ISSN 2443-6771

European Commission

Labour Market and Wage Developments in Europe

Annual Review 2016

Social Europe

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Annual Review 2016

European Commission
Directorate-General for Employment, Social Affairs and Inclusion
Directorate A
Manuscript completed in October 2016

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Luxembourg: Publications Office of the European Union, 2016

ISBN: 978-92-79-62847-4

doi:10.2767/232054

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"Addressing youth unemployment, long-term unemployment and evolving skills needs are among the key priorities of the jobs and growth agenda of the Juncker Commission. This report shows that the EU labour market continued to improve in 2015 and 2016, with unemployment rates getting closer to pre-recession levels. While these results are encouraging and reflect the reforms implemented over last years, we must not forget that about half of the unemployed in the EU and in the euro area are long term unemployed. The figures show we are moving in the right direction but we need to speed up and continue our common efforts."

Marianne Thyssen
Commissioner for Employment, Social Affairs, Skills and Labour Mobility

ACKNOWLEDGEMENTS

This report was prepared in the Directorate-General of Employment, Social Affairs and Inclusion under the supervision of Michel Servoz (Director-General), Barbara Kauffmann (Director, Employment and Social Governance Directorate) and Robert Strauss (Head of Unit – Country Reform).

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Adam Kowalski provided statistical and, with Lieselotte Fürst, editorial assistance.

The report has benefited from useful comments and suggestions received from many colleagues in the Directorate-General for Employment, Social Affairs and Inclusion and in the Directorate-General for Economic and Financial Affairs.

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SUMMARY AND MAIN FINDINGS

The labour market continues to recover

The labour market in Europe has continued to improve during 2015 and 2016, with unemployment rates moving closer to pre-recession levels. In August 2016, it reached 10.1% in the euro area and 8.6% in the EU, respectively about 2.5 and 2 percentage points below the peak reached in 2013 but still about 3 and 1.5 percentage points above pre-crisis levels. Labour market disparities across the EU and the euro area continued to fall from very high levels.

Unemployment in the EU continued to fall in line with a gradual economic recovery supported mainly by the growth of private consumption

In 2015, economic activity expanded by 2.2% in the EU (by 2% in the euro area), buoyed by the dynamism of private consumption, supportive macroeconomic policies, and low although rising energy prices. In the first half of 2016, real GDP growth slowed slightly to 1.8% and 1.6% for the EU and the euro area respectively, while unemployment kept falling at about the same rate as one year earlier. The reaction of unemployment to the moderate but steady economic recovery has been stronger than expected. This outcome could be linked to stronger job creation in the services sector, which is more labour intensive and more reactive to the dynamics of consumption. The materialisation of the effects of the large number of policy changes enacted since the onset of the crisis may have also contributed to the stronger employment response. The analysis suggests that an upward shift in expectations and the revival of domestic consumption after years of contraction and continuous job destruction have contributed to the recent positive employment developments. The increase in households' disposable income benefitted from employment gains, while wage growth remained moderate. In contrast, subdued capital spending, weaker growth in emerging economies, pervasive rebalancing needs in a number of Member States, are factors holding back the recovery.

Job finding rates have improved, especially for people with short unemployment durations, while the rate at which jobs losses occur is close to the level prevailing before the crisis

The decline in the unemployment rate observed at the onset of the 2013 recovery was linked mostly to reductions in the job separation rates (i.e. the rate at which job losses occur). Job finding rates have started to recover from early 2013, in particular for jobseekers with spells of unemployment shorter than 12 months, while for those with longer durations they started to pick up only in the second half of 2015, reaching in the first quarter of 2016 a level below the pre-crisis peak. Although recovering, in early 2016, job finding rates remained well below the pre-crisis level, and, as a consequence, the average unemployment duration continued to rise. In countries where job separation had increased the most during the crisis - especially Greece, Ireland, Spain, Portugal and the Baltics -, the fall in the separation rates since the onset of the current recovery was particularly sizeable. Conversely, improvements in job finding rates have been the strongest, especially in countries hit by the sovereign debt crisis. As a consequence, the share of the long-term unemployed in these countries also started to decline, often from very high levels.

The drop in the jobless rate reflect cyclical improvements while the low hiring rate may reflect possible labour market mismatches

Between mid-2011 and 2012, the euro-area Beveridge curve (the negative relation between vacancies and unemployment) shifted outward pointing to a potential increase in labour market mismatches. As the recovery gained momentum in 2014 and 2015, unemployment started to decline simultaneously with the increase in job vacancies. This is unusual as unemployment usually reacts with a time lag to the increase in vacancies. One explanation of this pattern is that the short-term unemployed have initially benefitted more from the recovery than the long-term unemployed.

In the second quarter of 2016, vacancies grew without producing a decline of unemployment comparable to that of 2015. This may point to unemployment becoming entrenched. It is possible that further policy actions will be needed to absorb unemployment, even if economic growth continues. The challenge is to avoid the self-perpetuating cycle whereby protracted joblessness makes employers reluctant to hire workers with long unemployment spells, further worsening their employment chances, which in turn could lead to an increase in *structural* unemployment (i.e. unemployment that remains also in good economic times). To prevent joblessness becoming entrenched, activation and job-search assistance measures need to be adequate to cope with still high number of unemployed and accompanied by measures that encourage job creation. The response to long-term unemployment involves a broader reform agenda of labour and product markets, taxation and benefit reform, as well as specific support measures such as training and up-skilling, and social policies. Yet, not all the long-term unemployed are detached from the labour market, as suggested by the lack of any visible signs of wage pressures, in particular in high unemployment countries.

Participation in the labour market kept rising, reflecting long-term trends but also increased labour market attachment of those that entered the labour force during the recession

In the second quarter of 2016, labour market activity rates in the EU and the euro area were close to 73%; about 3 and 2 percentage points respectively above the pre-crisis level. Activity rates continued to increase, reflecting longer term trends in the rising participation of women and older workers. During the crisis period, the increased activity of family members willing to contribute to household income in a situation of increased uncertainty offset the decline by those who dropped out of the labour force because they became *discouraged* by their job prospects. Analysis in the report suggests that the entry into the labour market when the economy is running below its potential results in a stronger attachment during recoveries. Indirect evidence of this asymmetry is the observation that the share of discouraged workers dropped in 2015 in the large majority of countries.

The dispersion of unemployment rates continued to decline largely reflecting the breadth of the recovery…

Compared to past recoveries, the drop in unemployment in the recovery that took hold in 2013 was swifter and stronger, with employment falling in a large number of countries. In 2015 and the first half of 2016, the divergence of unemployment rates across the EU and the euro continued to decline from high levels on account of stronger than expected falls in unemployment in countries hardly hit by the debt crisis and persistent rebalancing needs, and supportive real unit labour cost developments. In 2015, positive job creation prevailed in nearly all Member States – only not in Cyprus, Romania and Finland; employment growth of at least 2% was reported in eight Member States, including Ireland, Estonia, Spain, and Greece. Developments in the first half of 2016 were also often positive. As a consequence of broad unemployment reductions, labour markets have become tighter in countries that already had relatively low unemployment rates. Despite these improvements, large differences in unemployment rates still persist, reflecting the intensity of the rebalancing and deleveraging challenges.

… and supportive developments in wages and real unit labour costs

Wage gains have been limited in spite of the reduction of unemployment. In 2015, wage growth in the euro area was essentially unchanged at 1.2%. In the first half of 2016, unemployment fell by 0.8 percentage points, while wages remained flat and well below the growth rate implied by the pre-crisis Phillips curve (the relation linking wage growth to unemployment). Nominal wages (compensation per employee) declined in Greece, Cyprus and Portugal; wage growth below 1% was recorded in eight countries including Belgium, the Netherlands, Spain, Italy, Ireland, and France. The low wage and price growth since the onset of the recovery can be seen as a response to the spare capacity that built up over time in these countries. In a number of countries, low wage growth reflects low productivity growth and low inflation. In contrast, relatively large increases, above 2.5%, were observed in Germany, Malta and, especially, the Baltics where robust wage growth was the combined result of tightening labour market and flexible wage bargaining institutions. After substantial declines during the recession years, real unit labour costs in high unemployment countries have become less sensitive to unemployment levels.

After years of adjustment the rebalancing process has slowed down

The rebalancing process, which had advanced in previous years on the back of sizeable labour cost realignments, in particular on the side of deficit countries, slowed down in 2015. The weakening of the relationship between external imbalances and changes in competitiveness followed the substantial adjustments in current accounts and competitiveness of previous years, not only by countries previously characterised by current account deficits. The decline in unit labour costs in euro-area countries facing stronger rebalancing needs led to gains in cost competitiveness – measured by the unit labour cost deflated real effective exchange rate (*REER*). While improvements in cost competitiveness have been helpful for external rebalancing, adjustment in relative prices are also needed not only to support export demand via reduced export prices but also to induce the necessary shift from the non-tradable toward tradable activities. Although profit margins narrowed in 2015, the adjustment of competitiveness indicators based on prices remained more limited than the adjustment of those based on labour costs. In this respect, product market reforms could contribute to reduce mark-ups in the non-tradable sector.

The reallocation from non-tradable to tradable activities has become less intense

In 2015, employment in non-tradable activities expanded at a higher rate than in tradable ones in most EU countries, in the wake of the revival of domestic demand. Thus, the shift of resources from non-tradable to tradable sectors necessary to spur exports and reduce external debt was milder than in previous years. As the consumption-based recovery proceeds, it is unlikely that wage growth in the non-tradable sector will remain below wage growth in the tradable sector, which might slow the reallocation of labour toward tradable activities. More dynamic domestic demand in countries previously characterised by current account surpluses, possibly supported by favourable macroeconomic policies and productivity enhancing reforms in all countries, would facilitate the continuation of the rebalancing process.

The macroeconomic implications of statutory minimum wages

This report includes an analytical chapter focusing on the macroeconomic implications of statutory minimum wages. The minimum wage is a tool to improve the distribution of income and reduce wage inequality. If set at a level that is not too high, it may contribute to guarantee a fair wage and address cases in which workers are in a weak bargaining position with

limited effects on employment. The findings in the report suggest that changes in the minimum wages may have had negative but small effects on youth and low-skilled employment. The effect on wages is only partly offset by increases in consumption prices; improvements in the purchasing power of minimum wage workers have positive effects on consumption, mainly for lower income groups.

The institutional dimensions of statutory minimum wage setting differ considerably across countries

Key dimensions of minimum wage setting institutions include the scope of government intervention, the criteria taken into account and the actors involved in the revisions, as well as the scope of automatic adjustment rules. Three groups of countries are identified on the basis of these characteristics. In a first group, composed of the large majority of Member States, minimum wage revisions are framed in a process which requires formal obligations to negotiate or consult (*through an institutionalised process);* in a second group, minimum wage revisions occur mainly through *indexation* systems, which differ across countries depending on the strictness of the rule, its scope, the frequency of revisions and the possibility of temporary suspensions. In a third group, the statutory minimum wage setting is not in a specific framework.

The governance of statutory minimum wage setting influences the size of minimum wage changes and their response to underlying macroeconomic conditions

The codification of these characteristics makes it possible to construct an index of *institutional stringency* of the minimum wage framework. According to this method, stringent systems are characterised by limited discretion on the part of government, predictable updating rules and broad criteria considered or actors involved when updating the minimum wage. Econometric evidence presented in this report suggests that the institutional design influences both the increase in the minimum wage and its response to underlying macroeconomic variables. The findings suggest, *first*, that discretionary (i.e. less predictable) minimum wage setting leads to larger revisions of the minimum wage than rule-based systems; *second*, that the response of the minimum wage to changes in the average wage is stronger in discretionary systems, in particular in years that follow elections; and *third*, that the effect of prices is larger in rule based systems. Thus, distributional concerns appear to play an important role in discretionary systems, particularly in years that follow elections, while the maintenance of the purchasing power of minimum wage workers plays a larger role in rule-based systems.

The design of the statutory minimum wage needs to balance the objective of guaranteeing a fair wage with the need of predictable updating frameworks

Systems where governments can set the minimum wage without early consultation of social partners and clear criteria may allow more flexibility to respond to unexpected shocks, but at the cost of making the updating unpredictable and at the mercy of the electoral cycle. Rule-based systems reduce political bias and, being predictable and transparent, allow employers and employees to plan. Yet, they may introduce real wage rigidity for low wage earners and lead to excessive *ripple effects* on wages above the minimum. A properly designed institutional setting has to balance the need of achieving the objectives of a minimum wage policy with the uncertainty that an unclear and unpredictable framework may entail. Institutional arrangements that allow some flexibility in the minimum wage setting policy (e.g. inability-to-pay clauses or temporary suspensions by bipartite or tripartite agreements) could provide additional levers to deal with negative shocks that hit the most vulnerable workers more strongly.

The focus of structural reforms is gradually moving from measures that improve macroeconomic adjustment capacity to measures that ensure greater support for individuals transitioning between different labour market statuses

The labour market reforms implemented since the onset of the 2008-2009 crisis aimed at enhancing the adjustment capacity and the resilience of labour markets against the background of pervasive external and internal imbalances. As the recovery gained momentum, more measures have been introduced to sustain the demand for labour and strengthen work incentives, including in countries without major rebalancing needs. With the significant reform activity during the crisis period, the conduct of systematic analyses of the effects of enacted or planned reforms is a key condition for early identification of further policy needs, including to disentangling the short- from the long-term effects of policy measures and their redistributive implications. More awareness of the short-term costs of reforms and their distributional implications may lead to designing reform packages that minimise these costs. This, together with proper communication and transparency about both the expected costs and the benefits of policy measures in the longer term, might be instrumental to building ownership for reforms.

The EU has played a key role of a catalyst of reforms at national level

The EU has shown an ability to play a role as a catalyst of reform. EU recommendations have been used as a compass for reforms during the crisis years, in particular in vulnerable countries. The challenges ahead are related to how best to combine flexibility and security in a changing world of work and how to support an effective process of convergence towards resilient economies both in the EMU and the EU. Peer reviews and benchmarking in a number of well-defined policy areas can also provide powerful leverage to support the reform process at national level, by allowing for the cross-examination of relative performance and the identification of best policy practices. The European Pillar of Social Rights is a policy framework to achieve renewed convergence in the EU. It expresses a number of essential principles common to participating Member States for the conduct of their employment and social policy.

Part I

Labour market and wage developments

1. GENERAL LABOUR MARKET CONDITIONS IN THE EURO AREA AND THE EU

The gradual improvement in economic and labour market conditions that started in the second half of 2013 continued throughout 2015 and the beginning of 2016 in both the EU and the euro area, with a steady reduction in unemployment. Employment growth picked up spurred by an increase in domestic demand; activity rates continued to trend upwards, while the dynamics in the average number of hours worked remained subdued. The observed reduction in unemployment is mainly due to a decline in job separation rates (job losses), while job-finding rates improved but remain below the historical average. Low job-finding rates are related to persistently high rates of long-term unemployment. Wage gains have been limited in spite of the reduction of unemployment.

1.1. INTRODUCTION

The EU labour market recovery that started in 2013 gained further traction in the course of 2015; in the first half of 2016 labour markets continued to improve, spurred by favourable expectations and supportive macroeconomic policies.

Unemployment continued to get closer to pre-recession levels, on the back of a modest economic recovery supported by domestic demand amid an uncertain global outlook. Job separation rates continued to fall while job-finding rates kept improving from very low levels, while long-term unemployment remains at historically high levels. Despite the recovery in labour demand, wage growth remained moderate throughout 2015.

Against this background, this first chapter of the report analyses the main features of the current labour market adjustment by looking at aggregate developments in the EU and the euro area. It compares the EU labour market performance with that of other developed economies and assesses the role of cyclical and structural factors in unemployment dynamics, labour market flows, and the role played by the relevant adjustment margins including employment, participation, working hours and labour costs.

The analysis digs deeper into a number of issues. The possible reasons behind the recent unemployment developments are discussed, and the question of the role of domestic demand in driving the swift response of unemployment to GDP growth is addressed. In light of the recent subdued wage dynamics, there is a focus on how the relationship between wage growth and unemployment has changed over time.

The remainder of the chapter is organised as follows. The next section compares aggregate labour market developments in the euro area and the EU with those taking place in other world regions. Section 1.3 analyses employment and unemployment dynamics, while section 1.4 reviews latest trends in wages and labour costs. Section 1.5 focuses on salient aspects of European unemployment analysing labour market flows, long-term unemployment and job matching. Section 1.6 concludes.

1.2. SETTING THE SCENE: THE EU LABOUR MARKET IN AN INTERNATIONAL PERSPECTIVE

1.2.1. Recent EU-level developments

The economic recovery that followed the sovereign debt crisis continued in 2015, driven by favourable external conditions and supportive macroeconomic policies. The recovery has been broad-based and sustained by robust domestic demand, in particular consumption, after a period of prolonged contraction. Unemployment rates in the EU and the euro area fell throughout 2015, although the decline was initially more moderate in the euro area.

Labour market conditions improved in 2015 and, for the euro area, strengthened further at the beginning of 2016, notwithstanding a more uncertain external outlook. Since the start of the recovery in 2013, the EU unemployment rate has fallen by 2.2 percentage points; for the euro area, the reduction was 1.8 percentage points over the same period. Yet, in the EU and the euro area the jobless rate remains above the pre-crisis average (at 8.7 per cent and 10.2 per cent respectively in the first half of 2016). The unemployment recovery has been outpacing the rhythm of the

Table I.1.1: **Unemployment, compensation per employee and GDP growth in the euro area and European Union (seasonally adjusted data)**

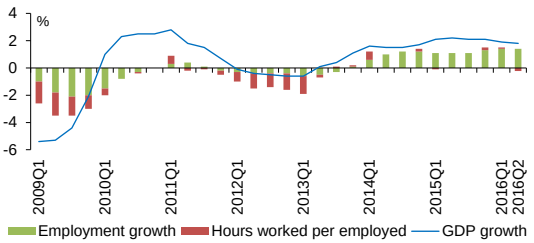
					Quarter over quarter of previous year (1), %						Quarter over quarter same year, %					
		2013	2014	2015	2015Q1	2015Q2	2015Q3	2015Q4	2016Q1	2016Q2	2015Q1	2015Q2	2015Q3	2015Q4	2016Q1	2016Q2
Unemployment rate	EA	12.0	11.6	10.9	-0.6	-0.6	-0.8	-1.0	-0.9	-0.9	-0.3	-0.2	-0.3	-0.2	-0.2	-0.2
	EU28	10.9	10.2	9.4	-0.8	-0.7	-0.8	-1.0	-0.9	-1.0	-0.3	-0.1	-0.3	-0.3	-0.2	-0.2
Unemployment growth	EA	5.8	-3.1	-6.4	-4.4	-4.2	-6.3	-7.4	-7.4	-7.7	-1.6	-1.4	-2.8	-1.8	-1.6	-1.7
	EU28	4.1	-5.7	-7.8	-7.4	-6.6	-8.0	-9.1	-8.8	-9.2	-2.5	-1.7	-2.9	-2.4	-2.2	-2.1
Growth of nominal compensation per employee	EA	1.7	1.3	1.2	0.5	0.7	0.6	0.6	1.2	1.1	-0.4	0.3	0.3	0.4	0.3	0.2
	EU28	0.9	1.7	3.0	2.6	3.5	3.1	2.8	0.9	-0.2	1.1	1.1	0.3	0.2	-0.8	0.1
GDP growth	EA	-0.3	1.1	2.0	1.8	2.0	2.0	2.0	1.7	1.6	0.8	0.4	0.4	0.4	0.5	0.3
	EU28	0.2	1.5	2.2	2.1	2.2	2.1	2.1	1.9	1.8	0.8	0.4	0.4	0.5	0.5	0.4
Employment growth	EA	-0.9	0.6	1.1	0.9	1.0	1.1	1.3	1.4	1.4	0.2	0.4	0.3	0.3	0.4	0.4
	EU28	-0.5	1.0	1.1	1.1	1.1	1.1	1.3	1.4	1.4	0.3	0.3	0.4	0.4	0.4	0.3

Note: for unemployment rate percentage point difference.
Source: Eurostat.

expansion of GDP. Indeed, after swiftly receding at the onset of the recovery, unemployment continued falling at an unchanged pace despite a softening of the growth momentum in the second half of 2015. This pattern is quite unusual as reductions in the unemployment rate generally require GDP to grow above a certain threshold to compensate for trends in labour supply and productivity growth. ([1]) The reduction of unemployment was matched by the strongest employment growth since the start of the 2008 recession.

Activity rates in the EU have been trending upward and also been quite resilient to the 2008-2009 financial and 2011-2012 sovereign debt crisis. As opposed to the US, activity rates increased for several EU countries and during the crisis they increased even more for individuals with low incomes (Box I.1.1). ([2]) Hence, since 2013, the increase in participation tempered the impact of employment growth on the fall of unemployment. A number of tentative explanations could be put forward for the swift response of unemployment to the recovery. First of all, consumers' and business confidence continued to improve in the first half of 2015. Although sentiment indicators worsened slightly in the second half of 2015, job separation rates (the rate at which job losses occur) still remained well below those of 2014. As the economic recovery got underway, the job finding rates continued to improve from very low levels and picked up strongly in the second half of 2015, following a typical hump-shaped pattern responsible for the persistence of unemployment and long-term unemployment during recoveries (see the response of the job finding rate to domestic demand shock in Box I.1.2).

Graph I.1.1: **Employment, hours and GDP growth in the EU**



Note: Growth rates are defined as percentage change compared to the corresponding quarter of the previous year.
Source: Eurostat.

Second, subdued wage growth contributed to the recovery of profit margins, which were squeezed during the crisis. After growing mildly in 2013 and 2014, real product wages (i.e. wages deflated with the price of output) were flat in 2015; at the same time, productivity growth (both on head-count and on hourly basis) kept rising although at a modest rate (see section 1.4. below). Third, the dynamics of hours worked remained subdued. In response to the recessions in 2008-2009 and 2011-2012, average hours worked dropped and did not return towards the levels prevailing before the shocks. The counterpart of this weak growth in average hours worked is the increase in part-time employment, which typically rises during recessions, and the high proportion of those that declare working part-time because of the lack of full-time job (rising from 22% in 2007 to 29.2 in 2015).

([1]) The need for positive growth above a certain threshold to ensure unemployment reductions is an observed regularity associated with the so-called "Okun law", the statistical relationship between GDP growth and the unemployment rate. See also the analysis in (Box I.1.1).
([2]) For the US, there is a trend decline in activity rate, which is substantial for higher incomes (Hall and Ptrosky-Nadeau, 2016).

Box I.1.1: Labour market participation in upswings and downturns

Labour market participation is affected by long-term trends as well as by cyclical factors. In past years, structural factors such as the ageing of the workforce coupled with pension reforms that increased the statutory pension age led to an increase in the participation of older workers. In parallel, more women entered the labour market as a result of, *inter alia*, changing cultural preferences and the provision of child-care. Next to such structural factors cyclical developments such as the recent economic downturn would be expected to have affected labour market participation. In general, an economic slowdown can be expected to lead to a decline in labour market participation as individuals are discouraged from looking for scarce jobs, while in periods of economic recovery participation is expected to increase when search efforts are more likely to pay off.

As opposed to the US, where participation increased in the lower half of the income distribution and dropped in the upper half (see Hall and Petrosky-Nadeau, 2016), over the past decade the activity rate of prime-aged (25-54) individuals increased in the EU for all income quartiles (Table 1). The trend was more pronounced for the lowest quartiles, with the largest increase observed after the 2008 financial crisis.

Table 1: EU activity rates by quartile of household income distribution

	2004	2008	2013
1st quartile (lowest income)	74.6%	75.1%	78.9%
2nd quartile	81.3%	83.0%	84.7%
3rd quartile	86.6%	87.5%	89.6%
4th quartile (highest income)	88.0%	88.4%	91.6%

Note: Bulgaria, Croatia, Malta and Romania not included.
Source: Commission services, based on data from the EU SILC micro data.

As suggested by Graph 1, the aggregate pattern conceals important differences across countries. For a first group of countries (Austria, Belgium, Denmark, Finland, Sweden and Slovakia) labour market participation in the lowest quartile of the household income distribution started decreasing during the 2008-2009 recession, while for higher income groups it increased or remained stable. For a second group (Germany, France, Luxemburg, Latvia, Netherlands and United Kingdom), labour market participation of the poorest households evolved in line with the rest of the income distribution. Finally, in the years that followed the economic and financial crisis, labour market participation of the lowest quartile increased faster than for higher quartiles in Cyprus, Czech Republic, Greece, Spain, Ireland, Italy, Portugal and Slovenia.

How much do changes in labour force participation reflect cyclical fluctuations? How much do these changes differ across income quartiles? In a deep and prolonged recession, the activity rate may drop as individuals are discouraged from looking for a job. However, labour market participation may also increase as individuals are forced to more actively look for jobs in order to support household income (the so-called "income effect"). That includes also cases where additional household members (for instance, potential second or third earners) join the labour force and start looking for a job. This effect may become important in case of prolonged spells of unemployment by primary earners, leading to the exhaustion of unemployment benefits.

Table 1 looks at the impact of the business cycle on the activity rate by household income quartiles. Cyclical developments are proxied by the output gap (the difference between actual output and potential output). To analyse whether participation behaviour changes over the cycle, a distinction is made between situations in which the output gap is positive or negative. The business cycle has a significant impact on labour market participation, albeit the impact is limited to specific quartiles. When the economy is running above potential (i.e. when the output gap is positive), a further improvement is expected to send a positive signal to the labour market and encourage inactive workers to join the labour force. The effect is only statistically significant (i.e. measured with precision to exclude that its effect is zero) for the second to fourth quartile; an increase in the output gap by one percentage point increases the activity rate by about 0.15 percentage points for the second and third quartile and 0.2 percentage points for the fourth quartile.

When the economy is below potential (i.e. the output gap is negative), the income effect appears to dominate and there is a negative relation between the output gap and the change in the activity rate. Thus, during periods of economic slack, activity rates increase when conditions worsen. This effect is the largest for the

(Continued on the next page)

Box (continued)

lowest income quartile: a 1 percentage point decline in the output gap when demand is weak leads to an increase in the activity rate of about 0.6 percentage points. These findings are consistent with the observed increase in activity rates of the first quartile in countries hit particularly hard by the crisis. For the second and third quartile the effect is 0.2 and 0.3 percentage points, respectively. Conversely, when the economy is below potential, the closing of the output gap leads to a decline in the activity rate of low-income households.

Graph 1: Activity rates (25-54) by income quartile: cumulated change over the period 2004-2013

Source: Commission services, based on data from the EU SILC micro data.

Table 1: Drivers of changes in labour market activity rate by income quartile

	Household income quartile			
	Q1	Q2	Q3	Q4
Output gap – when positive	-0.0132	0.146**	0.158***	0.199***
	(0.130)	(0.0620)	(0.0447)	(0.0525)
Output gap – when negative	-0.558***	-0.235*	-0.300**	-0.259
	(0.180)	(0.123)	(0.116)	(0.172)
Constant	0.555***	4.178***	0.885***	1.488***
	(0.150)	(0.103)	(0.0831)	(0.126)
Country FE	Yes	Yes	Yes	Yes
Observations	230	230	230	230
R-squared	0.663	0.638	0.520	0.534

Note: Output gap is the percentage change deviation between actual and potential GDP. Sample period 2004-2013; *** 1% significant, ** 5% significant, * 10% significant; Robust standard errors in parentheses. ***Source:*** Authors' analysis based on EU-SILC micro data and AMECO.

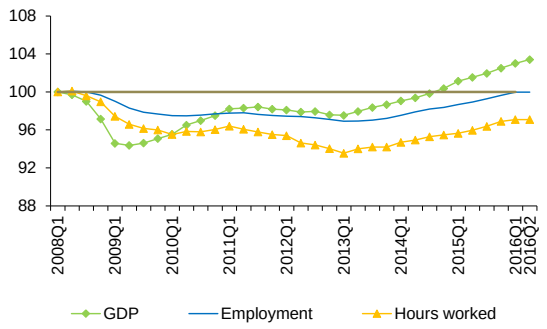
However, given the pre-crisis downward trend in average hours worked, a reversal toward levels prior to the crisis seems unlikely. ([3])

Fourth, the employment recovery reflects the higher job content of consumption growth. Since the bulk of consumption expenditure is in labour intensive products and services, an increase in aggregate consumption has a stronger impact on job creation than an increase in more capital intensive exports. The analysis in Box I.1.3 confirms that employment responds more to consumption than to investment or export growth. However, the lower effect of an increase of

([3]) See European Commission (2015,) and Boppart, and Krussel (2016).

investment on unemployment has to be weighed against the effect of investment on potential output and consumption.

Graph I.1.2: **Employment, GDP and Hours worked in the EU, levels (index numbers, 2008q1 = 100)**



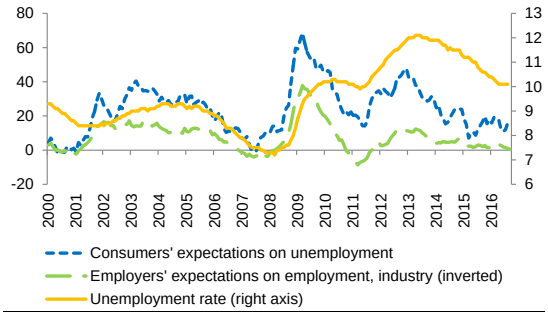
Source: Eurostat.

Despite its recent fall, unemployment remains historically high, also reflecting the larger pool of active individuals due to the positive developments in labour market participation. The number of unemployed in the fourth quarter of 2015 was about 17 million in the euro area and 22.8 million in the EU, 1.5 and 2 million less than at the beginning of the year respectively. Although employment has come back to its pre-crisis level, the volume of work remains below the one reached before the crisis (Graph I.1.2). From 2011Q1 to 2013Q1, the fall in the volume of work mirrored the decline in the average hours worked; since 2013Q1, the pick-up in the volume of hours reflects mainly the increase in headcounts.

Quarterly GDP growth gained strength in the course of 2015. Household and business sentiment about labour market prospects improved substantially and fuelled optimism at the beginning of 2015, possibly on account of consumption growth and favourable real disposable incomes supported by lower oil prices (Graph I.1.3).

It remains to be seen whether the current responsiveness of unemployment to growth will continue also in the future, also in view of the heightened uncertainty notably linked to the result of the UK leave vote (see also European Commission, 2016f). Delayed investment and consumption decisions may take a toll on the recovery. Looking forward, therefore, further progress on the front of EU employment will crucially depend on growth prospects and on support to investment and consumption.

Graph I.1.3: **Unemployment expectations for the coming 12 months**



Source: European Commission, Business and Consumer Surveys; Eurostat.

1.2.2. Recent labour market developments in major world regions

In 2015, unemployment continued to decline in the main industrial countries despite moderate economic growth and weak demand stemming from emerging economies.

The recovery in the US continued driven by households' spending, but growth has not been rapid by the standards of past recoveries. ([4]) By early 2016 unemployment was back to its pre-crisis level. However, the decline in unemployment rate has been accompanied by a decline in labour force participation rate. Since the onset of the recovery in 2010, the activity rate – the percentage of the working-age population that is employed or looking for work- has fallen by 3 percentage points to 62.6% in May 2016, along a declining trend that started around 2000. ([5])

([4]) GDP per capita and per employed had been declining since before the 2008-2009 crisis. Various causes have been adduced for the weak recovery, including financial crises making recoveries more difficult, the so-called 'secular stagnation' hypothesis (i.e. factors making demand inherently insufficient to maintain full employment), and a reduced pace of innovation.

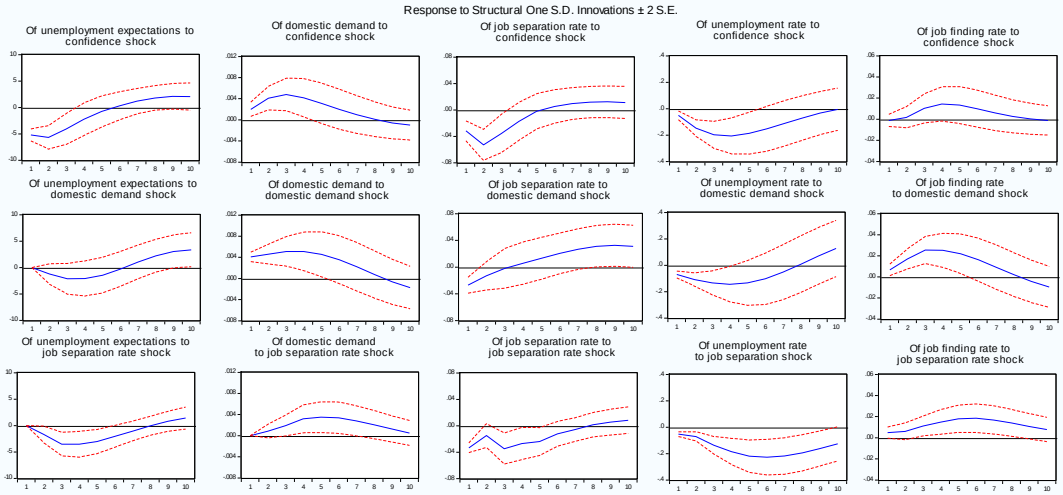
([5]) However, the participation rate has started to increase from September 2015. Although early to interpret as a change in a trend, this increase has been driven mainly by low-skilled males, suggesting a cyclical pattern due to discourage worker effect.

