6	78.8	80.7	1.9 pps
	Older (55-64)	57.8	59.7	61.1	61.6	62.5	0.9 pps
	<i>Female</i>	55.7	56.9	57.9	55.7	57.9	2.2 pps
	Young (15-24)	19.7	20.5	20.1	16.6	19.3	2.7 pps
	Prime age (25-54)	67.1	68.6	69.9	67.4	70.1	2.7 pps
	Older (55-64)	43.5	44.9	46.9	48.0	49.3	1.3 pps
<b>6</b>	- <b>Employed persons</b> (15-64, 1000 pers.)	18648.5	19136.3	19567.9	18957.5	19493.0	2.8 %
<b>7</b>	- <b>Employment growth</b> (% , National accounts)	2.6	2.2	2.8	-4.1	2.4	6.5 pps
	Employment growth (% , 15-64, LFS)	2.6	2.6	2.3	-3.1	2.8	5.9 pps
	<i>Male</i>	2.5	2.5	2.0	-3.1	2.0	5.1 pps
	<i>Female</i>	2.6	2.7	2.6	-3.1	3.8	6.9 pps
<b>8</b>	- <b>Self employed</b> (15-64, % of total employment )	15.7	15.2	14.9	15.3	15.0	-0.3 pps
	<i>Male</i>	19.3	18.6	18.2	18.5	18.4	-0.2 pps
	<i>Female</i>	11.4	11.1	11.0	11.4	11.0	-0.4 pps
<b>9</b>	- <b>Temporary employment</b> (15-64, % of total employment)	26.8	26.9	26.3	24.2	25.2	1.0 pps
	<i>Male</i>	26.0	26.0	25.4	22.7	22.9	0.2 pps
	<i>Female</i>	27.6	27.8	27.3	25.7	27.6	1.9 pps
<b>10</b>	- <b>Part-time</b> (15-64, % of total employment )	14.9	14.5	14.5	13.9	13.7	-0.2 pps
	<i>Male</i>	7.2	6.7	6.8	6.5	6.3	-0.2 pps
	<i>Female</i>	24.1	23.9	23.7	22.6	22.3	-0.3 pps
<b>11</b>	- <b>Involuntary part-time</b> (15-64, % of total employment)	9.1	8.1	7.9	7.3	7.3	0.1 pps
<b>12</b>	- <b>Unemployment rate</b> (harmonised:15-74)	17.2	15.3	14.1	15.5	14.8	-0.7 pps
	Young (15-24)	38.6	34.3	32.5	38.3	34.8	-3.5 pps
	Prime age (25-49)	15.9	14.0	12.9	14.5	13.5	-1.0 pps
	Older (55-64)	15.3	13.8	12.6	12.5	13.4	0.9 pps
	Low-skilled (15-64)	25.2	22.3	20.5	21.9	21.6	-0.3 pps
	Medium-skilled (15-64)	17.0	15.5	14.5	16.6	16.1	-0.5 pps
	High-skilled (15-64)	10.0	9.0	8.7	10.3	9.3	-1.0 pps
	Nationals (15-64)	16.4	14.4	13.3	14.2	13.6	-0.6 pps
	Non-nationals (15-64)	23.9	21.9	20.1	24.7	23.2	-1.5 pps
	<i>Male</i>	15.7	13.7	12.5	13.9	13.1	-0.8 pps
	<i>Female</i>	19.0	17.0	16.0	17.4	16.7	-0.7 pps
<b>13</b>	- <b>Long-term unemployment</b> (% of total unemployment)	44.4	41.7	37.8	32.0	41.6	9.6 pps
<b>14</b>	- <b>Worked hours</b> (full-time, average actual weekly hours)	40.1	40.3	39.9	39.1	38.9	-0.5 %
	<i>Male</i>	41.1	41.3	40.9	40.1	39.9	-0.5 %
	<i>Female</i>	38.7	38.9	38.6	38.0	37.7	-0.8 %
<b>15</b>	- <b>Sectoral employment growth</b> (% change)						
	Agriculture	2.9	0.0	-3.9	-7.8	1.9	9.7 pps
	Building and construction	4.3	6.8	7.1	-0.9	4.7	5.6 pps
	Services	2.9	1.5	4.3	-5.5	2.1	7.6 pps
	Manufacturing industry	2.7	2.2	1.3	-5.7	-2.3	3.4 pps
<b>16</b>	- <b>Indicator board on wage developments</b> (% change)						
	Compensation per employee	0.7	1.6	2.3	-1.4	2.9	4.2 pps
	Real compensation per employee based on GDP	-0.6	0.4	1.0	-2.4	0.7	3.1 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	0.8	1.8	2.2	3.9	-0.1	-4.0 pps
	Labour cost index (wages and salaries, total)	0.8	1.9	1.8	3.1	0.4	-2.7 pps
	Labour productivity (GDP/person employed)	0.3	0.1	-0.7	-7.0	2.7	9.7 pps

France		2017	2018	2019	2020	2021	2020-2021
1	- Population (LFS, total, 1000 pers.)	67116	67449	67762	68004	68217	0.3 %
2	- Population (LFS, working age:15-64, 1000 pers.)	40846	40791	40730	40692	40558	-0.3 %
	(% of total population)	60.9	60.5	60.1	59.8	59.5	-0.4 pps
3	- Labour force (15-64, 1000 pers.)	29207	29316	29192	28902	29620	2.5 %
	Male	15119	15128	15007	14846	15125	1.9 %
	Female	14088	14189	14185	14056	14495	3.1 %
4	- Activity rate (% of population 15-64)	71.5	71.9	71.7	71.0	73.0	2.0 pps
	Young (15-24)	36.9	37.5	36.8	35.6	39.7	4.1 pps
	Prime age (25-54)	87.4	87.6	87.4	86.9	88.0	1.1 pps
	Older (55-64)	54.9	56.0	57.0	57.1	59.7	2.6 pps
	Nationals (15-64)	72.1	72.3	72.2	71.5	73.6	2.1 pps
	Non-nationals (15-64)	63.9	66.2	65.5	65.5	66.5	1.1 pps
	Male	75.5	75.7	75.3	74.5	76.2	1.6 pps
	Young (15-24)	40.3	41.0	39.6	38.2	41.7	3.5 pps
	Prime age (25-54)	92.6	92.4	91.9	91.5	92.3	0.8 pps
	Older (55-64)	56.9	58.4	59.5	59.4	61.7	2.2 pps
	Female	67.6	68.2	68.2	67.6	70.0	2.4 pps
	Young (15-24)	33.5	33.9	33.9	33.1	37.7	4.6 pps
	Prime age (25-54)	82.5	83.1	83.1	82.6	84.0	1.4 pps
	Older (55-64)	53.1	53.9	54.6	54.9	57.9	2.9 pps
5	- Employment rate (% of population 15-64)	64.7	65.3	65.6	65.3	67.2	2.0 pps
	Young (15-24)	28.7	29.7	29.6	28.5	32.2	3.8 pps
	Prime age (25-54)	80.0	80.5	80.9	80.8	82.1	1.3 pps
	Older (55-64)	51.3	52.3	53.1	53.8	55.9	2.1 pps
	Low-skilled (15-64)	39.7	39.5	38.8	38.8	38.0	-0.9 pps
	Medium-skilled (15-64)	66.2	66.7	66.2	64.8	67.8	3.0 pps
	High-skilled (15-64)	82.9	82.8	83.3	82.5	84.2	1.7 pps
	Nationals (15-64)	65.8	66.2	66.4	66.1	68.1	2.0 pps
	Non-nationals (15-64)	52.0	55.1	55.7	55.7	57.2	1.5 pps
	Male	68.4	68.9	68.8	68.5	70.1	1.6 pps
	Young (15-24)	31.0	32.2	31.4	30.4	33.8	3.4 pps
	Prime age (25-54)	85.0	85.2	85.2	85.0	86.0	1.0 pps
	Older (55-64)	52.8	54.2	55.5	56.0	57.7	1.7 pps
	Female	61.2	61.9	62.5	62.2	64.5	2.3 pps
	Young (15-24)	26.4	27.2	27.8	26.5	30.6	4.1 pps
	Prime age (25-54)	75.2	76.1	76.8	76.7	78.3	1.6 pps
	Older (55-64)	49.9	50.4	50.9	51.8	54.3	2.6 pps
6	- Employed persons (15-64, 1000 pers.)	26434.3	26646.1	26710.9	26563.1	27273.9	2.7 %
7	- Employment growth (% , National accounts)	1.1	1.0	1.2	-0.7	2.5	3.2 pps
	Employment growth (% , 15-64, LFS)	0.7	0.8	0.2	-0.6	2.7	3.2 pps
	Male	1.1	0.5	-0.3	-0.6	2.0	2.7 pps
	Female	0.4	1.1	0.8	-0.5	3.4	3.8 pps
8	- Self employed (15-64, % of total employment )	10.8	10.9	11.3	11.6	11.8	0.1 pps
	Male	13.8	14.0	14.5	14.5	14.7	0.2 pps
	Female	7.7	7.6	8.0	8.6	8.7	0.1 pps
9	- Temporary employment (15-64, % of total employment)	16.8	16.6	16.2	15.3	15.0	-0.3 pps
	Male	16.2	16.1	15.9	14.7	14.3	-0.4 pps
	Female	17.4	17.2	16.6	15.9	15.6	-0.3 pps
10	- Part-time (15-64, % of total employment )	18.2	18.0	17.5	17.0	17.3	0.3 pps
	Male	7.7	7.8	7.6	7.6	7.6	0.0 pps
	Female	29.5	28.8	28.0	27.0	27.4	0.4 pps
11	- Involuntary part-time (15-64, % of total employment)	7.9	7.5	6.6	6.5	4.9	-1.6 pps
12	- Unemployment rate (harmonised:15-74)	9.4	9.0	8.4	8.0	7.9	-0.1 pps
	Young (15-24)	22.1	20.8	19.5	20.2	18.9	-1.3 pps
	Prime age (25-49)	8.5	8.1	7.4	7.1	6.8	-0.3 pps
	Older (55-64)	6.6	6.8	6.8	5.8	6.3	0.5 pps
	Low-skilled (15-64)	17.3	16.3	15.7	14.2	14.6	0.4 pps
	Medium-skilled (15-64)	10.1	9.7	9.2	8.9	8.5	-0.4 pps
	High-skilled (15-64)	5.3	5.5	5.1	5.3	5.3	0.0 pps
	Nationals (15-64)	8.8	8.5	8.0	7.6	7.5	-0.1 pps
	Non-nationals (15-64)	18.6	16.7	15.0	14.9	14.0	-0.9 pps
	Male	9.5	9.0	8.5	8.1	8.0	-0.1 pps
	Female	9.4	9.0	8.4	8.0	7.8	-0.2 pps
13	- Long-term unemployment (% of total unemployment)	45.4	42.0	40.3	36.8	29.4	-7.4 pps
14	- Worked hours (full-time, average actual weekly hours)	35.9	36.0	35.8	35.3	35.7	1.1 %
	Male	36.3	36.3	36.3	35.9	36.1	0.6 %
	Female	37.6	37.5	37.4	36.8	37.2	1.1 %
15	- Sectoral employment growth (% change)						
	Agriculture	-0.4	0.3	-0.1	-0.4	-0.4	0.0 pps
	Building and construction	-0.7	1.5	3.0	1.7	3.7	2.0 pps
	Services	2.6	2.1	1.2	-1.5	3.6	5.1 pps
	Manufacturing industry	-0.6	0.0	3.0	-1.2	0.2	1.4 pps
16	- Indicator board on wage developments (% change)						
	Compensation per employee	2.0	1.7	0.0	-2.7	4.7	7.4 pps
	Real compensation per employee based on GDP	1.4	0.7	-1.3	-5.3	3.8	9.2 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	1.3	2.7	1.7	2.4	0.7	-1.7 pps
	Labour cost index (wages and salaries, total)	1.8	2.0	1.7	3.3	0.9	-2.4 pps
	Labour productivity (GDP/person employed)	1.1	0.9	0.6	-7.1	4.2	11.3 pps

<b>Croatia</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- Population (LFS, total, 1000 pers.)	4130	4091	4067	4047	3889	-3.9 %
<b>2</b>	- Population (LFS, working age:15-64, 1000 pers.)	2720	2689	2658	2629	2600	-1.1 %
	(% of total population)	65.9	65.7	65.4	64.9	66.9	1.9 pps
<b>3</b>	- Labour force (15-64, 1000 pers.)	1807	1783	1768	1764	1785	1.2 %
	<i>Male</i>	973	953	951	955	957	0.3 %
	<i>Female</i>	835	829	818	809	828	2.4 %
<b>4</b>	- Activity rate (% of population 15-64)	66.4	66.3	66.5	67.1	68.7	1.6 pps
	Young (15-24)	35.7	33.5	33.2	32.5	33.0	0.5 pps
	Prime age (25-54)	83.3	83.4	83.6	83.9	85.3	1.4 pps
	Older (55-64)	43.6	44.8	45.5	47.8	50.8	3.0 pps
	Nationals (15-64)	66.5	66.3	66.5	67.1	68.7	1.5 pps
	Non-nationals (15-64)	43.7	67.5	69.9	55.7	65.3	9.6 pps
	<i>Male</i>	71.5	70.9	71.5	72.6	73.6	1.0 pps
	Young (15-24)	40.9	37.9	38.8	39.2	38.4	-0.9 pps
	Prime age (25-54)	86.7	86.4	86.9	88.1	89.3	1.3 pps
	Older (55-64)	52.8	53.4	54.2	55.7	57.4	1.7 pps
	<i>Female</i>	61.4	61.7	61.5	61.6	63.7	2.2 pps
	Young (15-24)	30.2	28.8	27.3	25.3	27.2	1.9 pps
	Prime age (25-54)	79.9	80.3	80.2	79.8	81.2	1.5 pps
	Older (55-64)	35.1	36.7	37.5	40.4	44.6	4.3 pps
<b>5</b>	- Employment rate (% of population 15-64)	58.9	60.6	62.1	62.0	63.4	1.4 pps
	Young (15-24)	25.9	25.6	27.7	25.6	25.8	0.1 pps
	Prime age (25-54)	74.9	77.0	78.3	78.3	79.4	1.2 pps
	Older (55-64)	40.4	42.8	44.0	45.5	48.6	3.1 pps
	Low-skilled (15-64)	24.4	25.8	26.7	25.3	27.4	2.1 pps
	Medium-skilled (15-64)	62.6	63.9	65.5	64.9	66.1	1.2 pps
	High-skilled (15-64)	81.5	81.5	81.8	83.4	84.1	0.7 pps
	Nationals (15-64)	59.0	60.6	62.1	62.0	63.5	1.5 pps
	Non-nationals (15-64)	42.5	58.1	61.4	54.4	46.7	-7.8 pps
	<i>Male</i>	63.8	65.4	67.0	67.1	68.2	1.1 pps
	Young (15-24)	29.8	30.5	33.2	31.9	31.1	-0.8 pps
	Prime age (25-54)	78.7	80.4	81.7	82.0	83.4	1.4 pps
	Older (55-64)	49.0	51.0	52.6	53.4	55.1	1.6 pps
	<i>Female</i>	54.0	55.9	57.1	56.9	58.6	1.8 pps
	Young (15-24)	21.8	20.3	21.9	19.0	20.0	1.0 pps
	Prime age (25-54)	71.1	73.5	74.9	74.5	75.4	0.9 pps
	Older (55-64)	32.3	35.2	35.9	38.2	42.7	4.5 pps
<b>6</b>	- Employed persons (15-64, 1000 pers.)	1603.0	1630.2	1649.6	1629.8	1649.2	1.2 %
<b>7</b>	- Employment growth (% , National accounts)	2.4	2.6	3.1	-1.2	1.2	2.4 pps
	Employment growth (% , 15-64, LFS)	2.3	1.7	1.2	-1.2	1.2	2.4 pps
	<i>Male</i>	2.7	1.3	1.4	-0.9	0.5	1.4 pps
	<i>Female</i>	1.9	2.2	1.0	-1.5	2.0	3.6 pps
<b>8</b>	- Self employed (15-64, % of total employment )	10.5	10.2	10.5	11.0	11.1	0.0 pps
	<i>Male</i>	12.6	12.2	13.3	14.3	14.7	0.5 pps
	<i>Female</i>	7.9	7.8	7.2	7.2	6.8	-0.4 pps
<b>9</b>	- Temporary employment (15-64, % of total employment)	20.7	19.9	18.1	15.2	13.5	-1.7 pps
	<i>Male</i>	20.6	19.4	16.9	14.3	11.7	-2.6 pps
	<i>Female</i>	20.7	20.6	19.3	16.2	15.5	-0.7 pps
<b>10</b>	- Part-time (15-64, % of total employment )	4.8	5.2	4.8	4.5	4.7	0.2 pps
	<i>Male</i>	3.8	3.8	3.1	3.2	3.7	0.5 pps
	<i>Female</i>	6.0	6.8	6.7	6.1	5.8	-0.3 pps
<b>11</b>	- Involuntary part-time (15-64, % of total employment)	1.7	1.8	1.4	1.3	1.6	0.4 pps
<b>12</b>	- Unemployment rate (harmonised:15-74)	11.2	8.5	6.6	7.5	7.6	0.1 pps
	Young (15-24)	27.4	23.7	16.6	21.1	21.9	0.8 pps
	Prime age (25-49)	10.1	7.7	6.3	6.8	6.9	0.1 pps
	Older (55-64)	7.5	4.4	3.4	4.7	4.2	-0.5 pps
	Low-skilled (15-64)	20.5	12.1	9.6	10.3	10.9	0.6 pps
	Medium-skilled (15-64)	11.7	9.2	7.0	8.2	8.4	0.2 pps
	High-skilled (15-64)	7.2	6.1	5.4	5.4	4.9	-0.5 pps
	Nationals (15-64)	11.3	8.5	6.7	7.6	7.6	0.0 pps
	Non-nationals (15-64)	0.0	14.2	0.0	0.0	29.2	29.2 pps
	<i>Male</i>	10.6	7.7	6.2	7.5	7.3	-0.2 pps
	<i>Female</i>	11.9	9.4	7.2	7.6	8.0	0.4 pps
<b>13</b>	- Long-term unemployment (% of total unemployment)	42.0	41.6	37.2	28.9	37.4	8.5 pps
<b>14</b>	- Worked hours (full-time, average actual weekly hours)	39.9	39.7	39.5	39.1	39.0	-0.3 %
	<i>Male</i>	40.4	40.0	39.8	39.3	39.5	0.5 %
	<i>Female</i>	39.1	39.2	38.8	38.4	38.3	-0.3 %
<b>15</b>	- Sectoral employment growth (% change)						
	Agriculture	-6.2	-8.6	1.3	-1.3	8.7	10.0 pps
	Building and construction	-1.4	12.2	5.7	5.5	6.3	0.8 pps
	Services	5.5	1.3	0.4	-1.4	0.1	1.5 pps
	Manufacturing industry	2.4	3.4	5.3	-1.3	1.8	3.1 pps
<b>16</b>	- Indicator board on wage developments (% change)						
	Compensation per employee	0.2	3.9	0.4	2.1	5.6	3.5 pps
	Real compensation per employee based on GDP	-0.9	1.8	-1.5	2.3	2.3	0.0 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	5.0	6.5	3.2	-2.6	2.7	5.3 pps
	Labour cost index (wages and salaries, total)	5.0	6.6	3.8	-1.7	2.7	4.4 pps
	Labour productivity (GDP/person employed)	0.9	0.3	0.4	-7.0	8.9	15.9 pps