Box I.1.2: The effect of unemployment expectations on job finding and separation rates

After spiking upward in 2008 and 2011, job separation rates in the EU and euro area returned to levels slightly above the pre-crisis average by the end of 2013. In contrast, job finding rates improved only gradually following the development of employers' and consumers' expectations and the recovery of domestic demand. How much do shifts in consumers' unemployment expectations influence the response of job finding and separation rates? The underlying idea is that an increase in economic uncertainty raises the separation rates and worsens job prospects, increases unemployment and leads employed households to accumulate precautionary savings. The ensuing lower demand of goods depresses vacancies and the job finding rate; the consequent increase in unemployment duration leads to further increases of precautionary savings amplifying the effect of the initial shock. Similarly, a reduction in job separations would entail a reduction in the job loss risk, reduce precautionary saving, increase demand and improve job finding rates (see Ravn and Sterk, 2016).

To provide an answer, a VAR model is estimated to analyse the interactions between consumers' unemployment expectations, domestic demand and the job finding and separation rates. The sample covers the period 2005Q1-2015Q4. Shocks are identified by means of Cholesky decomposition with the following ordering of variables: unemployment expectations, domestic demand, job separation rate, unemployment rate and job finding rate. This is consistent with the view that economic confidence is a forward-looking variable that can jump in response to news; all other variables respond contemporaneously with no contemporaneous feedbacks to confidence. Moreover, the job separation rate and the unemployment rate are allowed to respond contemporaneously to domestic demand shocks. The job finding rate is the least exogenous variable and is supposed to influence all the other variables only with a lag.

Graph 1. Responses to positive shock to confidence and to a negative shock to job separation rate



Notes: On the horizontal axis quarters following the shock. Variables are presented as percentage deviations from steady state. Charts show the response of each variable to a 1 standard-deviation shock in consumers' unemployment expectations (row 1), domestic demand (row 2), and the separation rate (row 3).

***Source*:** DG EMPL based on Eurostat data.

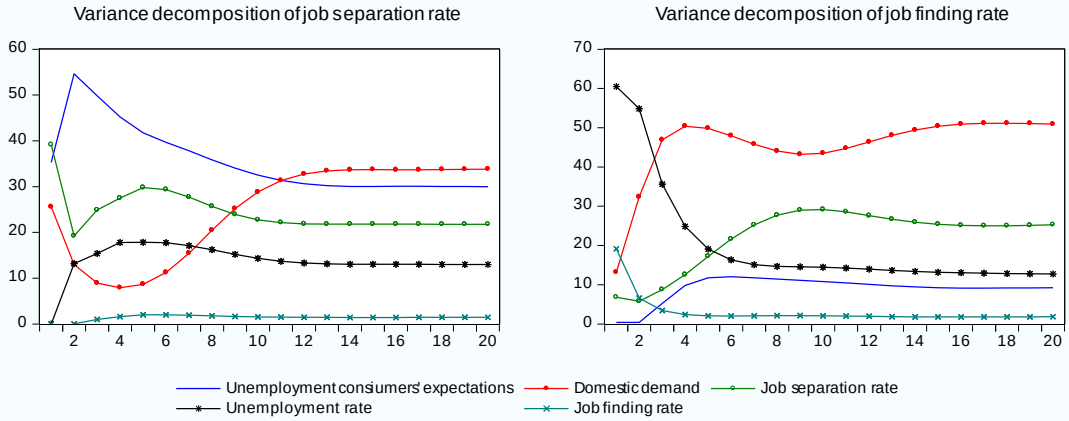
Graph 1 depicts the impulse responses to respectively a positive confidence and domestic demand shocks, and to a negative shock in the job separation rate. They show that the job separation rate drops sharply in response to a confidence shock and quickly reverts toward the pre-crisis levels (first row, third chart). The decline in job destruction rate leads to a gradual reduction of the unemployment rate which reaches a maximum after about one year (first row, fourth chart). In contrast, the job finding rate is initially unreactive to a change in unemployment expectations and improves only gradually over time; yet, the response is small and statistically not different from zero (first row, last chart). Domestic demand gradually improves and reaches a maximum within the year (first row, second chart). Unemployment expectations improve during the recovery as the job finding rates improve (first row, first chart).

(Continued on the next page)

Box (continued)

A shock to domestic demand (charts in the second row) has an immediate effect on the rate of job destruction, which fades away quite quickly while the job finding rate improves gradually. Consequently, the effect on unemployment is initially small and gradually builds up to reach a maximum within the year. Finally, a negative shock to the job separation rate leads to an immediate reduction of the unemployment rate which accompanies a gradual improvement in consumers' unemployment expectations, domestic demand, the job finding rate and the unemployment rate. Consistently with the findings by Fujita (2007) for the US, the hump-shaped pattern in the response of the job finding rate explains the persistency of unemployment and long-term unemployment.

How much of the fluctuations in unemployment, job finding and separation rates can be explained by shocks to consumers' unemployment expectations and to domestic demand? The chart below reproduces the percentage of the variance of the error made in forecasting a variable due to a specific shock at a specific time horizon. They provide a measure of the relevance of each shock for cyclical behaviour of a specific variable. For the euro area, unexpected confidence shocks account for 30% of the error in the one quarter ahead forecast of the job separation rate. The contribution of confidence shocks reaches a maximum after two quarters and declines thereafter, but the proportion of the variance explained by the shock remains around 30%. Conversely, shocks to domestic demand account for ¼ of the fluctuations of the separation rate in the very short-term (1 quarter after the shock) but have a lower weight in explaining medium term fluctuations. In contrast, domestic demand plays a larger role at medium- to long-term horizons. As concerns the finding rate, the largest contribution stems within the year from shocks to the unemployment rate, while at medium- to long-term horizons the contributions of domestic demand shocks prevail.



Notes: The charts show the contribution of different shocks to fluctuations in the job separation and finding rates at different time horizons following a shock.

Source: DG EMPL based on Eurostat data.

On top of demographic changes, including the ageing of the baby-boom generation and the fading of the effect of the entrance of women in the labour force, peaking around 2000, the US labour force exits reflect discouragement from seeking a job and the expiration of extended unemployment benefits. ([6]) ([7]) Payroll employment increases in the US have been robust averaging 350 thousand per month. Yet, the employment rate (employment-to-population ratio) started to increase only slowly, only two years after the end of the recession; in August 2016 it stood at 59.7% about 3.5 percentage points below the pre-crisis peak. In addition, although the share of those working part-time who would prefer to work full-time dropped, it remains above its levels prior to the 2008-2009 recession.

Economic growth slowed down in Canada amidst resource shifts from capital intensive sectors (i.e. falling investments in the energy sector), the deterioration of terms of trade - mostly due to the

([6]) The probability of an unemployed to leave the labour force is higher and more pro-cyclical for those with long unemployment spells. Conversely, job finding rates are higher and more pro-cyclical for short-term unemployed (Krueger, 2015).

([7]) The *Emergency Unemployment Compensation* is a federal program providing additional 13 weeks of benefits to individuals who exhausted State benefits. The program, created in 2008, expired in January 2014.

fall of commodity prices - and high household indebtedness; the unemployment rate has slowly declined hovering around 7%, about 1 percentage point above the pre-crisis average.

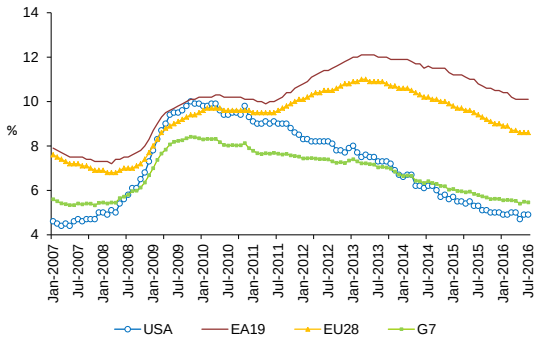
Table I.1.2: **GDP growth and unemployment in selected economies**

	GDP growth %			Unemployment rate %		
	2000-2007	2014	2015	2000-2007	2014	2015
EA	2.2	1.1	2.0	8.6	11.6	10.9
EU	2.5	1.6	2.2	8.7	10.2	9.4
CAN	2.8	2.5	1.2	7.0	6.9	6.9
JPN	1.5	0.0	0.5	4.7	3.6	3.4
USA	2.7	2.4	2.6	5.0	6.2	5.3
OECD	2.5	1.9	2.2	6.5	7.4	6.8
BRIC:	8.1	5.3	4.2	:	:	:
BRA	*3.6*	*0.1*	*-3.8*	*11.1*	*4.8*	*6.8*
RUS	*7.2*	*0.6*	*-3.7*	*8.1*	*5.2*	*5.6*
IND	*7.2*	*7.0*	*7.2*	*:*	*7.3*	*:*
CHN	*10.5*	*7.3*	*6.9*	*3.9*	*4.1*	*4.1*

Source: Eurostat and OECD.

In Japan, unemployment hovered around 3 per cent supported by expansionary monetary and fiscal policy, in a context of declining potential output growth and depressed demand entrenched deflationary environment.

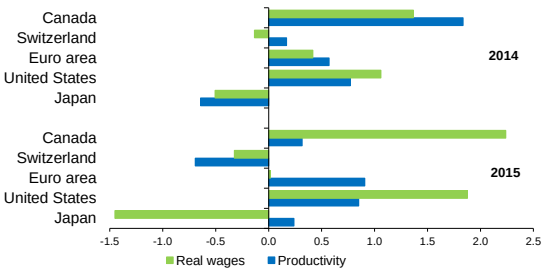
Graph I.1.4: **Unemployment rates in the EU the US and the 'Group of seven' advanced economies**



Source: OECD.

In 2015, declining real product wages (i.e. the relevant concept for labour demand) prevailed in several developed countries, except Canada and the US (Graph I.1.5). While in Canada real wages lagged behind the slowdown in productivity growth, real wage gains in the US showed only a modest acceleration in response to a drop of unemployment to 5%. Wage moderation during the US recovery could be the result of different factors. First, the slack in the labour market might be more extensive than suggested by the unemployment rate. Broader measures of labour market slack that include marginally attached workers and employed part-time for economic reasons trend downwards, but the slack in the labour market remains above levels prior to the crisis.

Graph I.1.5: **Real wages and productivity growth in the euro area and selected advanced economies**



Note: Real wages are deflated with GDP deflator
Source: DG ECFIN AMECO database.

Secondly, the gradual reduction in the ratio of the long- to the short-term unemployed may have started only lately to exert upward pressure on wages. ([8]) Thirdly, changes in the composition of the workforce; the entry into full-employment with wages below the median of workers with part-time jobs or not-in the labour force have offset the increase of wages of continuously full employed workers. ([9])

1.3. EMPLOYMENT, ACTIVITY RATES, HOURS WORKED

In 2015, employment growth picked up both in the EU and the euro area (Table I.1.1). Labour market participation continued to increase but at a less rapid pace than during the recession. Between 2015 and 2016 (first half of the year), the activity rate increased by 0.2 percentage points for the EU and 0.1 for the euro area (respectively to 72.7% and 72.6%).

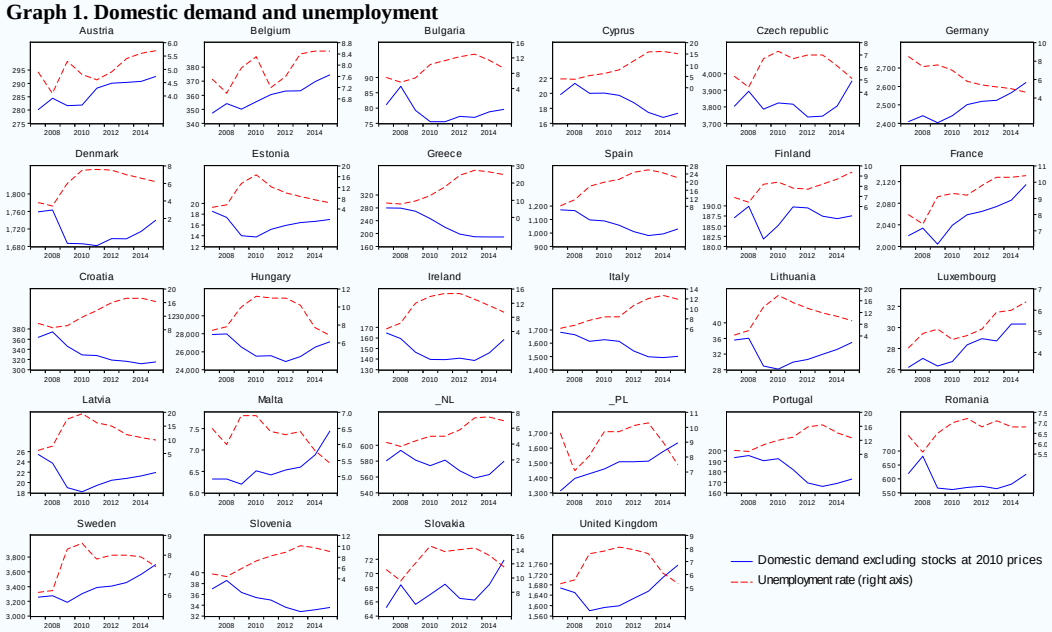
([8]) Gordon (2013), Krueger et al (2014) and Watson (2014) showed that long-term unemployed do not put pressure on wages to adjust. Thus, a decline in the ratio of total unemployment to short-unemployment translates into lower structural unemployment and higher wage inflation.

([9]) Those who change jobs over the year contributed to the increase of wages as in past recoveries while the contribution of job stayers is lower. Another non-cyclical factor pushing down wages is the exits from of higher paid retirees (Daly and Hobijn 2016, Daly et al. 2016).

Box I.1.3: Domestic demand and unemployment developments

Since the start of the economic recovery, unemployment has declined quite quickly given the modest increase of GDP growth. During the 2008-2009 financial and 2011 sovereign debt crises, domestic demand experienced the most sizeable contraction since three decades. Households and firms reduced substantially spending and investments in response to heightened uncertainty, difficult access to credit and deleveraging. This contraction was particularly large in countries (Ireland Spain, Portugal, Greece) where a sudden stop of capital inflows led to a sharp correction of the current account (also called a current account reversal; see Graph 1). In contrast during the current recovery, private consumption has been increasing at a rapid pace, spurred by gains in real disposable income, lower energy prices and a reduction in household debt (European Central Bank, 2015).

Graph 1. Domestic demand and unemployment



***Source*:** DG ECFIN AMECO database.

How much do changes in various components of GDP explain the job intensity of growth? As suggested by Anderton et al. (2014), changes in different expenditure components of GDP have different effects on unemployment depending on how labour intensive are the products related to each component of expenditure. Thus, a pick-up of consumption would lead to a larger drop in unemployment than export as it tends to be more labour intensive (but also less productive).

Table 1 provides an answer to the above question by means of estimating "Okun's law" type relationships linking unemployment changes to different components of final demand (consumption, investment, exports and imports). The first column in Table 1 shows results for a simple "Okun's law" relationship across EU countries. An increase of GDP growth by one percent leads to a decline in unemployment by 0.2 percentage points. The second column reports results for a similar relationship, explaining unemployment changes by the development of different components of domestic demand (rather than by GDP growth). The third column replaces these components with their contribution to the growth of GDP. (In practice each category of expenditure is weighted with their weight in GDP.) This helps to control for the different share in GDP of various expenditure components. For example, consumption accounts for about 2/3 of total GDP.

Results suggest that the response of unemployment is the highest for private consumption. This is valid both when looking at the effect of an increase in each component of GDP (column (2), un-weighted components) and when looking at the contribution of each to GDP growth (column (3), weighted components). Thus countries with an increase in domestic private consumption of 1.5% (about the median annual increase

(Continued on the next page)

Box (continued)

observed during 2013-2015) have benefitted from a decline in unemployment of about 0.2 percentage points (unweighted estimation).

Finally, equations (4) and (5) split the sample in two groups depending on whether the capital intensity is above or below trend. If the capital gap is positive (i.e. capital intensity is above trend), the employment content of growth of higher domestic demand (both consumption and investment) is higher, while an increase in imports do not subtract from the decline in unemployment. Conversely, when the capital gap is negative (i.e. capital intensity is below trend), only a change in public consumption reduces unemployment, while an increase in imports increases unemployment. Results suggest also that in presence of a negative capital gap an increase in imports leads to the export of jobs, but this effect is not statistically significant (i.e. its effect is likely to be zero when capital intensity is above trend).

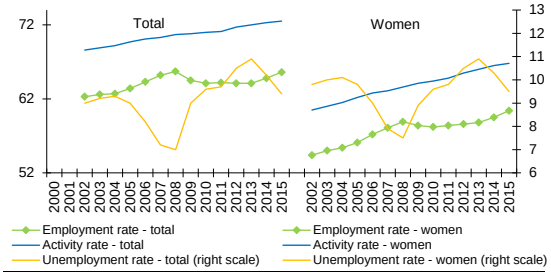
Table 1. The response of unemployment to domestic and foreign demand, EU28, 1990-2015

	(1)	(2)	(3)	(4)	(5)
Dependent variable		Y-o-y change in unemployment rate			
				Capital intensity below trend	Capital intensity above trend
Contribution of each component of GDP	None	Un-weighted	Weighted	Un-weighted	Un-weighted
Change in unemployment rate, lagged	0.37***	0.36***	0.35***	0.38***	0.32***
	(0.077)	(0.063)	(0.073)	(0.09)	(0.09)
GDP growth	-0.21***				
	(0.030)				
Change in private consumption		-0.12***	-0.24***	-0.02	-0.17***
		(0.028)	(0.048)	(0.03)	(0.04)
Change in public consumption		-0.048**	-0.21**	-0.044**	-0.07**
		(0.020)	(0.093)	(0.02)	(0.03)
Change in investment		-0.018**	-0.11**	-0.004	-0.03**
		(0.089)	(0.041)	(0.009)	(0.01)
Change in exports		-0.017	-0.06*	-0.019	-0.02
		(0.015)	(0.036)	(0.02)	(0.02)
Change in imports		-0.037	0.0037	-0.07***	-0.03
		(0.017)	(0.037)	(0.02)	(0.03)
Constant	0.62***	0.77***	0.88***	0.36***	0.89***
	(0.089)	(0.098)	(0.12)	(0.16)	(0.14)
Observations	556	612	612	284	326
R-squared	0.51	0.59	0.57	0.50	0.63
Number of countries	28	28	28	28	28

Notes: Panel corrected standard errors in parentheses. Asterisks mark estimated coefficients that are statistically significant: *** p<0.01, ** p<0.05, * p<0.1. Estimation method: Least square dummy variables, country and period effects included. Capital intensity: ration of the net capital stock per person employed. Trend value estimated from regressions on country specific trends (sample: 1990-2015).

Source: DG ECFIN AMECO database.

Graph I.1.6: **Employment, unemployment and activity rates**

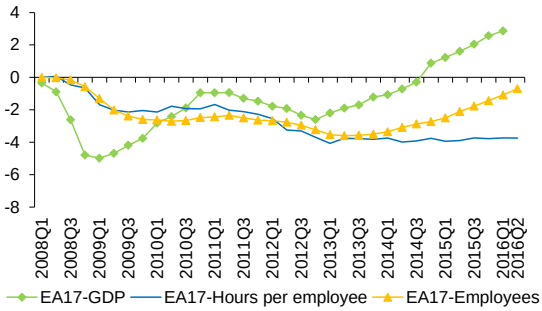


Source: Eurostat, LFS.

Over the same period, the labour force increased by about 285 thousand individuals in the EU and 100 thousand in the euro area, driven mostly by an increase in female participation. However, the proportion of inactive who wanted to work rose in the EU from about 4% in 2007 to 5% in 2015 (while in the euro area from 4% to 6%), hinting at an underutilisation of the labour force. Developments in activity rates should be read in conjunction with those of the working age population (i.e. the denominator of the activity rate). Between 2014 and 2015, despite a growing labour force, the working age population declined (by about 600 and almost 200 thousand in the EU and the euro area respectively). Thus, the rise in the activity rate stems also from a drop in the working age population.

The weak dynamics of hours worked could partly explain the swift response of employment to the recovery. After a major drop during 2008-2009 and 2011-2012 recessions, average *hours worked* remained flat (Graph I.1.7). Weekly hours worked by *full-time* employees fell by 1 hour over the recession period. Part of this decline reflects the increase in the share of part-time workers for the EU from about 20% of 2007 to about 22% of 2015.

Graph I.1.7: **Cumulative change in GDP, number of employees and average hours worked per employee, Euro area**



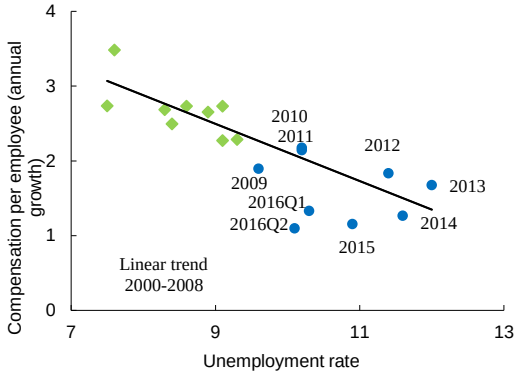
Source: Eurostat.

The share of those reporting that the main reason for working part-time is the lack of a full-time job rose by 7 percentage points to 29.2% and 31.4% in the EU and the euro area respectively. As a consequence, closing the gap in average hours worked relative to the long-term trend could constrain job creation looking forward. Yet, this has to be considered against the long-term downward trend in average hours worked, which reflects both efficiency gains and a shift of employment toward the less *hours-intensive* service sector. In the period 2000-2015, hours worked declined from 38 to 36.5 hours; almost half of this decline occurred before 2007.

1.4. WAGES AND LABOUR COSTS

The response of wages to the labour market recovery has been quite moderate. In 2015, wage growth in the euro area remained relatively flat, hovering around 1% (both compensation per employee and hourly wages). Wage growth remained sluggish in early 2016 when unemployment dropped below 11%. ([10])

Graph I.1.8: **Phillips curve for the euro area 2000-2014: annual growth rate of compensation per employee**



Source: DG ECFIN AMECO database and Eurostat, LFS

A key question is to what extent slow wage growth reflects a delayed adjustment of wages with respect to what is implied by the Phillips curve (the relation linking wage growth to unemployment) or whether there is more underutilisation of the labour force than suggested by the unemployment rate, which exerts downward pressure on wages. During the recession, wages reacted slowly to the increase in unemployment (European Commission, 2015). Similarly, since the start of the recovery they have been lagging behind the drop of unemployment (Graph I.1.8). Since then, the link with unemployment has weakened.

The relationship between the unemployment rate and wage growth can be analysed with a Phillips curve estimated on a panel of euro area countries over different sub-periods, controlling for past and expected consumer prices inflation (Gali 2011). Results from such an analysis are shown in Table I.1.3. There are three main conclusions to be drawn.

First, over time, inflation expectations have stabilised and inflation has become less persistent; thus, nominal wage growth depends more on inflation expectations than on past inflation (see also IMF, 2013; Blanchard et al, 2015). This

([10]) Wage growth has lagged unemployment declines also in the US. From 1990Q1 to beginning of 2007-09 recession labour cost grew by 1.2 per cent yearly; since 2009Q2 they have grown on average 0.7 per cent yearly.

pattern is visible from the change of the coefficient of past inflation for different sub-periods (see also Graph I.1.9). ([11])

Table I.1.3: **Wage Phillips curve: wage growth and unemployment across euro area countries over different time periods.**

	(1)	(2)	(3)	(4)	(5)
Dependent variable: wage growth	2000-2007	2007-2013	2007-2016	2009-2016	2013-2016
Lagged wage growth	0.24 **	0.16	0.12	-0.25	-0.40***
	(0.11)	(0.13)	(0.14)	(0.18)	(0.15)
Inflation expectations	0.50***	1.1***	1.04***	0.82***	0.22*
	(0.15)	(0.13)	(0.16)	(0.11)	(0.14)
Unemployment gap	-0.69***	-0.60***	-0.55***	-0.85***	-1.1***
	(0.08)	(0.20)	(0.17)	(0.20)	(0.13)
Constant	0.89	0.07	0.43	1.3***	2.3***
	(0.56)	(0.46)	(0.42)	(0.63)	(0.34)
Observations	131	133	189	151	75
R-squared	0.75	0.69	0.65	0.69	0.73
Number of countries	19	19	19	19	19

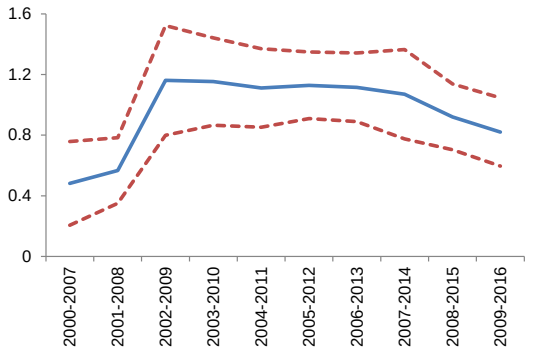
(1) Panel estimation with country fixed effects. Equations estimated imposing the restriction that the effects of past and future inflation sum up to one.
(2) Robust standard errors in parentheses. Statistically significant estimated coefficients are marked with asterisks (*** p<0.01, ** p<0.05, * p<0.1).
(3) Wages are measured by nominal compensation per employee. Inflation expectations are households' consumer price expectations for the next 12 months; unemployment gap: gap between actual and structural unemployment rate (NAWRU).
Source: European Commission calculations based on data from DG ECFIN AMECO database, EU Survey, and Eurostat.

Second, the Phillips curve is fairly stable up to 2013. An increase in the unemployment gap (the difference between the actual and the structural unemployment rate (measured by the NAWRU) by 1 percentage point is accompanied by a decrease in wage growth by about 0.6 per cent.

Third, from 2013, the effect of expected inflation becomes weaker, while the Phillips curve becomes steeper. The increased sensitivity of wage growth to unemployment and the lower sensitivity to inflation expectations are visible in the difference of the values of the coefficients of unemployment gap and expectations in columns (1) to (4) of Table I.1.3 – see also Graphs I.1.9 and I.1.10.

It is too early to draw solid conclusions on the relationship between wage developments and unemployment after 2013. Yet, if persistent, the recent changes in the responsiveness of wages to unemployment and inflation could have important implications for the aggregate dynamics of wages and the deflation risks. The weaker response of wages to inflation expectations signals that it may become more difficult to stabilise expectations. In contrast, the increase in the cyclical sensitivity of wages to unemployment means that labour market conditions exert stronger pressures on wages. ([12]) Thus, smaller fluctuations of unemployment around its structural level are needed to stabilise wage inflation. However, the fact that wages depend more on past than expected inflation, risks decoupling wages from inflation expectations.

Graph I.1.9: **Effects of inflation expectations on wage growth**



(1) The chart shows the coefficient of inflation expectations in a wage Phillips curve linking wage growth to lagged wage growth, lagged consumer price inflation, inflation expectations over the next 12 months, and the unemployment gap. A coefficient close to 1 means that wage growth is anchored to long-term inflation expectations.
(2) Each point shows estimates over different periods.
(3) The dotted lines mark the band 2 standard errors around the point estimates.
Source: European Commission calculations based on data from DG ECFIN AMECO database, EU Survey, and Eurostat.

The stability of inflation expectations means that cyclical fluctuations of the unemployment rate around its structural level would entail temporary changes on wage inflation; even with high unemployment rates, wage growth would settle around a value consistent with price stability. ([13]) Yet, a prolonged period of low wage growth may destabilise inflation expectations. Similarly, a protracted period of high unemployment may have long-lasting effects and lead to higher structural unemployment (the so-called *"hysteresis"* effect).

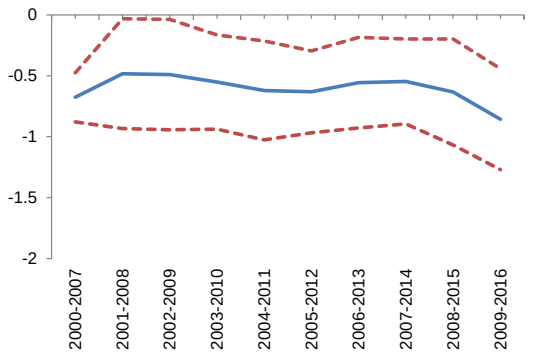
([11]) The Phillips curve is estimated assuming that inflation expectations are based on past and expected inflation, both effects summing to 1. An increase of the effect of expected inflation implies a decline of the effect of past inflation.

([12]) In the analysis of Blanchard et al (2015) the estimated Phillips curve becomes steeper in 5 out of 13 EU countries after 2007.

([13]) If expected inflation is replaced with ECB 2% reference value, the coefficient of inflation expectations equals 1 for the period covering the recovery. This suggests that keeping inflation close to the ECB 2% would not de-anchor inflation expectations.

If estimates of the Phillips curve suggest that recently wages may have become more sensitive to the labour market slack, why have wage gains been limited in spite of the drop in unemployment? Several explanations can be put forward.

Graph I.1.10: **Effect unemployment gap on wage growth**



(1) The chart shows the coefficient of inflation expectations in a wage Phillips curve linking wage growth to lagged wage growth, lagged consumer price inflation, inflation expectations over the next 12 months, the unemployment gap. A coefficient close to 1 means that wage growth is anchored to long-term inflation expectations. Each point shows the estimates over different periods.
Source: DG ECFIN AMECO database, EU Survey, Eurostat,

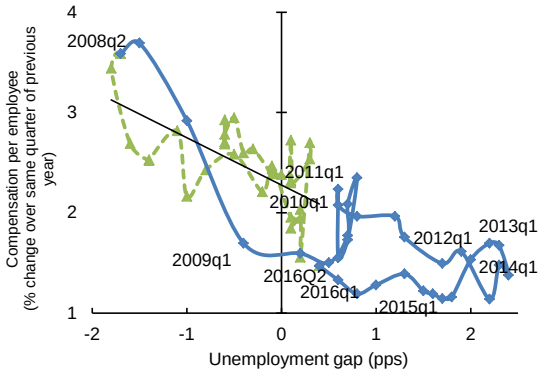
First, low wage growth of recent years has occurred against the slowdown of productivity growth. In the 1990s, labour productivity gains averaged 1.5 per cent per year. In the 2000s and up to 2007, productivity growth averaged about 1 per cent per year. Since 2008, productivity growth has dropped to 0.3 per cent per year. ([14]) A pick-up of investment would boost productivity and wages.

Second, the fall in energy prices has held down consumer price inflation and helped to contain wage claims on the back of rising real household disposable income. In a low-inflation environment, there are fewer incentives in undertaking costly negotiations for wage gains that are known to be limited. With low inflation, nominal wage rigidities prevent upwards and downwards wage adjustments. ([15])

Third, aggregate wages appeared relatively unresponsive to the drop of output at the early stages of the crisis. Cyclical changes in the composition of the workforce (i.e. the dismissal of low skilled workers during recessions leading to an automatic increase of the average wage) may have contributed to the downward wage rigidity observed at the onset of the crisis (e.g. Verdugo, 2016). Similarly, when previously displaced workers are rehired, wages would be subdued at the early stage of the recovery as most of the hires concern previously displaced low-wage workers.

Fourth, wage growth may remain low because, although unemployment is dropping, the current slack in the labour market is higher than indicated by cyclical unemployment (the difference between the unemployment rate and the NAIRU), as witnessed *inter alia* by the high number of part-time work and lower average hours worked.

Graph I.1.11: **Phillips curve for the euro area: growth rate of nominal compensation per employee, 2000q1-2016q1**



(1) The regression line is based on the pre-crisis relationship.
Source: DG ECFIN AMECO database and Eurostat, LFS.

Graph I.1.11 depicts the Phillips curve for the euro area using, rather than unemployment, a measure of cyclical unemployment. Despite the possibility that also the NAWRU may contain a cyclical element so that fluctuations in the NAWRU follow closely those of overall unemployment, Graph I.1.11 shows nonetheless some flattening of the Phillips curve after 2013. ([16])

([14]) If productivity is based on potential output per person employed and structural employment obtained from the NAWRU, the current activity rate and working age population, productivity growth is 1 per cent for the 1995-2000 and 2000-2007 and 0.4 per cent after 2008.

([15]) Nominal wage rigidities have been proved to be the main reason for the low wage growth during the US recovery (Daly and Hobjin, 2015).

([16]) See European Commission (2013) for a discussion of the cyclicality of the NAWRU. Similar pattern is observed when the growth rate of negotiated wages is used instead of the growth rate of nominal compensations per employee.

Since 2013 wage growth has been lower than at comparable levels during the previous recovery; in 2016Q1 wage growth was slightly less than 1 percentage point below growth implied by its level of cyclical unemployment.

Recent analyses have tested whether the flattening of the Phillips curve in the US is linked to the growing incidence of the long-term unemployed, less easily employable even at lower wages. Graph I.1.12 shows the relationship between wage growth and respectively the short-term (less than 12 months) and the long-term unemployment rate (more than 12 months) for the period 2000Q2-2016Q1 ([17]). The rounded and the squared symbols represent the long-term and the short unemployment respectively. The symbols without fill denote the pre-crisis period; those with fill the post-crisis period. Several factors stand out as particularly important.

Graph I.1.12: **Phillips curve for the euro area: short-term and long-term unemployment rates**

(1) Short-term and long-term unemployment rates: duration shorter and longer than 12 months.
Source: Commission Services.

The slope of the Phillips curve for long-term unemployment is lower than for short-term unemployment. This is an indication that long spells of unemployment make unemployed workers less employable, so that wages fall less in response to unemployment when its duration is long than when it is short. Yet the difference between the wage response to short- and long-term unemployment is small and the composition of unemployment by duration does not modify significantly the slope of the Phillips curve. ([18])

The fact that the change of the long-term unemployment rate lags the increase in the short-term unemployment rate implies that wage growth may be relatively flat before long-term unemployment changes. Similarly, the change in the long-term unemployment lags the fall in unemployment because job destruction has fallen while the job finding rate remains low. Therefore one should see moderate wage pressures (i.e. a flatter Phillips curve) when long-term unemployment increases (i.e. aggregate unemployment is high) but strong wage pressures (i.e. a steeper Phillips curve) when long-term unemployment falls (i.e. aggregate unemployment is low).

The fact that both short and long-term unemployment dropped by about 1% since late 2013 without generating upward pressures on wages, suggests that there is more slack in the labour market than the unemployment rate would suggest. In 2015 there were almost 22 million unemployed in the EU (17 million in the euro area). In addition, 12 million of employed declared that they were willing to work more hours; among the inactive, about 4.5 million have given up looking for a job.

Wage growth dropped from about an annual average of 1.6 per cent between 2012Q1 and 2014Q1 to 1.2 per cent between 2014Q2 and 2016Q1. This reduction in wage growth predates the stronger than expected drop in HICP inflation which occurred between the fourth quarter of 2013 and the first of 2014; it appears to be stronger for actual rather than negotiated wages. The moderate wage growth in 2014 and 2015, coupled with a pick-up in productivity growth, translated into a reduction in the dynamics of unit labour costs at euro-area level, with growth rates in 2015 falling below 1% (Graph I.1.13).

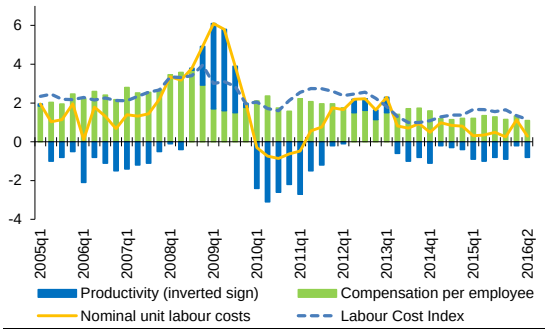
It is early for a clear assessment of the recent steepening Phillips curve. It is however likely that

([17]) Data are available until 2005 at annual frequencies only for the second quarter.

([18]) Over the 2005Q1-2016Q1 period, a 1 percentage point increase in the long-term unemployment rate leads to drop in wage growth by -0.6%; this decline is comparable to the effect of a 1 percentage point increase in the overall unemployment rate. See also European Commission (2015).

the protracted labour market slack plays a role, in combination with the usual lags characterising the response of wages to labour market conditions (i.e. similar to the evolution for the US) and the materialisation of the impact of wage setting reforms in a few countries.

Graph I.1.13: **Compensation per employee and unit labour costs in the euro area, growth rate on same quarter of previous year**

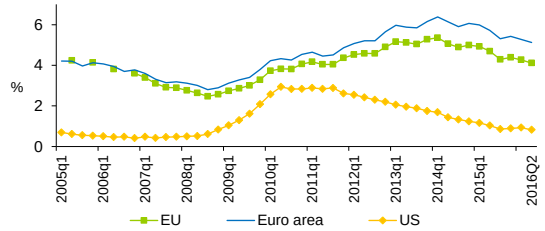


Source: Commission Services.

1.5. LONG-TERM UNEMPLOYMENT AND LABOUR MARKET MATCHING

The proportion of the labour force that is unemployed for one year or more continued to decline, reaching at the end of 2015 4.4% in the EU (5.4% in the euro area). Compared to the US, where it has gone back to pre-crisis averages (slightly below 1%), in the EU it remains around levels about 2 percentage points above those prevailing before the 2008 crisis (Graph I.1.14).

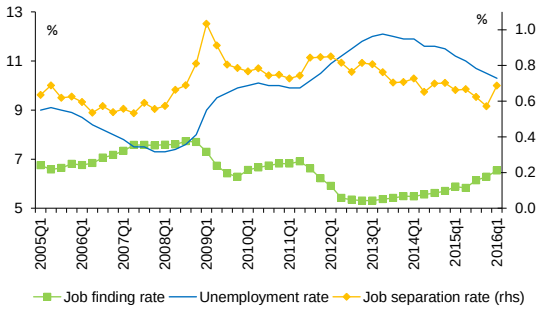
Graph I.1.14: **Long-term unemployed (for 1 year or more) in the EU, the euro area and the US (% of total labour force)**



Source: Eurostat and U.S. Bureau of Labor Statistics.

Changes in the structure of unemployment duration reflect fluctuations in the job-finding and separation rates (Graph I.1.15). After the initial surge at the onset of the 2008 and 2011 recessions, *separation rates* declined steadily at a fairly sustained rate, almost reaching their pre-crisis levels by the end of 2013.

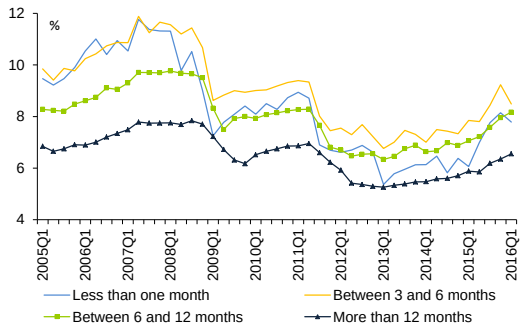
Graph I.1.15: **Job-finding and separation rates in the euro area**



Source: Commission Services based on Eurostat data.

In contrast, *job-finding rates*, albeit bottoming out in 2013 and slightly recovering afterwards, continue to remain at historically low levels. Persistently depressed job-finding rates find their counterpart in the lengthening of unemployment spells. The expected duration of unemployment spells reached a peak of almost 19 months at the end of 2012, up from about 10 months before the crisis. ([19])

Graph I.1.16: **Job-finding rate by duration of unemployment, euro area**



Source: Commission Services based on Eurostat data.

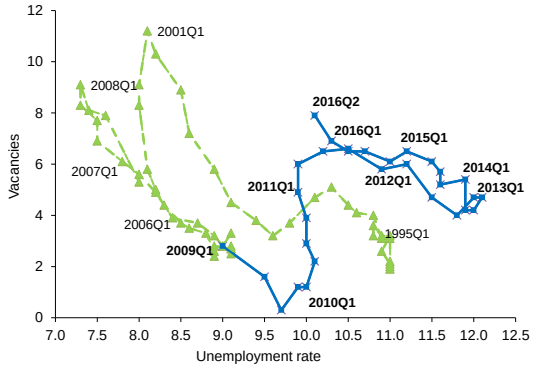
At the end of 2015, it dropped to 16 months, still above the pre-crisis average duration of about 14 months. Job-finding rates are distinguished according to length of time spent in unemployment

([19]) The expected duration of unemployment equals the reciprocal of the job-finding rate.

in Graph I.1.16. Since 2013, the job-finding probability has been increasing for all durations but more sharply for jobseekers with short durations; job-finding rates remain depressed, especially for the long-term unemployed.

The evolution of job-finding rate is behind movements of the *Beveridge curve* depicting the relationship between the unemployment rate and the availability of job vacancies (Graph I.1.17). Post-crisis movements in the euro-area Beveridge curve were the result of a mix of temporary, demand-related and structural factors (European Commission 2013). The outward shift of the Beveridge curve since 2008 observed at the aggregate level was to some extent linked to worsened labour market matching, with however major differences across countries (e.g., improved matching in Germany).

Graph I.1.17: **Beveridge curve for the euro area, 1995q1-2016q2**



Note: Job vacancies are approximated with the survey based indicator of labour shortages in industry.
Source: Commission Services.

Labour demand also played an important role. At the onset of the 2008 crisis, the number of vacancies dropped sharply and the unemployment grew. Vacancies started to increase visibly during the short-lived 2010 recovery, while the response of unemployment was relatively muted, a pattern that can be attributed to either a typical counter-clockwise movement of the vacancy-unemployment relation during the adjustment to negative labour demand shocks or to an increase in structural unemployment. As the euro area entered again in recession, unemployment and vacancies moved along the negative relationship, signalling weak demand for labour instead of a structural deterioration in matching.

Since 2013 a new phase has started where vacancies are growing in parallel with a reduction in unemployment. This is an unusual pattern as unemployment responds to cyclical developments with lags; while vacancies respond to shocks immediately. In the second quarter of 2016, vacancies increase more than unemployment declines. This pattern is consistent with a consolidation of expectations in the first half of the year; however, as unemployment gets closer to its structural level (9.7% for the EU), unemployment becomes also less reactive to the cycle.

1.6. CONCLUSIONS

The overall labour market performance in the EU and the euro area is improving. The unemployment rate has dropped to 8.6% in the EU (10% in the euro area) amidst a weak recovery and a modest uptick in investment. The drop of unemployment has been supported by a strengthening of domestic demand, moderate real labour cost developments and low consumer prices. Although the unemployment rate has fallen, it remains at the highest levels since 2000.

The drop of unemployment has not been accompanied by a significant increase in wage growth. Yet, for the *typical* euro area country the estimated slope of the Phillips curve has increased. The increase in the sensitivity of wages to unemployment is consistent with the materialisation of the effects of structural reforms aiming at enhancing nominal wages flexibility and at removing the constraints to job creation and labour market participation.

However, during the current recovery observed wage growth has been less than expected. Factors explaining lacklustre wage growth include low commodity prices, the pickup of profit margins after a prolonged contraction, the current slack in the labour market and a trend decline in labour productivity. While the former are likely to fade as the recovery gains strength the latter will continue to hamper further wage gains. Low productivity growth together with prolonged labour market slack may validate the current low inflation and destabilise inflation expectations. For example, it

may be difficult for firms to increase prices if the general perception of households is that prices are going to be low. With low wage growth, a slowdown in inflation makes the absorption of the unemployed difficult.

After the initial surge, separation rates are gradually returning towards their pre-crisis levels, while the job-finding rates have improved only slightly and especially for the short-term unemployed. This implies that employment prospects remain difficult for those who have lost a job during the 2008-2009 economic and financial crisis. With high unemployment the pressures to increase wages are limited. Lower job-finding rates imply that unemployment will stay for longer far from the level that corresponds to the pre-crisis inflows and outflows rates.

Looking forward, while the labour market has improved considerably, the labour market outlook is linked to medium-term growth prospects, which remain weak in light of the legacy of the economic and financial crisis and underlying long-term economic trends.

2. LABOUR MARKET DEVELOPMENTS IN MEMBER STATES

In 2015 and early 2016, labour markets continued to improve in nearly all EU Member States. Unemployment rates fell, while employment and activity rates increased, benefiting from a relatively job-rich recovery in view of the modest economic growth. Most significant improvements have been observed in the countries hit the hardest by the crisis, notably Greece, Ireland, Portugal and Spain and also Bulgaria, Hungary, Slovakia and the Baltic states. A convergence of wage growth across the EU was observed on the back of wage stabilisation in countries that adjusted the most during the sovereign debt crisis and moderate wage developments in countries with stronger economic activity. With subdued wage and dynamics, unit labour costs continued rising at a moderate pace even declined in some EU countries. In particular, after falling for several years, unit labour costs picked up in euro area countries that had experienced current account deficits before the crisis, while growing at an unchanged pace, or even decelerating, in countries with previous current account surpluses. The rebalancing process, which had brought about sizeable labour cost adjustment and reductions in trade deficits in a number of countries, slowed down in 2015. The observed shift of resources from non-tradable to tradable sectors necessary to spur exports and reduce external debt was also milder than in earlier years. More dynamic domestic demand in countries previously characterised by current account surpluses, possibly supported by favourable macroeconomic policies, would ease the continuation of the rebalancing process.

2.1. INTRODUCTION

This chapter takes a closer look at labour market and wage developments at the level of the individual EU Member States. It does so in an integrated way assessing employment, unemployment and wage developments. Current labour market developments are compared to previous recoveries. A focus on cyclical patterns and sectoral developments provides some insights into the macroeconomic determinants of temporary employment.

The chapter is structured as follows. Sections 2.2 and 2.3 describe recent developments in unemployment rates and in employment and activity rates, respectively, while the latter looks at which sectors are driving the recent job creation. Section 2.4 reviews the fluctuations of unemployment in terms of job creation and job destruction and the cyclical and sectoral determinants of temporary employment. Section 2.5 describes recent wage and productivity developments, and changes in wages at the sectoral level. Section 2.6 analyses the evolution of unit labour costs and their main components. Section 2.7 focuses on external competitiveness and how labour market outcomes relate to external balances and adjustment needs. Section 2.8 concludes.

2.2. UNEMPLOYMENT RATES

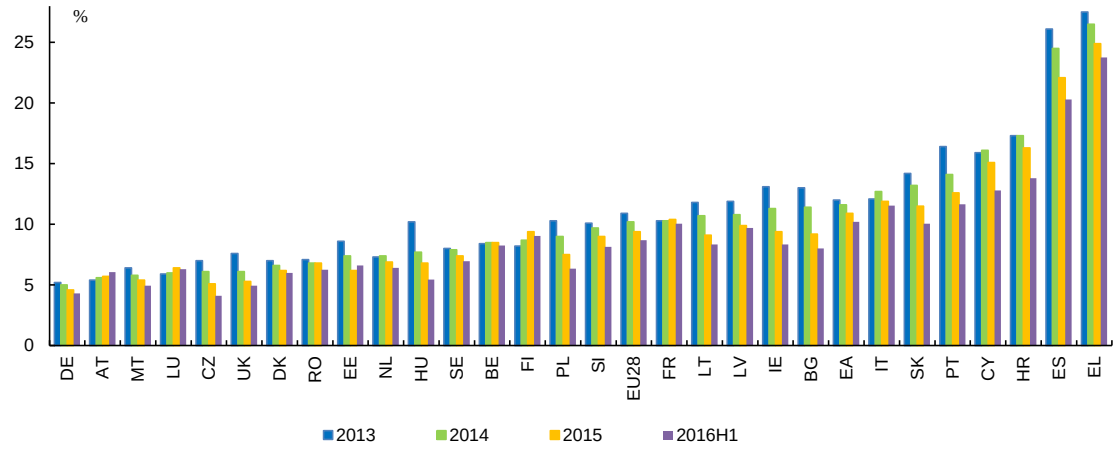
The fall in unemployment that had started in mid-2013 continued throughout 2015 and the first half of 2016 with unemployment rates dropping in almost all EU countries (Graph I.2.1).

Since the start of the recovery, there has been convergence in unemployment rates with large falls especially in countries more severely hit during the crisis. Spain, Bulgaria and Ireland recorded falls in their annual average unemployment rates of about 2 percentage points in 2015; Greece, Lithuania, Slovakia and Portugal had unemployment falling by about 1.5 percentage points. These trends continued in the first two quarters of 2016, with unemployment declining by around 1.5 percentage points in Spain and Slovakia and 1 point in the other cases.

Declines of 1 percentage point over 2015 took place in Estonia, Latvia, Hungary, and Poland – respectively from very high levels in the former two countries and from levels close to the EU average in the latter two. The same happened in Cyprus, Croatia and Italy, which represented the first falls in unemployment rates in several years and from levels above EU average. Croatia and Cyprus recorded further declines in the first half of 2016 in excess of 2 percentage points, which were the strongest in the EU.

Unemployment fell also in countries with rates below the EU average (e.g. Czech Republic, Germany, Malta, Slovenia, Denmark and Sweden).

Graph I.2.1: **Unemployment rate, 2013-2015 and first half of 2016**



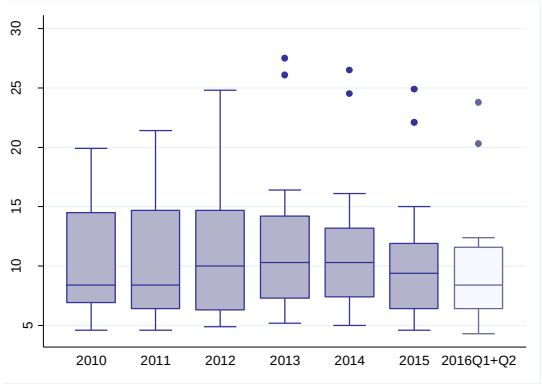
(1) Seasonally-adjusted data for 2016 Q1 and Q2.
(2) Countries are ranked by ascending order of unemployment rate in 2014.
Source: Eurostat, Labour Force Survey.

After two years of increase, the unemployment rate dropped in 2015 in the Netherlands.

There were few exceptions to these positive developments. In Austria, Luxembourg and especially Finland, unemployment rates were on the rise in 2015 – reaching the highest rate in more than a decade in Finland; in Austria a marginal deterioration continued into the first half of 2016. Romania, Belgium and France recorded declining unemployment rates already in 2016 after unchanged readings in 2015.

Backed by improvements in high unemployment countries, the dispersion of unemployment rates continued to decline in 2015 and early 2016. Improvements in countries with unemployment rates just above the EU median also contributed to the fall in the dispersion (Graph I.2.2). Compared to past recoveries, the current fall in the dispersion of unemployment rates appears particularly rapid (see Box I.2.1 on labour market patterns in the current and past recoveries.). Nonetheless, cross-country differences in unemployment rates remain important. With the exception of four countries (including Germany), the jobless rate remains above the lows of 2008. On the other hand, in the cases of Spain and Greece, the unemployment rate remains close to or well above 20%, respectively, more than 10 percentage points above the pre-crisis rate.

Graph I.2.2: **Distribution of unemployment rates for euro area Member States: 2010-2016**



(1) The boxes represent the "middle 50%" of the distribution of unemployment rates across euro area Member States (i.e., the second and third quartile); the horizontal mark inside the box represents the median. The two whiskers show the upper and lower extreme values of the observed unemployment rates that fall within a range of 1.5 of the interquartile range (the height of the box) away from the top or the bottom of the box, respectively; the dots represent the values that fall outside this range.
Source: European Commission based on Eurostat, Labour Force Survey.

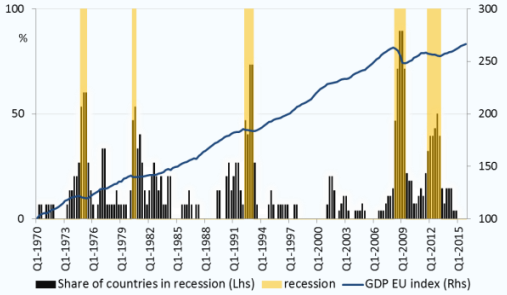
The labour market recovery gained traction supported by the consolidation of economic growth. Yet the reaction of unemployment to the economic recovery has been stronger than expected.

Box I.2.1: **Labour market behaviour during the current recovery and past recoveries**

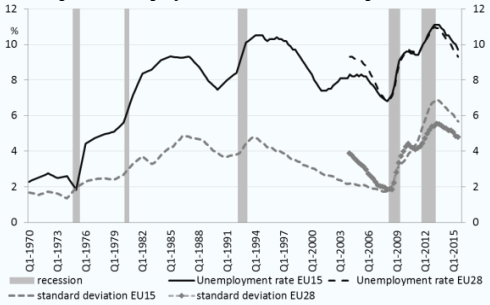
The recovery from the 2008-2009 financial and 2011-2012 Eurozone sovereign debt crises is three years old. Compared to previous episodes, the recessions triggered by the global financial crisis affected almost all Member States, especially in the 2008-2009 crisis, and, excluding the slow 2009-2011 recovery, lasted for about 12 quarters for the EU as a whole (Graph 1). ([1]) The recession hit the quasi totality of Member States but resulted in wide differences in GDP growth rates across countries. These divergences in economic growth were accompanied by remarkably divergent unemployment rates; this is visible in the spike of the measure of dispersion at the peak of the 2011-2012 recession (Graph 2).

How does the current recovery compare to previous ones? It has been noted that recoveries that follow financial crises are weak. For instance, Reinhart and Rogoff (2014) note that according to the experience of past severe banking crises, it took about eight years for the affected countries to reach the pre-crisis level of per capita GDP. By the end of 2015, about eight EU countries ([2]) had GDP more than 5% lower than the levels prior to the 2008-2009 crisis. In every previous recovery, the dispersion across countries in unemployment rates appeared highly persistent or even increasing, with each recession of the 1970s and the 1980s being followed by a temporary drop in the standard deviation only after few years. The current recovery showed a relatively early fall in dispersion of unemployment rates from historical highs, not seen in previous recoveries; yet, by the end of 2015 it remained at its very high historical levels.

Graph 1: Member States in recession and EU GDP (1970q1= 100)



Graph 2: Unemployment rate levels and dispersion



Note: EU 15 before 2002, EU 28 after 2002.

Source: Eurostat, Ameco and OECD.

Graph 3 provides a snapshot of the cross-country distribution of the GDP, employment, unemployment and wages (in real terms, deflated with the GDP deflator) since the start of the recovery (normalised to 100) and up to the following three years. The height of the boxes inside the graphs is informative of the mass of the distribution that is within the second and the third quartiles; the white strip is the mean and the *dot* symbol represents extreme values. Weak GDP growth is a salient feature of the current recovery; even the outlier of the current recovery stays well within the 50% range of the distribution of previous recoveries. Compared to the 2008-2009 recession, the distribution shifts upward, which means that the recovery is broad-based, benefitting also countries most hardly hit by the twin 2008-2009 and 2011-2012 crises. In the last two recoveries, the growth rate was almost half that observed in the previous recovery (median growth: +1.5 % after one year).

Unlike earlier recoveries, the recovery following the 2008-2009 recession saw unemployment falling in most EU countries, in some cases quite markedly. Since 2013, all countries have benefitted from the recovery as employment increased and unemployment dropped, with the size of those improvements being comparable to those over previous crisis. Yet the level of unemployment remains far from the readings observed before 2008-2009. The behaviour of real wages was atypical with no real wage growth for more than half of the countries. After increasing during the 2011-2012 recovery as reflection of the differences across countries in the jobless

([1]) Adopting the double dip definition of recession as in Reinhart and Rogoff (2014), the 2011-2012 recovery is part of the recessive episode and the recession lasted for five years.

([2]) Ranked by decreasing difference of GDP between 2015q4 and 2008q2; Greece (around -25%), Cyprus (-16%), Italy (-11%), FI (-9.5%), HR (-9.5%), SI (-7%), DK (-6.5%), ES (-5%).

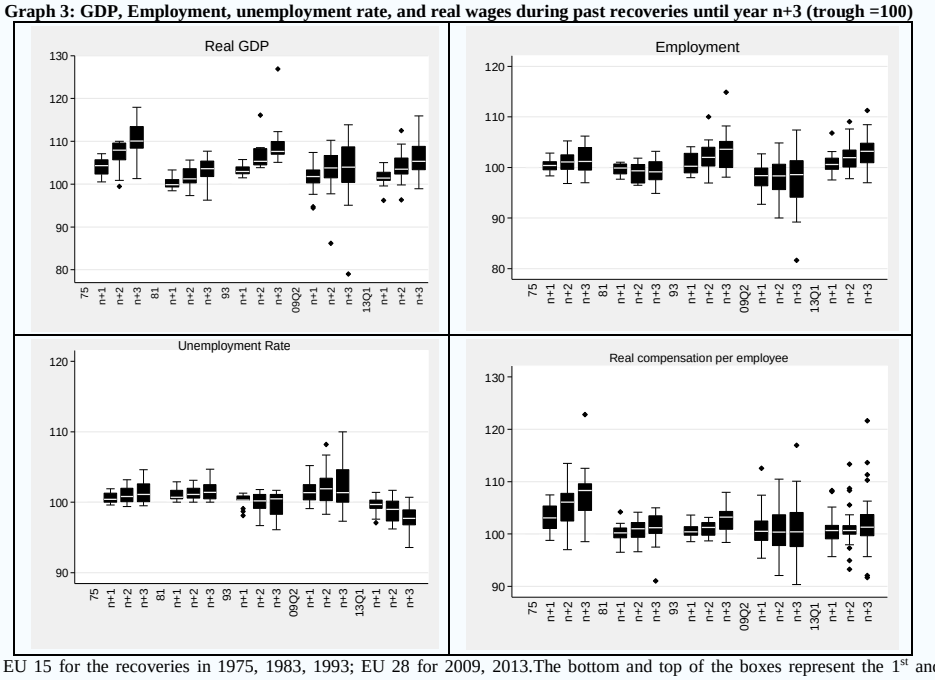
(Continued on the next page)

Box (continued)

However, the current recovery remains weak and, although back to its pre-crisis level, output is in many countries well below where it would be based on the pre-crisis long-term trend.

In a historical perspective, Table 1 confirms that the employment intensity of the current recovery is high in light of the weak economic growth and comparable only to the recovery that followed the currency crisis of the early 1990s. However, treating the double dip as part of the same cycle, the recession was unusually long and unemployment rate has shown only recently some encouraging signs.

Graph 3: GDP, Employment, unemployment rate, and real wages during past recoveries until year n+3 (trough =100)



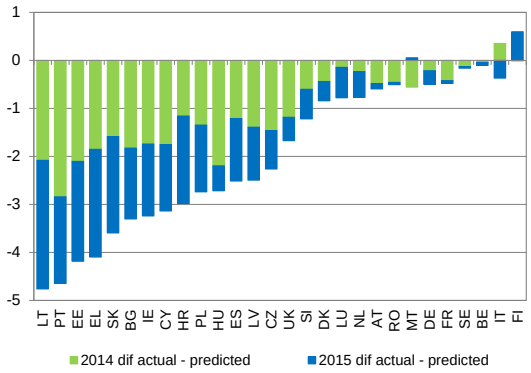
Notes: EU 15 for the recoveries in 1975, 1983, 1993; EU 28 for 2009, 2013.The bottom and top of the boxes represent the 1st and 3rd quartiles of the distribution; the horizontal mark inside the box represents the median. The two whiskers show the upper and lower values falling within a range of 1.5 of the interquartile range (the range between the 1st and 3rd quartile); the dots represent observations that do not fall within that range. Year n+1 is determined depending on the quarter in which the trough was reached. If this was Q1 or Q2, year n+1 is the trough year (for 1975); if in Q3 or Q4, year n+1 is the following year (for 1982 and 1993). For 2009 and 2013, quarterly data available for all countries; the dating is from the exact quarter in which the trough was reached.

Table 1: The recent recovery in historical perspective: cumulated change 3 years after the recovery

Recession period	1974q4-5q2	1980q2-80q3	1992q2-93q1	2008q2-09q2	2011q4-13q1
GDP growth					
Mean	10.6	3.3	9.5	2.2	6.8
Median	10.1	3.6	7.7	4.4	5.9
Max	18.0	7.7	26.9	9.1	19.8
Min	1.3	-3.7	5.1	-21.0	-0.2
Employment growth					
Mean	1.7	-0.9	3.3	-2.1	2.8
Median	1.2	-0.9	3.6	-0.1	3.1
Max	6.2	3.2	14.9	7.4	8.5
Min	-3.0	-5.1	-1.9	-18.4	-1.9
Unemployment rate pp change					
mean	1.5	1.6	-0.2	1.6	-1.7
median	1.1	1.4	0.5	1.1	-1.6
max	4.6	4.7	1.7	10.0	0.7
min	-0.5	0.0	-3.9	-2.7	-4.8
Real wages growth (GDP deflator)					
mean	7.5	1.0	2.8	0.9	2.2
median	8.3	1.2	3.2	0.4	1.3
max	22.8	5.0	8.0	16.9	21.6
min	-1.5	-9.0	-1.6	-9.6	-8.3

Graph I.2.3 shows the difference between the actual change in unemployment rate and the change predicted on the basis of historical relationship between GDP growth and changes in the unemployment rate (negative values imply that the fall in unemployment is stronger than expected).

Graph I.2.3: **Changes in unemployment rate unexplained by GDP growth in 2014 and 2015 (cumulative, percentage points)**



(1) The graph shows the gap between the actual change in the unemployment rate and the change predicted on the basis of GDP growth. A negative value means that unemployment fell faster (or increased by less) than predicted based on economic growth.
(2) The relationship between the change in unemployment and GDP growth is also called "Okun's law". The graph is based on an estimated relationship for EU Member States in which 1 ppt of additional GDP growth reduces unemployment by 0.29 ppts. The expected change in unemployment at zero economic growth is estimated by country-specific constant terms.
Source: Commission services based on Eurostat

Stronger-than-expected declines in unemployment occurred in almost all countries in 2014 and 2015, most notably in Lithuania, Portugal, Estonia and Greece. Only in Finland were changes in the unemployment rate less beneficial than predicted based on GDP growth over the two years. In a few other countries, unemployment developed in line with GDP growth (Sweden, Belgium and Italy).

Various factors may have contributed to the strong unemployment response. The drop of unemployment comes after marked job destruction during the crisis beyond what could be expected on the basis of past trends. At the same time, as shown in Chapter 1, the recovery was fuelled by a revival of domestic demand, which usually is more conducive to job creation than an export-led upturn. In addition, labour market reforms and measures taken over these years may be fostering job creation. Finally, the recovery was accompanied only by a minor increase in average hours worked.

2.3. EMPLOYMENT AND ACTIVITY RATES, HOURS WORKED AND JOB MARKET FLOWS

In 2015, employment increased in nearly all EU countries. The number of employed persons rose at the highest rate in Luxembourg and Spain by about 5% and 3%, respectively, compared to EU and euro area averages of about 1%. Additional evidence from the first half of 2016 suggests a strengthening of those developments. Employment and activity rates have increased in most countries in 2015, while the number of discouraged workers (i.e. inactive people who stopped looking for a job because they feel they would not find one) declined, especially where employment expanded the most. At the same time, the rising number of persons employed in 2015 was accompanied by largely unchanged, or at times falling, average hours per worker.

2.3.1. Employment and activity rates

In 2015, employment and activity rates went up in almost every Member State(Table I.2.1). More than half of EU countries recorded gains in the employment rate of at least 1 percentage point, in particular Eastern European countries and those most hit by the crisis. The gains surpassed 2 percentage points in Estonia and Hungary. Increases in employment rates were more limited in Member States with already above-average employment rates and in most large EU countries. Employment rates declined only in Luxembourg, Finland and Belgium; and in the last two countries by low margins.

The activity rate increased nearly everywhere but less than employment rates, which is consistent with the observed declines in the unemployment rate. Increases in excess of 1 percentage point were recorded in countries such as Hungary, Estonia, Malta and Latvia. The activity rate declined only in Cyprus, and, marginally, in Germany and Belgium.