Italy	2017	2018	2019	2020	2021	2020-2021
1 - Population (LFS, total, 1000 pers.)	60002	59877	59729	59439	59110	-0.6 %
2 - Population (LFS, working age:15-64, 1000 pers.)	38726	38588	38428	38261	37526	-1.9 %
(% of total population)	64.5	64.4	64.3	64.4	63.5	-0.9 pps
3 - Labour force (15-64, 1000 pers.)	25340	25327	25254	24520	24198	-1.3 %
Male	14467	14450	14367	14035	13782	-1.8 %
Female	10873	10877	10887	10485	10416	-0.7 %
4 - Activity rate (% of population 15-64)	65.4	65.6	65.7	64.1	64.5	0.4 pps
Young (15-24)	26.2	26.1	26.1	23.8	24.9	1.1 pps
Prime age (25-54)	77.9	77.9	78.1	76.5	77.3	0.8 pps
Older (55-64)	55.4	57.0	57.4	57.1	56.5	-0.5 pps
Nationals (15-64)	64.8	65.0	65.1	63.9	64.1	0.3 pps
Non-nationals (15-64)	70.8	71.2	70.9	66.0	67.6	1.6 pps
Male	75.0	75.1	75.0	73.5	73.6	0.1 pps
Young (15-24)	30.0	29.9	29.8	28.5	29.4	0.9 pps
Prime age (25-54)	88.5	88.4	88.5	87.0	87.3	0.3 pps
Older (55-64)	67.0	68.6	68.6	68.0	67.2	-0.8 pps
Female	55.9	56.2	56.5	54.7	55.4	0.7 pps
Young (15-24)	22.1	21.9	22.0	18.8	20.1	1.3 pps
Prime age (25-54)	67.3	67.4	67.8	66.0	67.3	1.3 pps
Older (55-64)	44.5	46.1	47.0	46.9	46.5	-0.4 pps
5 - Employment rate (% of population 15-64)	58.0	58.5	59.0	58.1	58.2	0.1 pps
Young (15-24)	17.1	17.7	18.5	16.8	17.5	0.7 pps
Prime age (25-54)	69.4	69.8	70.5	69.6	70.2	0.6 pps
Older (55-64)	52.2	53.7	54.3	54.2	53.4	-0.8 pps
Low-skilled (15-64)	43.4	43.8	44.0	43.0	42.7	-0.3 pps
Medium-skilled (15-64)	64.1	64.3	64.9	63.5	63.7	0.2 pps
High-skilled (15-64)	78.2	78.7	78.9	78.0	79.2	1.2 pps
Nationals (15-64)	57.7	58.2	58.8	58.2	58.3	0.1 pps
Non-nationals (15-64)	60.6	61.2	61.0	57.3	57.8	0.5 pps
Male	67.1	67.6	68.0	67.2	67.1	-0.1 pps
Young (15-24)	20.1	20.8	21.5	20.5	21.3	0.7 pps
Prime age (25-54)	79.9	80.3	80.8	80.1	80.2	0.1 pps
Older (55-64)	62.8	64.2	64.6	64.5	63.4	-1.1 pps
Female	48.9	49.5	50.1	49.0	49.4	0.4 pps
Young (15-24)	13.9	14.3	15.2	12.8	13.5	0.7 pps
Prime age (25-54)	59.0	59.4	60.1	59.1	60.1	1.0 pps
Older (55-64)	42.3	43.9	44.6	44.6	44.0	-0.6 pps
6 - Employed persons (15-64, 1000 pers.)	22443.6	22585.7	22687.1	22222.7	21849.2	-1.7 %
7 - Employment growth (% , National accounts)	1.2	0.9	0.5	-2.1	0.6	2.7 pps
Employment growth (% , 15-64, LFS)	0.9	0.6	0.4	-2.0	-1.7	0.4 pps
Male	0.6	0.6	0.2	-1.6	-2.1	-0.5 pps
Female	1.3	0.7	0.8	-2.7	-1.1	-1.5 pps
8 - Self employed (15-64, % of total employment)	20.8	20.6	20.4	20.2	19.6	-0.6 pps
Male	25.2	24.8	24.4	24.3	23.6	-0.7 pps
Female	14.9	14.9	14.9	14.6	14.2	-0.4 pps
9 - Temporary employment (15-64, % of total employment)	15.5	17.1	17.1	15.2	16.6	1.4 pps
Male	15.1	16.6	16.8	14.9	15.8	0.9 pps
Female	16.0	17.7	17.5	15.5	17.4	1.9 pps
10 - Part-time (15-64, % of total employment)	18.5	18.4	18.7	18.2	18.2	0.0 pps
Male	8.3	8.0	8.2	8.0	8.4	0.4 pps
Female	32.5	32.4	32.9	32.1	31.5	-0.6 pps
11 - Involuntary part-time (15-64, % of total employment)	11.6	12.1	12.3	12.0	11.4	-0.6 pps
12 - Unemployment rate (harmonised:15-74)	11.3	10.6	9.9	9.3	9.5	0.2 pps
Young (15-24)	34.7	32.2	29.2	29.4	29.7	0.3 pps
Prime age (25-49)	10.9	10.3	9.8	9.0	9.2	0.2 pps
Older (55-64)	5.8	5.7	5.4	5.0	5.5	0.5 pps
Low-skilled (15-64)	15.8	14.9	14.1	13.1	13.7	0.6 pps
Medium-skilled (15-64)	10.6	10.2	9.6	8.9	9.3	0.4 pps
High-skilled (15-64)	6.5	6.1	5.9	5.5	5.2	-0.3 pps
Nationals (15-64)	11.1	10.4	9.7	8.9	9.1	0.2 pps
Non-nationals (15-64)	14.4	14.1	13.9	13.2	14.5	1.3 pps
Male	10.4	9.7	9.1	8.6	8.7	0.1 pps
Female	12.4	11.7	11.1	10.4	10.6	0.2 pps
13 - Long-term unemployment (% of total unemployment)	59.3	59.6	57.5	53.1	58.0	4.9 pps
14 - Worked hours (full-time, average actual weekly hours)	40.2	40.2	40.0	38.9	39.1	0.5 %
Male	40.9	40.9	40.6	39.6	39.8	0.5 %
Female	37.0	37.1	37.4	36.5	36.8	0.8 %
15 - Sectoral employment growth (% change)						
Agriculture	-1.7	1.9	-1.3	0.0	-0.1	-0.1 pps
Building and construction	-0.9	0.0	-0.1	1.9	5.9	4.0 pps
Services	2.5	1.3	1.0	-3.7	0.4	4.1 pps
Manufacturing industry	0.6	1.0	0.6	-1.1	-0.1	1.0 pps
16 - Indicator board on wage developments (% change)						
Compensation per employee	0.4	2.0	1.3	-5.1	6.0	11.1 pps
Real compensation per employee based on GDP	-0.3	0.9	0.3	-6.4	5.5	11.9 pps
Labour cost index (compens. of employees plus taxes minus subs.)	0.6	1.7	2.4	4.0	-1.9	-5.9 pps
Labour cost index (wages and salaries, total)	0.4	1.0	1.8	4.4	-1.5	-5.9 pps
Labour productivity (GDP/person employed)	0.5	0.0	0.0	-7.1	6.0	13.1 pps

<b>Cyprus</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- Population (LFS, total, 1000 pers.)	860	870	882	892	900	0.9 %
<b>2</b>	- Population (LFS, working age:15-64, 1000 pers.)	564	568	572	579	589	1.7 %
	(% of total population)	65.6	65.3	64.9	64.9	65.4	0.5 pps
<b>3</b>	- Labour force (15-64, 1000 pers.)	417	426	435	439	452	2.9 %
	<i>Male</i>	215	220	226	231	235	1.7 %
	<i>Female</i>	202	207	209	208	217	4.1 %
<b>4</b>	- Activity rate (% of population 15-64)	73.9	75.0	76.0	75.8	76.7	0.9 pps
	Young (15-24)	36.6	39.2	38.8	38.3	42.0	3.7 pps
	Prime age (25-54)	87.5	87.2	88.3	87.9	87.7	-0.2 pps
	Older (55-64)	60.0	64.7	65.2	64.8	67.0	2.2 pps
	Nationals (15-64)	73.7	75.3	75.9	75.4	76.2	0.7 pps
	Non-nationals (15-64)	74.8	73.6	76.8	77.0	78.5	1.5 pps
	<i>Male</i>	78.8	79.9	81.5	82.3	82.7	0.4 pps
	Young (15-24)	33.2	36.5	37.6	40.3	44.5	4.1 pps
	Prime age (25-54)	93.0	92.8	93.4	93.2	93.1	-0.1 pps
	Older (55-64)	71.6	75.2	76.7	77.7	78.9	1.3 pps
	<i>Female</i>	69.3	70.4	71.0	69.7	71.1	1.4 pps
	Young (15-24)	39.9	41.7	39.8	36.7	39.6	2.9 pps
	Prime age (25-54)	82.5	82.1	83.5	82.7	82.7	0.0 pps
	Older (55-64)	48.9	54.7	54.2	52.2	55.2	3.0 pps
<b>5</b>	- Employment rate (% of population 15-64)	65.6	68.6	70.5	69.9	70.8	0.9 pps
	Young (15-24)	27.5	31.3	32.4	31.3	34.8	3.5 pps
	Prime age (25-54)	78.4	80.4	82.6	81.7	81.5	-0.2 pps
	Older (55-64)	55.3	60.9	61.1	61.0	63.4	2.4 pps
	Low-skilled (15-64)	41.7	44.2	46.2	47.3	46.3	-1.0 pps
	Medium-skilled (15-64)	66.4	69.8	70.9	68.5	69.3	0.8 pps
	High-skilled (15-64)	79.1	80.8	83.2	83.1	83.7	0.6 pps
	Nationals (15-64)	65.2	68.8	70.1	69.8	70.8	1.0 pps
	Non-nationals (15-64)	67.1	67.5	72.2	70.3	70.8	0.6 pps
	<i>Male</i>	70.0	73.3	76.2	75.9	76.7	0.8 pps
	Young (15-24)	24.2	27.3	30.4	30.5	36.5	6.0 pps
	Prime age (25-54)	83.6	86.2	88.4	87.1	86.9	-0.2 pps
	Older (55-64)	64.9	70.3	72.0	73.2	74.9	1.7 pps
	<i>Female</i>	61.4	64.2	65.2	64.3	65.3	1.1 pps
	Young (15-24)	30.7	35.1	34.1	32.2	33.2	1.0 pps
	Prime age (25-54)	73.5	75.0	77.1	76.4	76.5	0.0 pps
	Older (55-64)	46.2	52.0	50.8	49.3	52.1	2.8 pps
<b>6</b>	- Employed persons (15-64, 1000 pers.)	369.8	389.7	403.5	404.8	417.0	3.0 %
<b>7</b>	- Employment growth (% , National accounts)	5.4	5.3	3.8	-0.5	1.2	1.7 pps
	Employment growth (% , 15-64, LFS)	4.5	5.4	3.5	0.3	3.0	2.7 pps
	<i>Male</i>	4.6	5.7	4.9	0.9	2.3	1.4 pps
	<i>Female</i>	4.4	5.0	2.1	-0.2	3.8	4.0 pps
<b>8</b>	- Self employed (15-64, % of total employment )	11.4	11.7	12.0	12.1	9.9	-2.3 pps
	<i>Male</i>	13.7	14.1	14.4	14.9	11.5	-3.4 pps
	<i>Female</i>	8.9	9.1	9.3	9.1	8.0	-1.0 pps
<b>9</b>	- Temporary employment (15-64, % of total employment)	15.3	13.8	13.7	13.4	13.0	-0.4 pps
	<i>Male</i>	12.0	10.5	9.5	8.9	9.2	0.3 pps
	<i>Female</i>	18.6	17.2	18.2	18.1	17.0	-1.1 pps
<b>10</b>	- Part-time (15-64, % of total employment )	12.2	10.8	10.2	10.0	10.1	0.1 pps
	<i>Male</i>	9.1	7.5	6.3	6.8	7.8	1.0 pps
	<i>Female</i>	15.6	14.4	14.6	13.6	12.7	-0.9 pps
<b>11</b>	- Involuntary part-time (15-64, % of total employment)	8.2	6.9	5.8	5.7	4.7	-1.1 pps
<b>12</b>	- Unemployment rate (harmonised:15-74)	11.1	8.4	7.1	7.6	7.5	-0.1 pps
	Young (15-24)	24.7	20.2	16.6	18.2	17.1	-1.1 pps
	Prime age (25-49)	10.4	7.8	6.4	7.1	7.1	0.0 pps
	Older (55-64)	7.8	5.8	6.3	5.8	5.3	-0.5 pps
	Low-skilled (15-64)	14.9	10.4	8.2	7.8	9.0	1.2 pps
	Medium-skilled (15-64)	11.6	8.9	8.1	8.6	8.8	0.2 pps
	High-skilled (15-64)	9.8	7.7	6.2	7.1	6.4	-0.7 pps
	Nationals (15-64)	11.5	8.6	7.6	7.5	7.0	-0.5 pps
	Non-nationals (15-64)	10.5	8.3	6.1	8.8	9.8	1.0 pps
	<i>Male</i>	10.9	8.1	6.3	7.6	7.1	-0.5 pps
	<i>Female</i>	11.3	8.8	8.0	7.6	7.9	0.3 pps
<b>13</b>	- Long-term unemployment (% of total unemployment)	40.7	31.6	29.2	28.2	34.2	6.0 pps
<b>14</b>	- Worked hours (full-time, average actual weekly hours)	40.7	40.2	39.8	39.5	39.5	0.0 %
	<i>Male</i>	41.9	41.3	40.8	40.4	40.3	-0.2 %
	<i>Female</i>	39.2	38.9	38.6	38.4	38.5	0.3 %
<b>15</b>	- Sectoral employment growth (% change)						
	Agriculture	-1.3	-2.0	1.0	-0.2	0.7	0.9 pps
	Building and construction	15.0	13.9	9.6	2.8	2.1	-0.7 pps
	Services	6.4	5.7	3.4	-2.2	1.2	3.4 pps
	Manufacturing industry	5.9	6.3	3.7	0.9	0.9	0.0 pps
<b>16</b>	- Indicator board on wage developments (% change)						
	Compensation per employee	1.5	1.5	4.4	-3.2	4.7	7.8 pps
	Real compensation per employee based on GDP	0.5	0.5	3.3	-2.1	1.9	3.9 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	2.3	3.6	4.7	-1.8	6.8	8.6 pps
	Labour cost index (wages and salaries, total)	2.7	3.6	2.9	-1.5	6.0	7.5 pps
	Labour productivity (GDP/person employed)	0.4	0.3	1.4	-4.5	4.3	8.8 pps

Latvia	2017	2018	2019	2020	2021	2020-2021
1 - Population (LFS, total, 1000 pers.)	1941	1926	1913	1901	1883	-0.9 %
2 - Population (LFS, working age:15-64, 1000 pers.)	1230	1216	1204	1190	1177	-1.1 %
(% of total population)	63.3	63.1	62.9	62.6	62.5	-0.1 pps
3 - Labour force (15-64, 1000 pers.)	946	945	931	931	892	-4.1 %
Male	475	475	468	469	454	-3.3 %
Female	471	470	463	461	438	-4.9 %
4 - Activity rate (% of population 15-64)	77.0	77.7	77.3	78.2	75.8	-2.4 pps
Young (15-24)	39.7	37.7	36.3	34.8	32.7	-2.1 pps
Prime age (25-54)	88.5	89.1	88.3	89.3	87.1	-2.2 pps
Older (55-64)	67.9	70.8	72.1	74.7	72.2	-2.4 pps
Nationals (15-64)	77.5	78.2	77.7	78.2	76.1	-2.2 pps
Non-nationals (15-64)	73.4	74.3	74.1	78.0	74.2	-3.8 pps
Male	79.8	80.4	79.8	80.7	78.8	-1.9 pps
Young (15-24)	42.8	40.6	39.6	38.0	35.3	-2.7 pps
Prime age (25-54)	91.8	92.1	91.2	92.0	90.9	-1.1 pps
Older (55-64)	69.2	72.5	73.0	76.8	73.2	-3.6 pps
Female	74.3	75.1	75.0	75.8	73.0	-2.8 pps
Young (15-24)	36.6	34.8	32.8	31.5	30.0	-1.5 pps
Prime age (25-54)	85.4	86.0	85.5	86.6	83.3	-3.3 pps
Older (55-64)	66.9	69.4	71.4	72.9	71.4	-1.5 pps
5 - Employment rate (% of population 15-64)	70.1	71.8	72.3	71.6	69.9	-1.8 pps
Young (15-24)	33.0	33.1	31.8	29.7	27.9	-1.8 pps
Prime age (25-54)	81.2	82.7	83.1	82.2	80.4	-1.8 pps
Older (55-64)	62.3	65.4	67.3	68.6	67.8	-0.8 pps
Low-skilled (15-64)	35.8	35.1	36.4	35.3	31.7	-3.7 pps
Medium-skilled (15-64)	70.5	72.7	72.4	72.4	69.9	-2.5 pps
High-skilled (15-64)	86.9	88.9	89.0	86.3	85.7	-0.6 pps
Nationals (15-64)	70.9	72.7	72.8	71.9	70.4	-1.5 pps
Non-nationals (15-64)	64.5	65.9	68.4	69.8	65.9	-3.9 pps
Male	71.9	73.6	73.9	73.1	71.9	-1.3 pps
Young (15-24)	35.0	35.5	33.9	32.5	30.1	-2.4 pps
Prime age (25-54)	83.5	84.6	85.2	83.8	82.9	-0.9 pps
Older (55-64)	62.4	66.4	67.6	69.5	68.5	-1.0 pps
Female	68.4	70.1	70.7	70.2	68.0	-2.2 pps
Young (15-24)	30.9	30.6	29.6	26.7	25.5	-1.1 pps
Prime age (25-54)	79.0	80.7	81.0	80.6	77.9	-2.7 pps
Older (55-64)	62.2	64.6	67.1	67.9	67.1	-0.8 pps
6 - Employed persons (15-64, 1000 pers.)	861.9	873.3	870.3	852.2	822.0	-3.5 %
7 - Employment growth (% , National accounts)	0.0	1.5	-0.1	-2.3	-2.6	-0.3 pps
Employment growth (% , 15-64, LFS)	0.0	1.3	-0.3	-2.1	-3.5	-1.5 pps
Male	0.7	1.5	-0.1	-2.1	-2.6	-0.6 pps
Female	-0.8	1.2	-0.5	-2.1	-4.4	-2.3 pps
8 - Self employed (15-64, % of total employment)	11.8	11.0	11.0	12.2	12.2	0.0 pps
Male	13.9	12.9	12.7	14.0	14.6	0.7 pps
Female	9.8	9.1	9.3	10.5	9.8	-0.7 pps
9 - Temporary employment (15-64, % of total employment)	3.0	2.7	3.2	2.8	2.8	0.0 pps
Male	3.7	3.0	3.9	3.0	3.3	0.3 pps
Female	2.4	2.4	2.5	2.6	2.3	-0.3 pps
10 - Part-time (15-64, % of total employment)	7.7	7.3	8.4	8.9	7.8	-1.1 pps
Male	4.8	4.7	5.8	6.5	5.6	-0.9 pps
Female	10.6	9.8	10.9	11.3	10.0	-1.3 pps
11 - Involuntary part-time (15-64, % of total employment)	2.7	2.4	1.8	2.1	2.7	0.6 pps
12 - Unemployment rate (harmonised:15-74)	8.7	7.4	6.3	8.1	7.6	-0.5 pps
Young (15-24)	17.0	12.2	12.4	14.9	14.8	-0.1 pps
Prime age (25-49)	8.3	7.2	5.9	7.9	7.8	-0.1 pps
Older (55-64)	8.3	7.6	6.6	8.1	6.2	-1.9 pps
Low-skilled (15-64)	19.2	16.8	14.1	18.9	15.1	-3.8 pps
Medium-skilled (15-64)	10.4	8.7	7.3	9.1	9.3	0.2 pps
High-skilled (15-64)	4.0	3.8	3.7	5.3	4.8	-0.5 pps
Nationals (15-64)	8.5	7.1	6.3	8.1	7.4	-0.7 pps
Non-nationals (15-64)	12.1	11.4	7.7	10.5	11.2	0.7 pps
Male	9.8	8.4	7.2	9.1	8.5	-0.6 pps
Female	7.7	6.5	5.4	7.1	6.6	-0.5 pps
13 - Long-term unemployment (% of total unemployment)	37.5	42.0	37.9	27.4	30.1	2.7 pps
14 - Worked hours (full-time, average actual weekly hours)	40.0	40.0	39.5	39.3	39.6	0.8 %
Male	40.3	40.3	39.9	39.5	39.8	0.8 %
Female	39.4	38.8	39.5	39.2	39.4	0.5 %
15 - Sectoral employment growth (% change)						
Agriculture	-3.4	-0.1	0.8	0.4	-2.4	-2.8 pps
Building and construction	5.4	9.4	2.4	-4.5	-3.4	1.1 pps
Services	-0.2	1.7	-0.8	-3.4	-4.8	-1.4 pps
Manufacturing industry	0.0	1.1	0.6	-3.3	4.6	7.9 pps
16 - Indicator board on wage developments (% change)						
Compensation per employee	7.6	8.1	7.8	5.5	11.0	5.5 pps
Real compensation per employee based on GDP	4.5	4.0	5.1	5.6	3.9	-1.7 pps
Labour cost index (compens. of employees plus taxes minus subs.)	6.6	12.1	7.2	5.7	3.4	-2.3 pps
Labour cost index (wages and salaries, total)	6.6	10.7	7.1	5.9	4.1	-1.8 pps
Labour productivity (GDP/person employed)	3.3	2.5	2.6	-1.5	7.2	8.7 pps