Table I.2.1: **Employment and activity rates and shares of marginally attached and discouraged workers: 2013-2015**

	Employment rate			Activity rate			Share of marginally attached workers			Share of discouraged workers		
	2013	2014	2015	2013	2014	2015	2013	2014	2015	2013	2014	2015
SE	74.4	74.9	75.5	81.1	81.5	81.7	9.8	9.3	8.4	3.0	2.8	2.4
NL	73.6	73.1	74.1	79.4	79.0	79.6	14.9	15.1	14.7	6.3	5.9	5.4
DE	73.5	73.8	74.0	77.6	77.7	77.6	8.1	8.2	8.5	1.9	1.6	1.6
DK	72.5	72.8	73.5	78.1	78.1	78.5	12.2	13.5	11.8	0.5	0.5	0.4
UK	70.5	71.9	72.7	76.4	76.7	76.9	14.3	13.9	13.9	0.5	0.5	0.4
EE	68.5	69.6	71.9	75.1	75.2	76.7	15.4	15.5	15.2	3.9	3.6	3.7
AT	71.4	71.1	71.1	75.5	75.4	75.5	20.0	20.3	21.1	0.7	0.8	0.6
CZ	67.7	69.0	70.2	72.9	73.5	74.0	5.0	4.5	4.6	0.6	0.8	0.8
FI	68.9	68.7	68.5	75.2	75.4	75.8	11.4	12.7	13.3	6.1	6.8	6.3
LV	65.0	66.3	68.1	74.0	74.6	75.7	19.9	17.2	17.6	8.5	7.9	6.8
LT	63.7	65.7	67.2	72.4	73.7	74.1	4.6	3.7	4.6	2.5	2.3	2.3
LU	65.7	66.6	66.1	69.9	70.8	70.9	18.2	16.8	21.6	1.2	1.2	1.5
EU28	64.1	64.8	65.6	72.0	72.3	72.5	12.1	12.2	11.9	5.6	5.7	5.2
SI	63.3	63.9	65.2	70.5	70.9	71.8	13.0	14.5	10.3	3.8	5.2	3.8
EA19	63.4	63.8	64.5	72.2	72.3	72.4	11.7	12.1	12.1	6.1	6.3	6.1
HU	58.1	61.8	63.9	64.7	67.0	68.6	11.6	10.4	10.0	6.6	5.3	4.2
MT	60.8	62.4	63.9	65.0	66.3	67.6	14.6	13.3	14.2	1.4	0.8	0.5
PT	60.6	62.6	63.9	73.0	73.2	73.4	14.5	14.7	13.9	12.6	12.1	11.3
FR	64.1	63.8	63.8	71.1	71.1	71.3	5.9	6.7	6.9	2.7	2.9	3.6
IE	60.5	61.7	63.3	69.8	69.8	70.0	10.9	9.3	7.9	4.2	3.4	2.5
BG	59.5	61.0	62.9	68.4	69.0	69.3	12.1	11.3	10.4	14.0	13.5	12.2
PL	60.0	61.7	62.9	67.0	67.9	68.1	15.2	14.9	13.6	6.2	6.3	6.0
CY	61.7	62.1	62.7	73.6	74.3	73.9	13.1	13.6	13.1	6.4	7.5	7.4
SK	59.9	61.0	62.7	69.9	70.3	70.9	5.9	5.9	6.3	0.9	1.4	2.0
BE	61.8	61.9	61.8	67.5	67.7	67.6	7.2	7.0	6.4	4.8	4.4	4.2
RO	60.1	61.0	61.4	64.9	65.7	66.1	12.0	11.2	7.3	9.1	8.6	3.5
ES	54.8	56.0	57.8	74.3	74.2	74.3	13.5	12.7	11.5	7.4	7.1	5.5
IT	55.5	55.7	56.3	63.4	63.9	64.0	19.4	21.0	21.6	12.5	13.9	13.7
HR	52.5	54.6	55.8	63.7	66.1	66.8	13.9	12.1	12.2	7.8	5.3	5.5
EL	48.8	49.4	50.8	67.5	67.4	67.8	4.5	4.5	4.9	1.9	1.6	1.4

(1) Marginally attached workers are defined as inactive persons (aged 15-74) who are available to work but are not actively searching for a job, expressed as a share of the total inactive population. Discouraged workers are defined as marginally attached workers who are not seeking employment because they think no work is available, based on questionnaires about the reasons for not looking for work, expressed as a share of the total inactive population. Countries are sorted according to the decreasing order of the employment rate in 2015. Employment is based on the resident concept. Employment and activity rates refer to age group 15-64.
Source: Eurostat, LFS

As shown in Chapter 1, activity rates have been resilient since 2008. In fact, labour force participation often increased across the income distribution and especially for those living in poorest households. In particular, in the countries that were hit the hardest by the crisis such as Cyprus, Greece, Spain, Ireland, Italy and Portugal, participation of those in the lowest quartile of the income distribution increased faster than for the higher quartiles in the years following the crisis (Box I.2.2).

The share of marginally attached workers (i.e. the proportion of the inactive who are available to work but not actively search for a job) declined in around half of the EU Member States while the share of discouraged workers (i.e. those marginally attached workers that do not search for a job because they believe that no jobs are available) declined for more than two thirds of the EU countries (Table I.2.1). The most significant declines were recorded in Romania, Slovenia, Spain, Slovenia, Ireland, and Denmark. Yet the stability in the ranking of the stocks of marginally attached workers and, within this group, of discouraged workers – with highest percentages in Italy, Bulgaria and Portugal and the lowest in Denmark, UK and Malta – suggests that, beyond cyclical developments, factors such as the low labour market transitions of specific groups of the population influence individuals' decisions to search for jobs.

Table I.2.2: **Drivers of the employment rate, 2013-2015 (cumulative changes)**

	Change in employment rate (pps)	Components explained by: Change in active population (ΔAt/WAPt)	Change in unemployed population (opposite sign) (-ΔUt/WAPt)	Change in working age population (opposite sign)
	(1)	(2)	(3)	(4)
HU	7.3	3.3	2.5	1.4
LT	5.2	-0.4	3.3	2.3
LV	5.1	-3.1	4.5	3.8
MT	4.8	4.7	0.3	-0.3
EE	4.7	-0.5	3.1	2.1
IE	4.4	-0.1	3.8	0.8
BG	4.1	-0.6	2.3	2.5
CZ	3.7	0.4	1.4	1.9
PL	3.2	0.1	1.8	1.4
SK	3.0	0.6	1.7	0.7
UK	2.8	1.2	1.9	-0.3
PT	2.5	-2.0	2.8	1.7
HR	2.3	1.7	-0.4	1.1
ES	2.1	-1.7	2.5	1.3
SE	1.8	2.2	0.3	-0.7
RO	1.2	0.1	0.0	1.1
SI	1.1	-0.3	-0.1	1.5
DE	1.0	1.1	0.5	-0.7
DK	0.9	0.5	1.0	-0.6
LU	0.3	7.2	-1.4	-5.4
EL	0.0	-1.3	0.0	1.2
BE	-0.1	1.0	-0.7	-0.3
FR	-0.2	2.2	-0.9	-1.5
NL	-0.3	0.3	-0.9	0.3
AT	-0.3	1.7	-0.7	-1.3
IT	-0.3	0.4	-0.9	0.1
FI	-0.8	-0.5	-1.3	1.0
CY	-2.0	-2.4	-2.0	2.5

(1) Countries are ranked by decreasing order of the change in the employment rate over the years 2013-2015. Population aged 15-64 is considered for working-age population. (2) In the formula, At refers to the number of active individuals, Ut refers to the number of unemployed, while WAPt refers to the working-age population. See also the previous footnote.
Source: European Commission based on Eurostat data.

Demographic trends may also impact employment and activity rates. Table I.2.2 disentangles recent changes in the employment rate due to changes in the number of employed and active people and, residually, changes in working-age population. ([20])

For the majority of EU Member States the number of unemployed people dropped (i.e., where figures in column (3) are positive) while the number of active people kept rising (i.e., where figures in column (2) are positive), both developments contributing to an increasing employment rate.

Demographic trends and international mobility also had a sizeable impact. In particular, for two thirds of the EU countries, shrinking working-age populations contributed to increasing employment rates (i.e., in countries for which the figure in column (4) is positive). The decline in the labour force depends on a number of factors, including, *inter alia*, ageing, low fertility rates, and net emigration flows.

For instance, in the case of Latvia, Portugal and Spain, falling unemployment was accompanied by significant decreases in active population and working-age population. In the decomposition of Table I.2.2, a decrease in active population has a negative contribution to the employment rate (column 2), while a decrease in working-age population has the opposite ('mechanical') effect, as it affects the employment-to-population ratio positively (column 4). In Central European countries (such as the Czech Republic, Hungary, Poland and Slovakia), decreases in working-age population were accompanied by stable, or even increased, active population due to comparatively high activity rates of young cohorts and increasing activity rates among older cohorts related, as in the case of Hungary, to restrictions in early retirement, among other factors.

Overall, factors related to demography and international mobility were playing a role not only in countries with rapid ageing of the population (e.g. Bulgaria or Finland) but also in the Baltic and Eastern European countries and in countries hit by the debt crisis (e.g. Cyprus, Portugal, Greece and Spain). The working age population rose in Luxembourg, and, to a lesser extent, France and Austria.

([20]) The decomposition of the change of employment rate is based on the following relationships. First, the employment rate in year *t* is defined as the ratio of employment (E*t*) to working-age population (WAP*t*). The change in the employment rate is then decomposed into the change in employment and the change in working-age population in the following way: (E*t* / WAP*t*) – (E*t*-1 / WAP*t*-1) = [(E*t* – E*t*-1) / WAP*t*] + [(E*t*-1 / WAP*t*) – (E*t*-1 / WAP*t*-1)], where the first term in square brackets on the right-hand side of the equation isolates the effect of the change in the number of employed people, while the second term in square brackets is the effect of the change in working-age population. In a final step, the first term can be further decomposed into the effect of active population and unemployed population, using the relationship that employment (E*t*) is equal to active population (A*t*) minus unemployed population (U*t*) (E*t* = A*t* – U*t*). Columns (2) to (4) of Table I.2.2 correspond to these three components.

Box I.2.2: **Temporary employment in upswings and downturns**

How much do changes in the share of temporary employment reflect cyclical fluctuations? It can be expected that in periods of economic slack when the economy is below its potential, the beginning of the economic recovery may trigger first an increase in the relative importance of temporary employment as employers are risk averse and may fear that the economic recovery is too fragile, uncertain or even possibly short-lived to hire on a permanent basis. Only when economic growth has proven to be stable, are open-ended contracts more likely to be offered instead of temporary positions. As a result, one may expect a different relation between the share of temporary employment and economic growth depending on whether the economy is below or above its potential: the relation between changes in the output gap and the share of temporary employment being positive in the former and negative in the latter. Table 1 shows the impact of the cycle on the share of temporary employment. Cyclical developments are proxied by the output gap (the gap between actual GDP and its potential level). To analyse whether the impact of economic growth is different in economic upswings than in downturns, a distinction is made between positive and negative output gaps.

The effect of the cycle on the share of temporary employment is found to be only significant when the economy is below its potential. In these periods, a 1 percentage point increase in the output gap is expected to lead an increase of about 0.2 to 0.3 percentage points in the share of temporary employment in the various specifications. There is no significant effect of economic growth on the share of temporary employment in periods when the economy is above potential. These findings are robust to alternative specifications of the estimated model. An alternative model specification which includes the output gap and its squared term as explanatory variables confirms the hypothesis that the share of temporary employment responds differently according to which phase of the business cycle the economy is. In case the output gap is negative or slightly positive, there is a positive correlation between the output gap and the share of temporary employment. However, in case the output gap increases further, the correlation becomes negative.

Table 1: Drivers of changes in the share of temporary employment

	Model A	Model B	Model C
Output gap (when positive)	-0.0103	-0.0429	-0.256
	(0.0759)	(0.0967)	(0.187)
Output gap (when negative)	0.234***	0.220***	0.311**
	(0.0702)	(0.0832)	(0.149)
Constant	19.02***	18.28***	18.44***
	(0.612)	(0.826)	(1.383)
Sector FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Time FE	No	Yes	Yes
Observations	5316	5316	2323
R-squared	0.496	0.497	0.471

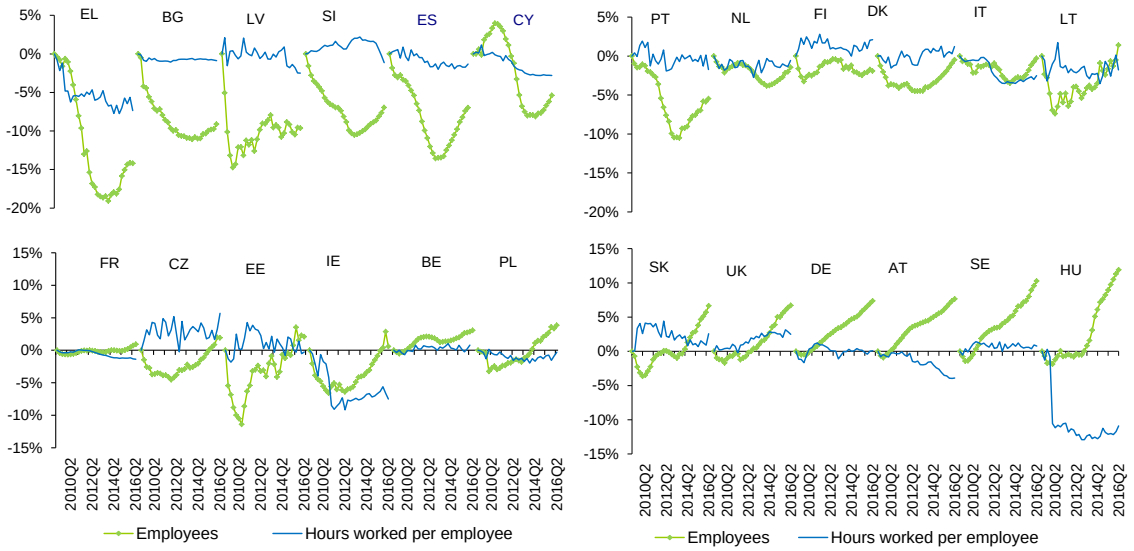
Note: The output gap is the difference, in percentage points, between actual and potential GDP. The share of temporary employment is the percentage of temporary employees in the total number of employees employed in a specific sector. The sample period is 2000-2015; the sample includes all 28 EU member states; Depending on the data availability in the individual country, model A and B include the sectors NACE Rev.2 A-U (except O – public administration); Model C is based on a subsample and only includes the sectors with a higher-than-average share of temporary employment. The sectors included are NACE Rev. 2 A, B, F, H, N, P, Q, R, S and T.
*** 1% significant, ** 5% significant, * 10% significant; Robust standard errors in parentheses.
Source: Authors' analysis based on EU-LFS data and AMECO.

2.3.1. The adjustment of hours worked

Increasing headcount employment has been accompanied by a very muted increase in hours worked since the start of the recovery. In 2015, hours worked changed little and even declined further in nearly half of the EU countries; these have been followed by only slightly higher readings in the first and second quarters of 2016 (Graph I.2.4). Even for countries where job creation has been solid and the labour market became tighter recently, hours have seldom picked up in a meaningful way.

Average hours worked per employee stand at levels higher than before the crisis only in a minority of EU countries. In the aftermath of the crisis, Greece, Hungary, Ireland, and Malta recorded the sharpest cumulated falls. The UK, the Czech Republic, Slovakia and Finland posted the

Graph I.2.4: **Change in number of employees and of total hours worked (cumulative % change since 2009q1)**



Note: Countries are ordered by increasing order of % change in the number of employees between 2009q1 and 2016q1. Full data are not available for Croatia, and Romania; values for number of employees for Luxembourg and Malta are out of scale (+17.1% and +24% respectively between 2009q1 and 2016q1). There is a break in the data series for hours worked in Hungary in 2010q1.
Source: Eurostat, National Accounts.

largest gains. Although these patterns can hint to the existence of some labour market slack, they should also be seen against the long-term trend of falling average hours per worker. The latter predates the crisis and can reflect changes in the structure of employment with increased importance of services, where the overall amount of hours are lower and the work schedule more flexible than the more standardised production activities in construction or manufacturing. In 2015, the diffusion of part-time does not seem to have played a role in bringing down average hours as in previous years, as the share of part-time over total employment remained largely constant at about 20%, after some marked increases during the crisis years.

2.3.2. Employment developments at sectoral level

Employment in market services recorded the strongest growth in the majority of countries (Table I.2.3). Consistent with the dynamism of domestic demand, areas like accommodation, food service activities and information and communication recorded the strongest gains; employment in public administration, health and education often grew at similar rates.

Table I.2.3: **Employment growth in different sectors over the years 2013-2015 (cumulative % change)**

	Industry	Construction	Market services	Public admin, health, education
MT	-2.3	9.9	11.0	10.3
HU	1.6	4.8	5.5	4.8
LU	-1.2	2.7	5.8	5.4
IE	6.1	20.1	4.1	5.3
UK	2.3	7.9	5.0	4.9
EE	1.4	10.2	8.9	5.9
LT	-0.3	17.3	2.3	2.8
SE	-3.5	5.6	4.5	5.6
PL	5.9	-4.9	3.7	2.8
SK	2.2	-5.7	2.4	1.1
DE	1.0	1.0	1.8	2.2
LV	-5.2	12.7	4.6	3.2
CZ	4.1	-6.9	1.4	1.3
DK	-0.3	4.2	2.6	2.7
AT	0.2	-0.1	2.1	2.3
EU28	0.1	-3.2	2.2	2.2
HR	-3.2	0.5	3.6	3.1
FR	-2.4	-3.7	0.4	0.2
EA19	-1.2	-5.7	1.0	1.3
BE	-5.5	-3.8	-1.3	-1.3
ES	-0.9	-11.7	2.2	2.9
SI	-0.5	-7.4	0.3	0.1
BG	-0.7	-1.9	1.2	0.3
PT	3.6	-11.1	1.5	0.9
NL	-1.7	-10.2	0.3	1.0
RO	-0.4	-4.2	9.3	8.5
IT	-4.6	-13.2	-1.0	-0.9
FI	-7.3	-1.7	-1.5	-2.2
EL	-3.0	-25.1	2.4	3.8
CY	-13.2	-32.6	-3.5	-3.3

Countries are ranked by decreasing order of total employment growth over the years 2013-2015.
Source: Eurostat, National Accounts.

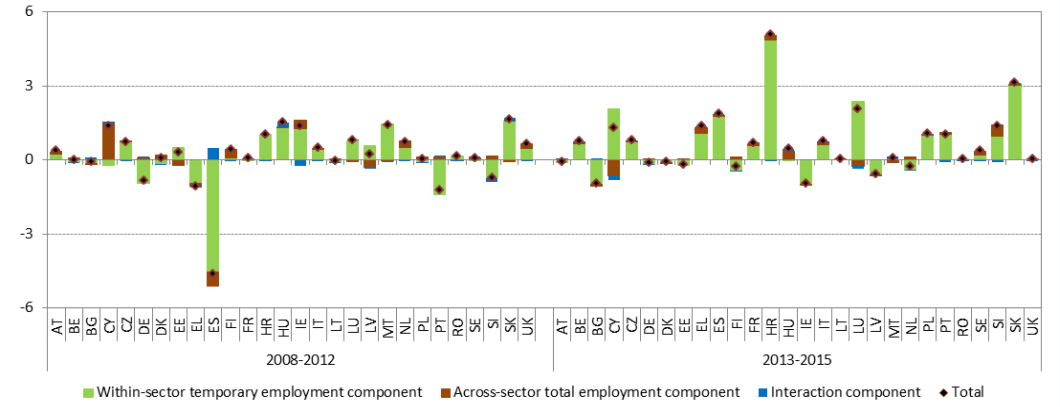
Box I.2.3: Structure of employment per sectors and temporary work

How does the sectorial structure of employment affect the change of temporary employment? A shift-share analysis is applied here to decompose changes in the share of temporary employment in total employment into three components: a within-sector temporary employment component, an across-sector total employment component, and an interaction component. The first component, the within-sector temporary employment component identifies changes in the weight of temporary employment at the sectorial level for an unchanged sectorial employment structure. The second component, the across-sector total employment component measures the shift in the structure of employment across the economy, for a given sectorial structure of temporary employment. Finally, the third component, the interaction component measures the change in temporary employment due to changes in the sectorial structure of both of temporary employment and total employment. In symbols:

$$Temp_t - Temp_{t-1} = \sum_{i=1}^{I} e_{it-1} * \Delta Temp_{it} + \sum_{i=1}^{I} Temp_{it-1} * \Delta e_{it} + \sum_{i=1}^{I} \Delta Temp_{it} * \Delta e_{it}$$

$Temp_t$ = Share of temporary employment in total employment in period *t;* $Temp_{it}$ = Share of temporary employment in sector *i* in total employment in sector *i* in period *t;* e_{it} = Share of employment in total employment in sector *i* in period *t; i = {A, …. , U}* NACE sector classification,

Graph 1: Decomposition of growth of share of temporary employment, 2008-2012 and 2013-2015



Note: No data on temporary employment by sector available for Lithuania.

Source: European Commission based on Eurostat, Labour Force Survey.

The shift-share analysis reveals that changes in the share of temporary employment within the different sectors account for a large proportion of the changes in the total share of temporary employment – both up or down (Graph 1). Thus, for countries where the overall share of temporary employment varied the most, the changes of temporary employment in different sectors have been more important than the shifts in the structure of the economy towards or away from sectors that use relatively more temporary employment. This holds both the years of the crisis and for the period of the recovery (i.e. years 2008-2012 and the period 2013-2015 respectively), e.g. Greece and Spain in 2008-12 and Bulgaria, Ireland and Latvia in 2013-15).

On the other hand, changes in the structure of employment across the economy prevailed over changes in sectorial temporary employment in the cases of Cyprus (in 2008-2012) and Hungary (in 2013-2015): in these countries, the structure of employment tilted towards sectors where temporary contracts were relatively more common and thereby contributed to a change in share of temporary employment for the whole economy with the relevance of temporary employment within the different sectors changing little. In some countries, the within-sector temporary employment and across-sector total employment component offset each other to a certain extent, thereby limiting the growth of temporary employment. This is for example the case of Denmark, Latvia and Slovenia in 2008-12, Cyprus, Finland and the Netherlands in 2013-15.

(Continued on the next page)

Box (continued)

Across the EU, the increase in temporary employment over the years 2013-15 was particularly prevalent in sectors such as arts, entertainment and recreation; transportation and storage; wholesales; and construction. In contrast, it was less important in information and communication, manufacturing; education; and professional, scientific and technical activities (Table 1).

Table 1: Percentage point change in the share of temporary employment, 2013-2015

	Total	Accommodation & food service	Administrative & support service	Agriculture, forestry & fishing	Arts, entertainment & recreation	Construction	Education	Financial & insurance	Human health & social work	Information & communication	Manufacturing	Professional, scientific & technical	Public administration	Transportation & storage	Wholesale & retail trade
HR	5.1	8.7	8.7	4.6	10.0	6.8	0.9	6.9	2.3	9.2	4.9	3.9	2.0	1.6	5.1
SK	3.1	7.7	-9.2	0.6	-1.1	3.3	2.7		3.5		1.6		12.2	1.8	5.0
LU	2.0	3.5	5.3			5.1	2.5	2.0	2.5			1.0	2.7		4.2
ES	1.8	1.2	1.5	4.0	0.8	5.2	1.7	0.5	1.1	-1.1	3.4	0.2	2.8	0.1	2.2
SI	1.4	4.2	2.6	2.4	-0.9	1.6	-0.3	-0.8	0.5	-2.8	0.9	0.9	1.1	2.1	1.5
EL	1.3	3.1	1.8		1.3	3.7	2.0	0.5	0.3	3.2	-0.4	0.9		0.7	1.1
CY	1.3	4.8	3.7	-2.5	-2.4	4.8	-4.2	7.5	3.4	0.7	3.7	3.2	-3.5	1.9	2.9
PL	1.0	5.6	-0.6	0.3	2.4	1.3	0.4	3.3	1.3	-2.4		2.6	0.3	3.0	1.9
PT	1.0	1.8	4.4	3.9	-2.5	0.7	-2.8	0.7	-1.3	-0.1	1.6	1.2	-0.6	2.6	2.4
CZ	0.8	-0.1	-1.1	-0.6	-3.3	-0.4	0.3	1.9	1.2		1.9	1.1	-0.4	1.2	0.8
IT	0.7	2.3	0.3	1.3	4.2		-0.3	-1.0	0.5	-0.3	1.6	-0.3	-0.5	2.4	
BE	0.7	0.0	4.8		1.2	0.2	0.6	-0.2	0.6	-1.1	1.4	0.2	1.0	1.0	0.9
FR	0.7	0.1	-1.0	-0.2	4.0	-0.7	3.7	0.4	0.3	-1.0	1.7		2.1	-0.4	-0.2
HU	0.4	-1.7	1.0	2.7	1.6	-1.5	0.1		-0.4	-0.9	-1.3	-0.1	6.3	-0.5	-1.4
SE	0.3	-2.3	4.0		2.7		-0.4	0.6	0.5	-0.7	0.2	-0.4	-0.8	0.2	0.6
MT	0.0	-7.0	-1.7					2.1	1.4	0.1		-1.0	4.5	-1.8	1.4
UK	0.0	0.2		-0.1	0.4	0.6	-0.9	-0.6	0.3	-0.2	-0.3	-0.5	0.3	-0.2	0.5
RO	0.0			0.2		0.5									-0.2
AT	-0.1	-2.0	-1.0		1.2	-1.2	1.9		-0.2	0.2	-0.1	-0.3			
DK	-0.1	1.1	-2.1	-2.0	1.0	-0.7	-0.8		-0.2		0.4		-1.5	1.3	0.4
DE	-0.1	0.8	-0.3	1.7	-0.6	-0.6	-0.9	-0.1	-0.4	-0.8		-0.1	0.2		
EE	-0.2	-1.0		-2.2		0.5					-0.4				-0.5
NL	-0.3	-1.4	-1.3	-1.2	-0.3	-0.2	1.2	-1.5	-1.5	-2.4	1.1	-1.5	1.1	-1.2	-0.3
FI	-0.3	-1.0	0.7	-0.4	-2.0	1.4		-0.6	-0.8	-0.1		-2.4	-3.0	0.9	
LV	-0.6	-1.6		-1.3		0.8					-0.7			-1.6	
BG	-1.0	0.2	-14.2	1.8		-1.4	-0.3		-1.2				-2.2		-1.1
IE	-1.0	-1.3	-1.3		1.3	-0.4	-3.8	-0.9	-1.5	-2.4	-0.6	-1.7	0.7	-0.6	-0.2

Note: No data on temporary employment by sector available for Lithuania.

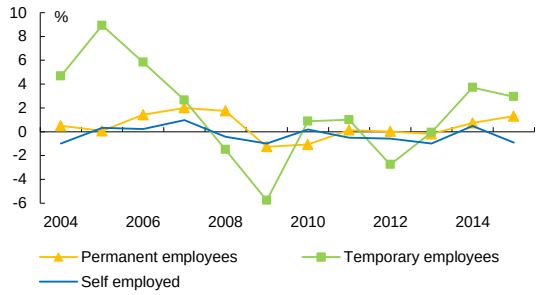
Source: European Commission based on Eurostat, Labour Force Survey.

The services sector as a whole (public and private), rather than export-driven activities, accounted for an ever-growing share of employment. Employment in services declined only in Cyprus, Finland, Belgium and Italy between 2013 and 2015. Over the years 2013-2015, employment in construction exhibited marked variations across countries, reflecting different financing and demand conditions as well as different stages in the adjustment after the booms in construction recorded in a number of countries in the 2000s. Job creation in this sector has been quite robust in Ireland and the Baltics, while it declined in Cyprus, Greece, Italy, Spain and Portugal.

2.3.3. Employment developments by contract type

The labour market recovery has been characterised by a strong expansion of temporary employment – growing by 3% in 2015 following the strong growth of 2014.

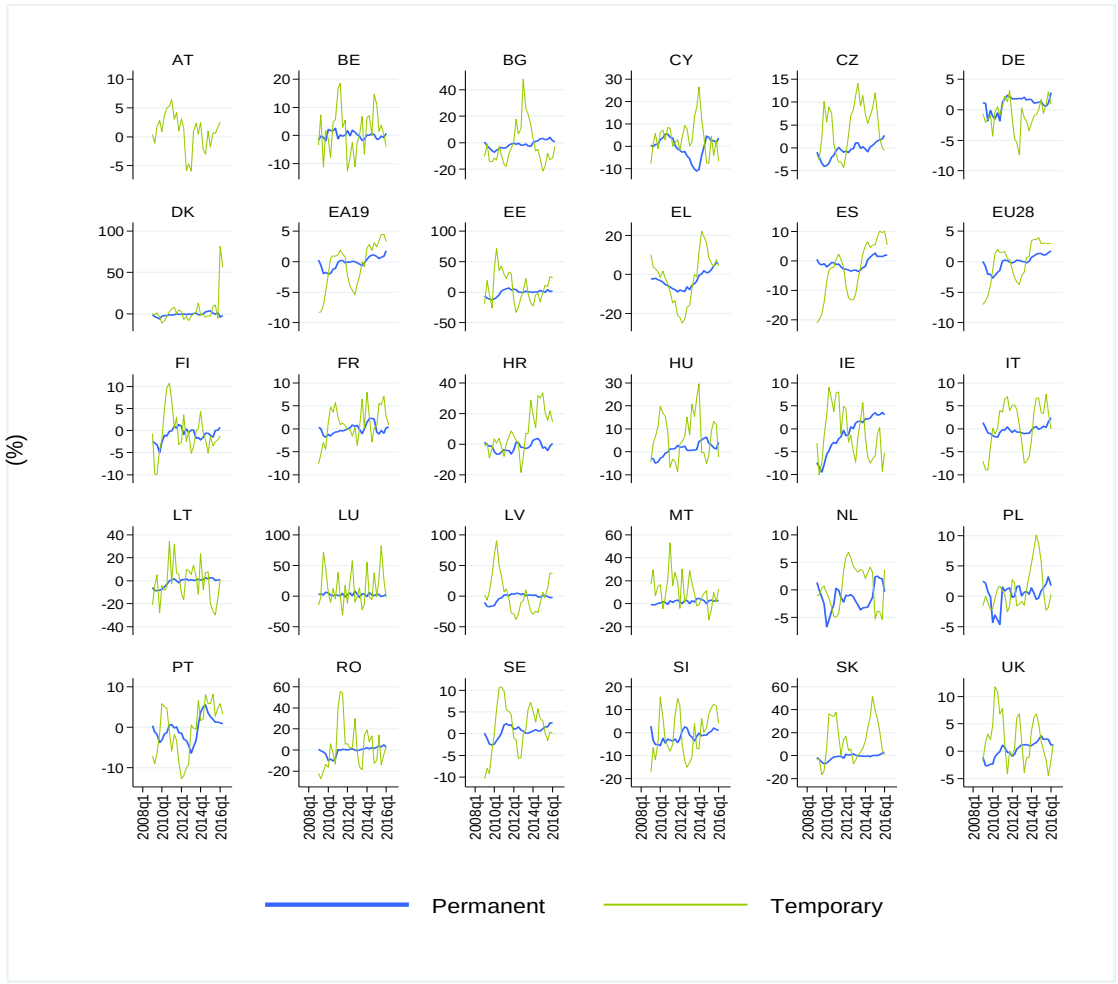
Graph I.2.5: **Employment growth by type of contract, EU 28**



Source: Eurostat, Labour Force Survey, age group: 15-64.

The number of permanent positions also expanded, especially more recently, yet it lagged temporary job creation, such that the share of the latter in total employment edged up in 2014 and again in 2015. The number of self-employed slightly dropped along the trend of the last years (Graph I.2.5).

Graph I.2.6: **Dynamics of open-ended and temporary contracts (year-on-year % change, 2009q1-2016q1)**



(1) Age group: 15-64.
Source: European Commission calculations based on Eurostat, Labour Force Survey.

As shown in Box I.2.2, the increase in temporary contracts is typical of the early stages of economic recoveries – i.e. when GDP growth becomes positive but GDP level is below potential (negative output gap). As the economic recovery proceeds, employment grows stronger on the basis of open-end positions and the temporary employment share is expected to recede. Similarly, during downturns the share of temporary employment falls as the share of expired but not renewed contracts increase.

In 2015, the number of temporary employees increased by double-digit rates in some countries (e.g., Slovakia and Croatia) and declined sharply in others (e.g., Lithuania and Bulgaria). Whereas very often strong growth in temporary contracts occurred in countries that had recorded dynamic job creation, also countries with below-average improvements like France and Italy recorded a visible expansion of temporary employment. On the other hand, fast increases in temporary work or self-employment are not necessary conditions for rising employment figures as the cases of Ireland and UK show as all the net job creation was on permanent contracts (Graph I.2.6). The developments in some countries may also reflect recent reforms affecting the possibilities of using fixed-term contracts (e.g. Croatia where changes went in the direction of broadening those possibilities and where the share of temporary employment increased visibly). The path of

temporary contracts is also linked to the structure of the economy, with temporary contracts more likely to be found in the service sector, which has been growing the most during the current recovery. Box I.2.3 provides insight on the impact of changes in the structure of the economy on the relative importance of temporary contracts.

Differences across Member States with respect to contractual relationships can be significant. In some countries, a low share of open-ended employment goes hand in hand with a comparatively high incidence of self-employment, while in others it is linked to the prevalence of fixed-term employment (Table I.2.4). This depends on institutional and legal features, structure of employment and labour demand.

Table I.2.4: **Distribution of contract type among the employed (%)**

	Open-ended contracts		Temporary contracts		Self employed	
	2015	change	2015	change	2015	change
LU	88.1	*-1.2*	5.8	*1.2*	6.1	*-0.1*
EE	87.6	*-0.3*	3.0	*0.2*	9.4	*0.1*
LT	85.9	*0.4*	1.8	*-0.6*	12.3	*0.2*
DK	85.8	*0.1*	7.6	*0.1*	6.6	*-0.3*
LV	84.1	*-1.2*	3.2	*0.3*	12.7	*0.9*
UK	82.7	*0.6*	5.0	*-0.2*	12.3	*-0.5*
MT	82.4	*0.5*	6.0	*-0.3*	11.7	*-0.2*
HU	80.7	*-0.5*	9.7	*0.5*	9.6	*0.0*
SE	80.7	*0.3*	14.6	*-0.2*	4.7	*-0.2*
AT	79.4	*0.4*	7.6	*0.0*	13.0	*-0.4*
DE	79.2	*0.2*	10.8	*0.0*	10.0	*-0.2*
CZ	77.3	*0.3*	7.9	*0.3*	14.7	*-0.6*
SK	76.2	*-1.2*	9.5	*1.6*	14.3	*-0.4*
IE	75.8	*0.6*	7.0	*-0.5*	17.2	*-0.2*
BE	75.8	*-0.3*	7.5	*0.2*	16.7	*0.1*
FR	75.8	*0.2*	13.5	*0.0*	10.8	*-0.2*
FI	75.2	*0.1*	12.5	*-0.3*	12.3	*0.2*
EU28	73.6	*0.1*	11.3	*0.2*	15.1	*-0.3*
EA19	72.9	*-0.1*	12.3	*0.3*	14.7	*-0.2*
CY	72.1	*0.0*	15.6	*-0.1*	12.3	*0.1*
RO	71.1	*2.7*	1.0	*0.0*	27.9	*-2.6*
BG	70.1	*1.0*	3.3	*-0.6*	26.6	*-0.5*
NL	67.5	*0.9*	15.3	*-0.9*	17.1	*0.0*
HR	67.1	*-2.7*	16.9	*2.8*	16.0	*-0.1*
ES	66.5	*-0.7*	20.0	*1.0*	13.4	*-0.3*
PT	66.4	*-0.3*	17.6	*0.7*	16.0	*-0.3*
SI	65.7	*-1.3*	14.4	*1.2*	19.9	*0.1*
IT	64.9	*-0.1*	9.7	*0.4*	25.4	*-0.2*
EL	60.2	*0.6*	6.9	*0.3*	32.9	*-0.8*
PL	56.7	*0.3*	22.0	*-0.2*	21.3	*-0.1*

(1) Countries are ranked decreasing share of open-end contracts in 2015. Change refers to the change in the ratio compared with the previous year (in percentage points).
Source: European Commission.

2.3.4. Job market flows

Changes in unemployment are the result of two countervailing labour market flows: job separations (inflows into unemployment from employment) and job findings (outflows from unemployment into employment). The drop of unemployment from its peak, especially in countries that had been most affected by the financial crisis, was driven initially by a decline in the job separation rate (or, somewhat more loosely, the rate of job destruction, i.e., the number of layoffs). In contrast, job finding rates have edged up only recently. This reflects the consolidation of the economic recovery and/or possibly a reduction of the number of those unemployed with a low probability of finding a job. ([21])

Falls in job separation rates in 2015 were particularly visible in countries where they had increased the most during the crisis, notably Greece, Ireland, Spain, Portugal and the Baltics (Graphs I.2.7 and I.2.8). But also a number of countries less affected by the crisis have recorded lower probabilities of losing a job, e.g., Denmark, Poland, UK and Germany. Even if from low levels, in 2015 separation rates have still been growing in Cyprus and Austria and have started to decline only more recently. ([22])

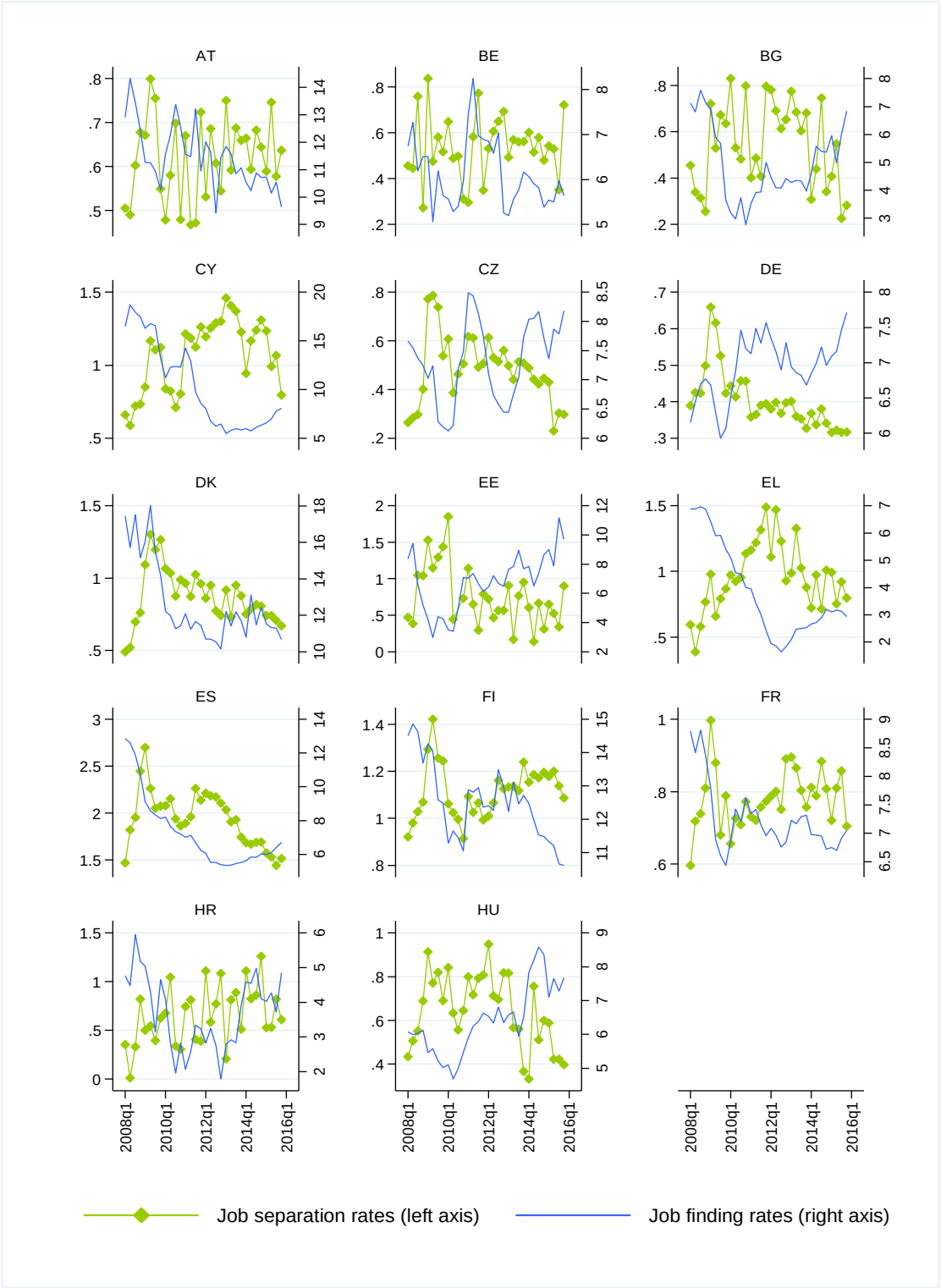
Job finding rates have kept mildly improving in most of EU countries from the low points witnessed during the recession. Some of the strongest improvements in job finding rates have taken place in the countries most hit by the debt crisis, especially in the Baltics and to a lesser extent Ireland, Portugal and Italy. Job finding rates have trended up also in Greece and Spain, albeit only gradually. Yet, with the exception of few countries, the pace of hiring remains below the one observed in pre-crisis years, in some cases by a large margin.

Job finding probabilities are at their lowest levels since a decade in Austria, and Finland, while improving only gradually in Cyprus, Greece and Spain. These developments may in part explain the persistence in long-term unemployment in the latter countries.

([21]) Darby, Haltiwanger and Plant (1985) claim that the average job finding rate can be expected to be countercyclical – in the sense of being lower over recessions and higher over expansions – and the average spell in unemployment procyclical. That happens if the composition of job-losers changes systematically over the business cycle, and groups that experience longer durations of unemployment, i.e. lower job-finding rates, enter unemployment in proportionally greater numbers during a recession. That result happens even if the spells of individual unemployment are acyclical and individuals search optimally independently of the cycle.

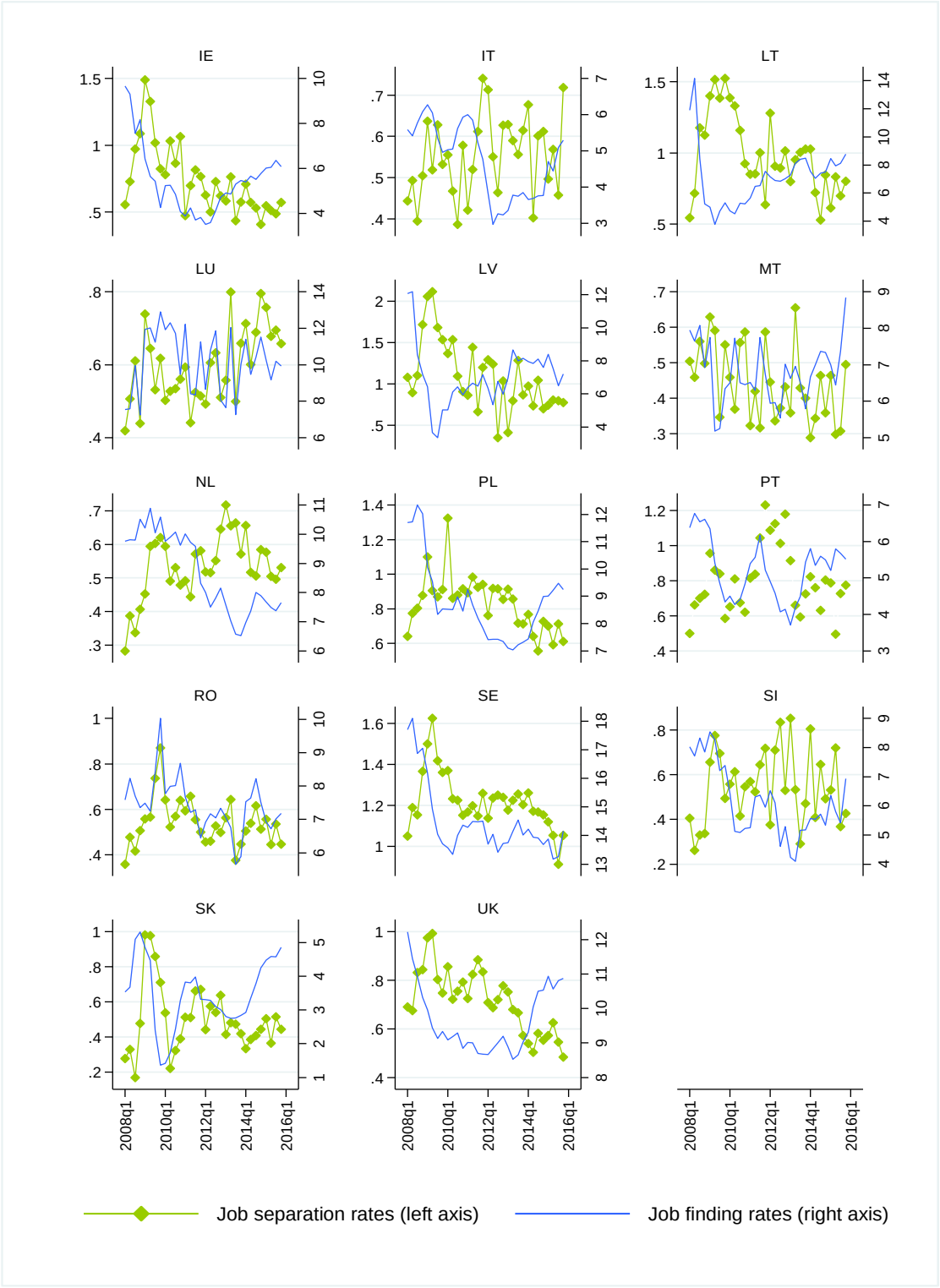
([22]) The methodology for computing job separation and finding rates follows the one as in Elsby (2009).

Graph I.2.7: **Job finding and job separation rates 2008q1-2016q1**



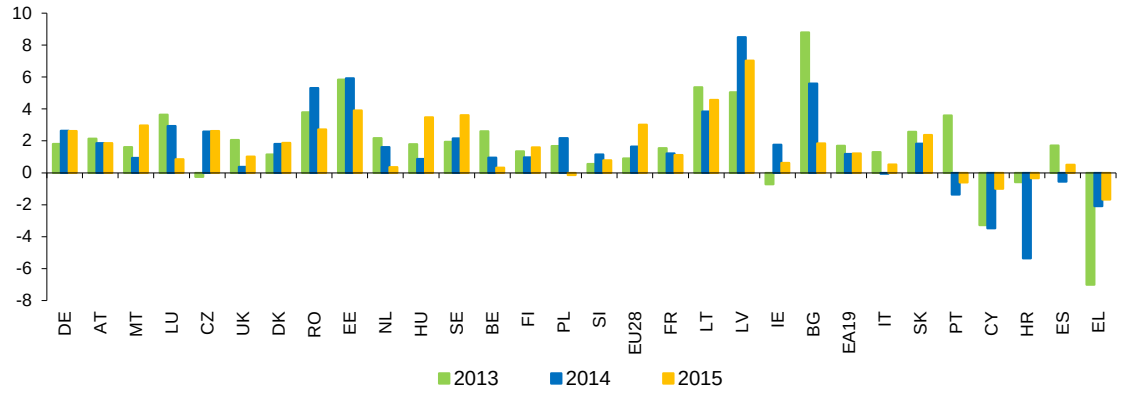
Source: European Commission based on Eurostat data.

Graph I.2.8: **Job finding and job separation rates 2008q1-2016q1 cont.**



Source: European Commission based on Eurostat data.

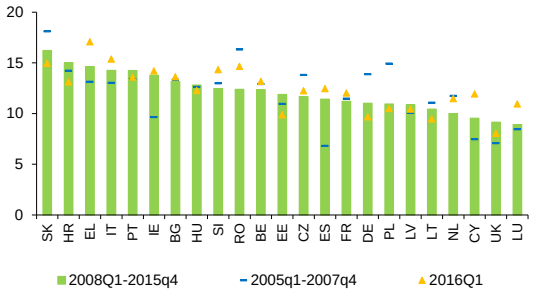
Graph I.2.9: **Nominal compensation per employee, annual % change**



(1) Countries are displayed in ascending order of the unemployment rate in 2014.
Source: AMECO database on the basis of Eurostat.

A lengthening of unemployment spells is the mirror image of depressed job finding rates. In most EU countries, the average duration of unemployment measured in late 2015 was the highest level in the past decade (Graph I.2.10).

Graph I.2.10: **Unemployment duration in months**



Source: European Commission based on Eurostat data.

In fact, only in few countries is the unemployment duration lower now than in the past ten years; and in all cases only by small margins.

2.4. TRENDS IN WAGES AND LABOUR COSTS

2.4.1. Wage developments in nominal terms

Differences in wage developments across EU and euro-area countries were significant but declining in 2015. ([23]) In nearly half of the EU countries, compensation per employee grew at an unchanged pace, or even decelerated, most notably in those that had shown faster wage growth in 2014. ([24]) At the same time, wages continued to fall – although at much lower rates – in countries that had marked wage cuts in earlier years (Graph I.2.9).

In general, countries with lower-than-average pay levels, for instance Eastern European countries, recorded stronger wage growth. At the same time, pay increases in euro area countries tended to be lower than the ones in non-euro area economies.

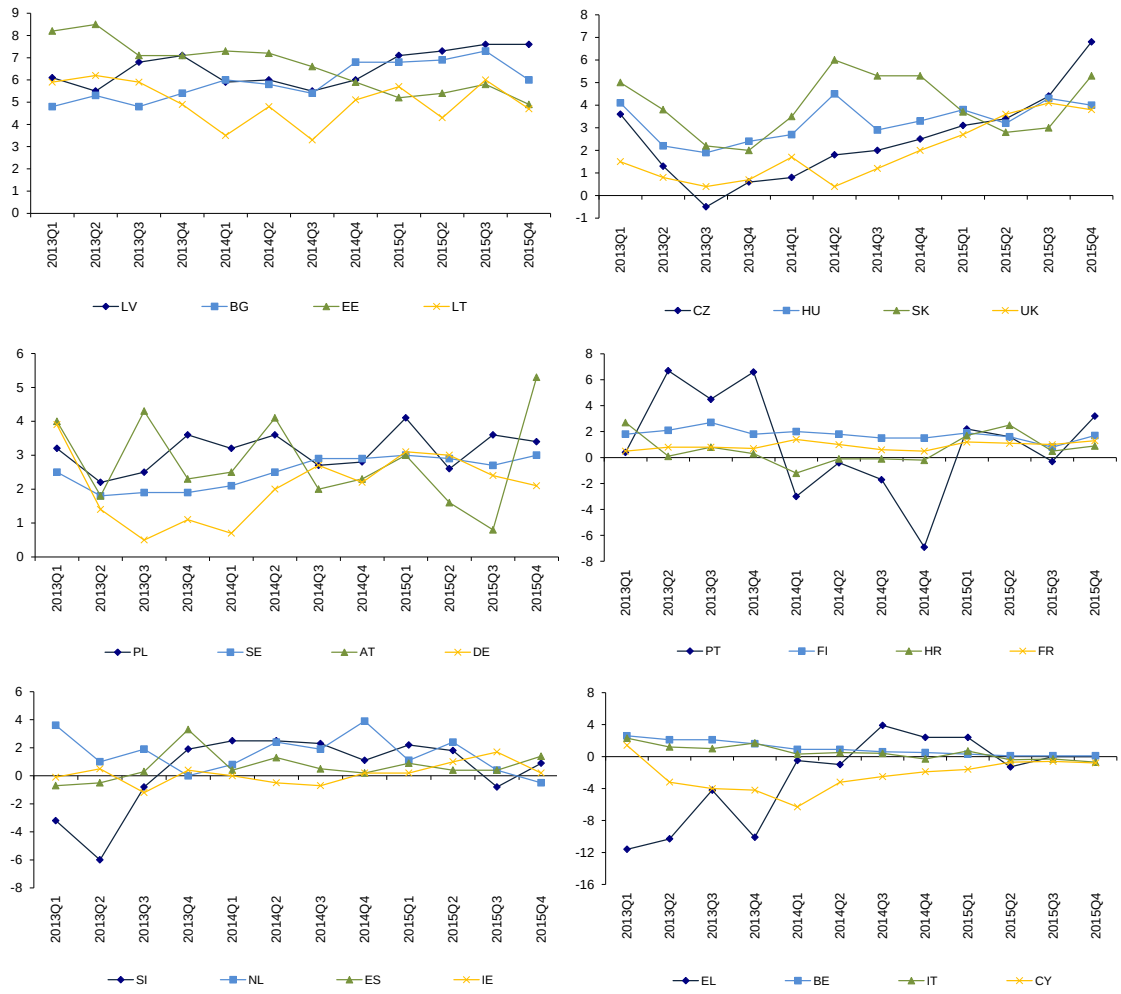
Pay increases were at the fastest pace in the Baltics, in particular Latvia. Sweden and Hungary also recorded a relatively high growth of compensation per employee. On the opposite side, Greece, Cyprus, Portugal and Croatia displayed further falls in nominal terms. However, these wage cuts were more limited than in previous years, reflecting also receding labour market slack.

The largest euro area countries saw varying rates of wage growth. Compensation per employee grew by 2.7% in Germany, by 1.2% in France (about the euro area average), and 0.5% in Spain and Italy – but linked with falling average hours in Spain and increasing hours in Italy. Wage growth changed little in these countries since 2014; the largest

([23]) Compensation per employee is obtained from national accounts as compensation of employees divided by total number of employees. Compensation of employees has two components: 1) Wages and salaries payable in cash or in kind; 2) Social contributions payable by employers. When not relevant the terms compensation, wages and pay are used inter-changeably.

([24]) The acceleration noticed for the EU as a whole was largely driven by a 10% appreciation of the UK's Pound (GBP).

Graph I.2.11: **Hourly Labour Cost Index, y-o-y % change**



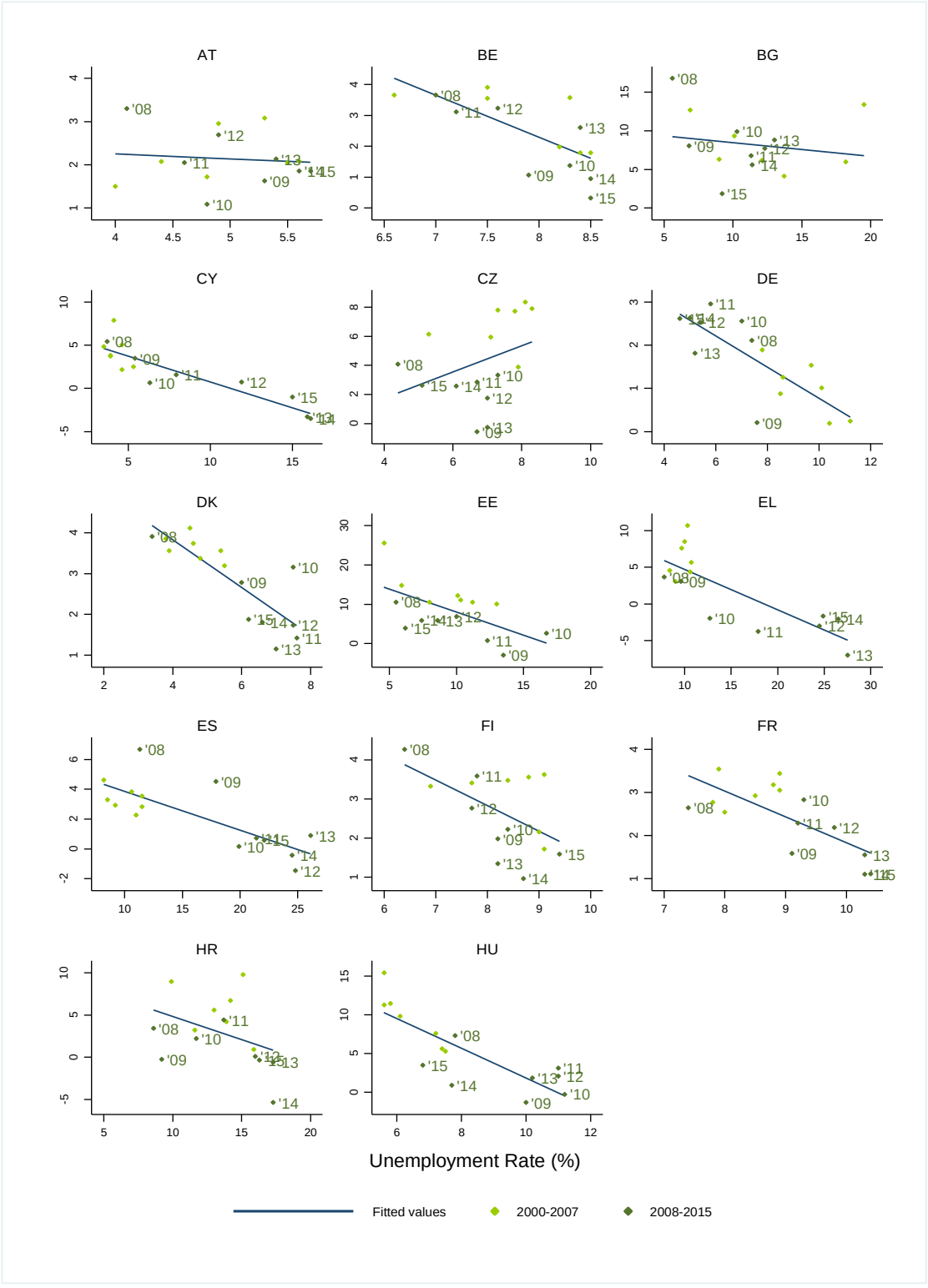
Note: Industry, construction and services (except activities of households as employers and extra-territorial organisations and bodies). Countries grouped according to the magnitude of variations in the HLCI. Data for Denmark, Luxembourg, Malta and Romania are lacking and thereby not displayed.
Source: Eurostat.

change was recorded in Spain, where wage growth marginally turned from negative to positive, followed by Italy; pay dynamics in Germany and France were largely unchanged.

Hourly labour costs developed largely in a similar way as compensation per employee (Graph I.2.11). In 2015, hourly labour costs increased at the highest rate in Latvia and Bulgaria, by around 7%, and by more than 5% in Estonia and Lithuania. Italy and, especially, Cyprus were the only EU countries where hourly labour costs declined by a small margin. Overall, most non-euro area countries saw their hourly labour costs rise more than euro area ones. Among the larger Member States, Germany clearly stood out for the sharpest increase, at 2.7% – the same progression as for pay per worker (Graph I.2.11). Differences between pay per hour and per worker were the largest in Bulgaria and Poland and negative in Sweden and Italy (and Belgium and Finland by a minor extent) on account of changes in the number of hours worked per worker.

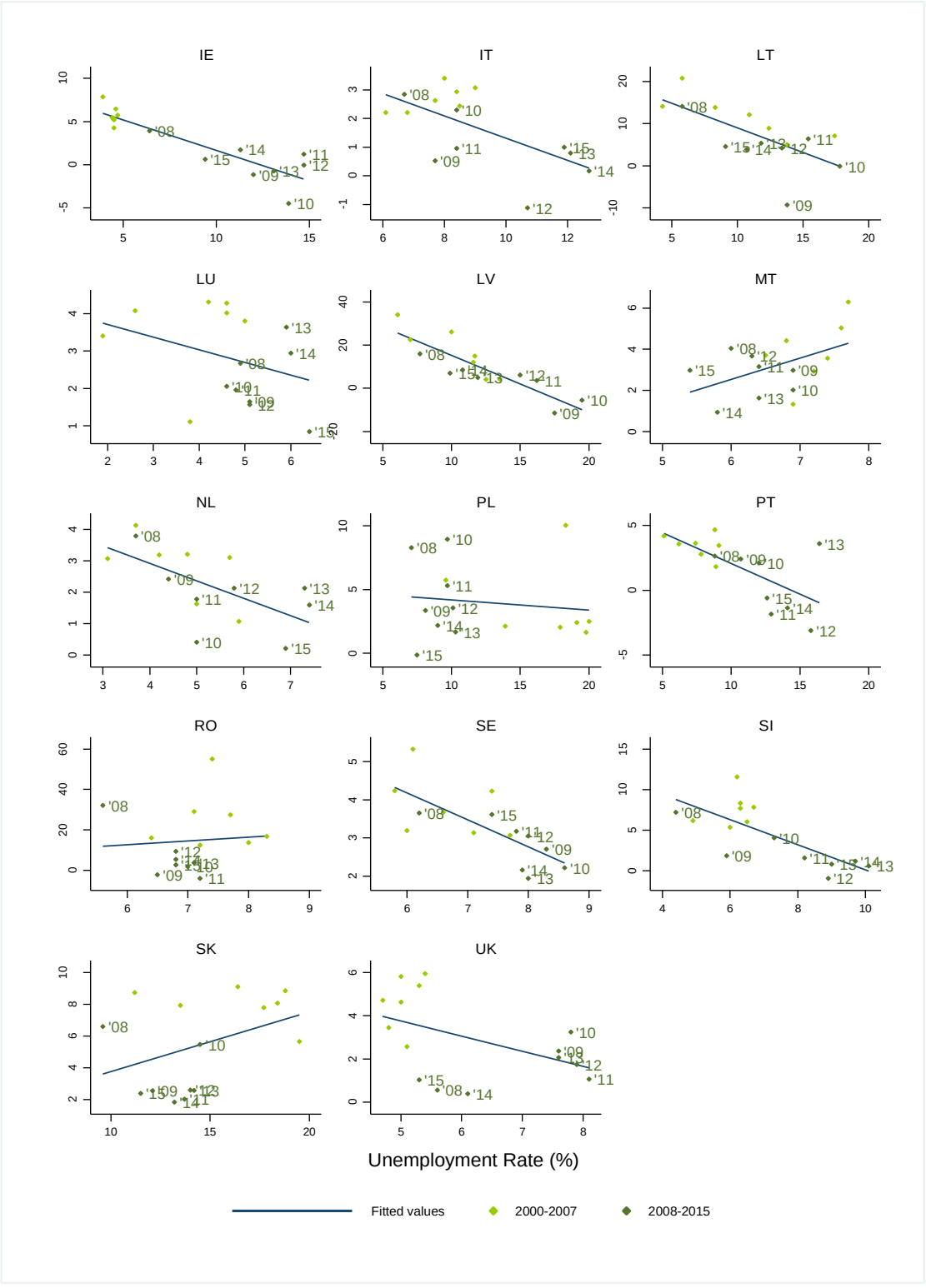
Cross-country differences in wage dynamics reflect to some extent the differences in unemployment rates of the previous year.

Graph I.2.12: **Philips curve for EU countries: compensation growth and unemployment rate 2000-2007 and 2008-2015**



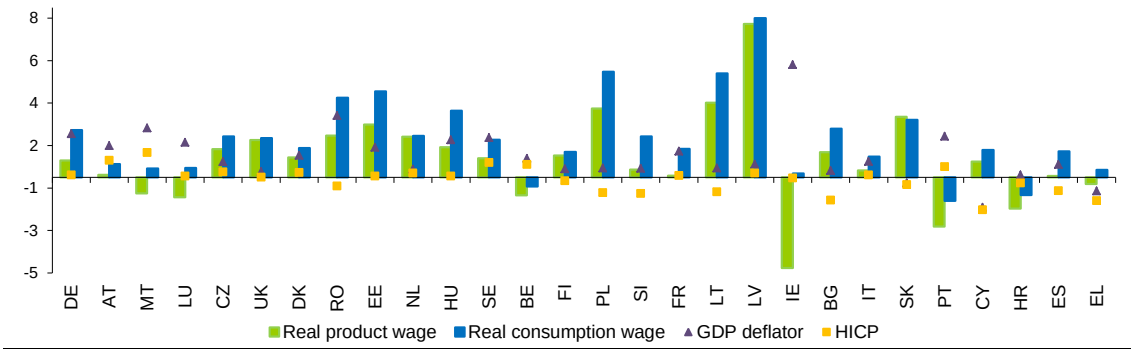
Source: European Commission.

Graph I.2.13: **Philips curve for EU countries: compensation growth and unemployment rate 2000-2007 and 2008-2015 cont.**



Source: European Commission.

Graph I.2.14: **Real product and consumption wages, HICP and GDP deflator, annual % change, 2015**



Countries are ranked in ascending order of the unemployment rate in 2014.
Source: AMECO database of the European Commission.

Still robust growth in compensation per employee was recorded in countries with above-average unemployment rates (e.g. Latvia, Lithuania or Slovakia), while wage restraint was observed also in countries with below-average unemployment rates (e.g. the Benelux countries).