<b>Lithuania</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- Population (LFS, total, 1000 pers.)	2828	2802	2794	2795	2803	0.3 %
<b>2</b>	- Population (LFS, working age:15-64, 1000 pers.)	1854	1828	1814	1812	1808	-0.2 %
	(% of total population)	65.6	65.2	64.9	64.8	64.5	-0.3 pps
<b>3</b>	- Labour force (15-64, 1000 pers.)	1408	1413	1416	1423	1414	-0.6 %
	<i>Male</i>	697	704	707	719	717	-0.4 %
	<i>Female</i>	711	709	709	704	698	-0.9 %
<b>4</b>	- Activity rate (% of population 15-64)	75.9	77.3	78.0	78.5	78.2	-0.3 pps
	Young (15-24)	35.0	36.5	37.3	36.6	36.3	-0.3 pps
	Prime age (25-54)	89.3	89.6	90.3	90.4	90.1	-0.3 pps
	Older (55-64)	71.3	73.9	73.5	75.0	74.0	-0.9 pps
	Nationals (15-64)	76.0	77.3	78.0	78.5	78.2	-0.3 pps
	Non-nationals (15-64)	73.9	77.5	80.6	81.4	77.8	-3.5 pps
	<i>Male</i>	77.4	78.9	79.2	79.9	79.2	-0.7 pps
	Young (15-24)	37.8	38.7	38.9	38.9	38.2	-0.7 pps
	Prime age (25-54)	90.4	91.0	91.4	91.4	91.0	-0.4 pps
	Older (55-64)	73.3	76.2	74.6	76.6	74.1	-2.6 pps
	<i>Female</i>	74.6	75.8	76.9	77.2	77.2	0.1 pps
	Young (15-24)	32.2	34.1	35.7	34.2	34.3	0.1 pps
	Prime age (25-54)	88.1	88.3	89.2	89.4	89.2	-0.2 pps
	Older (55-64)	69.6	72.0	72.5	73.6	74.1	0.4 pps
<b>5</b>	- Employment rate (% of population 15-64)	70.4	72.4	73.0	71.6	72.4	0.8 pps
	Young (15-24)	30.4	32.4	32.9	29.4	31.1	1.7 pps
	Prime age (25-54)	83.3	84.6	85.1	83.7	84.3	0.6 pps
	Older (55-64)	66.1	68.5	68.4	67.6	68.0	0.4 pps
	Low-skilled (15-64)	20.9	22.7	23.2	22.7	25.1	2.5 pps
	Medium-skilled (15-64)	68.8	71.0	70.6	68.4	69.3	0.9 pps
	High-skilled (15-64)	90.0	90.5	90.8	89.5	89.3	-0.2 pps
	Nationals (15-64)	70.4	72.4	73.0	71.6	72.5	0.9 pps
	Non-nationals (15-64)	71.2	73.2	77.1	77.1	71.0	-6.1 pps
	<i>Male</i>	70.6	73.3	73.5	72.2	72.9	0.7 pps
	Young (15-24)	32.3	34.1	33.4	30.5	32.8	2.3 pps
	Prime age (25-54)	83.1	85.2	85.4	84.0	84.6	0.6 pps
	Older (55-64)	67.1	70.5	69.4	68.4	67.6	-0.8 pps
	<i>Female</i>	70.2	71.6	72.5	71.0	71.9	0.9 pps
	Young (15-24)	28.4	30.6	32.3	28.3	29.3	1.0 pps
	Prime age (25-54)	83.6	84.1	84.8	83.4	83.9	0.5 pps
	Older (55-64)	65.2	67.0	67.5	66.9	68.4	1.4 pps
<b>6</b>	- Employed persons (15-64, 1000 pers.)	1305.6	1323.7	1324.3	1297.6	1309.8	0.9 %
<b>7</b>	- Employment growth (% , National accounts)	-0.7	1.4	0.6	-1.6	1.2	2.8 pps
	Employment growth (% , 15-64, LFS)	-0.9	1.4	0.0	-2.0	0.9	3.0 pps
	<i>Male</i>	-1.1	2.9	0.2	-0.9	1.6	2.4 pps
	<i>Female</i>	-0.7	0.0	-0.1	-3.1	0.3	3.5 pps
<b>8</b>	- Self employed (15-64, % of total employment )	10.9	10.8	10.9	11.1	10.7	-0.4 pps
	<i>Male</i>	13.8	13.4	14.2	14.4	12.9	-1.5 pps
	<i>Female</i>	8.1	8.3	7.7	7.7	8.5	0.8 pps
<b>9</b>	- Temporary employment (15-64, % of total employment)	1.7	1.6	1.5	1.2	1.9	0.7 pps
	<i>Male</i>	2.1	1.7	1.5	1.4	1.9	0.5 pps
	<i>Female</i>	1.3	1.4	1.4	1.1	1.9	0.8 pps
<b>10</b>	- Part-time (15-64, % of total employment )	7.6	7.1	6.4	6.1	6.0	-0.1 pps
	<i>Male</i>	5.7	5.2	4.7	4.8	4.3	-0.5 pps
	<i>Female</i>	9.4	8.9	8.0	7.5	7.6	0.1 pps
<b>11</b>	- Involuntary part-time (15-64, % of total employment)	2.3	1.7	1.5	1.8	1.5	-0.3 pps
<b>12</b>	- Unemployment rate (harmonised:15-74)	7.1	6.2	6.3	8.5	7.1	-1.4 pps
	Young (15-24)	13.3	11.1	11.9	19.6	14.3	-5.3 pps
	Prime age (25-49)	6.6	5.6	5.8	7.4	6.5	-0.9 pps
	Older (55-64)	7.3	7.2	6.9	9.9	8.2	-1.7 pps
	Low-skilled (15-64)	21.6	18.5	18.8	23.3	16.9	-6.4 pps
	Medium-skilled (15-64)	9.6	8.2	8.6	11.9	9.7	-2.2 pps
	High-skilled (15-64)	3.0	2.9	3.0	4.2	4.2	0.0 pps
	Nationals (15-64)	7.3	6.3	6.5	8.9	7.4	-1.5 pps
	Non-nationals (15-64)	0.0	0.0	0.0	0.0	8.5	8.5 pps
	<i>Male</i>	8.6	6.9	7.1	9.3	7.6	-1.7 pps
	<i>Female</i>	5.7	5.4	5.5	7.7	6.6	-1.1 pps
<b>13</b>	- Long-term unemployment (% of total unemployment)	37.7	32.2	30.6	29.0	36.7	7.7 pps
<b>14</b>	- Worked hours (full-time, average actual weekly hours)	39.4	39.6	39.5	39.0	39.5	1.3 %
	<i>Male</i>	39.9	39.9	39.9	39.5	39.8	0.8 %
	<i>Female</i>	39.1	39.5	38.7	38.7	39.2	1.3 %
<b>15</b>	- Sectoral employment growth (% change)						
	Agriculture	-3.0	-6.3	-9.8	-11.7	-5.3	6.4 pps
	Building and construction	-3.5	3.2	3.3	-4.9	3.2	8.1 pps
	Services	-0.6	1.7	2.0	-0.8	2.1	2.9 pps
	Manufacturing industry	-0.6	5.3	0.0	-1.3	5.5	6.8 pps
<b>16</b>	- Indicator board on wage developments (% change)						
	Compensation per employee	9.5	7.9	10.6	7.3	11.4	4.1 pps
	Real compensation per employee based on GDP	5.1	4.3	7.7	5.7	4.6	-1.2 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	9.6	10.0	3.0	6.1	12.3	6.2 pps
	Labour cost index (wages and salaries, total)	8.8	9.7	38.2	9.9	10.6	0.7 pps
	Labour productivity (GDP/person employed)	5.0	2.6	4.0	1.5	3.8	2.3 pps



<b>Luxembourg</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- Population (LFS, total, 1000 pers.)	597	609	622	631	641	1.6 %
<b>2</b>	- Population (LFS, working age:15-64, 1000 pers.)	407	415	423	431	437	1.2 %
	(% of total population)	68.2	68.1	68.0	68.3	68.1	-0.2 pps
<b>3</b>	- Labour force (15-64, 1000 pers.)	286	295	304	311	320	2.7 %
	<i>Male</i>	153	158	165	166	170	2.7 %
	<i>Female</i>	133	137	140	146	150	2.8 %
<b>4</b>	- Activity rate (% of population 15-64)	70.2	71.1	72.0	72.2	73.2	1.1 pps
	Young (15-24)	30.5	33.1	34.6	32.4	35.3	2.9 pps
	Prime age (25-54)	88.0	88.4	88.5	89.1	89.2	0.1 pps
	Older (55-64)	41.0	41.9	45.0	45.9	48.8	2.9 pps
	Nationals (15-64)	65.7	66.1	66.9	67.4	69.0	1.6 pps
	Non-nationals (15-64)	74.4	75.8	76.9	76.8	77.4	0.6 pps
	<i>Male</i>	74.0	74.7	76.4	75.4	76.4	1.0 pps
	Young (15-24)	32.5	33.8	37.9	33.8	36.2	2.4 pps
	Prime age (25-54)	91.9	92.2	92.8	92.9	92.5	-0.4 pps
	Older (55-64)	46.7	47.4	51.2	49.7	54.5	4.7 pps
	<i>Female</i>	66.2	67.4	67.4	68.7	69.9	1.2 pps
	Young (15-24)	28.2	32.2	31.5	30.9	34.4	3.5 pps
	Prime age (25-54)	84.0	84.5	84.0	85.3	85.9	0.6 pps
	Older (55-64)	35.2	36.2	38.5	41.8	42.8	1.0 pps
<b>5</b>	- Employment rate (% of population 15-64)	66.3	67.1	67.9	67.2	69.4	2.1 pps
	Young (15-24)	25.8	28.4	28.7	24.9	29.4	4.4 pps
	Prime age (25-54)	83.7	83.9	84.3	84.0	85.4	1.4 pps
	Older (55-64)	39.7	40.5	43.1	44.1	46.5	2.5 pps
	Low-skilled (15-64)	42.0	44.8	44.2	44.0	46.5	2.5 pps
	Medium-skilled (15-64)	67.8	67.6	66.7	66.7	66.9	0.2 pps
	High-skilled (15-64)	84.0	83.7	84.7	83.2	84.1	0.9 pps
	Nationals (15-64)	63.2	63.2	64.1	64.2	66.1	1.9 pps
	Non-nationals (15-64)	69.2	70.8	71.6	70.2	72.5	2.4 pps
	<i>Male</i>	69.9	70.6	72.1	70.4	72.6	2.2 pps
	Young (15-24)	26.8	28.5	31.2	25.2	29.8	4.6 pps
	Prime age (25-54)	87.4	88.0	88.6	88.0	89.1	1.2 pps
	Older (55-64)	45.3	45.5	48.8	47.2	51.5	4.3 pps
	<i>Female</i>	62.6	63.4	63.6	63.9	66.0	2.1 pps
	Young (15-24)	24.7	28.4	26.2	24.3	28.9	4.6 pps
	Prime age (25-54)	79.8	79.7	79.9	80.0	81.6	1.6 pps
	Older (55-64)	34.0	35.0	37.1	40.5	41.5	1.0 pps
<b>6</b>	- Employed persons (15-64, 1000 pers.)	269.9	278.4	287.3	290.0	302.8	4.4 %
<b>7</b>	- Employment growth (% , National accounts)	3.5	3.6	3.5	1.9	3.1	1.2 pps
	Employment growth (% , 15-64, LFS)	4.0	3.1	3.2	0.9	4.4	3.5 pps
	<i>Male</i>	1.8	3.1	4.2	-0.4	4.5	4.8 pps
	<i>Female</i>	6.7	3.1	2.2	2.5	4.4	1.9 pps
<b>8</b>	- Self employed (15-64, % of total employment)	8.9	7.5	7.4	7.8	8.3	0.5 pps
	<i>Male</i>	9.7	8.4	8.4	9.0	9.1	0.1 pps
	<i>Female</i>	8.0	6.4	6.4	6.4	7.4	1.0 pps
<b>9</b>	- Temporary employment (15-64, % of total employment)	9.1	9.8	9.2	7.7	9.2	1.5 pps
	<i>Male</i>	8.8	9.1	9.3	7.1	8.3	1.2 pps
	<i>Female</i>	9.4	10.7	9.1	8.3	10.1	1.8 pps
<b>10</b>	- Part-time (15-64, % of total employment)	19.6	17.8	17.0	18.1	18.1	0.0 pps
	<i>Male</i>	6.1	5.8	5.6	6.8	7.0	0.2 pps
	<i>Female</i>	35.3	31.8	30.4	31.0	30.9	-0.1 pps
<b>11</b>	- Involuntary part-time (15-64, % of total employment)	2.6	2.2	2.2	2.1	1.7	-0.4 pps
<b>12</b>	- Unemployment rate (harmonised:15-74)	5.5	5.6	5.6	6.8	5.3	-1.5 pps
	Young (15-24)	15.4	14.2	17.0	23.2	16.9	-6.3 pps
	Prime age (25-49)	4.9	5.0	4.7	5.7	4.3	-1.4 pps
	Older (55-64)	3.3	3.6	4.1	4.1	4.6	0.5 pps
	Low-skilled (15-64)	8.9	8.4	8.9	11.5	8.6	-2.9 pps
	Medium-skilled (15-64)	5.3	5.6	6.3	6.9	5.5	-1.4 pps
	High-skilled (15-64)	3.9	4.3	3.6	4.7	4.0	-0.7 pps
	Nationals (15-64)	3.9	4.4	4.1	4.8	4.2	-0.6 pps
	Non-nationals (15-64)	6.9	6.6	6.9	8.6	6.3	-2.3 pps
	<i>Male</i>	5.6	5.3	5.7	6.6	4.9	-1.7 pps
	<i>Female</i>	5.5	5.9	5.5	7.0	5.6	-1.4 pps
<b>13</b>	- Long-term unemployment (% of total unemployment)	39.7	25.5	24.5	26.8	34.0	7.2 pps
<b>14</b>	- Worked hours (full-time, average actual weekly hours)	41.0	40.6	40.6	39.9	38.8	-2.8 %
	<i>Male</i>	41.7	41.3	41.3	40.6	39.8	-2.0 %
	<i>Female</i>	39.8	39.8	39.3	38.8	37.4	-3.6 %
<b>15</b>	- Sectoral employment growth (% change)						
	Agriculture	-0.6	-0.4	-0.9	0.0	1.1	1.1 pps
	Building and construction	2.9	3.8	3.9	3.7	3.9	0.2 pps
	Services	4.0	4.1	3.8	1.2	2.7	1.5 pps
	Manufacturing industry	0.2	1.5	0.4	-1.4	-0.9	0.5 pps
<b>16</b>	- Indicator board on wage developments (% change)						
	Compensation per employee	3.1	2.8	1.9	0.4	5.1	4.8 pps
	Real compensation per employee based on GDP	0.9	1.1	1.3	-3.7	-1.6	2.2 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	2.6	2.0	2.7	0.9	1.6	0.7 pps
	Labour cost index (wages and salaries, total)	4.0	2.2	2.7	0.5	1.9	1.4 pps
	Labour productivity (GDP/person employed)	-2.1	-1.6	-0.2	-3.6	3.7	7.3 pps