The Phillips curve displays the relation between wage growth and the level of the unemployment rate and informs on how the strength of that relation has changed over time (Graphs I.2.12 and I.2.13). For some countries (e.g. Belgium, Finland, Portugal) the Phillips curve during the recovery is steeper than during the previous period of recession or weak growth, indicating that wage growth is lower than expected based on the level of unemployment. The steepening of the Phillips curve may reflect "pent-up wage deflation": downward wage rigidities during the recession period kept wages above the level consistent with higher unemployment; as the recovery proceeds, and unemployment falls, wages do not adjust upward for those workers that have not experienced wage cuts during the recession (Yellen, 2014).

2.4.2. Wage developments in real terms

In 2015, real consumption wages (i.e. wages measured in terms of the goods and services that can be purchased with a given wage) increased in several countries at faster rates than in earlier years (Graph I.2.14). Thus, the support to purchasing power stemming from low price inflation, amidst moderate growth of nominal wages, helped to sustain aggregate demand. Real consumption wages expanded at the fastest rates in the Baltics and Poland. They receded only in Portugal, Croatia and Belgium. As expected, the real consumption wage growth was more contained in high unemployment countries.

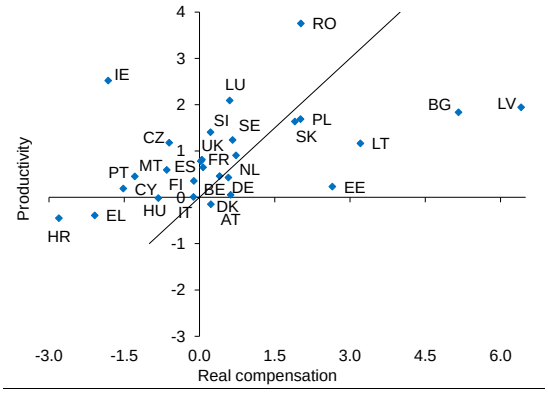
As in earlier years, wages expressed in terms of production prices (real production wages), which is a labour cost indicator relevant for labour demand decisions, barely grew in 2015. However, there were some marked differences across countries. The Baltics and Poland recorded the highest increases, together with Slovakia. On the other hand, the sharpest declines were recorded in Ireland (by over 4%), Portugal and Croatia.

Overall, production wages grew less than consumption wages, thereby leading to an increase in the profit margins. The differences were the largest in Ireland (by over 4%), Romania, Poland and Hungary. Only in Slovakia did production wages increase more, but by only a very small margin, than consumption wages.

2.4.3. Real compensation per employee, productivity and unemployment

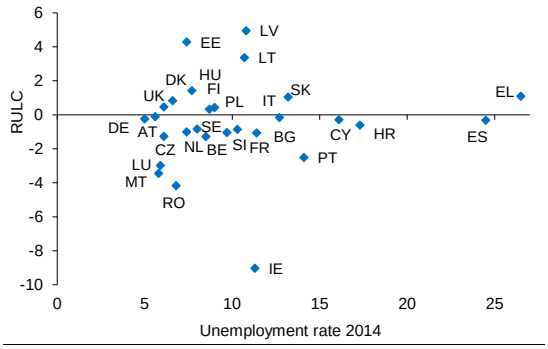
Over the years 2013 to 2015, real wage growth lagged behind productivity growth in a large number of EU countries. This is most visible in the case of Ireland, Croatia, Greece, Portugal, Czech Republic and Romania (Graph I.2.15). In contrast, wages have risen well above productivity in the Baltic states and Bulgaria. Real wage growth above productivity was also recorded in Austria, Denmark, Germany, Slovakia and Poland, which is consistent with low unemployment and tight labour markets in these countries.

Graph I.2.15: **Real compensation per employee and productivity, average growth rates 2013-2015**



(1) Real compensation is the change in nominal compensation per employee deflated with GDP deflator.
(2) Along the diagonal, real product wages growth equal productivity growth; points above the diagonal imply that real wages grow less than productivity; the opposite for points below the diagonal.
Source: European Commission.

Graph I.2.16: **Unemployment rate in 2014 and the change in real unit labour costs (RULC) in 2015**



Source: European Commission.

After a strongly negative correlation between the unemployment rate and the growth of real unit labour costs during the recession, this relationship weakened in 2015 (Graph I.2.16). Real unit labour costs appeared less responsive to unemployment, particularly in high unemployment countries (e.g. Greece, Spain, Cyprus and Croatia). However, declines in real unit labour cost were also observed in countries hit by the crisis such as Ireland and Portugal, owing respectively to strong productivity growth and sizable nominal wages cuts. Unit labour costs increased most in the Baltic states, even though unemployment rates were close to the EU average.

Several explanations can be put forward for this weak response of real unit labour costs to the unemployment rate in the last two years: the substantial adjustment that had already taken place in labour costs in previous years, low productivity growth, composition effects with job creation occurring more in low-pay sectors, the presence of downward real wage rigidities in a low inflation environment, and the relevance of higher structural unemployment that may make labour markets tighter than suggested by the headline unemployment rates. Wage setting reforms over recent years may also have contributed to increase the sensitivity of wage growth to recent conditions in some countries.

2.4.1. Compensation per employee at sectoral level

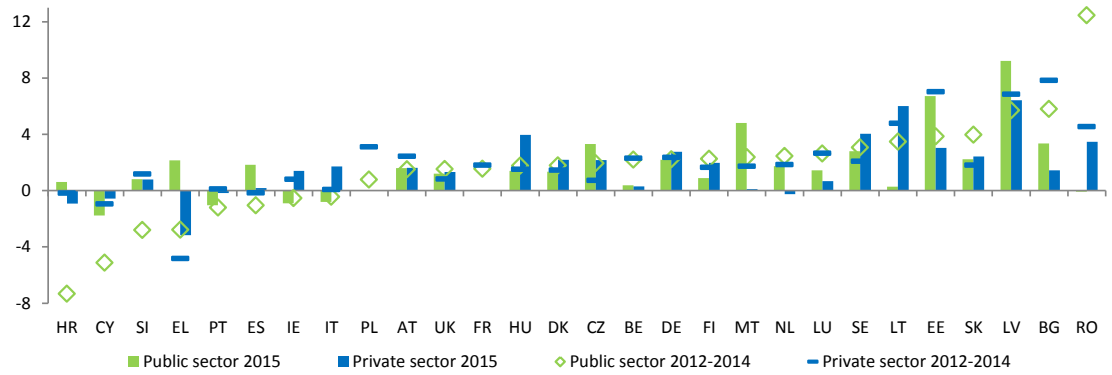
Both the private and public sectors contributed to the recent wage dynamics in many countries. Overall, the developments of public wages became less heterogeneous across the EU and more similar to that of the private sector.

Compared to earlier years, the dynamics of aggregate wages in 2015 were less dampened by developments in the public sector. Before 2015, public wages were cut in countries marked by strong fiscal adjustments (Croatia, Cyprus, Slovenia, Greece, Portugal, and Spain). This was much less the case in 2015, with several countries recording increases in public wages (Graph I.2.17).

On the other hand, public wages slowed down in some countries where they had been increasing the most before (Romania, Bulgaria, Slovakia and Lithuania). However, an acceleration of government wages was observed in Estonia and Latvia. For the remaining Member States, changes in public sector pay in 2015 were either muted or slightly lower than before.

Pay changes in the public and the private sectors have become more aligned than before; in 2015 public wages rose faster than in the private sector in more EU countries than before. Still, among the countries recording the largest increases in compensation per employee in 2015, the growth rate was higher in the public sector only in Latvia.

Graph I.2.17: **Compensation per employee in public and private sectors, % change, 2015 and in earlier years**



Note: Public sector proxied by public administration and defence, education, health and social work, personal service activities. Countries ranked by increasing order of growth of compensation per employee in the public sector in the period 2014-2014.
Source: Eurostat.

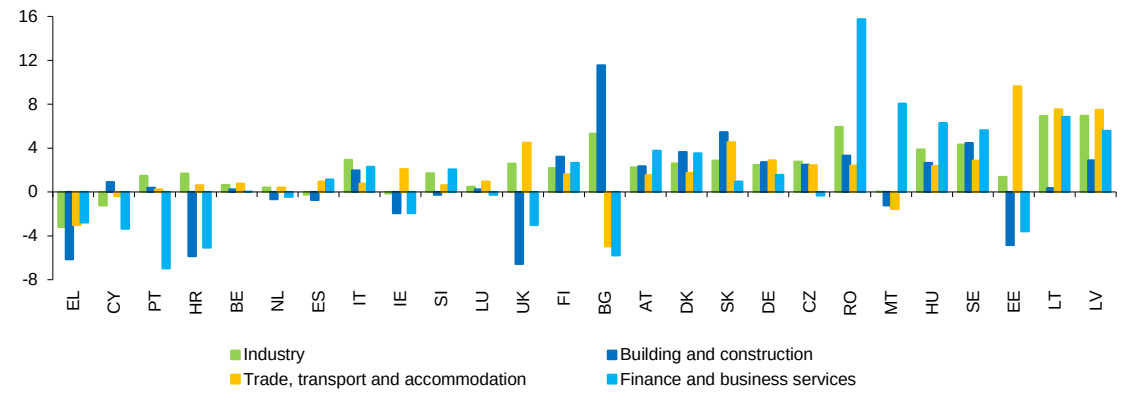
In the private sector, wage developments were strongest in trade, transport and accommodation and industry, both in the EU and the euro area countries (Graph I.2.18). For Member States with the strongest aggregate wage growth, pay in finance and business services also evolved in line with, and sometimes even faster than, the other broad sectors (Estonia being the only exception). However, the patterns in that sector were more heterogeneous for the rest of the countries, sometimes trailing behind the other sectors within the same country (e.g., Portugal, Croatia, Ireland, UK or Bulgaria). To a lesser extent, dispersion was observed also for construction, where wages declined in Greece, Croatia and the UK but increased strongly in Bulgaria.

2.5. PRICES, UNIT LABOUR COSTS AND THE TAX WEDGE

2.5.1. Nominal unit labour costs

The growth of nominal unit labour costs remained low in 2015 and even declined in various countries on the back of a modest increase in productivity and sluggish wages (Table I.2.5). As in previous years, the increase in unit labour costs was the highest in the Baltic countries, followed by Hungary. The sharp expansion of compensation per employee and the decelerating productivity – in Estonia, the productivity level even dropped –, contributed to the increases of unit labour costs in

Graph I.2.18: **Compensation per employee by sector, annual % change, 2015**



(1) France and Poland not included because of missing data. Countries are ranked by ascending order of changes in average compensation per employee (total economy) in 2015.
Source: Eurostat.

these countries.

Table I.2.5: **Decomposition of unit labour costs, annual % change, 2015**

	NULC	Compensation per employee	Labour productivity	GDP deflator	RULC
EE	5.8	3.9	-1.8	1.4	4.3
LV	5.6	7.0	1.4	0.6	4.9
LT	3.8	4.1	0.3	0.4	3.4
HU	3.2	3.3	0.1	1.8	1.4
DK	1.9	1.9	0.1	1.0	0.8
DE	1.8	2.7	0.9	2.1	-0.2
AT	1.4	1.6	0.2	1.5	-0.1
SE	1.0	3.6	2.6	1.9	-0.8
PL	0.9	3.1	2.2	0.4	0.4
SK	0.8	2.4	1.6	-0.3	1.0
UK	0.7	1.5	0.8	0.3	0.5
FI	0.7	1.6	0.9	0.4	0.3
IT	0.6	0.5	-0.1	0.8	-0.2
EL	0.4	-1.7	-2.1	-0.6	1.1
FR	0.4	1.2	0.8	1.2	-0.9
ES	0.3	0.5	0.2	0.6	-0.3
BE	-0.4	0.1	0.5	0.9	-1.3
HR	-0.5	-0.5	0.0	0.1	-0.6
CZ	-0.5	2.4	3.0	0.7	-1.3
SI	-0.6	0.8	1.4	0.4	-1.1
NL	-0.6	0.4	1.1	0.4	-1.0
PT	-0.6	-0.6	0.1	1.9	-2.5
BG	-0.7	1.8	2.6	0.3	-1.1
MT	-1.2	1.5	2.7	2.3	-3.5
RO	-1.4	3.2	4.7	2.9	-4.2
LU	-1.4	0.8	2.3	1.6	-3.0
CY	-1.7	-1.0	0.7	-1.4	-0.3
IE	-4.2	0.6	5.1	5.3	-9.0

Note: Countries are ranked by decreasing order of change in nominal unit labour costs in 2015.
Source: Commission services

At the same time, almost half of the EU Member States saw their unit labour costs declining in 2015, albeit at different pace and driven by different factors. In Ireland, the strong decline in unit labour costs was spurred by fast productivity gains, and moderate wage developments. The strong increase in productivity in Romania, partially offset by wage rises, led the decline in nominal unit labour costs. In contrast, pay cuts and, in some countries modest productivity gains, helped to preserve competitiveness in Cyprus, Portugal, Spain or Greece. Among the larger Member States, in 2015 unit labour cost continued to expand somewhat faster in Germany (slightly below 2%), with Italy, France and Spain all close to a 0.5% growth rate. Compared with 2014, labour costs accelerated in Spain, stabilised in Italy and decelerated in France.

In 2015, the dynamics of unit labour costs in real terms often reflected that of nominal unit labour costs but with somewhat larger cross-country variation given different paths for GDP deflators. Once again the Baltics recorded the strongest increases in real unit labour costs.

On the opposite side, the largest falls in real unit labour costs often coincided with the ones on the nominal unit labour costs and in some cases helped by brisk GDP deflators.

2.5.2. Contribution to the final demand deflator

In 2015, moderate unit labour cost developments contributed to keeping inflation in check (Table I.2.6). In fact, in around half of the EU countries, unit labour cost developments had a negative contribution to the domestic demand deflator. Estonia and Latvia were the countries where unit labour costs added the most to inflation, yet falling gross operating surplus (profits) led to low inflation pressures in these countries.

Table I.2.6: **Contributions to the final demand deflator, annual % change, 2015**

	Import prices	NULC	Indirect taxes	Gross oper. surplus	Final demand deflator
IE	1.4	-1.0	-0.1	3.7	4.1
LU	2.6	-0.3	-0.3	1.2	3.2
MT	0.8	-0.3	0.1	1.2	1.8
DK	0.9	0.7	0.2	-0.2	1.6
SE	0.2	0.4	0.3	0.6	1.6
RO	-0.6	-0.5	0.6	1.9	1.4
AT	-0.1	0.5	0.2	0.3	1.1
DE	-0.5	0.7	0.2	0.6	1.0
HU	-0.4	0.8	0.3	-0.2	0.5
FR	-0.7	0.2	0.0	0.8	0.2
EE	-0.8	1.6	0.5	-1.3	0.2
ES	-0.3	0.1	0.3	0.1	0.1
PT	-1.2	-0.2	0.7	1.0	0.1
LV	-0.4	1.6	0.2	-1.5	0.0
IT	-0.6	0.3	0.2	0.1	0.0
FI	-0.9	0.3	0.0	0.0	0.0
PL	-0.4	0.3	0.2	-0.1	-0.1
CZ	-0.6	-0.1	0.4	0.1	-0.3
SI	-0.5	-0.2	0.1	0.4	-0.3
HR	-0.4	-0.2	0.4	-0.1	-0.3
SK	-0.5	0.2	0.1	-0.4	-0.6
BG	-1.0	-0.3	1.0	-0.5	-0.8
BE	-1.5	-0.1	0.0	0.6	-1.0
CY	-0.2	-0.5	-0.2	-0.1	-1.0
UK	-1.4	0.3	0.0	-0.1	-1.2
NL	-1.5	-0.2	0.0	0.5	-1.4
EL	-2.2	0.2	-0.2	-0.4	-2.6
LT	-3.1	1.0	0.4	-1.1	-2.9

Source: Commission services

The final demand deflator continued to rise at moderate rates in all Member States. In addition to stagnant nominal unit labour costs, weak developments in gross operating surplus and falls in import prices led to moderate increases of the final demand deflator. The only exceptions are Luxembourg and especially Ireland where both imported inflation and strongly rising profit margins added to inflationary pressures.

Table I.2.7: **Decomposition of tax wedge**

	Total Tax Wedge 2015	Of which			Difference 2014 - 2015				Difference 2008 - 2015			
		Personal Income Tax	Social Contributions Employee	Social Contribution Employer	Total Tax Wedge	Personal Income Tax	Social Contribution Employee	Social Contribution Employer	Total Tax Wedge	Personal Income Tax	Social Contribution Employee	Social Contribution Employer
MT*	24.5	11.1	6.7	6.7	-0.7	-0.6	-0.1	-0.1	1.8	2.4	-0.3	-0.3
IE	27.5	14.2	3.6	9.7	-0.5	-0.5	0.0	0.0	5.2	4.4	0.7	0.0
UK	30.8	12.8	8.4	9.7	-0.1	-0.2	0.0	0.0	-2.0	-2.0	0.1	0.0
BG*	33.6	7.4	10.9	15.3	0.0	0.0	0.0	0.0	-1.5	0.2	0.1	-1.8
PL	34.9	5.2	15.3	14.4	0.1	0.1	0.0	0.0	1.3	0.0	-0.3	1.5
NL	36.2	15.2	12.1	8.9	-0.6	1.2	-1.7	-0.1	-3.0	1.2	-3.7	-0.5
DK	36.4	35.8	0.0	0.6	0.2	0.2	0.0	0.0	-2.5	-2.5	0.0	0.0
LU	38.3	16.0	11.4	10.9	0.6	0.2	0.4	0.0	3.6	2.2	0.6	0.9
EE	39.0	12.6	1.2	25.3	-1.0	-0.6	-0.3	-0.1	0.6	-0.4	0.7	0.3
EL	39.3	7.1	12.4	19.7	-1.3	-0.1	-0.3	-0.9	-2.2	0.0	-0.1	-2.2
ES	39.6	11.6	4.9	23.0	-1.2	-1.2	0.0	0.0	1.6	1.7	0.0	-0.1
HR*	40.5	8.8	17.1	14.7	1.0	-0.1	-0.3	1.5	:	:	:	:
LT*	40.9	10.4	6.9	23.7	-0.2	-0.1	0.0	-0.1	-0.7	-5.2	4.6	-0.1
SK	41.3	7.4	10.2	23.8	0.1	0.1	0.0	0.0	2.5	-0.1	-0.4	3.0
PT	42.1	14.0	8.9	19.2	0.9	0.9	0.0	0.0	5.1	5.1	0.0	0.0
RO*	42.1	10.4	9.8	21.9	0.2	0.2	0.0	0.0	-0.3	1.0	-2.5	1.2
SI	42.6	9.7	19.0	13.9	0.1	0.1	0.0	0.0	-0.3	0.3	0.2	-0.8
SE	42.7	13.5	5.3	23.9	0.2	0.2	0.0	0.0	-2.1	-1.6	0.0	-0.6
CZ	42.8	9.2	8.2	25.4	0.2	0.2	0.0	0.0	-0.7	0.9	-1.1	-0.6
LV*	43.2	15.6	8.5	19.1	-0.7	0.0	-0.4	-0.3	1.6	0.7	1.2	-0.3
FI	43.9	18.4	6.7	18.7	0.2	0.0	0.2	0.0	0.0	-1.1	1.7	-0.6
FR	48.7	10.6	10.3	27.8	0.3	0.1	0.1	0.1	-1.1	0.8	0.7	-2.7
IT	49.0	17.5	7.2	24.3	0.8	0.8	0.0	0.0	2.3	2.3	0.0	0.0
HU	49.0	12.5	14.4	22.2	0.0	0.0	0.0	0.0	-5.1	-3.4	1.8	-3.5
DE	49.4	16.1	17.2	16.2	0.2	0.1	0.0	0.0	-1.9	-1.6	-0.1	-0.1
AT	49.5	13.1	14.0	22.4	0.1	0.2	0.0	-0.1	0.5	0.5	0.0	0.0
BE	55.3	21.6	10.8	22.9	-0.3	-0.2	0.0	-0.1	-0.6	-0.2	0.1	-0.4

Note: Single person without children paid at the average wage. Countries are ranked by ascending order of the tax wedge in 2015. * 2014 data; differences are for 2013-2014 and 2008-2014 respectively. Data for Cyprus not available; data for Croatia not available before 2013.
Source: European Commission based on OECD Taxing wages models.

2.5.3. The tax wedge

The average tax burden on labour remained broadly stable in 2015 in most of the EU countries (Table I.2.7). Those declines even if small tended to be recorded in countries with the tax wedge already at or below the median. The tax wedge at the average wage fell by at least 1 percentage point in Greece, Spain and Estonia. Taking a more medium-term view, Hungary recorded the strongest decline since 2008 (by over 5 percentage points), followed by the Netherlands, Denmark and Greece. On the other hand, Croatia recorded the sharpest hike in the tax wedge by 1 percentage point driven by employers' contributions in 2015; Italy and Portugal came close to such an increase. From 2008, Ireland and Portugal increased the labour tax wedge the most by over 5 points largely on account of higher personal income taxation.

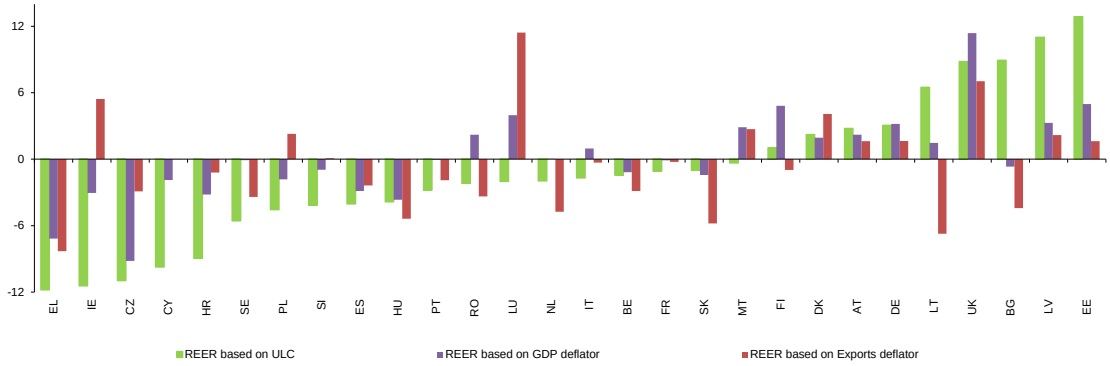
2.6. COST COMPETITIVENESS AND EXTERNAL ADJUSTMENT DEVELOPMENTS

2.6.1. Real effective exchange rate developments

In 2015, almost all EU countries recorded gains in their cost competitiveness. Over recent years, most countries have gained cost competitiveness (Graph I.2.19). Greece, Ireland, Czech Republic, Cyprus and Croatia, were the EU countries that experienced the strongest gains in cost competitiveness as measured by the falls in the real effective exchange rate (REER) based on ULC over recent years. ([25]) Yet, in contrast, the Baltics, Bulgaria, and the UK visibly worsened their

([25]) The REER measures cost competitiveness of a country relative to its main trading partners. It is computed as a weighted average of its currency relative to a basket of other currencies and adjusted for the effects of price or labour cost inflation. Weights are a function of trade vis-à-vis each country.

Graph I.2.19: **REERs based on ULC deflator, cumulative % change over the period 2013-2015**



Note: countries are ranked in ascending order of the variation in the ULC-based REER in 2013-2015.
Source: Commission services calculations on the basis of Eurostat data.

competitiveness position. To a lesser extent, that happened also to Germany, Austria and Denmark.

Various measures of the real effective exchange rate (REER) hints to these gains, in particular when the REER is based on the unit labour costs. Although the REER based on GDP or export deflators declined recently, they did so less than the ULC-based REER, which implies an increase of price mark-up and profit margins.

Countries benefitted also from the weakening of their currencies (including the euro), the fall in energy prices and, possibly, the materialisation of structural reforms. ([26])

2.6.2. Competitiveness and adjustment in the euro area

In the euro area, labour costs and prices of goods and services play a dual role of ensuring internal and external balance. With the lack of an exchange rate instrument, the dynamics of labour costs and prices have a bigger role to play in shaping how the economy reacts and adjusts to shocks.

In 2015, the relation between external adjustment needs in the euro area and changes in competitiveness positions weakened compared with earlier years. Indeed, the change of the ULC-based REER was of the same order for countries with different rebalancing needs (Graph I.2.20). ([27])

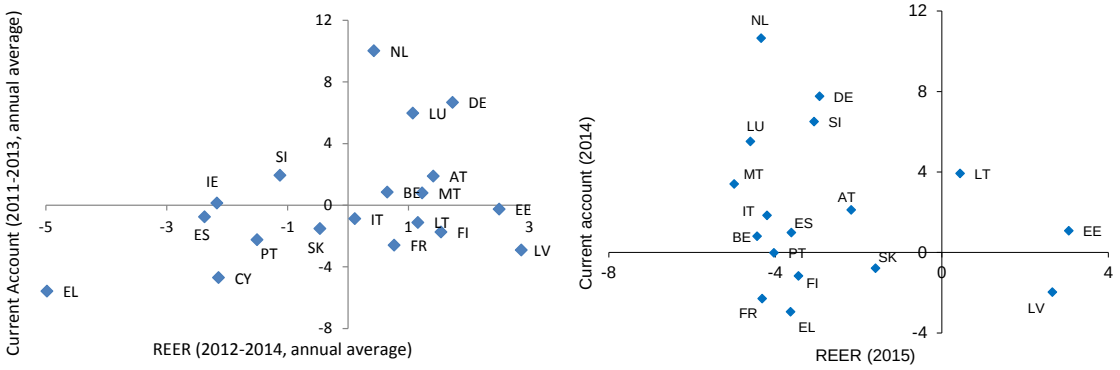
That apparent weakening of the relation between external adjustment needs and changes in competitiveness followed the substantial adjustments in current accounts and competitiveness of previous years, not only by *deficit* countries. ([28]) Various factors may have contributed to those earlier current account improvements including the contraction of private domestic demand, and in some countries, the pace of fiscal consolidation. As the recovery has gained momentum and private consumption and imports keep growing, the pace of improvement of the external balance has slowed down. Nevertheless, the dynamism of exports, the competitiveness gains of previous years and favourable oil prices contributed to preserving the current account surpluses. Although few euro area countries recorded sizeable current account deficits in 2015, the stocks of net external liabilities remain elevated in a number of them.

([26]) Among the euro area countries, Ireland and Cyprus benefitted the most from the nominal depreciation of the euro, which reached some 20% vis-à-vis the US dollar.

([27]) For example, the Netherlands recorded competiveness gains comparable to those of Spain despite having a position as large external creditor. This conclusion does not change when considering the current account needed to stabilise the net international investment position.

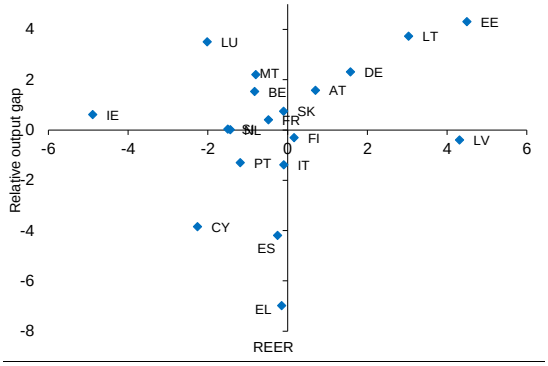
([28]) The group of *surplus* countries include: Belgium, Germany, Luxembourg, the Netherlands, Austria and Finland. *Deficit* countries are all other euro area member States. This classification is based on the current account situation (both headline and underlying readings of it) around the year 2008.

Graph I.2.20: **Current account balance (% of GDP) and ULC-based REER (% change): earlier and more recent relations**



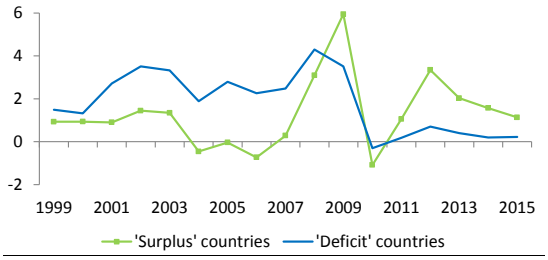
(1) Real effective exchange rate (REER) is calculated relative to main trading partners (37 industrial countries).
(2) Ireland is omitted in the right-hand graph.
Source: Commission services on the basis of Eurostat data.

Graph I.2.21: **ULC-based REER (2015, % change) and relative output gap (2014, % of GDP)**



Note: REER relative to the rest of the euro area. Relative output gap is the difference between the output gap of the country and the one of the euro area.
Source: Commission services.

Graph I.2.22: **ULC in deficit and surplus countries within the euro area (weighted average, annual % change)**



(1) Surplus countries are Belgium, Germany, Luxembourg, the Netherlands, Austria and Finland. 'Deficit' countries are all other euro area member states.
Source: Commission services calculations on the basis of Eurostat data

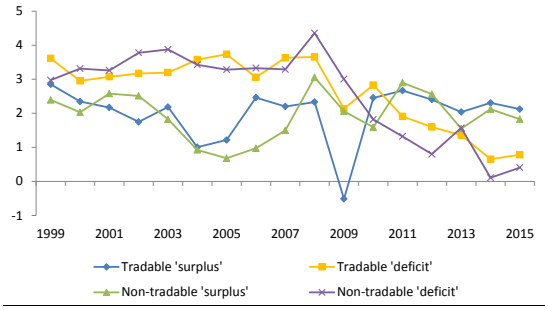
The cost competitiveness developments in 2015 appeared consistent with the different business cycle positions of most euro area countries. Graph I.2.21 suggests that countries with a relative weak cyclical position in 2014 – e.g. Cyprus and Portugal and, to some extent, Spain and Italy – experienced a weaker dynamic of the ULC-based REER in 2015 (i.e. gained in competitiveness). Similarly, an appreciation of the REER was observed in countries with rapidly expanding economies – e.g. Estonia, Lithuania, Germany and Austria. On the other hand, Greece had no further gains in competitiveness despite the weak activity, with a gap relative to potential that was perhaps too large to be recovered quickly.

When looking only at the recent evolution of unit labour costs (and leaving other factors aside like nominal exchange rate fluctuations), main indicators suggest that developments in 2015 have continued to be consistent with the external rebalancing needs of the different euro area countries. Indeed, labour costs have grown faster in countries characterised by a current account surplus before the crisis ("surplus countries") than in countries with previous current account deficits ("deficit countries") (Graph I.2.22). Yet in 2014 and 2015 the rebalancing was more moderate largely on account of a further lowering in unit labour cost growth in *surplus* countries, which confirms the view already suggested by the analysis between current account and ULC-based REER.

Rebalancing external positions requires not only changes in unit labour costs relative to main trading partners, but also changes in relative prices and wages of different sectors within countries. Two types of adjustments support the absorption of external imbalances: (i) a drop in the price and unit labour costs of domestic tradable goods relative to foreign tradable goods to stimulate exports and induce demand switching from foreign to domestic products (the better functioning the product markets are, the lower price stickiness should be and the stronger the pass-through of lower labour costs into lower prices); and (ii) the reallocation of production towards the tradable sector and the increase of export-oriented activities. The latter requires an increase in the wages and profit margins in sectors producing tradable goods and services *relative* to non-tradable ones. Higher profit margins in the tradable sector requires less dynamic prices in the non-tradable *relative* to tradable or lower unit labour cost growth in the tradable sector *relative* to the non-tradable sector or a combination of both. At the same time, lower prices for non-tradable goods and services support households' purchasing power.

The decomposition of compensation per employee between tradable and non-tradable sectors in *deficit* and *surplus* countries shows that the wage moderation in recent years in *deficit* countries was led mainly by a sharp deceleration of wages in the non-tradable sectors (Graph I.2.23). Thus, the recent pattern of relative wages seems to support a reallocation of labour from non-tradable to tradable sectors and contribute to external rebalancing in *deficit* countries. ([29]) As the recovery proceeds it is unlikely that this effect will continue with the same strength to support reallocation.

Graph I.2.23: **Compensation per employee, tradable and non-tradable sectors, in 'deficit' and 'surplus' countries within the euro area.**



Note: Surplus countries are Belgium, Germany, Luxembourg, the Netherlands, Austria and Finland. Deficit countries are all other euro area Member States.
Source: Commission services on the basis of Eurostat data.

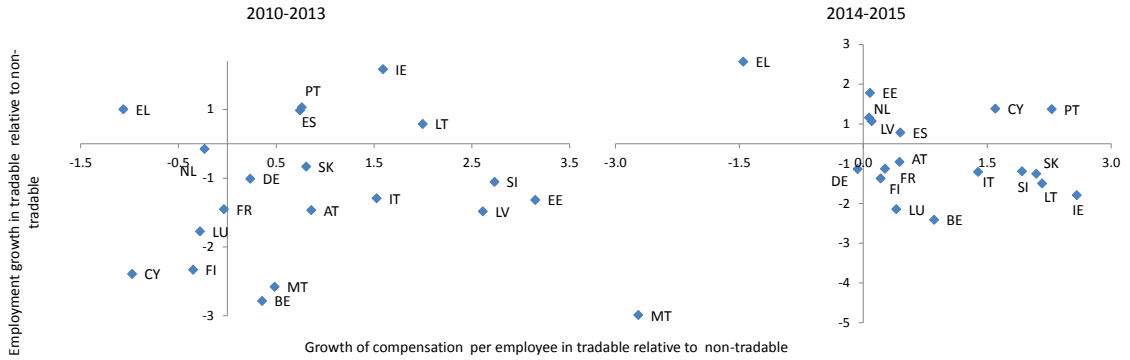
For the periods 2010-2013 and 2014-2015, Graph I.2.24 describes the tradable *vs* non-tradable dynamics of wage and employment within the euro area countries. During the first period, some countries more affected by the crisis (e.g. Ireland, Portugal and Spain) had a faster wage growth in the tradable than in the non-tradable sectors. Conversely, *surplus* countries usually had similar wage developments across tradable and non-tradable sectors (e.g. Germany or Netherlands) or slightly more wage growth in tradables (e.g. Belgium and Austria). As for employment, *surplus* countries were not marked by a single pattern, but in no case the employment composition shifted towards the tradable sector. *Deficit* countries (Ireland, Portugal, Spain and Greece) recorded a relative re-allocation of employment towards tradable activities.

In 2014 and 2015, stronger wage dynamics in the tradable sector were detected for a larger number of countries (Graph I.2.24), reflecting inter-alia the broadness of the EU economic recovery. Job dynamics continued to be tilted most towards tradable sectors in Greece, Cyprus, Portugal or Estonia. However, employment in non-tradables expanded at a higher rate in most EU countries, in the wake of the revival of domestic demand.

Still, the evolution of unit labour costs of recent years has been supportive of the adjustment towards tradable activities. In countries affected by external imbalances, unit labour costs grew less for the sectors most exposed to trade than for the

([29]) Tradable sectors include: Agriculture, forestry and fishing; Industry (except construction); Wholesale and retail trade, transport, accommodation and food service activities. Non-tradable sectors include: Construction; Information and communication; Financial and insurance activities; Real estate activities; Professional, scientific and technical activities; Administrative and support service activities; Public administration, defence, education, human health and social work activities; Arts, entertainment and recreation; Other service activities; Activities of household and extra-territorial organizations and bodies.

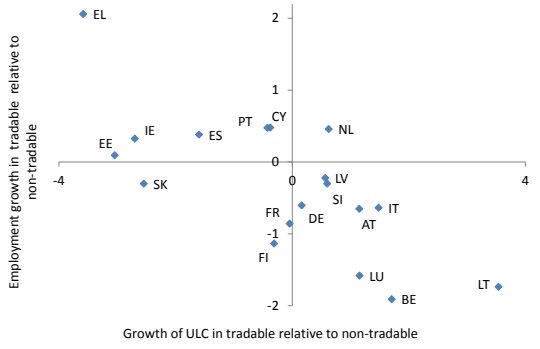
Graph I.2.24: **Compensation per employee and employment growth differential between tradable and non-tradable (average annual % change)**



Source: European Commission based on Eurostat data.

sheltered ones – not only Greece, Ireland or Spain, but also Estonia and Slovakia (Graph I.2.25).

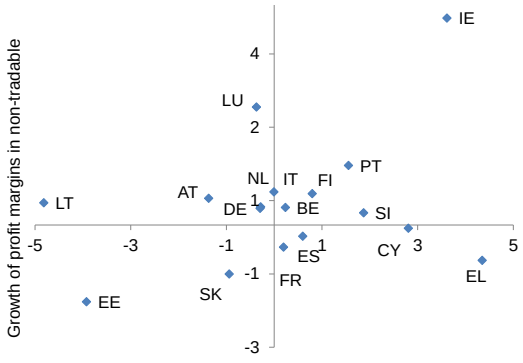
Graph I.2.25: **Developments in nominal ULC and employment growth differential between tradable and non-tradable sectors, 2013-2015 (average annual % change)**



Source: European Commission based on Eurostat data.

Overall, most of the EU countries showed one of the following two patterns: in some, contained unit labour costs in the tradable sectors *relative* to non-tradables coincided with relatively stronger employment dynamics in the former sector (upper left quadrant of Graph I.2.25); in others, higher labour cost growth in the non-tradable sectors *relative* to tradable ones went hand in hand with relatively more employment in non-tradables (lower right quadrant of Graph I.2.25). *Deficit* countries tended to display the first pattern, *surplus* countries the second. together with the dynamics of unit labour costs, the price developments determine profit margins. Changes in profit margins in tradable versus non-tradable sectors can be key to trigger the necessary re-allocation of resources.

Graph I.2.26: **Evolution of profit margins in tradable and non-tradable sectors: 2013-2015 (average annual % change)**



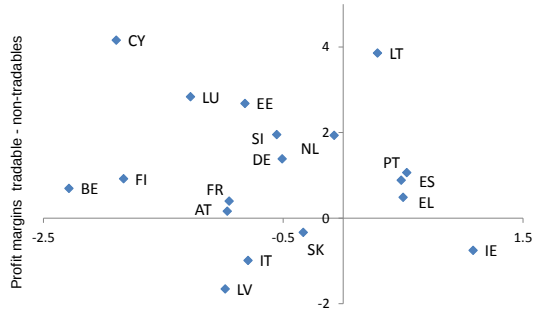
Source: European Commission based on Eurostat data.

In recent years, the increase in the profitability of tradable sectors (and often also of non-tradable ones) has been a key feature of the adjustment process in *deficit* countries. Over recent years, profitability in the tradable sector has dropped in few countries only, especially Estonia and Lithuania (Graph I.2.26).

In some cases, the increased profitability in the tradable sector went hand in hand with an employment shift towards tradables since 2010 (e.g., Spain, Greece and Portugal). However, most of the EU countries were marked by raising weight

of employment in non-tradable activities (Graph I.2.27).

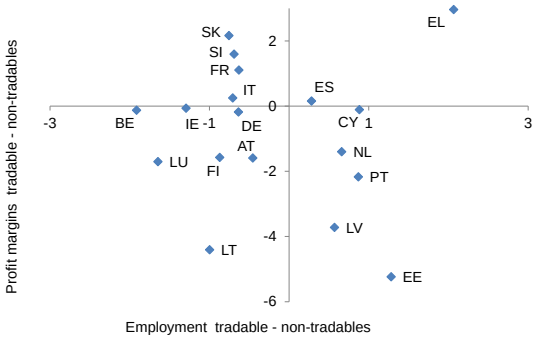
Graph I.2.27: **Tradable and non-tradable sectors: developments in profitability and employment: 2010-2013 (average annual % change)**



(1) 'Profit margins' is computed as the differences between the growth rates of deflator of gross value added and of ULC in each respective sector. The chart shows the difference between the growth of profit margins for the tradable and the non-tradable sectors.
Source: Commission services on the basis of Eurostat data

Unlike earlier years, in 2014 and 2015, profit margins tended to grow more in non-tradable sectors (Graph I.2.28).

Graph I.2.28: **Tradable and non-tradable sectors: developments in profitability and employment: 2014-2015 (average annual % change)**



(1) 'Profit margins tradable – non-tradables' is computed as the differences between the growth rates of deflator of gross value added and of ULC in the tradable and in the non-tradable sectors. 'Employment tradable – non-tradable' is computed as the gap in the average difference between annual change in employment in the tradable and in the non-tradable sectors.
Source: Commission services.

This observation is consistent with an economic recovery led by domestic demand, in particular consumption. Nonetheless, it has not prevented the continuation of a shift of employment towards tradable sectors in the countries that have been tackling large imbalances (e.g., Greece, Estonia, Cyprus or Portugal).

2.7. CONCLUSIONS

In 2015 and first half of 2016, the labour market continued to improve nearly in all EU countries. Unemployment rates fell further while employment and activity rates edged up, benefitting from the upswing in economic activity that started in mid-2013. For several countries, job creation responded faster and more strongly than expected, in light of the modest pick-up in economic activity. Improvements have been the strongest in the countries hit hardest by the crisis, notably Greece, Ireland, Portugal and Spain and also Bulgaria, Hungary, Slovakia and the Baltic states. However, labour market improvements were broad based and concerned also countries, such as Germany, which weathered the crisis relatively well.

Aggregate private consumption has been supported by confidence effects, spurred *inter alia* by the drop of unemployment after years of job destruction, expansionary macroeconomic policies and favourable energy prices. The latter also contributed to improvements in the purchasing power of wages. Yet, with few exceptions, the increase in headcount employment has not been accompanied by comparable increases in the number of the average hours worked. To some extent that seems consistent with earlier trends of gentle declining average number of hours worked per person. On the other hand, that dampens the growth of households' disposable income, which has implications for the sustainability of consumption growth of low wage workers households.

The fall in job separation rates and, more recently, improvements in job finding rates contributed to the decline in unemployment rates. Yet the rates at which the unemployed find a job often remain below pre-crisis levels, which contribute to the persistent long-term unemployment in a large number of countries.

The labour market recovery has seen a significant increase of job creation in the service sector, which

is consistent with the large contribution to GDP growth stemming from private consumption. Cyclical and sectoral composition effects over the upswing of these years have contributed to the increase in the share of temporary employment in total employment.

Low wage growth continued despite the receding joblessness, in particular in the euro area and with the exception of the Baltic states and, to a lesser extent, Eastern European countries. Wage moderation characterised both countries that need to reabsorb high levels of unemployment and improve competitiveness and those with low unemployment and no major external imbalances.

Factors that can explain this broad wage moderation include the remaining labour market slack, weak productivity growth, lagged response of negotiated wages to major labour demand shocks. Wage setting reforms aiming at increasing relative wages flexibility may also have contributed to increase the sensitivity of wage growth to those recent conditions. In a number of EU countries, public wage reductions were less frequent than in earlier years.

Productivity grew faster than real wages, especially in countries with high unemployment rates. Yet real unit labour costs have been less reactive to unemployment rates than in the past.

With subdued wage dynamics and productivity growth little changed, unit labour costs continued rising at a slow pace in most EU countries and even declined in some. Such developments partly explain the lack of significant inflationary pressures in a context of very low inflation rates and improving profitability.

Unit labour costs have risen somewhat in the so-called *deficit* countries after years of visible falls; they were unchanged or even decelerated in *surplus* countries. In all, unit labour costs have become less differentiated between these two groups of countries.

Rebalancing within the euro area has been consolidated in 2015, but after the substantial adjustment last years, the impetus was lower. Employment in non-tradable sectors has recently grown faster than in tradable sectors in line with a recovery led by domestic demand. Yet developments of employment and profitability have overall been consistent with a reallocation of resources towards the tradable sectors in *deficit* countries.

3. POLICY DEVELOPMENTS

Reform activity in employment and social policy in the EU can be divided into three phases since the burst of the financial crisis in 2008. In a first phase, the policy response largely consisted of stimulus measures aimed at cushioning the short-term impact of the crisis on employment and incomes. Starting from 2010, with the unfolding of the imbalances accumulated since the early 2000s, the focus shifted towards improving the adjustment capacity of labour markets, especially in countries with major adjustment needs. As of 2013, a new phase has been emerging, whereby attention is being increasingly paid to revising labour taxation, social policies and overall labour market settings in such a way to set the conditions for well-functioning labour markets, increased protection and a fair redistribution of the benefits of growth. This process of intense reform activity, which continues to be above pre-crisis levels, is being accompanied by a growing awareness about the need for collective ownership of reform efforts, including reform design issues that affect the short-term effects of reforms. Priorities at the EU level are in line with these findings.

3.1. INTRODUCTION

This chapter provides an overview of recent developments and reform trends in the field of employment and social policies since the start of the crisis.

Section 2 analyses reform activity across the EU making use of the LABREF database, an inventory of labour market reform measures adopted by the EU Member States since 2000. ([30]) Based on a count of measures by policy domain and direction, the section identifies reform patterns over time, reflecting different institutional settings, varying economic conditions and challenges, and shifts in priorities as the economic situation evolves. The section contrasts reform activity in two policy domains: Employment Protection Legislation (EPL) and Labour Taxation. It also provides an overview of youth-related measures across the EU.

Section 2 further reviews the emerging literature on the short-term effects of structural reforms. While long-term benefits of some labour market reforms (such as EPL) take time to materialise, recent studies find that such reforms can have negative effects in the short-run, especially if adopted during economic downturns. As a consequence, design issues as well as accompanying measures need to be carefully considered to cushion possible short-term negative impacts and increase ownership.

Section 3 surveys reform activity since the start of 2015. It confirms findings from the previous section noting that, between 2015 and 2016, reform activity accelerated in the fields of labour taxation and social protection, while fewer reforms were adopted in domains which had seen intensive reform activity over the previous years, such as employment protection and wage setting. In some Member States, the unprecedented inflow of migrants, and, in particular, of asylum seekers, also triggered significant policy response to facilitate their integration in the labour market and in the society at large.

Section 4 looks at policy priorities for the future, with a specific focus on the priorities emerging in the framework of the European Semester. Section 5 concludes.

3.2. POLICY TRENDS

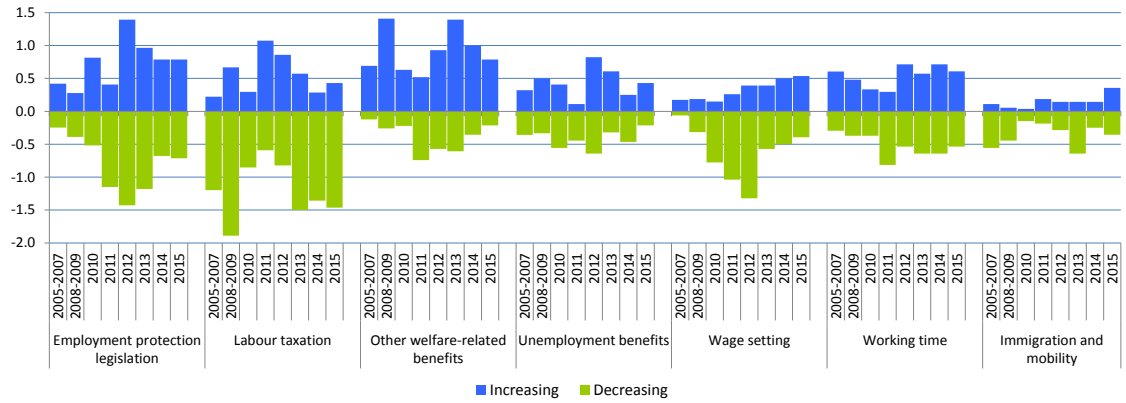
Overall patterns in reform activity

While Member States' response to the crisis has been different depending on the nature and severity of the challenges they faced on the labour market, three broad phases of labour market reform activity can be identified across the EU since 2008, as can be clearly depicted from Graph I.3.1, which, based on LABREF, shows the development of the average number of reform measures across the EU in a selected number of policy domains. Reform measures are differentiated by their 'direction'. ([31])

([30]) The LABREF database is maintained by the European Commission and is available online under the link: http://ec.europa.eu/social/main.jsp?catId=1143&intPageId=3193&. See Turrini et al. (2015).

([31]) The "direction" of policy measures is either increasing or decreasing, based on their effect on the underlying policy settings, with no *a priori* judgement on their implications for labour market functioning. Since the relevant labour

Graph I.3.1: **Average number of labour market reform measures per country per year by direction of reform measures, selected policy domains, EU28**



(1) Information for Bulgaria and Romania starts in 2003 while for Croatia in 2012. Reform measures are classified as "increasing" ("decreasing") if they lead to an increase (decrease) in the underlying policy setting: the tax burden on labour; the generosity of unemployment and other welfare benefits; the stringency of regulations on employment protection, wage setting, working time, and immigration and mobility policies. The graph excludes policy domains ALMP and Early withdrawal.
Source: European Commission, LABREF database.

In a first phase (2008-2009), the focus was on fiscal stimulus to contain the labour market effects of the economic slowdown and mitigate its social impact, including through labour tax cuts (of both of permanent and temporary nature), the extension of unemployment and other welfare benefits (in some cases also with a temporary nature) and the introduction or stepping-up of schemes such as the publicly sponsored short-time working arrangements. This was in line with what was recommended in the European Economic Recovery Plan of November 2008 (European Commission, 2008).

In a second phase (2010-2012), several European countries, and especially those affected by the sovereign debt crisis, resorted to tax increases and benefit cuts, although in several cases cuts in benefit generosity were rather the result of the expiry of the above-mentioned temporary stimulus measures or were accompanied by the extension of benefit coverage. Countries facing major adjustment needs passed significant reforms, in particular in the EPL and wage setting domains, to increase the adjustment capacity of their labour markets.

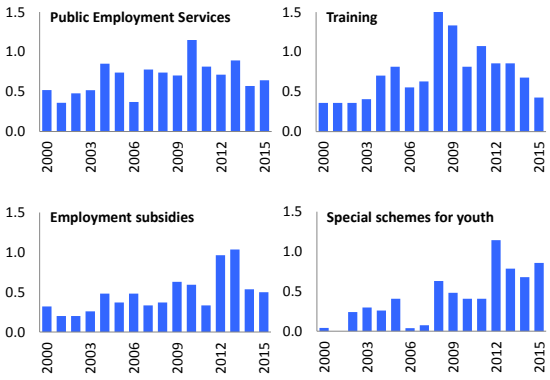
Starting from 2013, a third phase of reform activity can be identified, in which the focus has turned to a better targeting of Active Labour Market Policies (ALMPs), to enhancing social safety nets and to cutting the tax wedge on labour. During this third phase, reform activity in labour market regulation (in particular in EPL and wage setting) decreased somewhat following the major initiatives put forward in previous years, also in view of the time lag necessary for their full implementation and for producing effects. In terms of the direction of reforms, a similar number of measures can be observed since 2013 in the direction of either increasing or decreasing the stringency of regulation, while in the previous phase of reform activity, and especially between 2011 and 2012, a major part of measures was taken in the direction of decreasing stringency and increasing flexibility (Graph I.3.1).

Three phases of crisis response can, to some extent, also be identified when looking at the number of reform measures adopted through time by policy field within the domain of ALMPs (Graph I.3.2). The graph shows that there was a general increase in reform activity starting around

market institution or policy setting differs across policy domains, the definition of reform direction has to be defined separately for each domain. "Increasing" direction will thus for instance mean *increasing* stringency of regulation in the domains of employment protection legislation, wage setting, working time and immigration; *increasing* generosity of unemployment and other benefits; *increasing* tax burden on labour; and *increasing* availability of active labour market policies (ALMPs); *vice versa* for the "decreasing" direction. See European Commission, 2015a; Turrini et al., 2015.

2008, most pronounced in the field of Training and Special schemes for youth. ([32]) An increased focus on Public Employment Services can be seen between 2010 and 2013, followed by a further increase in targeted measures like employment subsidies (especially in 2012-2013) and special schemes for the youth (since 2012).

Graph I.3.2: **Average number of reform measures in selected policy fields in the domain of Active Labour Market Policies (ALMP), 2000-2015, EU28**



(1)The chart excludes policy fields 'Special schemes for the disabled' and 'Direct job creation schemes'.
Source: European Commission, LABREF database.

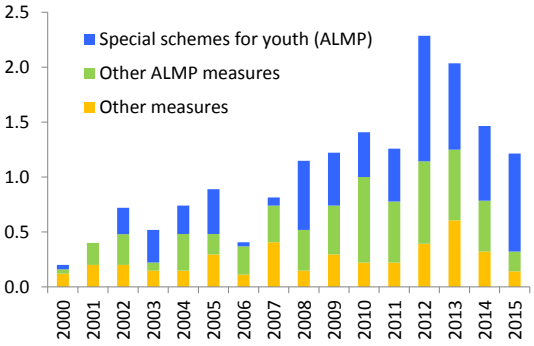
The rest of this section focuses on three policy areas: youth-related measures (mostly affecting ALMPs), reforms of employment protection legislation (EPL) and changes to the tax burden for low-income earners.

Youth-related measures: shared priorities

Addressing youth unemployment has continued to be an important task for Member States during the slow recovery from the financial and economic crisis. Without policy action, it clearly appeared from trends observed since the start of the crisis that depressed labour markets can mark the careers of the young generations for the long run, evidencing that the so-called "scarring effects" of unemployment are greater for the young. Addressing youth unemployment is also a field in which policy action at the European level has been stepped up, becoming a powerful lever for national reforms.

Graph I.3.3 provides an overview of youth-related measures across the EU. ([33]) While there was a clear increase in reform measures targeted at young people already in 2008, the peak of reform activism in this field was reached in 2012 and 2013, after which it returned to levels seen between 2008 and 2011. This reform momentum was partly spurred by the Youth Guarantee Recommendation and by the Youth Employment Initiative, both launched in 2013. The latter was intended to provide financial support (€6.4 billion), to the implementation of Youth Guarantee schemes through direct financial support to young people aged below 25 and living in regions where youth unemployment was higher than 25% in 2012. ([34])

Graph I.3.3: **Average number of youth-related measures by type of measure, 2000-2015, EU28**



(1) Reform measures are classified in the policy field of 'Special schemes for youth' (within policy domain ALMP) if they are complex measures affecting a number of different ALMPs (e.g., both training and employment subsidies), and they focus on youth. Many measures related to the 'Youth Guarantee' fall into this category.
Source: European Commission, LABREF database.

Graph I.3.3 shows youth-related reform measures in a breakdown of three sub-groups. The category "Special schemes for youth" designate complex

([32]) Special schemes for youth are complex measures comprising a number of different ALMPs (e.g. both training and employment subsidies). For more detail on youth-related measures, see the next subsection.

([33]) Beyond the measures in the policy field 'Special schemes for youth', youth-related measures were identified by a text search on the title and description of individual reform measures with key words "youth" and "young". Measures falsely identified by this automatic search as youth-related were manually marked and removed from the count.

([34]) For the legal acts, see European Council (2013) and Council of the European Union (2013). The Youth Employment Initiative, adopted in 2013, was already operational and implemented through national measures in 2012.

measures affecting a number of policy fields within the ALMPs domain (including for instance a combination of training and employment subsidies, but also the introduction or the stepping-up of new contractual arrangements targeted at young people, coupled with fiscal incentives or specific training). Many of the measures in this category are related to the introduction of the Youth Guarantee: the graph shows that the category of measures "Special schemes for youth" was the largest responsible for the jump in reform activity around 2012.

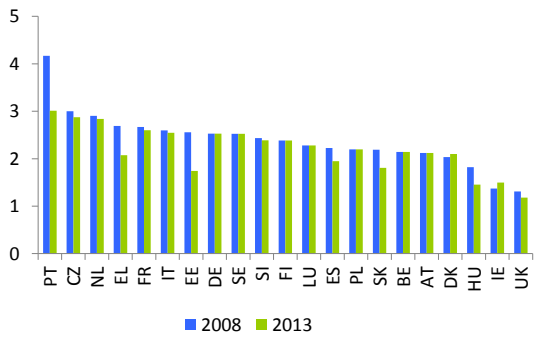
The number of "Other ALMP measures" (ALMP measures such as a training or wage subsidies targeted at young people that do not belong to the above mentioned "Special schemes for youth") also visibly increased after 2008 (especially between 2010 and 2013), but "Other measures" (i.e. all other measures specifically targeted at young people but outside the ALMP domain, such as targeted rebates in social security contributions) were also present throughout the post-2008 period.

Reforms of employment protection legislation: looking back and looking forward

Reforming employment protection legislation (EPL) has been high on the policy agenda in countries with large cumulated imbalances and pressing adjustment needs since the start of the crisis. In many of these countries, very strict EPL for regular workers under open-ended full-time contracts and a great discrepancy in the protection of open-ended versus temporary workers has been blamed for a high and increasing segmentation of the labour market, a reluctance of employers to hire on a permanent basis, and a lock-in of some categories of workers with long job tenure into protected jobs - all factors which have been widely recognised as hampering labour market adjustment in the face of economic shocks, thus contributing to slow productivity growth. ([35])

Graph I.3.4 shows the change in the strictness of EPL for permanent contracts between 2008 and 2013. The graph reveals that a number of countries have passed significant reforms of job protection regulation during that period (latest available data for most countries); the vast majority of them went in the direction of reducing the overall strictness of EPL for permanent contracts. These include euro-area countries like Portugal, Greece and Spain, but also countries such as Estonia and Slovakia that were not member of the euro area in 2008.

Graph I.3.4: **Strictness of Employment Protection Legislation, OECD indicator for regular workers**



(1) The graph includes all EU Member States for which the OECD database has values since at least 2008. For most of these countries, 2013 represents the most recent information.
Source: OECD/IAB Employment Protection Database, 2013 update.

Despite an overall reduction in the reform activity in this field in the subsequent period, the momentum for EPL reforms continued in 2013 and beyond, including in Belgium (the single status law, 2013), Croatia (Labour Act, 2014), France (El Khomri Law, 2016, besides a number of measures in 2013 and 2015), Italy (Jobs Act, 2015), the Netherlands (Work and Security Act, 2014), Slovenia (Employment Relations Act, 2013). ([36])

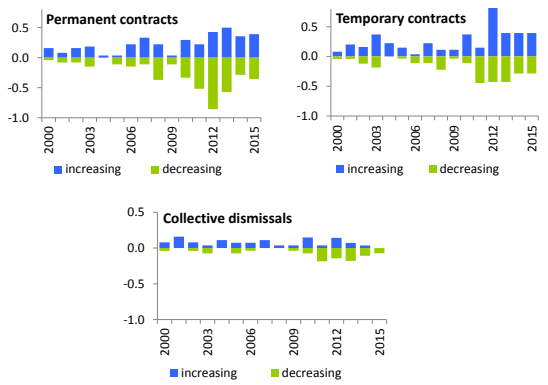
Graph I.3.5 shows a number of general reform patterns in the three main EPL fields, i.e. permanent contracts, temporary contracts and collective dismissals, across the EU. First, it clearly emerges from the graph that reform activity has significantly increased after 2009 in all three EPL domains, reaching a peak around 2012. Since then, the number of measures decreased but overall reform activity has remained far above pre-crisis levels. Second, in the post-crisis period most reform measures have affected permanent

([35]) A survey of the empirical literature on the effect of EPL reforms on labour reallocation and productivity is given by Martin and Scarpetta (2011).

([36]) See the next section for an overview of most recent policy action in the EPL domain. For a summary of the reforms in the 2013-2014 period, see European Commission (2015a, pp. 77-78).

contracts, followed by temporary contracts, and fewer measures have touched upon the regulation of collective dismissals. Third, while there have been measures in all three fields intended to both increase and decrease the strictness of regulation, a slight majority of post-crisis measures went in the direction of reducing the strictness of regulation in the fields of permanent contracts and collective dismissals. The majority of measures in the field of temporary contracts were on the contrary intended to increase the strictness of regulation. This indicates that there was a trend towards reducing the discrepancy that existed in a number of countries between the strictness of regulation for permanent and temporary contracts, with a view to reduce the incentives for firms to hire on temporary contracts.

Graph I.3.5: **Average number of reform measures by direction and policy field in the policy domain of Employment Protection Legislation, 2000-2015, EU28**



(1) Reform measures are classified as having an "increasing" direction if they increase the stringency of Employment Protection Legislation (and vice versa for decreasing measures).
Source: European Commission, LABREF database.

The large increase in policy action since 2008 has also prompted a growing interest for the effects of structural reforms in more recent years, notably in the field of EPL. While previous work focused on the long-term effects of structural reforms, and showed in particular that EPL reforms increase productivity in the long run, ([37]) recent studies have turned to the assessment of the short-term effects of reforms. This recent work can be divided into two groups: country-case studies and cross-country analyses.

([37]) See Bassanini et al. (2009) and Martin and Scarpetta (2012).

Some country-case studies have looked at the relationship between policy reforms and subsequent macroeconomic developments. A preliminary assessment of the Spanish labour market reforms found evidence that the reforms contributed to a decrease in labour market segmentation already in the short run, as hiring increased, especially on permanent contracts (OECD, 2014; 2016). An analysis of the effects of EPL reforms in Estonia and Slovenia shows that these reforms have led to increased unemployment in the first two years after implementation, but such an effect was not found in Spain. Similar reforms appear to have also increased hiring on permanent contracts in Slovenia, another country with high levels of labour market segmentation (OECD, 2016).

Preliminary evidence consistent with these findings has also been documented in the 2016 Country Reports of the European Commission. An analysis of the relationship between the different labour market flows in Spain suggests that job finding rates increased and job destruction rates were reduced after the EPL reform, as compared to what could be expected based on their pre-reform relationship with economic growth (European Commission, 2016a, p. 38). Also in Portugal, the labour market recovery since 2013 brought about a robust rate of hiring on permanent contracts for the first time in more than a decade, although the share of temporary workers remained stable (European Commission, 2016b, p. 29).

Some studies estimate the short-term effects of structural reforms based on experience over a long reference period. These studies show that EPL reforms can have adverse short-term effects on employment and unemployment outcomes, especially in recessionary times. ([38]) The experience of the various countries gives, however, some lessons about how other labour market institutions may contribute to mitigate such adverse short-term effects (OECD, 2016). First, it appears that benefits are higher and short-term costs lower in countries with high levels of labour market segmentation. Second, it is important that firms have at their disposal instruments to adjust in recessionary times without resorting to firing workers (e.g., by short-time work schemes,

([38]) See, e.g., Bouis et al (2012a ; 2012b), IMF (2016), OECD (2016).

flexibility in collective bargaining in bad times). Third, those who lose their job need to have access to employment services early, to reduce the risk of long unemployment spells.

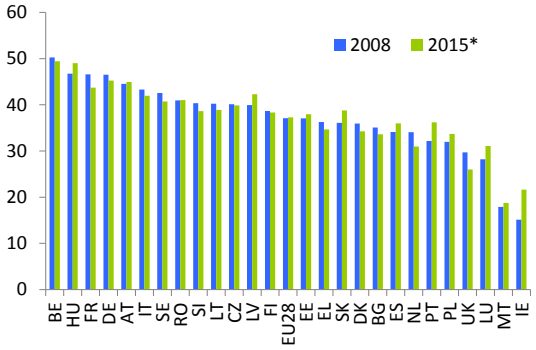
Also the design of reforms matters. For instance, if an EPL reform affects only new contracts (the so-called "grandfathering" clause), as it was the case in the recent reform passed in Portugal, then the incentives for employers to fire workers in a recessionary environment are not increased (although the longer-term productivity benefits are also expected to appear more gradually). Reform sequencing and reform packaging also play a key role in shaping reform effects. Typically, reform packages may include the provision of fiscal incentives associated to major EPL reforms to support their implementation (such as social security contribution rebates for new hires, as those decided in Italy for hiring under the new contract introduced by the Jobs Act). In this case, it will be also important to be able to disentangle the effects of the different strands of the reform package (for instance to know if possible first round positive effects on hiring are due to the EPL reform itself or to the fiscal incentives associated to it).

To conclude, overall there has been a great effort to reform the rules of hiring and firing in a number of EU Member States since 2008. Most reforms are quite recent; thus it may take time for workers and firms to adapt their behaviour to new rules, but also for courts to establish the case-law based on the new legislation and thereby reduce legal uncertainties. While challenges in EPL remain, these are to a great extent country-specific and only imperfectly captured by quantitative indicators. Looking forward, more attention should thus be paid to specific aspects of EPL legislation, such as those related to procedural requirements and dispute resolution mechanisms that, in interplay with other labour market institutions, may increase economic uncertainty related to hiring permanent workers and thereby reduce the incentives for job creation.