<b>Hungary</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- Population (LFS, total, 1000 pers.)	9788	9776	9771	9750	9710	-0.4 %
<b>2</b>	- Population (LFS, working age:15-64, 1000 pers.)	6415	6370	6327	6280	6207	-1.2 %
	(% of total population)	65.5	65.2	64.8	64.4	63.9	-0.5 pps
<b>3</b>	- Labour force (15-64, 1000 pers.)	4565	4582	4595	4572	4728	3.4 %
	<i>Male</i>	2485	2500	2521	2518	2516	-0.1 %
	<i>Female</i>	2080	2083	2074	2054	2212	7.7 %
<b>4</b>	- Activity rate (% of population 15-64)	71.2	71.9	72.6	72.8	76.2	3.4 pps
	Young (15-24)	32.4	32.3	32.2	31.2	31.8	0.6 pps
	Prime age (25-54)	86.9	87.0	87.0	86.2	90.1	3.9 pps
	Older (55-64)	53.6	55.8	58.0	61.4	64.7	3.3 pps
	Nationals (15-64)	71.2	72.0	72.6	72.8	76.2	3.4 pps
	Non-nationals (15-64)	62.5	64.1	72.4	72.5	76.4	3.9 pps
	<i>Male</i>	78.2	79.1	80.0	80.3	81.1	0.8 pps
	Young (15-24)	36.5	37.1	37.3	35.3	35.1	-0.2 pps
	Prime age (25-54)	93.3	93.3	93.4	93.1	93.6	0.4 pps
	Older (55-64)	64.5	67.1	70.6	74.0	76.6	2.6 pps
	<i>Female</i>	64.2	64.9	65.3	65.3	71.2	5.9 pps
	Young (15-24)	28.2	27.2	26.9	26.9	28.3	1.4 pps
	Prime age (25-54)	80.4	80.7	80.6	79.1	86.6	7.5 pps
	Older (55-64)	44.3	46.3	47.2	50.6	54.3	3.7 pps
<b>5</b>	- Employment rate (% of population 15-64)	68.2	69.2	70.1	69.7	73.1	3.4 pps
	Young (15-24)	29.0	29.0	28.5	27.2	27.5	0.3 pps
	Prime age (25-54)	83.7	84.1	84.4	82.9	87.0	4.1 pps
	Older (55-64)	51.7	54.4	56.7	59.6	62.8	3.2 pps
	Low-skilled (15-64)	38.5	39.4	39.4	37.7	39.2	1.5 pps
	Medium-skilled (15-64)	73.1	73.7	74.8	74.3	77.1	2.8 pps
	High-skilled (15-64)	84.3	85.1	85.2	85.2	89.9	4.7 pps
	Nationals (15-64)	68.2	69.3	70.1	69.7	73.1	3.4 pps
	Non-nationals (15-64)	60.6	60.3	69.2	66.5	73.7	7.2 pps
	<i>Male</i>	75.2	76.3	77.3	77.0	77.9	0.9 pps
	Young (15-24)	32.9	33.4	32.8	31.1	30.9	-0.2 pps
	Prime age (25-54)	90.1	90.4	90.8	89.8	90.4	0.7 pps
	Older (55-64)	62.5	65.5	69.0	71.6	74.1	2.5 pps
	<i>Female</i>	61.3	62.3	63.0	62.3	68.2	5.9 pps
	Young (15-24)	24.8	24.3	24.0	23.1	23.9	0.8 pps
	Prime age (25-54)	77.2	77.7	78.0	75.9	83.4	7.5 pps
	Older (55-64)	42.4	44.9	46.2	49.2	52.9	3.7 pps
<b>6</b>	- Employed persons (15-64, 1000 pers.)	4373.4	4410.7	4436.0	4375.8	4535.4	3.6 %
<b>7</b>	- Employment growth (% , National accounts)	1.9	2.3	1.1	-1.1	2.0	3.1 pps
	Employment growth (% , 15-64, LFS)	1.5	0.9	0.6	-1.4	3.6	5.0 pps
	<i>Male</i>	2.2	0.9	1.0	-0.8	0.1	0.9 pps
	<i>Female</i>	0.6	0.8	0.1	-2.0	8.0	10.0 pps
<b>8</b>	- Self employed (15-64, % of total employment)	9.7	9.7	10.1	11.2	11.6	0.4 pps
	<i>Male</i>	11.5	11.6	12.2	13.4	13.9	0.6 pps
	<i>Female</i>	7.5	7.4	7.5	8.6	9.0	0.3 pps
<b>9</b>	- Temporary employment (15-64, % of total employment)	8.8	7.3	6.6	5.9	5.9	0.0 pps
	<i>Male</i>	8.2	6.7	6.1	5.3	5.6	0.3 pps
	<i>Female</i>	9.5	7.9	7.1	6.5	6.2	-0.3 pps
<b>10</b>	- Part-time (15-64, % of total employment)	4.3	4.2	4.4	4.8	4.6	-0.2 pps
	<i>Male</i>	2.7	2.5	2.5	2.8	2.7	-0.1 pps
	<i>Female</i>	6.3	6.3	6.8	7.3	6.7	-0.6 pps
<b>11</b>	- Involuntary part-time (15-64, % of total employment)	1.2	1.0	0.9	0.9	1.1	0.1 pps
<b>12</b>	- Unemployment rate (harmonised:15-74)	4.0	3.6	3.3	4.1	4.1	0.0 pps
	Young (15-24)	10.7	10.2	11.4	12.8	13.5	0.7 pps
	Prime age (25-49)	3.7	3.4	3.0	3.8	3.5	-0.3 pps
	Older (55-64)	3.6	2.6	2.2	3.0	2.9	-0.1 pps
	Low-skilled (15-64)	11.2	10.4	9.8	11.1	11.1	0.0 pps
	Medium-skilled (15-64)	3.8	3.4	3.0	4.1	4.0	-0.1 pps
	High-skilled (15-64)	1.6	1.5	1.6	1.9	1.7	-0.2 pps
	Nationals (15-64)	4.2	3.7	3.4	4.3	4.1	-0.2 pps
	Non-nationals (15-64)	0.0	0.0	0.0	8.2	0.0	-8.2 pps
	<i>Male</i>	3.8	3.5	3.4	4.1	3.9	-0.2 pps
	<i>Female</i>	4.3	3.7	3.3	4.2	4.2	0.0 pps
<b>13</b>	- Long-term unemployment (% of total unemployment)	40.4	38.6	32.0	26.1	31.4	5.3 pps
<b>14</b>	- Worked hours (full-time, average actual weekly hours)	39.3	38.8	39.1	38.9	39.0	0.3 %
	<i>Male</i>	39.5	39.0	39.2	39.2	39.1	-0.3 %
	<i>Female</i>	38.6	38.1	38.6	38.5	38.6	0.3 %
<b>15</b>	- Sectoral employment growth (% change)						
	Agriculture	2.8	-1.7	-2.3	1.9	-2.8	-4.7 pps
	Building and construction	8.8	11.1	5.4	4.3	7.7	3.4 pps
	Services	1.9	2.4	2.0	-1.0	1.6	2.7 pps
	Manufacturing industry	4.3	2.6	0.7	-3.7	2.4	6.1 pps
<b>16</b>	- Indicator board on wage developments (% change)						
	Compensation per employee	7.0	6.4	6.9	3.0	9.2	6.3 pps
	Real compensation per employee based on GDP	2.8	1.5	2.1	-3.2	2.2	5.4 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	9.3	9.0	10.1	7.1	5.9	-1.2 pps
	Labour cost index (wages and salaries, total)	13.4	11.3	11.0	8.1	7.2	-0.9 pps
	Labour productivity (GDP/person employed)	2.3	3.0	3.4	-3.4	5.0	8.4 pps

<b>Malta</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- Population (LFS, total, 1000 pers.)	469	485	505	516	519	0.5 %
<b>2</b>	- Population (LFS, working age:15-64, 1000 pers.)	313	326	341	347	349	0.5 %
	(% of total population)	66.9	67.1	67.5	67.2	67.2	0.0 pps
<b>3</b>	- Labour force (15-64, 1000 pers.)	226	243	259	267	271	1.5 %
	<i>Male</i>	135	144	153	158	159	1.0 %
	<i>Female</i>	91	100	105	110	112	2.2 %
<b>4</b>	- Activity rate (% of population 15-64)	72.2	74.7	75.9	77.1	77.8	0.7 pps
	Young (15-24)	52.9	56.0	55.9	53.9	53.0	-0.9 pps
	Prime age (25-54)	84.6	86.1	87.2	88.2	89.1	1.0 pps
	Older (55-64)	48.3	51.9	51.9	54.8	53.7	-1.0 pps
	Nationals (15-64)	70.6	72.7	74.1	74.8	75.8	1.0 pps
	Non-nationals (15-64)	80.8	82.9	82.3	84.2	83.9	-0.3 pps
	<i>Male</i>	83.4	84.8	85.3	85.4	85.7	0.3 pps
	Young (15-24)	54.3	55.7	56.6	55.4	54.0	-1.4 pps
	Prime age (25-54)	96.1	96.4	96.6	95.9	96.5	0.6 pps
	Older (55-64)	66.1	69.5	67.2	69.4	67.8	-1.6 pps
	<i>Female</i>	60.2	63.8	65.5	67.6	68.8	1.2 pps
	Young (15-24)	51.4	56.3	55.1	52.2	51.9	-0.3 pps
	Prime age (25-54)	71.9	74.6	76.5	79.1	80.5	1.4 pps
	Older (55-64)	30.5	34.0	36.1	39.7	38.8	-0.9 pps
<b>5</b>	- Employment rate (% of population 15-64)	69.2	71.9	73.2	73.7	75.0	1.4 pps
	Young (15-24)	47.3	50.9	50.7	48.0	48.0	0.0 pps
	Prime age (25-54)	81.8	83.6	84.5	85.0	86.6	1.6 pps
	Older (55-64)	47.2	50.1	51.1	52.8	51.7	-1.0 pps
	Low-skilled (15-64)	55.9	59.7	62.4	62.5	61.9	-0.6 pps
	Medium-skilled (15-64)	73.0	73.1	73.5	72.9	77.0	4.1 pps
	High-skilled (15-64)	90.2	90.7	88.3	89.3	89.0	-0.4 pps
	Nationals (15-64)	67.9	70.3	71.8	72.0	73.2	1.2 pps
	Non-nationals (15-64)	76.5	78.4	77.5	79.1	80.4	1.3 pps
	<i>Male</i>	80.1	81.5	82.4	81.7	82.4	0.8 pps
	Young (15-24)	48.6	49.3	50.9	48.2	47.1	-1.0 pps
	Prime age (25-54)	93.1	93.5	93.9	92.7	93.6	0.9 pps
	Older (55-64)	64.5	67.2	66.2	67.1	65.8	-1.3 pps
	<i>Female</i>	57.6	61.5	62.8	64.6	66.5	2.0 pps
	Young (15-24)	45.9	52.7	50.8	47.8	48.5	0.7 pps
	Prime age (25-54)	69.4	72.5	73.7	75.9	78.3	2.4 pps
	Older (55-64)	29.8	32.7	35.4	37.7	37.1	-0.6 pps
<b>6</b>	- Employed persons (15-64, 1000 pers.)	216.8	234.4	249.3	255.5	261.6	2.4 %
<b>7</b>	- Employment growth (% , National accounts)	8.0	6.0	5.7	2.8	2.9	0.1 pps
	Employment growth (% , 15-64, LFS)	6.0	8.1	6.4	2.5	2.4	-0.1 pps
	<i>Male</i>	5.0	6.9	7.2	1.6	1.5	-0.1 pps
	<i>Female</i>	7.4	10.0	5.2	3.8	3.5	-0.2 pps
<b>8</b>	- Self employed (15-64, % of total employment )	14.4	13.7	15.0	15.5	14.7	-0.9 pps
	<i>Male</i>	18.6	17.6	18.9	19.8	19.4	-0.4 pps
	<i>Female</i>	8.1	8.0	9.2	9.3	8.1	-1.2 pps
<b>9</b>	- Temporary employment (15-64, % of total employment)	6.0	7.9	9.1	8.0	7.4	-0.6 pps
	<i>Male</i>	5.3	7.3	7.8	6.1	5.7	-0.4 pps
	<i>Female</i>	6.9	8.6	10.8	10.4	9.4	-1.0 pps
<b>10</b>	- Part-time (15-64, % of total employment )	13.7	13.2	12.2	11.2	11.3	0.1 pps
	<i>Male</i>	6.3	6.5	5.9	4.7	5.6	0.9 pps
	<i>Female</i>	24.6	22.8	21.4	20.5	19.2	-1.3 pps
<b>11</b>	- Involuntary part-time (15-64, % of total employment)	1.5	1.3	1.0	0.8	1.1	0.3 pps
<b>12</b>	- Unemployment rate (harmonised:15-74)	4.0	3.7	3.6	4.4	3.5	-0.9 pps
	Young (15-24)	10.6	9.1	9.3	10.9	9.6	-1.3 pps
	Prime age (25-49)	3.2	2.9	3.2	3.7	2.9	-0.8 pps
	Older (55-64)	2.5	3.3	1.5	3.6	3.6	0.0 pps
	Low-skilled (15-64)	6.2	5.5	4.7	6.1	5.2	-0.9 pps
	Medium-skilled (15-64)	3.5	3.5	3.8	4.3	3.9	-0.4 pps
	High-skilled (15-64)	2.0	1.9	2.6	3.0	1.9	-1.1 pps
	Nationals (15-64)	3.8	3.3	3.0	3.8	3.4	-0.4 pps
	Non-nationals (15-64)	5.3	5.4	5.7	6.1	4.2	-1.9 pps
	<i>Male</i>	3.8	3.8	3.4	4.3	3.7	-0.6 pps
	<i>Female</i>	4.3	3.5	4.0	4.5	3.3	-1.2 pps
<b>13</b>	- Long-term unemployment (% of total unemployment)	50.8	48.1	25.2	25.3	23.3	-2.0 pps
<b>14</b>	- Worked hours (full-time, average actual weekly hours)	40.9	41.1	41.7	40.4	38.6	-4.5 %
	<i>Male</i>	41.8	42.0	42.8	41.0	40.2	-2.0 %
	<i>Female</i>	38.1	38.6	39.9	38.6	38.1	-1.3 %
<b>15</b>	- Sectoral employment growth (% change)						
	Agriculture	3.3	2.3	-2.4	2.6	4.3	1.7 pps
	Building and construction	3.7	5.2	11.8	11.5	5.7	-5.8 pps
	Services	10.3	7.5	8.3	2.3	2.4	0.1 pps
	Manufacturing industry	2.0	2.9	-0.6	-1.8	1.9	3.7 pps
<b>16</b>	- Indicator board on wage developments (% change)						
	Compensation per employee	2.5	3.8	3.9	-0.7	4.8	5.5 pps
	Real compensation per employee based on GDP	0.4	1.6	1.5	-2.2	3.1	5.3 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	3.5	2.7	-0.3	3.8	1.4	-2.4 pps
	Labour cost index (wages and salaries, total)	3.2	2.9	-0.2	3.7	1.2	-2.5 pps
	Labour productivity (GDP/person employed)	2.7	0.1	0.2	-10.8	7.2	18.0 pps

<b>Netherlands</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- Population (LFS, total, 1000 pers.)	17131	17232	17345	17442	17533	0.5 %
<b>2</b>	- Population (LFS, working age:15-64, 1000 pers.)	11044	11070	11116	11160	11200	0.4 %
	(% of total population)	64.5	64.2	64.1	64.0	63.9	-0.1 pps
<b>3</b>	- Labour force (15-64, 1000 pers.)	8805	8884	8993	9030	9372	3.8 %
	<i>Male</i>	4659	4699	4745	4752	4900	3.1 %
	<i>Female</i>	4146	4185	4247	4278	4472	4.5 %
<b>4</b>	- Activity rate (% of population 15-64)	79.7	80.3	80.9	80.9	83.7	2.8 pps
	Young (15-24)	68.3	68.9	70.0	68.7	79.1	10.3 pps
	Prime age (25-54)	86.7	87.0	87.4	87.6	88.7	1.1 pps
	Older (55-64)	69.5	70.8	72.0	73.0	73.8	0.9 pps
	Nationals (15-64)	80.4	81.0	81.6	81.8	84.5	2.7 pps
	Non-nationals (15-64)	68.4	68.7	70.7	69.0	73.2	4.1 pps
	<i>Male</i>	84.2	84.7	85.1	84.8	87.1	2.3 pps
	Young (15-24)	67.0	68.0	69.7	67.7	76.8	9.2 pps
	Prime age (25-54)	91.3	91.7	91.5	91.5	92.2	0.7 pps
	Older (55-64)	79.0	80.0	81.0	81.5	82.1	0.6 pps
	<i>Female</i>	75.2	75.8	76.7	77.0	80.2	3.2 pps
	Young (15-24)	69.7	69.8	70.3	69.9	81.4	11.5 pps
	Prime age (25-54)	82.0	82.4	83.3	83.7	85.1	1.4 pps
	Older (55-64)	60.2	61.8	63.1	64.4	65.6	1.1 pps
<b>5</b>	- Employment rate (% of population 15-64)	75.8	77.2	78.2	77.8	80.1	2.4 pps
	Young (15-24)	62.3	63.9	65.3	62.5	71.7	9.2 pps
	Prime age (25-54)	83.5	84.6	85.2	85.1	85.9	0.9 pps
	Older (55-64)	65.7	67.7	69.7	71.0	71.4	0.4 pps
	Low-skilled (15-64)	58.8	60.4	61.3	60.2	65.5	5.3 pps
	Medium-skilled (15-64)	78.0	79.1	80.2	79.2	81.5	2.3 pps
	High-skilled (15-64)	87.8	88.5	88.6	88.4	88.4	0.0 pps
	Nationals (15-64)	76.7	78.1	79.1	78.8	81.1	2.3 pps
	Non-nationals (15-64)	62.8	63.8	66.1	63.9	66.8	2.9 pps
	<i>Male</i>	80.4	81.6	82.2	81.6	83.6	2.0 pps
	Young (15-24)	61.0	62.8	64.7	61.4	69.4	8.0 pps
	Prime age (25-54)	88.4	89.2	89.3	89.0	89.7	0.8 pps
	Older (55-64)	74.8	76.6	78.3	79.4	79.4	0.0 pps
	<i>Female</i>	71.3	72.8	74.1	73.9	76.6	2.7 pps
	Young (15-24)	63.6	65.2	66.0	63.6	74.1	10.5 pps
	Prime age (25-54)	78.6	79.9	81.1	81.2	82.1	0.9 pps
	Older (55-64)	56.6	58.8	61.2	62.6	63.5	0.9 pps
<b>6</b>	- Employed persons (15-64, 1000 pers.)	8376.4	8543.3	8689.2	8681.0	8975.1	3.4 %
<b>7</b>	- Employment growth (% , National accounts)	2.4	2.7	2.3	-0.5	2.0	2.5 pps
	Employment growth (% , 15-64, LFS)	1.9	2.0	1.7	-0.1	3.4	3.5 pps
	<i>Male</i>	1.5	1.7	1.4	-0.2	2.8	3.1 pps
	<i>Female</i>	2.3	2.3	2.1	0.1	4.0	3.9 pps
<b>8</b>	- Self employed (15-64, % of total employment )	15.5	15.4	15.4	15.8	14.3	-1.5 pps
	<i>Male</i>	18.4	18.4	18.4	18.9	17.8	-1.1 pps
	<i>Female</i>	12.2	12.0	12.0	12.4	10.6	-1.8 pps
<b>9</b>	- Temporary employment (15-64, % of total employment)	21.7	21.4	20.2	18.0	27.4	9.4 pps
	<i>Male</i>	20.4	19.9	19.0	17.0	25.6	8.6 pps
	<i>Female</i>	23.1	23.0	21.4	19.0	29.2	10.2 pps
<b>10</b>	- Part-time (15-64, % of total employment )	49.8	50.1	50.2	50.8	42.7	-8.1 pps
	<i>Male</i>	27.0	27.5	27.9	28.6	22.5	-6.1 pps
	<i>Female</i>	75.8	75.6	75.2	75.5	65.0	-10.5 pps
<b>11</b>	- Involuntary part-time (15-64, % of total employment)	4.1	3.5	2.7	3.0	1.6	-1.5 pps
<b>12</b>	- Unemployment rate (harmonised:15-74)	5.9	4.9	4.4	4.9	4.2	-0.7 pps
	Young (15-24)	8.9	7.2	6.7	9.1	9.3	0.2 pps
	Prime age (25-49)	3.7	2.8	2.6	2.9	3.1	0.2 pps
	Older (55-64)	5.5	4.5	3.2	2.7	3.3	0.6 pps
	Low-skilled (15-64)	8.5	6.7	5.9	7.0	7.2	0.2 pps
	Medium-skilled (15-64)	4.8	3.6	3.2	3.7	4.0	0.3 pps
	High-skilled (15-64)	2.9	2.4	2.2	2.6	2.9	0.3 pps
	Nationals (15-64)	4.7	3.6	3.1	3.6	3.9	0.3 pps
	Non-nationals (15-64)	8.2	7.2	6.6	7.4	8.7	1.3 pps
	<i>Male</i>	5.4	4.7	4.3	4.6	4.0	-0.6 pps
	<i>Female</i>	6.4	5.1	4.5	5.1	4.5	-0.6 pps
<b>13</b>	- Long-term unemployment (% of total unemployment)	40.0	36.8	30.1	23.4	19.6	-3.8 pps
<b>14</b>	- Worked hours (full-time, average actual weekly hours)	41.5	41.2	41.2	40.3	38.0	-5.7 %
	<i>Male</i>	42.2	41.9	41.9	41.0	39.5	-3.7 %
	<i>Female</i>	39.9	39.7	39.7	38.6	35.4	-8.3 %
<b>15</b>	- Sectoral employment growth (% change)						
	Agriculture	1.0	1.0	0.5	1.0	1.5	0.5 pps
	Building and construction	3.3	4.7	5.1	2.5	2.7	0.2 pps
	Services	3.0	3.1	1.6	-2.5	1.9	4.4 pps
	Manufacturing industry	0.8	2.1	2.2	-0.2	-0.1	0.1 pps
<b>16</b>	- Indicator board on wage developments (% change)						
	Compensation per employee	1.0	1.9	2.8	4.8	2.2	-2.6 pps
	Real compensation per employee based on GDP	-0.3	-0.5	-0.2	2.8	-0.3	-3.2 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	1.4	2.3	2.5	0.9	3.3	2.4 pps
	Labour cost index (wages and salaries, total)	1.6	2.1	2.1	5.9	0.9	-5.0 pps
	Labour productivity (GDP/person employed)	0.5	-0.4	-0.3	-3.4	2.8	6.2 pps

<b>Austria</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- Population (LFS, total, 1000 pers.)	8795	8838	8878	8917	8955	0.4 %
<b>2</b>	- Population (LFS, working age:15-64, 1000 pers.)	5800	5809	5819	5835	5845	0.2 %
	(% of total population)	65.9	65.7	65.5	65.4	65.3	-0.2 pps
<b>3</b>	- Labour force (15-64, 1000 pers.)	4433	4461	4484	4467	4515	1.1 %
	<i>Male</i>	2350	2369	2378	2362	2396	1.4 %
	<i>Female</i>	2083	2092	2106	2105	2119	0.7 %
<b>4</b>	- Activity rate (% of population 15-64)	76.4	76.8	77.1	76.6	77.2	0.7 pps
	Young (15-24)	56.1	56.6	56.4	56.1	56.3	0.2 pps
	Prime age (25-54)	88.7	88.5	89.0	88.3	89.0	0.7 pps
	Older (55-64)	53.6	56.2	56.4	57.0	58.4	1.4 pps
	Nationals (15-64)	77.3	77.4	77.8	77.2	77.6	0.4 pps
	Non-nationals (15-64)	72.6	74.2	73.7	73.8	75.7	1.9 pps
	<i>Male</i>	81.0	81.6	81.8	81.0	81.9	0.9 pps
	Young (15-24)	58.4	59.5	60.3	59.5	61.1	1.7 pps
	Prime age (25-54)	92.3	92.1	92.4	91.4	92.3	0.8 pps
	Older (55-64)	63.0	66.0	65.6	65.5	66.4	0.9 pps
	<i>Female</i>	71.8	72.0	72.3	72.1	72.6	0.5 pps
	Young (15-24)	53.7	53.8	52.5	52.8	51.5	-1.3 pps
	Prime age (25-54)	85.0	84.8	85.7	85.1	85.6	0.6 pps
	Older (55-64)	44.5	46.6	47.4	48.8	50.7	1.9 pps
<b>5</b>	- Employment rate (% of population 15-64)	72.2	73.0	73.6	72.4	72.4	0.0 pps
	Young (15-24)	50.6	51.3	51.6	50.2	50.1	-0.1 pps
	Prime age (25-54)	84.1	84.5	85.3	83.9	83.8	-0.1 pps
	Older (55-64)	51.3	54.0	54.5	54.7	55.4	0.7 pps
	Low-skilled (15-64)	46.9	48.2	48.2	47.5	47.6	0.1 pps
	Medium-skilled (15-64)	74.5	75.4	76.1	74.1	73.8	-0.3 pps
	High-skilled (15-64)	84.6	84.5	84.7	84.6	84.7	0.1 pps
	Nationals (15-64)	73.8	74.4	75.0	74.1	73.8	-0.3 pps
	Non-nationals (15-64)	64.8	66.9	67.0	65.3	66.7	1.4 pps
	<i>Male</i>	76.2	77.4	78.0	76.5	76.7	0.2 pps
	Young (15-24)	52.1	53.9	54.8	52.7	54.6	1.9 pps
	Prime age (25-54)	87.2	87.8	88.5	86.9	86.9	0.0 pps
	Older (55-64)	60.1	63.5	63.1	62.7	62.6	0.0 pps
	<i>Female</i>	68.2	68.6	69.2	68.3	68.1	-0.2 pps
	Young (15-24)	49.0	48.7	48.4	47.8	45.7	-2.1 pps
	Prime age (25-54)	81.0	81.3	82.1	80.8	80.7	-0.1 pps
	Older (55-64)	42.8	44.8	46.0	47.0	48.3	1.3 pps
<b>6</b>	- Employed persons (15-64, 1000 pers.)	4185.3	4241.1	4280.2	4224.0	4231.8	0.2 %
<b>7</b>	- Employment growth (% , National accounts)	1.6	1.7	1.1	-1.6	2.1	3.7 pps
	Employment growth (% , 15-64, LFS)	1.0	1.3	0.9	-1.3	0.2	1.5 pps
	<i>Male</i>	1.0	1.8	0.8	-1.6	0.6	2.2 pps
	<i>Female</i>	1.1	0.8	1.0	-1.0	-0.3	0.8 pps
<b>8</b>	- Self employed (15-64, % of total employment)	10.6	10.4	10.6	10.5	10.0	-0.5 pps
	<i>Male</i>	12.9	12.6	12.9	12.7	12.2	-0.5 pps
	<i>Female</i>	7.9	7.9	8.1	7.9	7.6	-0.4 pps
<b>9</b>	- Temporary employment (15-64, % of total employment)	9.2	9.1	8.7	8.2	8.8	0.6 pps
	<i>Male</i>	9.2	8.8	8.5	8.3	9.0	0.7 pps
	<i>Female</i>	9.2	9.4	8.9	8.1	8.7	0.6 pps
<b>10</b>	- Part-time (15-64, % of total employment)	27.9	27.3	27.2	27.2	28.7	1.5 pps
	<i>Male</i>	10.6	10.0	9.5	9.7	10.5	0.8 pps
	<i>Female</i>	47.2	46.9	47.1	46.9	49.2	2.3 pps
<b>11</b>	- Involuntary part-time (15-64, % of total employment)	3.5	2.9	2.4	2.5	2.6	0.1 pps
<b>12</b>	- Unemployment rate (harmonised:15-74)	5.9	5.2	4.8	6.0	6.2	0.2 pps
	Young (15-24)	9.8	9.4	8.5	10.5	11.0	0.5 pps
	Prime age (25-49)	5.1	4.4	4.2	5.0	5.8	0.8 pps
	Older (55-64)	4.2	3.9	3.4	4.0	5.2	1.2 pps
	Low-skilled (15-64)	13.3	11.6	10.8	12.5	14.0	1.5 pps
	Medium-skilled (15-64)	5.1	4.3	4.0	5.0	5.8	0.8 pps
	High-skilled (15-64)	3.2	3.3	3.0	3.4	4.1	0.7 pps
	Nationals (15-64)	4.5	3.9	3.6	4.1	4.9	0.8 pps
	Non-nationals (15-64)	10.8	9.8	9.1	11.6	11.9	0.3 pps
	<i>Male</i>	6.5	5.5	5.1	6.1	6.3	0.2 pps
	<i>Female</i>	5.3	4.9	4.6	5.9	6.1	0.2 pps
<b>13</b>	- Long-term unemployment (% of total unemployment)	33.3	28.9	25.1	24.5	31.5	7.0 pps
<b>14</b>	- Worked hours (full-time, average actual weekly hours)	40.7	40.8	40.7	38.7	38.6	-0.3 %
	<i>Male</i>	38.7	38.6	38.8	37.5	37.2	-0.8 %
	<i>Female</i>	39.6	39.7	39.5	37.4	37.4	0.0 %
<b>15</b>	- Sectoral employment growth (% change)						
	Agriculture	-2.4	-6.3	-4.6	1.8	1.6	-0.2 pps
	Building and construction	2.4	2.5	2.9	-0.1	5.1	5.2 pps
	Services	1.9	2.2	1.4	-3.4	2.1	5.5 pps
	Manufacturing industry	1.3	2.6	1.5	-1.4	0.5	1.9 pps
<b>16</b>	- Indicator board on wage developments (% change)						
	Compensation per employee	1.6	2.9	2.8	1.7	3.4	1.8 pps
	Real compensation per employee based on GDP	0.6	1.1	1.2	-0.6	2.1	2.7 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	3.5	3.3	2.6	5.9	1.2	-4.7 pps
	Labour cost index (wages and salaries, total)	2.7	2.9	2.9	6.1	0.9	-5.2 pps
	Labour productivity (GDP/person employed)	0.6	0.8	0.3	-5.2	2.5	7.7 pps

<b>Poland</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- Population (LFS, total, 1000 pers.)	38422	38413	38386	38354	38162	-0.5 %
<b>2</b>	- Population (LFS, working age:15-64, 1000 pers.)	24317	23941	23596	23372	23101	-1.2 %
	(% of total population)	63.3	62.3	61.5	60.9	60.5	-0.4 pps
<b>3</b>	- Labour force (15-64, 1000 pers.)	16919	16790	16650	16583	16815	1.4 %
	<i>Male</i>	9304	9213	9167	9154	9184	0.3 %
	<i>Female</i>	7616	7577	7483	7429	7631	2.7 %
<b>4</b>	- Activity rate (% of population 15-64)	69.6	70.1	70.6	71.0	72.8	1.8 pps
	Young (15-24)	34.8	35.1	35.2	31.8	31.0	-0.8 pps
	Prime age (25-54)	84.9	85.2	85.3	85.6	87.4	1.8 pps
	Older (55-64)	50.1	50.3	50.7	52.9	56.0	3.1 pps
	Nationals (15-64)	69.5	70.1	70.5	70.9	72.7	1.8 pps
	Non-nationals (15-64)	77.5	78.3	80.4	80.6	85.4	4.8 pps
	<i>Male</i>	76.6	77.0	77.7	78.3	79.5	1.2 pps
	Young (15-24)	39.7	39.2	39.2	36.1	35.7	-0.4 pps
	Prime age (25-54)	91.1	91.0	91.5	92.1	92.5	0.5 pps
	Older (55-64)	60.8	61.9	62.6	65.3	69.3	4.0 pps
	<i>Female</i>	62.6	63.3	63.4	63.6	66.1	2.5 pps
	Young (15-24)	29.7	30.7	31.0	27.4	26.1	-1.3 pps
	Prime age (25-54)	78.7	79.3	79.0	79.1	82.1	3.1 pps
	Older (55-64)	40.5	39.9	40.0	41.7	44.0	2.3 pps
<b>5</b>	- Employment rate (% of population 15-64)	66.1	67.4	68.2	68.7	70.3	1.6 pps
	Young (15-24)	29.6	31.0	31.7	28.4	27.3	-1.1 pps
	Prime age (25-54)	81.4	82.4	82.9	83.3	84.8	1.6 pps
	Older (55-64)	48.3	48.9	49.5	51.8	54.7	2.9 pps
	Low-skilled (15-64)	23.3	23.6	24.7	24.1	24.7	0.6 pps
	Medium-skilled (15-64)	67.0	68.1	68.6	69.0	70.7	1.8 pps
	High-skilled (15-64)	86.8	87.6	87.9	88.1	89.9	1.9 pps
	Nationals (15-64)	66.1	67.4	68.2	68.6	70.2	1.6 pps
	Non-nationals (15-64)	71.2	74.0	75.5	76.6	81.5	4.9 pps
	<i>Male</i>	72.8	74.0	75.3	75.9	76.8	0.9 pps
	Young (15-24)	33.9	34.7	35.4	32.3	31.6	-0.8 pps
	Prime age (25-54)	87.3	88.1	89.2	89.7	89.9	0.2 pps
	Older (55-64)	58.3	59.8	61.0	63.7	67.4	3.7 pps
	<i>Female</i>	59.5	60.8	61.1	61.5	63.8	2.4 pps
	Young (15-24)	25.2	27.0	27.8	24.2	22.8	-1.4 pps
	Prime age (25-54)	75.3	76.5	76.4	76.7	79.6	2.9 pps
	Older (55-64)	39.3	39.1	39.2	41.0	43.1	2.1 pps
<b>6</b>	- Employed persons (15-64, 1000 pers.)	16078.8	16133.4	16094.1	16049.3	16237.1	1.2 %
<b>7</b>	- Employment growth (% , National accounts)	1.3	0.5	0.0	0.0	1.5	1.5 pps
	Employment growth (% , 15-64, LFS)	1.1	0.3	-0.2	-0.3	1.2	1.4 pps
	<i>Male</i>	1.2	0.1	0.4	-0.2	0.0	0.2 pps
	<i>Female</i>	1.0	0.6	-1.0	-0.4	2.6	3.0 pps
<b>8</b>	- Self employed (15-64, % of total employment )	17.4	17.4	17.4	17.9	18.1	0.1 pps
	<i>Male</i>	21.8	21.6	21.6	22.5	22.5	0.0 pps
	<i>Female</i>	12.0	12.3	12.3	12.3	12.7	0.5 pps
<b>9</b>	- Temporary employment (15-64, % of total employment)	26.1	24.3	21.7	18.4	14.8	-3.6 pps
	<i>Male</i>	25.6	23.5	20.6	17.4	14.4	-3.0 pps
	<i>Female</i>	26.6	25.1	22.9	19.5	15.3	-4.2 pps
<b>10</b>	- Part-time (15-64, % of total employment )	6.6	6.4	6.1	5.9	5.2	-0.7 pps
	<i>Male</i>	3.7	3.8	3.5	3.4	3.3	-0.1 pps
	<i>Female</i>	10.0	9.7	9.3	8.9	7.6	-1.3 pps
<b>11</b>	- Involuntary part-time (15-64, % of total employment)	1.4	1.0	0.9	0.8	0.7	0.0 pps
<b>12</b>	- Unemployment rate (harmonised:15-74)	5.0	3.9	3.3	3.2	3.4	0.2 pps
	Young (15-24)	14.8	11.7	9.9	10.8	11.9	1.1 pps
	Prime age (25-49)	4.2	3.4	2.9	2.8	2.9	0.1 pps
	Older (55-64)	3.7	2.8	2.4	2.1	2.5	0.4 pps
	Low-skilled (15-64)	12.6	10.3	8.6	8.8	8.4	-0.4 pps
	Medium-skilled (15-64)	5.7	4.5	3.7	3.5	4.0	0.5 pps
	High-skilled (15-64)	2.5	2.0	2.0	2.0	1.8	-0.2 pps
	Nationals (15-64)	5.0	3.9	3.3	3.2	3.4	0.2 pps
	Non-nationals (15-64)	8.3	5.5	6.0	0.0	0.0	0.0 pps
	<i>Male</i>	5.0	3.9	3.1	3.1	3.4	0.3 pps
	<i>Female</i>	5.0	3.9	3.6	3.3	3.4	0.1 pps
<b>13</b>	- Long-term unemployment (% of total unemployment)	31.0	26.9	21.5	20.1	26.6	6.5 pps
<b>14</b>	- Worked hours (full-time, average actual weekly hours)	40.7	40.0	40.1	39.8	40.9	2.8 %
	<i>Male</i>	41.9	41.2	41.1	40.5	41.6	2.7 %
	<i>Female</i>	39.2	38.6	38.7	38.3	39.6	3.4 %
<b>15</b>	- Sectoral employment growth (% change)						
	Agriculture	-2.4	-5.6	-5.1	4.5	-11.2	-15.7 pps
	Building and construction	-0.2	2.5	4.9	1.3	1.2	-0.1 pps
	Services	1.6	0.9	1.1	-1.4	4.1	5.5 pps
	Manufacturing industry	4.4	1.5	-1.7	-4.0	-1.1	2.9 pps
<b>16</b>	- Indicator board on wage developments (% change)						
	Compensation per employee	5.8	8.1	7.3	5.6	5.0	-0.6 pps
	Real compensation per employee based on GDP	3.9	6.8	4.0	1.3	-0.8	-2.0 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	6.6	7.0	6.1	5.3	7.9	2.6 pps
	Labour cost index (wages and salaries, total)	6.6	7.0	6.1	5.3	7.9	2.6 pps
	Labour productivity (GDP/person employed)	3.4	4.8	4.8	-2.1	4.4	6.5 pps

Portugal		2017	2018	2019	2020	2021	2020-2021
1	- Population (LFS, total, 1000 pers.)	10300	10284	10286	10297	10292	0.0 %
2	- Population (LFS, working age:15-64, 1000 pers.)	6659	6623	6603	6603	6592	-0.2 %
	(% of total population)	64.6	64.4	64.2	64.1	64.0	-0.1 pps
3	- Labour force (15-64, 1000 pers.)	4972	4976	4987	4905	4957	1.1 %
	Male	2506	2499	2495	2444	2474	1.2 %
	Female	2466	2477	2493	2460	2483	0.9 %
4	- Activity rate (% of population 15-64)	74.7	75.1	75.5	74.3	75.2	0.9 pps
	Young (15-24)	34.0	34.2	34.3	30.2	29.7	-0.4 pps
	Prime age (25-54)	89.6	89.8	90.3	89.5	90.4	0.9 pps
	Older (55-64)	61.5	63.4	64.4	64.5	66.9	2.4 pps
	Nationals (15-64)	74.6	75.1	75.4	74.1	75.1	1.0 pps
	Non-nationals (15-64)	79.5	77.1	80.0	78.4	80.0	1.6 pps
	Male	77.9	78.1	78.3	76.9	77.7	0.8 pps
	Young (15-24)	35.6	36.6	36.0	32.2	32.2	0.0 pps
	Prime age (25-54)	92.3	92.6	92.7	91.8	92.3	0.4 pps
	Older (55-64)	69.2	69.0	70.9	70.3	73.3	3.0 pps
	Female	71.6	72.4	72.9	71.8	72.8	1.0 pps
	Young (15-24)	32.3	31.7	32.4	28.0	27.2	-0.8 pps
	Prime age (25-54)	87.0	87.3	88.0	87.4	88.7	1.4 pps
	Older (55-64)	54.6	58.4	58.8	59.5	61.3	1.9 pps
5	- Employment rate (% of population 15-64)	67.8	69.7	70.5	69.0	70.1	1.1 pps
	Young (15-24)	25.9	27.2	28.0	23.4	22.8	-0.6 pps
	Prime age (25-54)	82.5	84.3	85.2	84.2	85.3	1.1 pps
	Older (55-64)	56.2	59.2	60.4	60.7	63.4	2.6 pps
	Low-skilled (15-64)	59.8	61.3	61.2	60.1	59.9	-0.2 pps
	Medium-skilled (15-64)	70.5	72.0	73.3	69.3	69.1	-0.2 pps
	High-skilled (15-64)	83.5	85.5	85.5	84.4	85.9	1.5 pps
	Nationals (15-64)	67.8	69.7	70.5	69.0	70.1	1.1 pps
	Non-nationals (15-64)	68.6	68.8	70.7	68.2	71.9	3.7 pps
	Male	71.1	72.7	73.6	71.6	72.7	1.1 pps
	Young (15-24)	27.6	29.3	30.4	25.5	25.4	-0.1 pps
	Prime age (25-54)	85.6	87.5	88.1	86.7	87.5	0.7 pps
	Older (55-64)	63.0	64.5	66.5	65.6	68.9	3.3 pps
	Female	64.8	66.9	67.6	66.6	67.7	1.1 pps
	Young (15-24)	24.1	25.1	25.5	21.2	20.0	-1.2 pps
	Prime age (25-54)	79.7	81.4	82.5	81.8	83.3	1.5 pps
	Older (55-64)	50.2	54.6	55.1	56.5	58.6	2.1 pps
6	- Employed persons (15-64, 1000 pers.)	4515.4	4615.0	4652.9	4557.4	4622.6	1.4 %
7	- Employment growth (% , National accounts)	3.3	2.3	0.8	-1.9	2.1	4.0 pps
	Employment growth (% , 15-64, LFS)	3.3	2.2	0.8	-2.1	1.4	3.5 pps
	Male	3.4	1.8	0.7	-2.9	1.7	4.5 pps
	Female	3.2	2.6	1.0	-1.2	1.2	2.4 pps
8	- Self employed (15-64, % of total employment )	13.4	13.1	13.6	13.4	13.2	-0.2 pps
	Male	16.6	16.2	16.6	16.3	16.0	-0.3 pps
	Female	10.1	9.8	10.5	10.5	10.4	-0.1 pps
9	- Temporary employment (15-64, % of total employment)	22.0	22.0	20.8	17.8	17.0	-0.8 pps
	Male	22.3	22.0	20.6	17.4	16.7	-0.7 pps
	Female	21.7	22.0	21.1	18.1	17.2	-0.9 pps
10	- Part-time (15-64, % of total employment )	8.9	8.1	8.1	7.5	6.9	-0.6 pps
	Male	6.1	5.7	5.4	4.9	4.7	-0.2 pps
	Female	11.7	10.5	10.9	10.1	9.1	-1.0 pps
11	- Involuntary part-time (15-64, % of total employment)	4.2	3.7	3.5	3.3	2.8	-0.5 pps
12	- Unemployment rate (harmonised:15-74)	9.2	7.2	6.7	7.0	6.6	-0.4 pps
	Young (15-24)	23.9	20.3	18.3	22.6	23.4	0.8 pps
	Prime age (25-49)	7.9	6.1	5.7	6.0	5.7	-0.3 pps
	Older (55-64)	8.5	6.5	6.2	5.9	5.2	-0.7 pps
	Low-skilled (15-64)	10.2	7.7	7.2	6.9	6.9	0.0 pps
	Medium-skilled (15-64)	10.0	8.3	7.3	8.5	8.0	-0.5 pps
	High-skilled (15-64)	6.6	5.4	5.4	5.9	5.4	-0.5 pps
	Nationals (15-64)	9.1	7.2	6.5	6.9	6.7	-0.2 pps
	Non-nationals (15-64)	13.6	10.9	11.7	12.9	10.1	-2.8 pps
	Male	8.8	6.9	6.0	6.8	6.3	-0.5 pps
	Female	9.6	7.6	7.3	7.2	6.9	-0.3 pps
13	- Long-term unemployment (% of total unemployment)	49.6	43.4	42.2	33.0	43.3	10.3 pps
14	- Worked hours (full-time, average actual weekly hours)	40.4	40.2	40.0	39.1	39.1	0.0 %
	Male	41.6	41.4	41.3	40.1	40.3	0.5 %
	Female	39.4	39.2	38.9	38.0	38.3	0.8 %
15	- Sectoral employment growth (% change)						
	Agriculture	-1.5	-2.6	-8.2	-0.6	-5.1	-4.5 pps
	Building and construction	4.6	4.6	4.8	2.2	5.6	3.4 pps
	Services	5.2	3.8	2.4	-4.1	3.2	7.2 pps
	Manufacturing industry	3.6	3.4	-0.6	-2.2	1.1	3.3 pps
16	- Indicator board on wage developments (% change)						
	Compensation per employee	2.3	3.9	4.8	2.0	3.8	1.8 pps
	Real compensation per employee based on GDP	0.8	2.0	3.0	0.0	3.1	3.1 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	2.0	1.9	1.1	7.6	2.1	-5.5 pps
	Labour cost index (wages and salaries, total)	2.1	1.9	1.0	8.5	1.4	-7.1 pps
	Labour productivity (GDP/person employed)	0.2	0.5	1.9	-6.7	2.8	9.5 pps



<b>Romania</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- Population (LFS, total, 1000 pers.)	19593	19477	19376	19269	19202	-0.4 %
<b>2</b>	- Population (LFS, working age:15-64, 1000 pers.)	13095	12930	12774	12611	12385	-1.8 %
	(% of total population)	66.8	66.4	65.9	65.4	64.5	-0.9 pps
<b>3</b>	- Labour force (15-64, 1000 pers.)	8812	8761	8761	8723	8125	-6.9 %
	<i>Male</i>	5034	5036	5049	5040	4752	-5.7 %
	<i>Female</i>	3778	3725	3712	3683	3373	-8.4 %
<b>4</b>	- Activity rate (% of population 15-64)	67.3	67.8	68.6	69.2	65.6	-3.6 pps
	Young (15-24)	29.9	29.5	29.6	29.7	26.8	-2.9 pps
	Prime age (25-54)	83.4	83.6	84.1	84.3	80.6	-3.7 pps
	Older (55-64)	46.0	47.5	48.9	50.2	45.6	-4.6 pps
	Nationals (15-64)	67.3	67.8	68.6	69.2	65.6	-3.6 pps
	Non-nationals (15-64)	74.5	72.1	0.0	0.0	60.9	60.9 pps
	<i>Male</i>	76.2	76.9	78.0	78.7	75.6	-3.1 pps
	Young (15-24)	34.6	34.6	35.7	35.5	32.9	-2.6 pps
	Prime age (25-54)	92.2	92.5	93.1	93.6	90.7	-3.0 pps
	Older (55-64)	57.4	59.7	61.6	62.5	57.9	-4.6 pps
	<i>Female</i>	58.2	58.3	58.9	59.3	55.3	-4.0 pps
	Young (15-24)	25.0	24.2	23.3	23.6	20.4	-3.2 pps
	Prime age (25-54)	74.2	74.2	74.6	74.5	70.0	-4.4 pps
	Older (55-64)	35.7	36.4	37.3	38.8	34.1	-4.7 pps
<b>5</b>	- Employment rate (% of population 15-64)	63.9	64.8	65.8	65.6	61.9	-3.7 pps
	Young (15-24)	24.5	24.7	24.7	24.6	21.2	-3.4 pps
	Prime age (25-54)	79.9	80.6	81.4	80.6	76.9	-3.7 pps
	Older (55-64)	44.5	46.3	47.8	48.5	43.8	-4.7 pps
	Low-skilled (15-64)	42.5	42.6	44.4	43.4	34.7	-8.7 pps
	Medium-skilled (15-64)	67.5	68.6	68.6	68.1	64.3	-3.7 pps
	High-skilled (15-64)	87.9	88.4	89.2	88.8	88.4	-0.4 pps
	Nationals (15-64)	63.9	64.8	65.8	65.6	61.9	-3.7 pps
	Non-nationals (15-64)	68.2	68.6	0.0	0.0	59.2	59.2 pps
	<i>Male</i>	71.8	73.2	74.6	74.4	71.1	-3.4 pps
	Young (15-24)	28.4	29.0	29.8	29.2	26.0	-3.2 pps
	Prime age (25-54)	87.6	88.7	89.7	89.3	86.2	-3.2 pps
	Older (55-64)	55.3	57.9	60.1	60.4	55.4	-5.0 pps
	<i>Female</i>	55.8	56.2	56.8	56.5	52.5	-4.0 pps
	Young (15-24)	20.4	20.3	19.3	19.7	16.1	-3.6 pps
	Prime age (25-54)	71.8	72.1	72.7	71.4	67.1	-4.3 pps
	Older (55-64)	34.9	35.7	36.5	37.5	33.0	-4.5 pps
<b>6</b>	- Employed persons (15-64, 1000 pers.)	8363.2	8381.8	8407.9	8272.2	7667.6	-7.3 %
<b>7</b>	- Employment growth (% , National accounts)	2.4	0.1	0.1	-1.8	-8.9	-7.1 pps
	Employment growth (% , 15-64, LFS)	2.4	0.2	0.3	-1.6	-7.3	-5.7 pps
	<i>Male</i>	1.6	1.0	0.7	-1.2	-6.3	-5.1 pps
	<i>Female</i>	3.5	-0.8	-0.2	-2.2	-8.6	-6.5 pps
<b>8</b>	- Self employed (15-64, % of total employment )	16.4	15.5	15.2	15.1	11.6	-3.5 pps
	<i>Male</i>	21.1	19.9	19.6	19.4	15.3	-4.1 pps
	<i>Female</i>	10.1	9.8	9.4	9.3	6.5	-2.8 pps
<b>9</b>	- Temporary employment (15-64, % of total employment)	1.2	1.1	1.4	1.2	2.4	1.2 pps
	<i>Male</i>	1.4	1.2	1.7	1.6	3.3	1.7 pps
	<i>Female</i>	0.9	0.9	1.0	0.8	1.1	0.3 pps
<b>10</b>	- Part-time (15-64, % of total employment )	6.8	6.5	6.1	5.9	3.7	-2.2 pps
	<i>Male</i>	6.7	6.2	6.0	5.8	4.1	-1.7 pps
	<i>Female</i>	6.9	6.9	6.2	6.0	3.0	-3.0 pps
<b>11</b>	- Involuntary part-time (15-64, % of total employment)	3.8	3.5	3.4	3.4	2.4	-0.9 pps
<b>12</b>	- Unemployment rate (harmonised:15-74)	6.1	5.3	4.9	6.1	5.6	-0.5 pps
	Young (15-24)	18.3	16.2	16.8	17.3	21.0	3.7 pps
	Prime age (25-49)	4.2	3.6	3.2	4.4	4.6	0.2 pps
	Older (55-64)	3.2	2.5	2.4	3.4	3.9	0.5 pps
	Low-skilled (15-64)	7.6	6.6	7.0	9.0	14.0	5.0 pps
	Medium-skilled (15-64)	5.2	4.4	4.0	5.2	5.1	-0.1 pps
	High-skilled (15-64)	2.4	2.1	1.6	2.2	2.1	-0.1 pps
	Nationals (15-64)	5.1	4.3	4.0	5.2	5.6	0.4 pps
	Non-nationals (15-64)	0.0	0.0	0.0	0.0	0.0	0.0 pps
	<i>Male</i>	6.8	5.8	5.3	6.3	6.0	-0.3 pps
	<i>Female</i>	5.1	4.5	4.3	5.7	5.1	-0.6 pps
<b>13</b>	- Long-term unemployment (% of total unemployment)	41.5	44.3	42.5	29.9	36.5	6.6 pps
<b>14</b>	- Worked hours (full-time, average actual weekly hours)	39.3	39.4	39.5	38.4	40.5	5.5 %
	<i>Male</i>	40.2	40.0	40.2	39.8	40.5	1.8 %
	<i>Female</i>	39.9	39.8	39.9	39.4	39.8	1.0 %
<b>15</b>	- Sectoral employment growth (% change)						
	Agriculture	0.3	-0.1	-4.2	-5.6	-44.4	-38.8 pps
	Building and construction	3.2	-2.7	6.1	3.9	2.8	-1.1 pps
	Services	3.2	2.6	1.9	0.9	2.2	1.3 pps
	Manufacturing industry	3.5	-0.5	-1.9	-6.0	-1.3	4.7 pps
<b>16</b>	- Indicator board on wage developments (% change)						
	Compensation per employee	14.8	12.9	10.9	2.6	5.7	3.1 pps
	Real compensation per employee based on GDP	9.7	6.4	3.8	-1.2	0.3	1.5 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	14.3	12.4	12.3	8.1	6.0	-2.1 pps
	Labour cost index (wages and salaries, total)	14.2	33.1	12.3	7.8	6.0	-1.8 pps
	Labour productivity (GDP/person employed)	4.8	4.4	4.1	-2.0	16.2	18.2 pps

Slovenia		2017	2018	2019	2020	2021	2020-2021
1	- Population (LFS, total, 1000 pers.)	2066	2072	2089	2103	2108	0.2 %
2	- Population (LFS, working age:15-64, 1000 pers.)	1362	1352	1350	1362	1336	-1.9 %
	(% of total population)	65.9	65.3	64.6	64.7	63.4	-1.4 pps
3	- Labour force (15-64, 1000 pers.)	1011	1015	1015	1016	1002	-1.3 %
	Male	538	544	546	547	540	-1.3 %
	Female	473	470	469	469	462	-1.4 %
4	- Activity rate (% of population 15-64)	74.2	75.0	75.2	74.6	75.0	0.4 pps
	Young (15-24)	39.1	38.5	36.2	31.5	33.9	2.4 pps
	Prime age (25-54)	91.9	92.0	92.4	92.4	92.2	-0.2 pps
	Older (55-64)	45.6	49.5	50.9	52.4	54.9	2.5 pps
	Nationals (15-64)	74.1	75.1	75.2	74.4	75.0	0.6 pps
	Non-nationals (15-64)	76.0	74.3	75.6	78.4	76.3	-2.2 pps
	Male	77.1	78.2	78.0	77.1	77.8	0.7 pps
	Young (15-24)	42.9	42.4	39.1	33.9	36.4	2.4 pps
	Prime age (25-54)	93.4	94.0	94.4	94.2	94.1	-0.1 pps
	Older (55-64)	51.7	55.1	55.8	56.3	59.3	3.0 pps
	Female	71.2	71.7	72.2	71.9	72.0	0.1 pps
	Young (15-24)	34.9	34.4	32.9	28.7	31.0	2.3 pps
	Prime age (25-54)	90.2	89.9	90.3	90.3	90.1	-0.2 pps
	Older (55-64)	39.5	43.9	46.0	48.5	50.6	2.1 pps
5	- Employment rate (% of population 15-64)	69.3	71.1	71.8	70.9	71.4	0.6 pps
	Young (15-24)	34.7	35.1	33.3	27.0	29.6	2.6 pps
	Prime age (25-54)	86.1	87.5	88.6	88.1	88.3	0.2 pps
	Older (55-64)	42.7	47.0	48.6	50.5	52.7	2.2 pps
	Low-skilled (15-64)	35.4	36.3	34.4	30.4	31.4	1.0 pps
	Medium-skilled (15-64)	70.7	72.8	73.2	70.9	70.0	-0.9 pps
	High-skilled (15-64)	86.2	88.0	89.5	89.4	88.5	-0.9 pps
	Nationals (15-64)	69.3	71.3	71.9	70.7	71.5	0.8 pps
	Non-nationals (15-64)	69.0	68.6	70.3	72.7	70.4	-2.2 pps
	Male	72.5	74.5	74.8	73.7	74.5	0.8 pps
	Young (15-24)	38.6	38.8	36.2	29.6	32.2	2.5 pps
	Prime age (25-54)	88.5	90.1	90.9	90.4	90.6	0.2 pps
	Older (55-64)	48.0	52.2	53.2	54.3	57.1	2.7 pps
	Female	65.8	67.5	68.6	67.8	68.1	0.4 pps
	Young (15-24)	30.4	31.0	29.9	24.1	26.5	2.5 pps
	Prime age (25-54)	83.5	84.8	86.0	85.6	85.7	0.2 pps
	Older (55-64)	37.4	41.9	44.0	46.6	48.5	1.9 pps
6	- Employed persons (15-64, 1000 pers.)	943.5	961.9	969.7	964.7	954.3	-1.1 %
7	- Employment growth (% , National accounts)	2.9	3.2	2.5	-0.7	1.3	2.0 pps
	Employment growth (% , 15-64, LFS)	4.5	2.0	0.8	-0.5	-1.1	-0.6 pps
	Male	4.6	2.5	1.0	-0.3	-1.1	-0.8 pps
	Female	4.5	1.3	0.6	-0.8	-1.1	-0.3 pps
8	- Self employed (15-64, % of total employment)	11.4	12.1	11.8	10.7	11.9	1.2 pps
	Male	14.3	15.4	15.2	13.4	15.6	2.2 pps
	Female	8.1	8.3	7.8	7.6	7.6	0.0 pps
9	- Temporary employment (15-64, % of total employment)	17.6	15.7	13.2	10.8	11.8	1.0 pps
	Male	16.4	14.4	11.7	9.5	10.3	0.8 pps
	Female	18.9	17.1	14.9	12.2	13.3	1.1 pps
10	- Part-time (15-64, % of total employment)	10.3	9.7	8.4	8.3	9.2	0.9 pps
	Male	6.7	5.9	4.8	5.1	6.2	1.1 pps
	Female	14.5	14.3	12.7	12.1	12.8	0.7 pps
11	- Involuntary part-time (15-64, % of total employment)	1.1	0.6	0.4	0.5	0.9	0.4 pps
12	- Unemployment rate (harmonised:15-74)	6.6	5.1	4.4	5.0	4.8	-0.2 pps
	Young (15-24)	11.2	8.8	8.1	14.2	12.8	-1.4 pps
	Prime age (25-49)	6.3	4.9	4.2	4.6	4.2	-0.4 pps
	Older (55-64)	6.4	4.9	4.5	3.7	4.0	0.3 pps
	Low-skilled (15-64)	11.5	9.1	9.9	11.5	9.5	-2.0 pps
	Medium-skilled (15-64)	6.8	5.6	4.7	5.6	5.4	-0.2 pps
	High-skilled (15-64)	5.3	3.7	3.0	3.2	3.4	0.2 pps
	Nationals (15-64)	6.5	5.1	4.4	4.9	4.6	-0.3 pps
	Non-nationals (15-64)	9.2	7.6	7.1	7.3	7.6	0.3 pps
	Male	5.8	4.6	4.0	4.4	4.3	-0.1 pps
	Female	7.5	5.7	5.0	5.7	5.3	-0.4 pps
13	- Long-term unemployment (% of total unemployment)	47.5	42.9	43.0	38.8	39.2	0.4 pps
14	- Worked hours (full-time, average actual weekly hours)	39.9	40.1	40.1	40.4	40.2	-0.5 %
	Male	39.9	40.0	39.8	39.7	40.1	1.0 %
	Female	39.2	39.3	39.3	39.9	39.7	-0.5 %
15	- Sectoral employment growth (% change)						
	Agriculture	-1.0	-0.4	-0.6	-3.0	-1.2	1.8 pps
	Building and construction	2.3	6.5	9.1	2.5	4.4	1.9 pps
	Services	3.8	3.2	2.1	-1.7	0.7	2.4 pps
	Manufacturing industry	3.7	4.6	2.6	-1.9	1.7	3.6 pps
16	- Indicator board on wage developments (% change)						
	Compensation per employee	3.0	3.9	5.0	3.4	7.9	4.6 pps
	Real compensation per employee based on GDP	1.6	1.7	2.7	2.2	2.8	0.6 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	5.6	3.3	4.8	1.9	6.3	4.4 pps
	Labour cost index (wages and salaries, total)	5.1	3.6	4.9	2.8	5.2	2.4 pps
	Labour productivity (GDP/person employed)	1.9	1.2	1.0	-3.7	6.8	10.5 pps

<b>Slovak Republic</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- Population (LFS, total, 1000 pers.)	5438	5446	5453	5461	5451	-0.2 %
<b>2</b>	- Population (LFS, working age:15-64, 1000 pers.)	3781	3749	3718	3689	3631	-1.6 %
	(% of total population)	69.5	68.8	68.2	67.6	66.6	-0.9 pps
<b>3</b>	- Labour force (15-64, 1000 pers.)	2726	2713	2702	2672	2709	1.4 %
	<i>Male</i>	1489	1487	1478	1459	1437	-1.5 %
	<i>Female</i>	1237	1225	1223	1213	1272	4.9 %
<b>4</b>	- Activity rate (% of population 15-64)	72.1	72.4	72.7	72.4	74.6	2.2 pps
	Young (15-24)	33.2	32.3	29.7	28.1	26.2	-1.9 pps
	Prime age (25-54)	86.6	86.5	86.5	85.9	88.8	2.8 pps
	Older (55-64)	56.4	57.2	59.8	61.3	64.1	2.8 pps
	Nationals (15-64)	72.1	72.3	72.6	72.4	74.5	2.1 pps
	Non-nationals (15-64)	79.4	78.1	80.6	70.9	88.0	17.1 pps
	<i>Male</i>	78.2	78.7	78.8	78.3	78.6	0.3 pps
	Young (15-24)	39.6	39.7	36.8	34.9	31.9	-3.0 pps
	Prime age (25-54)	93.1	93.2	93.2	92.2	92.4	0.1 pps
	Older (55-64)	60.0	61.1	62.9	64.5	67.7	3.2 pps
	<i>Female</i>	65.9	65.9	66.4	66.4	70.6	4.1 pps
	Young (15-24)	26.5	24.5	22.2	21.0	20.2	-0.7 pps
	Prime age (25-54)	79.8	79.7	79.6	79.3	85.0	5.7 pps
	Older (55-64)	53.0	53.7	57.0	58.3	60.7	2.5 pps
<b>5</b>	- Employment rate (% of population 15-64)	66.2	67.6	68.4	67.5	69.4	1.9 pps
	Young (15-24)	26.9	27.5	24.9	22.7	20.8	-1.9 pps
	Prime age (25-54)	80.0	81.2	82.0	80.6	83.2	2.6 pps
	Older (55-64)	53.0	54.2	57.0	58.3	60.6	2.3 pps
	Low-skilled (15-64)	21.4	21.1	20.7	18.2	13.7	-4.5 pps
	Medium-skilled (15-64)	72.5	74.1	75.0	73.3	74.9	1.6 pps
	High-skilled (15-64)	78.5	79.3	80.6	80.2	85.4	5.2 pps
	Nationals (15-64)	66.2	67.6	68.4	67.5	69.4	1.9 pps
	Non-nationals (15-64)	74.8	68.8	76.3	62.7	81.2	18.5 pps
	<i>Male</i>	72.0	73.9	74.4	73.3	73.3	0.0 pps
	Young (15-24)	32.4	34.0	31.6	28.5	25.6	-2.9 pps
	Prime age (25-54)	86.3	87.9	88.3	86.9	86.8	-0.1 pps
	Older (55-64)	56.6	58.4	60.4	61.7	64.2	2.6 pps
	<i>Female</i>	60.3	61.2	62.4	61.7	65.6	3.9 pps
	Young (15-24)	21.1	20.6	17.8	16.5	15.8	-0.8 pps
	Prime age (25-54)	73.4	74.4	75.3	74.0	79.4	5.4 pps
	Older (55-64)	49.6	50.4	53.9	55.2	57.3	2.1 pps
<b>6</b>	- Employed persons (15-64, 1000 pers.)	2502.1	2533.3	2543.8	2490.9	2521.7	1.2 %
<b>7</b>	- Employment growth (% , National accounts)	2.2	2.0	1.0	-1.9	-0.6	1.3 pps
	Employment growth (% , 15-64, LFS)	1.2	1.2	0.4	-2.1	1.2	3.3 pps
	<i>Male</i>	0.2	1.8	0.0	-2.2	-1.8	0.4 pps
	<i>Female</i>	2.5	0.6	1.0	-2.0	4.9	6.9 pps
<b>8</b>	- Self employed (15-64, % of total employment )	15.0	14.6	14.8	14.7	14.6	-0.1 pps
	<i>Male</i>	19.0	18.7	19.1	19.1	20.2	1.1 pps
	<i>Female</i>	10.2	9.6	9.7	9.4	8.3	-1.1 pps
<b>9</b>	- Temporary employment (15-64, % of total employment)	9.4	8.1	7.8	6.5	4.1	-2.4 pps
	<i>Male</i>	9.1	7.5	7.1	5.8	3.9	-1.9 pps
	<i>Female</i>	9.8	8.7	8.6	7.3	4.3	-3.0 pps
<b>10</b>	- Part-time (15-64, % of total employment )	5.8	4.9	4.5	4.6	3.1	-1.5 pps
	<i>Male</i>	4.0	3.2	2.9	2.7	1.8	-0.9 pps
	<i>Female</i>	8.0	7.0	6.5	6.8	4.6	-2.2 pps
<b>11</b>	- Involuntary part-time (15-64, % of total employment)	1.8	1.3	1.2	0.9	0.6	-0.3 pps
<b>12</b>	- Unemployment rate (harmonised:15-74)	8.1	6.5	5.7	6.7	6.8	0.1 pps
	Young (15-24)	18.9	14.9	16.1	19.3	20.6	1.3 pps
	Prime age (25-49)	7.6	6.1	5.3	6.2	6.3	0.1 pps
	Older (55-64)	6.0	5.3	4.7	4.8	5.4	0.6 pps
	Low-skilled (15-64)	29.9	30.0	31.3	30.7	42.1	11.4 pps
	Medium-skilled (15-64)	7.6	5.8	4.9	6.4	6.4	0.0 pps
	High-skilled (15-64)	4.2	3.1	2.5	3.5	3.0	-0.5 pps
	Nationals (15-64)	8.2	6.6	5.8	6.8	6.9	0.1 pps
	Non-nationals (15-64)	0.0	0.0	0.0	0.0	0.0	0.0 pps
	<i>Male</i>	7.7	6.0	5.5	6.2	6.7	0.5 pps
	<i>Female</i>	8.5	7.1	6.0	7.1	7.0	-0.1 pps
<b>13</b>	- Long-term unemployment (% of total unemployment)	62.4	61.7	58.2	47.7	56.6	8.9 pps
<b>14</b>	- Worked hours (full-time, average actual weekly hours)	39.7	39.8	39.8	39.2	38.5	-1.8 %
	<i>Male</i>	40.5	40.5	40.6	39.9	39.2	-1.8 %
	<i>Female</i>	38.7	38.6	38.6	38.2	37.6	-1.6 %
<b>15</b>	- Sectoral employment growth (% change)						
	Agriculture	-0.3	-0.2	0.1	-2.6	-4.6	-2.0 pps
	Building and construction	2.3	2.3	5.2	-0.7	0.4	1.1 pps
	Services	1.8	2.9	0.6	-1.9	0.0	1.9 pps
	Manufacturing industry	3.9	1.7	0.2	-4.3	-1.4	2.9 pps
<b>16</b>	- Indicator board on wage developments (% change)						
	Compensation per employee	5.1	6.0	6.8	3.6	5.9	2.3 pps
	Real compensation per employee based on GDP	3.8	3.9	4.2	1.2	3.4	2.3 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	6.7	6.6	7.1	5.6	5.3	-0.3 pps
	Labour cost index (wages and salaries, total)	6.1	6.5	7.0	8.5	5.5	-3.0 pps
	Labour productivity (GDP/person employed)	0.8	1.8	1.5	-2.5	3.6	6.1 pps

<b>Finland</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- Population (LFS, total, 1000 pers.)	5508	5516	5522	5531	5542	0.2 %
<b>2</b>	- Population (LFS, working age:15-64, 1000 pers.)	3434	3421	3410	3401	3399	0.0 %
	(% of total population)	62.3	62.0	61.7	61.5	61.3	-0.2 pps
<b>3</b>	- Labour force (15-64, 1000 pers.)	2635	2665	2669	2662	2679	0.6 %
	<i>Male</i>	1362	1375	1379	1377	1388	0.8 %
	<i>Female</i>	1273	1290	1290	1285	1291	0.4 %
<b>4</b>	- Activity rate (% of population 15-64)	76.7	77.9	78.3	78.3	78.8	0.5 pps
	Young (15-24)	53.2	53.1	53.9	52.2	52.9	0.7 pps
	Prime age (25-54)	86.8	87.8	87.7	87.5	87.9	0.4 pps
	Older (55-64)	67.8	70.3	71.5	72.9	73.8	0.9 pps
	Nationals (15-64)	77.1	78.3	78.7	78.6	79.1	0.5 pps
	Non-nationals (15-64)	68.9	68.8	68.4	71.3	74.3	3.0 pps
	<i>Male</i>	78.5	79.5	79.9	80.0	80.3	0.4 pps
	Young (15-24)	52.3	51.5	54.3	53.1	53.1	0.1 pps
	Prime age (25-54)	89.8	90.8	90.3	90.0	90.0	0.1 pps
	Older (55-64)	67.5	69.7	70.5	72.4	73.8	1.4 pps
	<i>Female</i>	74.9	76.3	76.6	76.5	77.2	0.7 pps
	Young (15-24)	54.2	54.7	53.5	51.3	52.7	1.3 pps
	Prime age (25-54)	83.6	84.6	84.9	84.9	85.6	0.7 pps
	Older (55-64)	68.2	70.8	72.4	73.5	73.9	0.4 pps
<b>5</b>	- Employment rate (% of population 15-64)	70.0	72.1	72.9	72.1	72.7	0.6 pps
	Young (15-24)	42.5	44.0	44.6	41.1	43.8	2.8 pps
	Prime age (25-54)	80.6	82.5	83.2	82.4	82.3	-0.1 pps
	Older (55-64)	62.5	65.4	66.8	67.5	68.4	0.9 pps
	Low-skilled (15-64)	38.5	39.5	39.0	36.6	41.0	4.4 pps
	Medium-skilled (15-64)	71.1	73.2	74.4	72.1	73.9	1.8 pps
	High-skilled (15-64)	84.4	86.2	86.2	86.2	87.3	1.0 pps
	Nationals (15-64)	70.5	72.7	73.5	72.6	73.3	0.7 pps
	Non-nationals (15-64)	58.3	57.7	59.8	61.2	63.2	2.0 pps
	<i>Male</i>	71.4	73.5	74.1	73.4	73.6	0.2 pps
	Young (15-24)	41.3	42.6	44.1	40.7	43.7	2.9 pps
	Prime age (25-54)	83.3	85.3	85.6	84.7	83.7	-1.0 pps
	Older (55-64)	61.6	64.3	64.8	66.6	67.9	1.3 pps
	<i>Female</i>	68.5	70.6	71.8	70.7	71.7	1.0 pps
	Young (15-24)	43.7	45.5	45.1	41.4	44.0	2.6 pps
	Prime age (25-54)	77.9	79.5	80.7	80.0	80.8	0.8 pps
	Older (55-64)	63.4	66.5	68.7	68.4	68.8	0.4 pps
<b>6</b>	- Employed persons (15-64, 1000 pers.)	2402.6	2464.8	2487.0	2450.4	2469.5	0.8 %
<b>7</b>	- Employment growth (% , National accounts)	1.0	2.5	1.8	-1.9	3.3	5.2 pps
	Employment growth (% , 15-64, LFS)	1.0	2.6	0.9	-1.5	0.8	2.3 pps
	<i>Male</i>	1.0	2.6	0.6	-1.1	0.6	1.8 pps
	<i>Female</i>	0.9	2.6	1.2	-1.8	0.9	2.8 pps
<b>8</b>	- Self employed (15-64, % of total employment)	11.6	11.6	11.8	11.8	12.2	0.5 pps
	<i>Male</i>	15.0	14.8	14.9	15.1	15.7	0.7 pps
	<i>Female</i>	8.1	8.2	8.6	8.2	8.5	0.3 pps
<b>9</b>	- Temporary employment (15-64, % of total employment)	15.8	16.2	15.5	14.6	16.0	1.4 pps
	<i>Male</i>	12.9	13.1	12.7	12.0	13.4	1.4 pps
	<i>Female</i>	18.6	19.2	18.2	17.1	18.5	1.4 pps
<b>10</b>	- Part-time (15-64, % of total employment)	15.1	15.1	15.5	14.8	16.9	2.1 pps
	<i>Male</i>	9.9	10.0	10.1	10.2	11.0	0.8 pps
	<i>Female</i>	20.5	20.6	21.3	19.8	23.2	3.4 pps
<b>11</b>	- Involuntary part-time (15-64, % of total employment)	4.8	4.8	4.8	4.8	5.3	0.6 pps
<b>12</b>	- Unemployment rate (harmonised:15-74)	8.7	7.5	6.8	7.7	7.7	0.0 pps
	Young (15-24)	20.1	17.0	17.2	21.4	17.1	-4.3 pps
	Prime age (25-49)	7.1	6.0	5.1	5.8	6.4	0.6 pps
	Older (55-64)	7.8	6.9	6.6	7.5	7.4	-0.1 pps
	Low-skilled (15-64)	18.9	16.7	17.1	20.0	17.6	-2.4 pps
	Medium-skilled (15-64)	9.6	8.4	7.3	9.1	8.2	-0.9 pps
	High-skilled (15-64)	5.3	4.3	4.0	4.4	4.7	0.3 pps
	Nationals (15-64)	8.6	7.2	6.6	7.7	7.4	-0.3 pps
	Non-nationals (15-64)	15.3	16.2	12.6	14.2	15.0	0.8 pps
	<i>Male</i>	9.1	7.7	7.3	8.1	8.2	0.1 pps
	<i>Female</i>	8.3	7.2	6.2	7.4	7.1	-0.3 pps
<b>13</b>	- Long-term unemployment (% of total unemployment)	24.5	22.6	18.1	15.7	24.3	8.6 pps
<b>14</b>	- Worked hours (full-time, average actual weekly hours)	38.9	38.6	38.3	38.3	38.0	-0.8 %
	<i>Male</i>	40.0	39.7	39.9	39.5	39.1	-1.0 %
	<i>Female</i>	37.0	37.0	36.9	36.8	36.2	-1.6 %
<b>15</b>	- Sectoral employment growth (% change)						
	Agriculture	-3.2	-3.4	-0.1	2.2	-1.2	-3.4 pps
	Building and construction	3.6	4.5	-1.7	-2.2	3.0	5.2 pps
	Services	1.4	3.2	2.4	-3.9	3.3	7.2 pps
	Manufacturing industry	0.0	1.7	0.2	-1.7	1.7	3.4 pps
<b>16</b>	- Indicator board on wage developments (% change)						
	Compensation per employee	-1.1	1.3	1.2	0.4	2.9	2.5 pps
	Real compensation per employee based on GDP	-1.9	-0.7	-0.2	-1.0	0.3	1.4 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	-0.7	1.4	0.8	0.2	3.8	3.6 pps
	Labour cost index (wages and salaries, total)	0.4	2.1	1.5	1.4	2.9	1.5 pps
	Labour productivity (GDP/person employed)	2.1	-1.3	-0.6	-0.3	-0.3	0.0 pps

Sweden		2017	2018	2019	2020	2021	2020-2021
1	- Population (LFS, total, 1000 pers.)	10058	10175	10279	10353	10416	0.6 %
2	- Population (LFS, working age:15-64, 1000 pers.)	6290	6347	6404	6443	6438	-0.1 %
	(% of total population)	62.5	62.4	62.3	62.2	61.8	-0.4 pps
3	- Labour force (15-64, 1000 pers.)	5190	5251	5310	5317	5334	0.3 %
	Male	2709	2739	2773	2791	2792	0.0 %
	Female	2481	2513	2538	2525	2542	0.7 %
4	- Activity rate (% of population 15-64)	82.5	82.7	82.9	82.5	82.9	0.3 pps
	Young (15-24)	54.7	54.1	55.0	52.1	54.0	2.0 pps
	Prime age (25-54)	91.2	91.3	91.3	91.2	91.1	-0.1 pps
	Older (55-64)	80.5	81.7	81.5	82.4	82.5	0.1 pps
	Nationals (15-64)	83.2	83.6	83.9	83.3	83.4	0.0 pps
	Non-nationals (15-64)	75.9	74.5	74.6	75.5	77.9	2.4 pps
	Male	84.3	84.4	84.6	84.6	84.8	0.2 pps
	Young (15-24)	54.1	52.8	53.9	52.2	53.3	1.0 pps
	Prime age (25-54)	93.6	93.6	93.7	93.8	93.9	0.1 pps
	Older (55-64)	83.2	84.7	84.1	85.4	85.1	-0.3 pps
	Female	80.7	81.0	81.2	80.3	80.8	0.5 pps
	Young (15-24)	55.4	55.5	56.2	51.9	54.9	3.0 pps
	Prime age (25-54)	88.8	88.9	88.7	88.4	88.2	-0.2 pps
	Older (55-64)	77.8	78.6	78.9	79.4	79.9	0.5 pps
5	- Employment rate (% of population 15-64)	76.9	77.4	77.1	75.5	75.4	-0.1 pps
	Young (15-24)	44.9	44.7	43.9	39.6	40.7	1.1 pps
	Prime age (25-54)	86.3	86.6	86.4	85.0	84.7	-0.3 pps
	Older (55-64)	76.4	78.0	77.7	77.6	76.9	-0.7 pps
	Low-skilled (15-64)	46.5	46.8	46.0	41.9	41.1	-0.8 pps
	Medium-skilled (15-64)	82.6	83.0	82.5	81.0	80.3	-0.7 pps
	High-skilled (15-64)	88.1	88.6	88.8	88.0	88.4	0.4 pps
	Nationals (15-64)	78.6	79.4	79.2	77.8	77.1	-0.6 pps
	Non-nationals (15-64)	59.8	58.8	59.5	56.5	59.4	2.9 pps
	Male	78.3	78.8	78.8	77.4	77.4	0.0 pps
	Young (15-24)	43.9	43.0	42.9	39.2	39.8	0.6 pps
	Prime age (25-54)	88.5	88.8	89.0	87.7	87.9	0.2 pps
	Older (55-64)	78.4	80.4	79.8	79.8	78.5	-1.3 pps
	Female	75.4	75.9	75.4	73.5	73.3	-0.2 pps
	Young (15-24)	46.0	46.4	45.1	40.1	41.6	1.6 pps
	Prime age (25-54)	84.1	84.2	83.7	82.2	81.4	-0.7 pps
	Older (55-64)	74.4	75.7	75.6	75.3	75.2	-0.1 pps
6	- Employed persons (15-64, 1000 pers.)	4833.9	4910.2	4938.5	4862.6	4852.7	-0.2 %
7	- Employment growth (% , National accounts)	2.5	1.6	0.6	-1.3	1.2	2.5 pps
	Employment growth (% , 15-64, LFS)	2.1	1.6	0.6	-1.5	-0.2	1.3 pps
	Male	2.3	1.7	1.0	-1.1	-0.2	1.0 pps
	Female	1.8	1.5	0.1	-2.0	-0.2	1.8 pps
8	- Self employed (15-64, % of total employment)	8.6	8.6	8.7	8.6	8.5	-0.1 pps
	Male	11.8	11.9	12.2	11.8	11.8	-0.1 pps
	Female	5.1	5.0	5.0	5.0	4.8	-0.1 pps
9	- Temporary employment (15-64, % of total employment)	16.1	15.9	15.7	14.8	14.4	-0.4 pps
	Male	14.5	14.3	14.0	13.2	12.5	-0.7 pps
	Female	17.7	17.6	17.3	16.5	16.3	-0.2 pps
10	- Part-time (15-64, % of total employment)	23.3	22.6	22.5	22.3	20.4	-1.9 pps
	Male	13.1	12.9	13.4	13.8	12.0	-1.8 pps
	Female	34.4	33.3	32.5	31.7	29.7	-2.0 pps
11	- Involuntary part-time (15-64, % of total employment)	6.3	5.5	5.2	5.1	5.1	0.0 pps
12	- Unemployment rate (harmonised:15-74)	6.8	6.5	7.0	8.5	8.8	0.3 pps
	Young (15-24)	17.9	17.4	20.1	23.9	24.7	0.8 pps
	Prime age (25-49)	5.4	5.2	5.3	6.8	7.0	0.2 pps
	Older (55-64)	5.1	4.4	4.7	5.8	6.8	1.0 pps
	Low-skilled (15-64)	19.4	19.5	21.6	25.8	29.4	3.6 pps
	Medium-skilled (15-64)	5.2	4.7	5.1	6.5	6.8	0.3 pps
	High-skilled (15-64)	4.1	3.7	3.8	4.8	4.4	-0.4 pps
	Nationals (15-64)	5.5	5.1	5.5	6.7	7.5	0.8 pps
	Non-nationals (15-64)	21.3	21.1	20.2	25.2	23.7	-1.5 pps
	Male	7.1	6.6	6.9	8.6	8.5	-0.1 pps
	Female	6.6	6.4	7.1	8.5	9.1	0.6 pps
13	- Long-term unemployment (% of total unemployment)	19.6	18.3	14.3	14.4	24.3	9.9 pps
14	- Worked hours (full-time, average actual weekly hours)	39.1	39.0	38.7	37.7	38.3	1.6 %
	Male	40.3	40.3	39.9	38.9	39.6	1.8 %
	Female	38.0	38.0	37.7	36.8	37.4	1.6 %
15	- Sectoral employment growth (% change)						
	Agriculture	0.1	-2.8	0.4	1.6	-0.2	-1.8 pps
	Building and construction	7.5	3.5	0.1	-0.9	1.0	1.9 pps
	Services	2.9	1.9	1.2	-2.8	2.6	5.3 pps
	Manufacturing industry	2.3	2.6	-0.5	-1.7	-0.4	1.3 pps
16	- Indicator board on wage developments (% change)						
	Compensation per employee	2.1	3.9	2.9	2.5	4.4	1.9 pps
	Real compensation per employee based on GDP	-0.1	1.4	0.4	0.5	1.2	0.7 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	2.8	2.0	2.6	0.5	3.1	2.6 pps
	Labour cost index (wages and salaries, total)	2.3	1.6	2.8	2.1	2.7	0.6 pps
	Labour productivity (GDP/person employed)	0.1	0.3	1.4	-0.8	3.8	4.6 pps

Euro Area		2017	2018	2019	2020	2021	2020-2021
1	- Population (LFS, total, 1000 pers.)	340575	341462	342508	343069	343145	0.0 %
2	- Population (LFS, working age:15-64, 1000 pers.)	218479	218080	218115	217834	216612	-0.6 %
	(% of total population)	64.1	63.9	63.7	63.5	63.1	-0.4 pps
3	- Labour force (15-64, 1000 pers.)	159642	160011	160565	158372	159693	0.8 %
	Male	85554	85661	85734	84544	84868	0.4 %
	Female	74088	74351	74831	73828	74825	1.4 %
4	- Activity rate (% of population 15-64)	73.1	73.4	73.6	72.7	73.7	1.0 pps
	Young (15-24)	39.8	40.0	40.1	38.7	40.8	2.1 pps
	Prime age (25-54)	85.5	85.6	85.8	84.9	85.8	0.8 pps
	Older (55-64)	61.3	62.6	63.6	63.8	64.9	1.1 pps
	Nationals (15-64)	73.4	73.6	73.9	73.0	74.1	1.1 pps
	Non-nationals (15-64)	70.2	71.1	71.6	69.9	70.7	0.8 pps
	Male	78.5	78.7	78.8	77.8	78.5	0.7 pps
	Young (15-24)	42.0	42.6	42.7	41.1	43.1	2.0 pps
	Prime age (25-54)	91.4	91.4	91.4	90.5	90.9	0.4 pps
	Older (55-64)	68.1	69.3	70.2	70.0	70.8	0.9 pps
	Female	67.7	68.0	68.5	67.7	69.0	1.3 pps
	Young (15-24)	37.4	37.3	37.4	36.1	38.3	2.2 pps
	Prime age (25-54)	79.6	79.8	80.2	79.4	80.6	1.3 pps
	Older (55-64)	54.9	56.3	57.5	57.9	59.2	1.2 pps
5	- Employment rate (% of population 15-64)	66.4	67.3	68.0	66.9	67.9	1.1 pps
	Young (15-24)	32.3	33.2	33.8	32.0	33.9	2.0 pps
	Prime age (25-54)	78.1	79.0	79.7	78.6	79.6	1.0 pps
	Older (55-64)	57.1	58.8	60.0	60.2	61.0	0.8 pps
	Low-skilled (15-64)	45.6	46.3	46.7	45.7	45.8	0.2 pps
	Medium-skilled (15-64)	70.3	71.1	71.5	69.7	70.7	1.0 pps
	High-skilled (15-64)	83.0	83.6	84.0	82.8	83.9	1.1 pps
	Nationals (15-64)	67.1	67.9	68.6	67.7	68.8	1.0 pps
	Non-nationals (15-64)	60.3	61.9	63.0	60.3	61.5	1.2 pps
	Male	71.5	72.4	73.0	71.8	72.6	0.8 pps
	Young (15-24)	33.9	35.1	35.8	33.9	35.9	2.0 pps
	Prime age (25-54)	84.1	84.8	85.3	84.1	84.8	0.6 pps
	Older (55-64)	63.3	65.0	66.1	66.0	66.7	0.6 pps
	Female	61.2	62.1	63.0	62.0	63.3	1.3 pps
	Young (15-24)	30.6	31.2	31.7	29.9	31.9	2.0 pps
	Prime age (25-54)	72.2	73.1	74.0	73.0	74.4	1.4 pps
	Older (55-64)	51.3	52.9	54.2	54.6	55.6	0.9 pps
6	- Employed persons (15-64, 1000 pers.)	144970.3	146715.5	148248.2	145703.4	147180.5	1.0 %
7	- Employment growth (% , National accounts)	1.6	1.6	1.3	-1.5	1.3	2.8 pps
	Employment growth (% , 15-64, LFS)	1.3	1.2	1.0	-1.7	1.0	2.7 pps
	Male	1.3	1.1	0.8	-1.8	0.6	2.4 pps
	Female	1.3	1.3	1.4	-1.7	1.5	3.1 pps
8	- Self employed (15-64, % of total employment)	13.5	13.3	13.3	13.2	12.9	-0.3 pps
	Male	16.8	16.6	16.5	16.3	16.0	-0.2 pps
	Female	9.7	9.5	9.5	9.6	9.2	-0.3 pps
9	- Temporary employment (15-64, % of total employment)	16.1	16.2	15.8	14.3	15.3	1.0 pps
	Male	15.6	15.7	15.4	13.7	14.6	0.9 pps
	Female	16.5	16.7	16.1	14.8	16.0	1.2 pps
10	- Part-time (15-64, % of total employment)	21.6	21.3	21.4	21.3	20.9	-0.4 pps
	Male	9.4	9.3	9.3	9.4	9.2	-0.2 pps
	Female	35.7	35.3	35.3	35.1	34.3	-0.8 pps
11	- Involuntary part-time (15-64, % of total employment)	6.3	5.9	5.6	5.3	4.9	-0.4 pps
12	- Unemployment rate (harmonised:15-74)	9.1	8.2	7.6	8.0	7.7	-0.3 pps
	Young (15-24)	18.8	16.9	15.7	17.4	16.8	-0.6 pps
	Prime age (25-49)	8.6	7.8	7.2	7.5	7.2	-0.3 pps
	Older (55-64)	6.8	6.2	5.7	5.6	6.0	0.4 pps
	Low-skilled (15-64)	16.8	15.2	14.1	14.2	14.0	-0.2 pps
	Medium-skilled (15-64)	8.2	7.4	6.9	7.4	7.3	-0.1 pps
	High-skilled (15-64)	5.5	5.1	4.8	5.4	5.2	-0.2 pps
	Nationals (15-64)	8.7	7.8	7.2	7.3	7.2	-0.1 pps
	Non-nationals (15-64)	14.1	12.9	12.0	13.8	13.0	-0.8 pps
	Male	8.8	7.9	7.3	7.7	7.4	-0.3 pps
	Female	9.5	8.6	8.0	8.3	8.1	-0.2 pps
13	- Long-term unemployment (% of total unemployment)	49.0	47.0	44.1	38.0	41.1	3.1 pps
14	- Worked hours (full-time, average actual weekly hours)	40.3	40.3	40.2	39.2	39.2	0.0 %
	Male	41.2	41.2	41.0	40.0	40.0	0.0 %
	Female	38.6	38.6	38.5	37.6	37.6	0.0 %
15	- Sectoral employment growth (% change)						
	Agriculture	-0.4	-0.4	-2.4	-2.2	0.0	2.2 pps
	Building and construction	1.2	2.6	2.6	0.9	3.2	2.3 pps
	Services	2.2	2.0	1.5	-2.7	1.4	4.1 pps
	Manufacturing industry	1.0	1.6	1.0	-2.1	-0.4	1.7 pps
16	- Indicator board on wage developments (% change)						
	Compensation per employee	1.7	2.1	2.1	-0.6	3.9	4.5 pps
	Real compensation per employee based on GDP	0.6	0.6	0.4	-2.3	2.0	4.3 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	2.1	2.5	2.4	2.6	1.0	-1.6 pps
	Labour cost index (wages and salaries, total)	2.2	2.3	2.5	3.3	1.0	-2.3 pps
	Labour productivity (GDP/person employed)	1.0	0.2	0.3	-4.7	3.9	8.6 pps

<b>European Union (27 countries)</b>		<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2020-2021</b>
<b>1</b>	- Population (LFS, total, 1000 pers.)	445996	446839	447849	448308	447964	-0.1 %
<b>2</b>	- Population (LFS, working age:15-64, 1000 pers.)	286511	285462	284908	284123	282224	-0.7 %
	(% of total population)	64.2	63.9	63.6	63.4	63.0	-0.4 pps
<b>3</b>	- Labour force (15-64, 1000 pers.)	208331	208577	209114	206665	207788	0.5 %
	<i>Male</i>	112222	112267	112398	111154	111192	0.0 %
	<i>Female</i>	96109	96310	96716	95511	96596	1.1 %
<b>4</b>	- Activity rate (% of population 15-64)	72.7	73.1	73.4	72.7	73.6	0.9 pps
	Young (15-24)	39.1	39.1	39.3	37.8	39.3	1.5 pps
	Prime age (25-54)	85.5	85.7	85.9	85.2	86.0	0.7 pps
	Older (55-64)	59.8	61.2	62.3	62.9	64.0	1.1 pps
	Nationals (15-64)	72.9	73.2	73.6	73.0	73.9	0.9 pps
	Non-nationals (15-64)	70.4	71.3	71.8	70.3	71.1	0.8 pps
	<i>Male</i>	78.3	78.7	78.9	78.2	78.7	0.5 pps
	Young (15-24)	41.7	41.9	42.1	40.5	42.0	1.4 pps
	Prime age (25-54)	91.5	91.5	91.6	91.0	91.2	0.2 pps
	Older (55-64)	67.2	68.6	69.6	69.9	70.8	1.0 pps
	<i>Female</i>	67.1	67.5	67.9	67.3	68.5	1.2 pps
	Young (15-24)	36.3	36.2	36.3	34.8	36.4	1.6 pps
	Prime age (25-54)	79.6	79.9	80.2	79.4	80.6	1.2 pps
	Older (55-64)	52.8	54.2	55.4	56.2	57.5	1.3 pps
<b>5</b>	- Employment rate (% of population 15-64)	66.7	67.7	68.4	67.5	68.4	0.9 pps
	Young (15-24)	32.0	32.8	33.4	31.4	32.7	1.3 pps
	Prime age (25-54)	79.0	79.9	80.5	79.6	80.4	0.8 pps
	Older (55-64)	56.1	57.8	59.1	59.6	60.5	0.9 pps
	Low-skilled (15-64)	43.9	44.7	45.2	44.0	43.9	-0.1 pps
	Medium-skilled (15-64)	70.4	71.3	71.7	70.3	71.0	0.7 pps
	High-skilled (15-64)	83.8	84.3	84.7	83.8	84.9	1.2 pps
	Nationals (15-64)	67.3	68.2	68.9	68.2	69.0	0.8 pps
	Non-nationals (15-64)	60.5	62.1	63.1	60.5	61.8	1.3 pps
	<i>Male</i>	72.1	73.0	73.7	72.8	73.3	0.6 pps
	Young (15-24)	34.0	35.0	35.7	33.7	35.0	1.3 pps
	Prime age (25-54)	84.9	85.7	86.3	85.3	85.7	0.4 pps
	Older (55-64)	62.9	64.7	66.0	66.3	67.0	0.7 pps
	<i>Female</i>	61.3	62.3	63.0	62.2	63.4	1.2 pps
	Young (15-24)	29.9	30.5	31.0	29.0	30.3	1.3 pps
	Prime age (25-54)	73.1	74.0	74.7	73.8	75.1	1.3 pps
	Older (55-64)	49.7	51.3	52.6	53.4	54.3	1.0 pps
<b>6</b>	- Employed persons (15-64, 1000 pers.)	191088	193137	194841	191757	192962	0.6 %
<b>7</b>	- Employment growth (% National accounts)	1.6	1.5	1.1	-1.4	1.3	2.7 pps
	Employment growth (% 15-64, LFS)	1.4	1.1	0.9	-1.6	0.6	2.2 pps
	<i>Male</i>	1.4	1.0	0.8	-1.5	0.1	1.7 pps
	<i>Female</i>	1.4	1.2	1.0	-1.6	1.2	2.8 pps
<b>8</b>	- Self employed (15-64, % of total employment)	13.7	13.5	13.4	13.4	13.0	-0.4 pps
	<i>Male</i>	17.1	16.8	16.7	16.7	16.3	-0.4 pps
	<i>Female</i>	9.6	9.5	9.5	9.5	9.2	-0.3 pps
<b>9</b>	- Temporary employment (15-64, % of total employment)	15.7	15.5	15.0	13.5	14.0	0.5 pps
	<i>Male</i>	15.2	15.0	14.5	12.9	13.3	0.4 pps
	<i>Female</i>	16.3	16.2	15.5	14.2	14.8	0.6 pps
<b>10</b>	- Part-time (15-64, % of total employment)	18.5	18.3	18.3	18.2	17.7	-0.5 pps
	<i>Male</i>	8.5	8.3	8.4	8.4	8.1	-0.3 pps
	<i>Female</i>	30.2	29.9	29.9	29.6	28.8	-0.8 pps
<b>11</b>	- Involuntary part-time (15-64, % of total employment)	5.4	5.0	4.7	4.5	4.1	-0.3 pps
<b>12</b>	- Unemployment rate (harmonised:15-74)	8.3	7.4	6.8	7.2	7.0	-0.2 pps
	Young (15-24)	18.0	16.1	15.1	16.8	16.6	-0.2 pps
	Prime age (25-49)	7.6	6.8	6.3	6.6	6.4	-0.2 pps
	Older (55-64)	6.2	5.5	5.1	5.2	5.5	0.3 pps
	Low-skilled (15-64)	16.2	14.6	13.6	13.9	14.1	0.2 pps
	Medium-skilled (15-64)	7.3	6.5	6.0	6.5	6.5	0.0 pps
	High-skilled (15-64)	4.9	4.5	4.3	4.8	4.6	-0.2 pps
	Nationals (15-64)	7.8	6.9	6.3	6.6	6.6	0.0 pps
	Non-nationals (15-64)	14.1	13.0	12.1	13.9	13.1	-0.8 pps
	<i>Male</i>	8.0	7.1	6.5	7.0	6.7	-0.3 pps
	<i>Female</i>	8.6	7.7	7.2	7.6	7.4	-0.2 pps
<b>13</b>	- Long-term unemployment (% of total unemployment)	46.8	45.0	42.0	35.8	39.5	3.7 pps
<b>14</b>	- Worked hours (full-time, average actual weekly hours)	39.7	39.5	39.4	38.7	38.8	0.3 %
	<i>Male</i>	41.3	41.2	41.1	40.1	40.2	0.2 %
	<i>Female</i>	38.8	38.7	38.7	37.9	38.1	0.5 %
<b>15</b>	- Sectoral employment growth (% change)						
	Agriculture	-0.2	-1.7	-3.3	-1.5	-1.4	0.1 pps
	Building and construction	1.5	2.6	3.1	1.1	3.0	1.9 pps
	Services	2.2	1.9	1.5	-2.5	1.6	4.1 pps
	Manufacturing industry	1.6	1.5	0.5	-2.7	-0.3	2.4 pps
<b>16</b>	- Indicator board on wage developments (% change)						
	Compensation per employee	2.2	2.4	2.4	-0.3	4.1	4.4 pps
	Real compensation per employee based on GDP	0.9	1.0	0.7	-2.0	1.7	3.7 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	2.5	2.9	2.8	2.7	1.5	-1.2 pps
	Labour cost index (wages and salaries, total)	2.6	2.9	2.9	3.5	1.5	-2.0 pps
	Labour productivity (GDP/person employed)	1.2	0.6	0.7	-4.3	3.9	8.2 pps



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