Tax wedge on low earnings: trade-off between tax revenue and employment incentives

While there have been significant reform efforts to revise EPL, a high tax burden on low earners remains a challenge in a number of countries, implying risks to the employability of low-skilled workers and the (long-term) unemployed, but also in terms of financial incentives to work. Graph I.3.6, showing the tax wedge for a single worker without children earning 67% of the average wage, indicates that between 2008 and 2015 the tax wedge on low earnings changed relatively little in most Member States, and in about half of them it increased even, in most cases due to fiscal needs. Meanwhile, the EU average remained about constant between 2008 and 2015. ([39])

Graph I.3.6: **Tax wedge of low earners in 2008 and 2015**

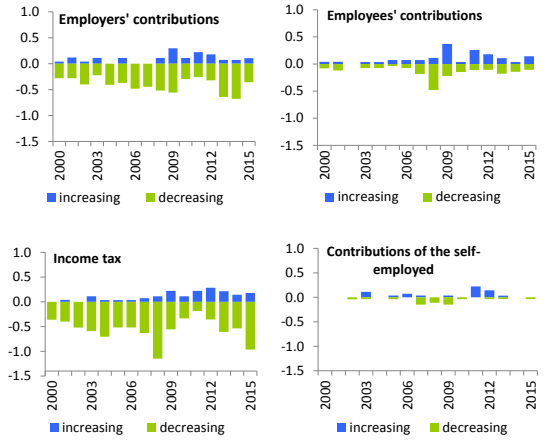


(1) The tax wedge indicator is the sum of all labour taxes, employee and employer contributions as a share of total wage cost. (2) The graph shows the tax wedge of single workers with no children earning 67% of the average wage. (3) Countries are ordered according to the tax wedge in 2008.
* Latest data reflects 2014 for Bulgaria, Latvia, Lithuania, Malta and Romania.
Source: European Commission and OECD: Tax and Benefits Database.

Trends in reform activity in labour taxation across time and tax instruments are presented in Graph I.3.7. The graph shows that most tax measures affect income taxes, followed by employers' social security contributions, employees' social security contributions and, finally, the contributions of the self-employed. The time pattern of tax measures is similar across instruments: stimulus around 2008-2009, followed by adjustment around 2011-2012 and by tax reductions in most recent years.

([39]) See the next section for an overview of most recent policy action in the labour taxation domain.

Graph I.3.7: **Average number of measures per year by direction and policy field within the policy domain of Labour taxation, 2000-2015, EU28**



(1) Reform measures are classified as having an "increasing" direction if they increase the tax burden on labour (and vice versa for decreasing measures).
Source: European Commission, LABREF database.

A closer look at Graph I.3.6 reveals that different reform paths can be observed across countries.

- A majority of countries having introduced reforms to reduce the tax wedge were among the countries with a high-tax wedge on low-income earners at the outset (the reduction was of 2.9 percentage points (ppts) in France, 1.8 ppts in Sweden, 1.3 ppts in Germany and Italy, 0.8 ppts in Belgium), while in few others the tax wedge on low earners was already comparatively low (notably Netherlands and the UK were able to reduce it by more than 2 ppts).

- Some of the Member States most affected by the financial and sovereign debt crisis, including Greece, Ireland, Portugal and Spain, had a tax wedge on labour below the EU average at the beginning of the reference period, and most of them increased it. Of these countries, Ireland had the lowest tax wedge on low incomes in 2008, and increased it most in the ensuing years (by 6.5 ppts to 21.6%) due to pressures of fiscal consolidation. The tax wedge on low earnings also increased in Portugal (by 4 ptts) and Spain (by about 2 ppts), while it decreased Greece. In 2015, all three countries have a tax wedge for low earners close to 35%.

- Another group of countries in which there has been a perceptible increase in the tax wedge for low-income earners are the Central and Eastern European Member States. In Hungary, Latvia, and Slovakia the tax wedge for low earners increased by more than 2 ppts between 2008 and 2015. In Hungary, this development is connected to the introduction of the flat income tax between 2011 and 2013, which cut taxes substantially for high-income earners, especially with children, while it eliminated the employee tax credit for low-income earners. To mitigate the increase of the tax wedge for low earners, contribution rebates were introduced for selected groups, including young people, older workers, those in low-skilled occupations, and those returning from maternity leave or long-term unemployment. This example highlights that policy makers generally face a trade-off between three possible policy targets: the introduction of a simple single rate tax regime, adequate public revenues, and employment incentives at the bottom end of the wage distribution.

3.3. POLICY ACTION SINCE 2015

In 2015, reform activity followed patterns similar to those seen since 2013. Increasing fiscal space allowed reductions in the tax burden on labour, and Member States adopted some reforms extending unemployment and other benefits. At the same time, the pace of reform activity affecting labour market regulation (employment protection, working time, wage setting institutions) was more moderate than at its peak around 2012 but still more elevated than during the pre-crisis period. Reforms affecting immigration and labour mobility received increased attention in the wake of the refugee crisis (see Graph I.3.1).

Active labour market policies

The provision of individualised job-search support and early activation has received increasing attention in recent years. In this respect, special action plans and strategies continued to be promoted in 2015, especially targeted to the long-term unemployed (e.g. Bulgaria, France, Ireland, Latvia, Spain, Slovakia).

In order to better support the unemployed, the institutional capacity has been improved by a reorganisation of the public employment services (e.g. Czech Republic), the introduction of benchmarking and bench-learning (e.g. Lithuania), the obligation to register vacancies (e.g. Latvia) and the setting-up of a one-stop shop for youth (e.g. Finland) Further measures include tighter conditionality of benefits with respect to accepting a job offer, public works or training (e.g. Italy, Slovakia, UK).

Employment subsidies continue to be used extensively to boost labour demand. Typically, new schemes are targeted to specific disadvantaged jobseekers, such as long-term unemployed (e.g. Cyprus, Malta, Slovakia), disabled (e.g. Germany, Luxemburg), young (e.g. France, Ireland, the Netherlands, Spain) and women (e.g. Portugal, Slovakia). Measures to support the unemployed to start working as self-employed emerged in several countries (e.g. Cyprus, Greece).

Direct job creation measures have been reintroduced in Romania after being abolished in 2010. In Hungary, the rules of the Public Works Scheme have been made somewhat more flexible and a financial incentive has been introduced to encourage participants to find a job on the primary labour market. In both 2015 and 2016, Greece adopted a new series of public work schemes.

In line with action pursued in the previous years, almost all Member States have further implemented measures under the Youth Guarantee to tackle youth unemployment. New training or support programmes have been introduced in several Member States targeted at the young (e.g. Malta, Sweden, UK), older workers (e.g. Bulgaria, Greece) and the long-term unemployed (e.g. Portugal).

Benefits

Since 2015, major reforms affecting unemployment benefit systems have been adopted in Italy. As foreseen by the Jobs Act, Italy linked unemployment benefits closer to contributions and increased the coverage by providing a means-tested income support targeted at workers who are no longer entitled to regular unemployment benefits, have children, or are close to retirement age. Further, it increased the link between access to unemployment benefits and participation in ALMPs. Other Member States implemented smaller reforms, such as increased flexibility and generosity of unemployment benefits for those willing to work by encouraging unemployed to take up any type of work including short-term assignments (Denmark), changes to the assessment base for older workers (Finland), changes in eligibility criteria (Latvia), the introduction of the possibility to cumulate unemployment benefits and income from self-employment for selected groups (Spain) and an increase in benefit generosity (Sweden).

Several Member States have broadened the coverage and increased the level of social assistance, in particularly for the poorest. Estonia increased the level of the Guaranteed Minimum Income, Greece started in 2015 subsidies for the basic needs of those families living in extreme poverty and in 2016 the roll out a guaranteed minimum income scheme, Slovenia introduced income support for elderly and non-employable individuals and Spain introduced several measures to tackle homelessness. Child allowances increased in Estonia and Slovenia. Rental price subsidies for disadvantaged groups have been implemented in Luxemburg and Spain. On the other hand, a number of Member States restricted access to social benefits for specific societal groups. Denmark and UK introduced requirements regarding the permanent residence in order to receive family and child benefits (Denmark) or in-work benefits (UK).

Participation-friendly schemes

The use of financial incentives to work, such as *in-work benefits*, was expanded in a number of countries. In France and Malta the right to in-work benefits was extended to particular groups, such as the young, low-wage workers (France) and low-income single-earner families with children under 23 years of age (Malta). Furthermore, employment of older workers has been further encouraged by reforms of *early retirement schemes*, in countries such as Finland and France. The latter country introduced early retirement schemes that include bonuses and/or penalties as incentives for later retirement. Austria introduced the option of partial retirement, which allows employees to work part-time while receiving a more than proportional

compensation compared to the hours worked. In order to activate the disabled, several Member States have introduced specific ALMPs (e.g. Bulgaria, Croatia, Estonia, Latvia, Lithuania, Malta).

Several measures have been adopted to facilitate the reconciliation between work and family life. The *availability and affordability of child care* has been enhanced by measures such as increases in the child care subsidies in Netherlands and Slovakia, or by a loosening of the legal restrictions to set up child-care facilities in Czech Republic. More flexible *leave arrangements for parents, including through provisions to reduce gender inequalities*, have been introduced in Austria, Italy, Sweden, Poland and Portugal. Germany made care arrangements more attractive by giving care providers the right to unemployment insurance benefits financed by care insurance funds. Finally, the Social Welfare Act was revised in Estonia with a view to ensure a better provision of quality social services.

Working hours

In several member states there was a trend towards increasing the flexibility of work organisation. *New flexible work arrangements* have been notably introduced in Bulgaria, Lithuania, France and the Netherlands. In France, the amendments to the Labour Code in the 'El Khomri' law have introduced the possibility to derogate from the legal provisions on working time through a company agreement, while in 2015 the 'Loi Macron' had already eased the provisions on Sunday work and night work.

Labour taxation

In 2015, Member States continued to reduce labour taxes in order to increase the incentives to work and reduce the relatively high cost of labour – in particular for low-wage earners. Box I.3.1 presents in more detail selected reform packages in Austria, Belgium, Greece, Latvia and the Netherlands.

With resuming economic growth and resulting larger fiscal space, several measures were also adopted in a number of countries aimed at cutting income taxes, in line with reform trends already witnessed in most recent years.

Less focus was on the contrary put on reducing employers' social security contributions than in the previous two years (see Graph I.3.7). Yet, significant reductions in employers' *social contributions* were implemented in Belgium to support labour demand and gain cost competitiveness (see Box I.3.1), while other Member States reduced social security contributions for specific groups, such as low-wage earners (Netherlands), the self-employed (Spain), older workers (Austria and Slovenia), when hiring under open-ended contracts (Spain) or for first time hiring by SMEs or self-employed (Belgium). In Slovakia, employers hiring long-term unemployed in the least developed regions received temporary exemptions from social security contributions. In contrast, Greece introduced in 2016 a temporary increase in the social security contributions of 1 percentage point up to 2018 (and 0.5% up to 2021) to partially finance the pension reform.

Several Member States, including Austria, Belgium, Estonia, Lithuania, Netherlands and Slovenia, adopted reforms to reduce the *personal income tax* to increase work incentives in particular for low-wage earners. In some Member States, such as Latvia and the Netherlands, these measures are being partially financed by tax increases for high-wage earners or taxation of non-labour income (see Box I.3.1). In Belgium, the "Tax Shift Law" did some rebalancing of the tax burden away from labour to other areas (including excises and income from interest and dividends).

Few countries increased labour taxation in 2015. In Finland and Germany, contributions were adjusted to finance the social security systems. In Malta, employers' social security contributions increased by 0.5% to finance the Maternity Leave Trust Fund. Other Member States, such as Latvia and Romania, introduced a minimum threshold for social contributions for all employees (Latvia) or for employees deriving income from agricultural activities, rental income or income from other sources (Romania).

Box I.3.1: **Labour tax reforms in Austria, Belgium, Greece, Latvia, and the Netherlands**

While a number of countries passed reform measures to reduce the tax burden on labour in 2015, the significant reform packages of Austria, Belgium, Greece (2016), the Netherlands and Latvia are presented in somewhat more detail in this box. In all of these cases, incentives for individuals to work, and for firms to hire, have been increased, especially affecting low wage earners.

Reforms in Austria focused on the take-home pay of low earners by reducing the entry personal income tax rate from 36.5% to 25%, and made its tax schedule more gradual, increasing the number of tax brackets from three to six. A top income tax bracket of 55% was introduced for incomes above EUR 1 million for the years 2016-2020, while earlier the top tax bracket was 50%. The tax-exemption threshold of EUR 11 thousand was unchanged, but refunds have been introduced or extended for employees and old-age pensioners who earn less than that amount. Working families also benefited from the doubling of the annual tax allowance for children to EUR 440 per children. As a result of changes, the tax wedge for a single average wage earner was reduced from 49.3% to 46.7%, from the second highest in the EU to seventh highest.

Belgium considerably reduced both labour taxes and social security contributions to reduce labour cost and leave more disposable income for low and middle-income earners. The tax-free allowance was increased and the tax brackets are being gradually adjusted to reduce the tax burden. Waivers for low-wage earning workers from a part of their social security contributions ("social employment bonus") and from personal income taxes ("fiscal employment bonus") have been increased from August 2015, with further reductions programmed in 2016 and 2019. Regarding employers' contributions, Belgium reduced the highest nominal contribution rate from 32.4% to 25%. In addition, it established or extended exemptions for first recruitments by SMEs and the self-employed and reduced social security contributions of the self-employed in general, from 22% in 2015 to 20.5% in 2018, in addition to increasing the tax deductions for professional expenses. Overall, the labour tax cuts are expected to reduce the implicit tax burden on labour by around 3 percentage points by 2020 (from 43.5% in 2014).

In Greece, the new income tax reform adopted in June 2016 introduced fundamental changes to the personal tax system. The reform (i) reduces the opportunities for tax avoidance by pooling business and employment income and taxing it on a single tax schedule; (ii) attenuates the preferential tax regime for farmers by taxing farm income, including direct subsidies, on the same tax scale as other forms of income while providing a standard tax credit, and by tightening the definition of professional farmer able to claim the tax credit; (iii) integrates the Solidarity Surcharge fully into the Income tax system changing from average to marginal tax rates and partly harmonising the brackets with those for personal income tax; (iv) adjusts marginal tax rates, in particular tackling the problem of high marginal tax rates for tax payers on middle incomes; (v) broadens the tax base and gives additional incentives for labour participation and work by reducing tax credit thresholds, which now take account of family composition; (vi) increases the tax rates on rental income above EUR 12 thousand.

In the Netherlands, recent reforms increased work incentives, especially for low earners and second earners by increasing the work-related tax credit and the tax credit for working parents, while decreasing the general tax credit. The tax rate applicable to the second and third income tax brackets was also reduced from 42% to 40.15%, while the income threshold for the highest tax bracket was increased by 15%. Employers' incentives to hire low-skilled workers at above but close to the minimum wage were increased, through an allowance of up to EUR 2 thousand.

Latvia introduced an income-dependent tax exemption, aimed at reducing the tax burden on low-income earners. At the same time it introduced a solidarity tax for high-wage earners. This measure was aimed to reverse the regressive impact of the recent introduction of ceilings on employee social security contributions (the flat income tax rate is set at 23%). In addition, Latvia introduced a lower threshold for social security contributions (binding at the minimum wage), expanded the exemption for dependent children and abolished the exemption for dependent adults of working age in the personal income tax scheme.

Wage setting and collective bargaining

Recent policy action in the domain of wage setting mechanisms includes the introduction of a statutory minimum wage in Germany and the establishment of a Low Pay Commission to advise the government on minimum wage changes in Ireland. In Latvia, the legal framework for minimum wage setting was adjusted in 2016 and includes now the obligation to take into account more extensive analytical information, with the involvement in the minimum wage setting process of other institutions (e.g. the Ministry of Health). The UK and the Netherlands have implemented measures to fight breaches of the minimum wage legislation, the former by obliging cashless payment of at least the minimum wage. In Poland, the government adopted in 2016 an amendment to the Law on Minimum Wage which extends the coverage of the statutory minimum wage to civil law contractors.

In order to ensure a better alignment of wages and productivity, Belgium has temporarily frozen wage indexation by introducing an "index jump" and capped the maximum margin for wage developments in 2015 and 2016 at respectively 0% and 0.5%. After several years of cost saving measures, some Member States, including Lithuania, Slovenia and Spain decided to increase public wages or to reintroduce bonuses that were supressed during the crisis. Croatia, on the other hand, extended the suspension of certain pay components for government employees, such as a salary increase based on experience, Christmas bonus and annual leave bonus.

The organisation of social dialogue at the firm level was revised in France, Lithuania and Luxemburg. At a higher level, France extended social dialogue to SMEs' employees by the introduction of bipartite committees that will provide legal information and advice to both employers and employees. In Poland, a new framework for social dialogue was set up by the establishment of the Council of Social Dialogue which includes representatives of employees, employers and the Government. It replaces the previous Tripartite Commission for Social and Economic Affairs, which stopped functioning when the employee representatives left the Tripartite Commission in 2013.

There were also changes concerning collective bargaining. In Ireland, the sectoral wage setting framework that was in place until 2013 was re-established and a more precise definition of collective bargaining introduced, to address legal deficiencies. Germany adopted the law on multi-union bargaining, which aims to prevent more than one collective agreement from being applied to an identical group of employees. France introduced representativeness criteria for employers' organisations at the sectoral level in 2014, which will come into effect in 2017.

Employment protection legislation

A number of countries have introduced changes to the regulation of *individual and collective dismissals* since 2015. Significant measures were adopted in France in 2015 (as part of the "Macron Law" and "Rebsamen Law") and 2016 ("El Khomri law"). The 2015 legislation amended employment tribunal procedures to make the procedure quicker and more effective, and introduced alternative dispute resolution mechanisms. The 2016 legislation broadens the conditions for collective dismissal and reduces the cost of individual unjustified dismissals.

In Lithuania, an in-depth revision of the Labour Code was passed in 2016. The aim of this reform is to make labour market regulations more flexible. The new legislative framework facilitates individual dismissals by shortening the notification period and providing additional grounds for dismissal. The new regulation also allows a wider use of short-time working schemes.

Major reforms in other Member States provided for more stringent rules on reasonable causes for dismissal (the Netherlands), increased protection against unfair dismissal for specific types of workers (Austria), reduced scope for reinstatement (Italy), reduced costs of dismissals and uncertainty related to justified dismissals (Italy, Ireland, the Netherlands), reduced protection for working pensioners (the Netherlands) and the obligation for certain employers to prepare a social plan in case of collective redundancy (Czech Republic).

Box I.3.2: **Integration policy facing new challenges**

The year 2015 and the first six months of 2016 saw the arrival of about 1.8 million asylum seekers in the EU. Considering the high asylum recognition rate for the main countries of origin, more than half of asylum seekers can be expected to receive international protection and stay in the EU at least in the short to medium run. This has necessitated not only the provision of reception services for asylum seekers, but also an overhaul of integration policies, as refugees constitute one of the most vulnerable groups of migrants (European Commission and OECD, 2016).

Most asylum seekers aimed for countries with already a significant non-EU born, and in particular refugee population. In 2014, before the inflows peaked, the number of working-age adults who were beneficiaries of international protection was 733 thousand in Germany, 247 thousand in Sweden, and 110 thousand in Austria (Labour Force Survey data). Between January 2015 and June 2016, Germany granted international protection to 453 thousand working-age migrants, Sweden to 72 thousand, Austria to 34 thousand. These first-instance decisions were lagging the inflows of asylum seekers considerably as asylum systems became overburdened. As a comparison, the number of asylum applicants by migrants aged 18-64 was 580 thousand in Germany, 100 thousand in Sweden, and 70 thousand in Austria. In Italy, 122 thousand asylum requests were registered in the same age group, and international protection was granted in 76 thousand cases.

In the major recipient countries, the size of the challenge led to considerable policy efforts aimed at better and swifter integration already in the asylum procedure phase, on the labour market as well as through training and education. This was justified as the average decision time at the beginning of 2016 was about 6-7 months in Germany and Austria, 6-12 months in Italy and 9 months in Sweden. In 2015, Italy allowed asylum seekers to access the labour market after two months from their asylum request, down from six months. In Germany, since August 2016, the previously required labour market test has been suspended for three years in the vast majority of regions. Austria is providing language trainings from early on and Germany also opened up language courses for asylum seekers from countries with a high asylum recognition rate.

With regard to the *regulation of temporary contracts*, reforms were aimed at either limiting their abuse or injecting more flexibility on the labour market. The use of temporary contracts has been discouraged by limiting the number of renewals and the maximum duration in Poland and Slovakia, by reducing the number of temporary contract types in Poland and UK, and with the introduction of chain liabilities in case of posted workers in the Netherlands. In Cyprus, a new law was adopted in 2016 that regulates the use of fixed-term and open-ended contracts in the public sector. On the other hand, flexibility of temporary contracts has been increased by extending the number of possible renewals (France), broadening the scope and number of temporary contract types (Bulgaria, Romania) and further liberalising fixed-term contracts (Lithuania).

Integration of immigrants

Measures to facilitate the integration of immigrants have been adopted in a number of Member States in 2015, including increased funding for the PES (Sweden) and faster access to language classes and apprenticeships for asylum seekers whose application is likely to be approved (Germany). In the Netherlands, a 'participation declaration', which informs immigrants about their rights and duties, as well as about the Dutch norms and values in society, has been introduced as a part of the integration plan for migrants who are granted asylum. In Belgium, the 'Individualised Project for Social Integration' has been reformed and extended to more societal groups. Box I.3.2 provides more detail on the challenges and policy responses related to the integration of asylum seekers, with a focus on some of the main recipient countries (Germany, Sweden, Austria and Italy).

3.4. POLICY PRIORITIES AND PLANS LOOKING FORWARD

With the economy continuing to experience a moderate recovery, accompanied by gradual improvements in the labour market and social situation, but also by persistently large disparities among countries, attention is being increasingly put on revising labour market regulations, labour taxation and social policies at large, in such a way as to set the broad conditions for well-functioning

labour markets, increased protection and a fair redistribution of the benefits of growth within the society.

President Juncker (2015) in his *State of the European Union address of September 2015* included among the top priorities of his mandate "to recreate a process of convergence, both between Member States and within societies, with productivity, job creation and social fairness at its core."

The broad public consultation on a *European Pillar of Social Rights*, launched in March 2016, reflects this political priority. The Communication launching the public consultation (European Commission 2016c) clarifies that the Pillar should be seen as a reference framework expressing a number of essential principles common to participating Member States for the conduct of their employment and social policy. The Pillar should serve as a compass for renewed socio-economic convergence and drive the process of reforms at national level in the light of 21st century realities. The challenges that the Pillar is called to address are related to how to best combine flexibility and security in a changing world of work and society, and on how to support an effective process of upward convergence towards equally resilient institutions and economic structures in both the euro area and the EU at large.

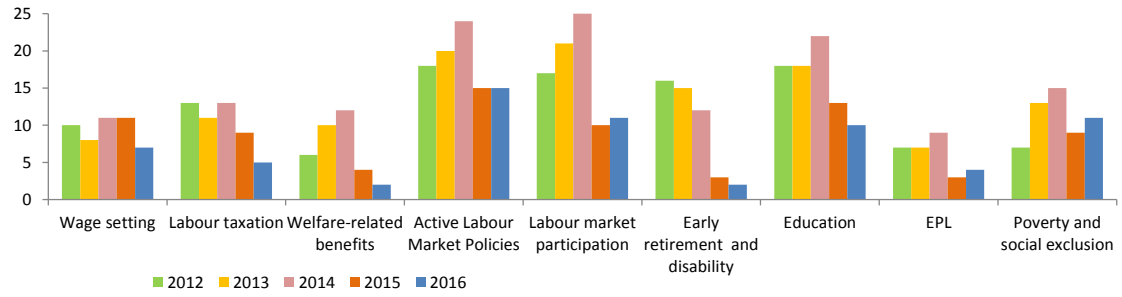
A call for a renewed process of upward socio-economic convergence was also made in the *Annual Growth Survey for 2016* (European Commission, 2015b), with a view to tackle economic and social disparities between Member States and within societies. In this context, and in a spirit of continuity with the approach endorsed in 2015, the 2016 Annual Growth Survey proposes to focus policy efforts on three key priorities: (i) re-launching both public and private investments in physical infrastructure as well as human capital; (ii) pursuing structural reforms to modernise the economy and to ensure a sound regulatory and institutional environment; and (iii) conducting responsible fiscal policies. This implies labour market policies fit to balance flexibility and security considerations and product and service markets that are able to stimulate innovation and job creation. In the labour market, in particular, the 2016 Annual Growth Survey emphasised the importance of supporting job creation, while calling for increased efforts to tackle most pressing challenges, notably as concerns long-term unemployment, but also labour market segmentation and the effectiveness of social protection systems.

- Fighting youth unemployment and long-term unemployment was also reaffirmed as a key priority for the EU with the adoption of the Youth Employment Initiative (YEI; European Council, 2013) and the Youth Guarantee (Council of the European Union, 2013) in 2013 and, more recently, with the Long-Term Unemployment Recommendation of February 2016 (Council of the European Union, 2016). The proposal for a Skills Guarantee, put forward by the Commission in June 2016 in the framework of the Skills Agenda (European Commission, 2016e), goes in the same direction as it proposes specific elements of policy design to tackle the skills challenges for those with low qualification attainments. The three initiatives follow a similar approach and can be seen as complementary, proposing an intervention model based on an individual, coordinated offer to, respectively, young people not in employment, education or training (NEETs), the long-term unemployed, or the low-skilled.

- While it is too early to assess the effects of the Recommendation on Long-term Unemployment in terms of follow-up at national level, it is already possible to see that the combination of well-targeted policy recommendations via the Youth Guarantee coupled with the provision of financial support to combat youth unemployment through the EU budget (via the YEI) has spurred positive results in terms of reform momentum in several countries (see also Section 3.2).

- The Commission Communication of 4 October 2016 (European Commission 2016g), taking stock of the main achievements of the Youth Guarantee and YEI since their launch in 2013, shows that the Youth Guarantee has been a catalyst for policy change, leading to structural reforms and policy innovation across Member States and that the Youth Employment Initiative has been central to the swift set-up of

Graph I.3.8: **Number of Country-Specific Recommendations (CSRs) by policy area and year**



Source: Council Recommendations 2012-2016. Programme countries are excluded from the European Semester, and thus do not receive CSRs, for the duration of the programme.

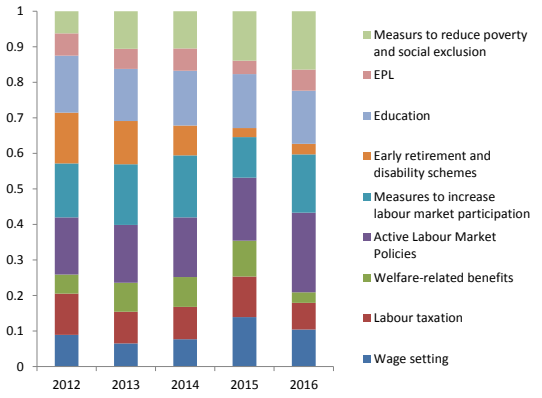
national Youth Guarantee schemes and has provided direct support to over 1.4 million young NEETs living in those regions most in need.

This attention to capacity building and to the effectiveness of service provision is also clearly reflected in the priorities set in the Country-Specific Recommendations addressed to the EU Member States in the framework of the European Semester.

Generally speaking, the streamlining of the European Semester process introduced by the new Commission in 2015 continued in 2016, but the weight of employment and social issues remained broadly stable among the Country-Specific Recommendations (CSRs) addressed to the Member States (Graph I.3.8). ([40]) Similarly to 2015, there has also been a clear differentiation across Member States. Two Member States (Denmark and Sweden) with relatively well-functioning labour markets have received no CSRs related to employment or social policies, while some other Member States (e.g. Bulgaria, France, Latvia, Lithuania, Hungary, Romania and Slovakia) have received a broad range of employment-related recommendations.

For most areas, the relative evolution of CSRs by policy field over the total number of CSRs per year has remained fairly stable as compared to previous years (Graph I.3.9). However, for some policy fields (notably early retirement and disability schemes) their relative importance has been decreasing considerably over time.

Graph I.3.9: **Country-Specific Recommendations: distribution of CSRs by policy area**



Source: Council Recommendations 2012-2016.

A closer look at labour market and social policy-related CSRs over the period 2012-2016 gives a good overview of national policy priorities from an EU perspective:

- In order to ensure that wages evolve in line with productivity, seven Member States received a CSR on wage-setting (compared to 11 in 2014 and 2015). For Belgium, Finland and France, the main concern is the effect of overall wage evolutions on cost-competitiveness, emphasising in particular in Finland the importance of the local wage-bargaining framework. In Croatia, the CSR concerns the need for harmonisation of the wage-setting frameworks across the public administration and public services. Similarly to

([40]) The classification of CSRs is done in this exercise by policy instrument (e.g. active labour market policies), rather than by expected outcomes (e.g. increasing employability). This is not always an easy task, as the recommendations can concern both objectives/expected outcomes and required policy actions.

2015, five Member States have received a CSR on the minimum wage in 2016. A major concern of minimum wage evolutions in these Member States is that they may hamper job creation and competiveness. In Bulgaria and Romania, this relates to the absence of established guidelines and clear criteria for changes in the minimum wage, which may also hamper their predictability. In France, Portugal and Slovenia, the high share of workers covered by the minimum wage may result in a further compression of the wage structure, putting upward pressure on wages overall. The CSRs acknowledge the role of social partners in wage setting.

- Since the start of the European Semester, various countries have implemented far-reaching reforms of their EPL to address labour market segmentation (e.g. Greece, Italy and Spain). As a result, there has been a progressive decline in the number of CSRs concerning EPL (7 in 2012, 9 in 2014 and 4 in 2016). In 2016, CSRs have been addressed to Portugal and France (in the latter a major reform of the dismissal law was adopted in the summer of 2016); to the Netherlands as concerns the rapid growth of temporary employment and self-employment; to Poland as concerns the abuse of civil law contracts.

- In light of substantial policy action aimed at addressing the high tax wedge on labour in particularly for low wage earners, the number of countries that received a CSR on labour taxation decreased from 9 in 2015 to 5 in 2016 (13 in 2014 and 11 in 2013). The 2016 CSRs to Germany, Latvia, Lithuania and Hungary mainly address labour taxation of low-wage earners, while the CSR addressed to the Netherlands concerns the tax distortions favouring self-employment.

- Tackling the negative consequences of the economic crisis on the social fabric has become a top priority in most recent years, in particular in those Member States with poor social protection systems or high pressure on public spending. In 2016, 11 Member States received a CSR related to poverty or social exclusion (compared to 7 in 2012, 15 in 2014 and 9 in 2015). Addressing shortcomings in the coverage and adequacy of social assistance remains high on the policy agenda especially in Bulgaria, Hungary, Latvia, Lithuania, and Spain. Also ensuring the provision of efficient social services is gaining in importance (Bulgaria, Estonia). With a view to increase the effectiveness of social protection systems, Italy received a CSR on to reviewing and rationalising social spending. Finally, some CSRs address the poverty and social exclusion of specific groups. The CSR addressed to Ireland urges measures related to child poverty in general, while five Member States (Bulgaria, Czech Republic, Hungary, Romania, Slovakia) received a CSR asking for a better access of disadvantaged groups, including Roma children, to mainstream education and childcare.

- In line with the drop in the number of CSRs concerning ALMPs in 2015, the number of Member States that received a CSR concerning ALMPs remained stable (15) in 2016, also in relative terms. Most of the CSRs in this field focus on enhancing the efficiency of the public employment services and the provision of more individualised support services, targeting in particular disadvantaged groups. These include the long-term unemployed (Bulgaria, Cyprus, Croatia, Portugal, Slovakia), the low-skilled (Croatia, Slovenia), young people (Bulgaria, Romania) and workers with a migrant background (Finland). More specific CSRs relate to improving the effectiveness of public employment services by reinforcing the coordination with social services (Spain, Portugal, Romania); reducing regional and skills mismatches (Finland, UK); facilitating the transition from school to work by strengthening the provision of quality apprenticeships (UK) and increasing the employability of older workers by means of targeted life-long learning (Slovenia).

- In 2016 three countries received CSRs addressing the integration challenges of people with a migrant background (AT, BE, FI) with reference to education and labour market policies. The increased policy focus on integration is also reflected in the June 2016 Commission Communication “Action Plan on

the integration of third country nationals" (European Commission, 2016d).

- Finally, eleven Member States received a CSR with a view to enhance labour market participation, often targeted at under-represented groups (women, older works, low-skilled). In order to increase female activity rates, a number of countries (Czech Republic, Estonia, Ireland, Spain, Italy, Austria, Slovakia, UK) received CSRs demanding an increase in in the offer of childcare and long-term care provisions, measures to address the gender pay gap and a reduction of the financial disincentives to work for second earners. Germany was asked to encourage the activity rate and employability of older workers by means of financial incentives for later retirement, while Poland was recommended to reform existing preferential pension arrangements for specific categories of workers.

3.5. CONCLUSIONS

The broad policy trends emerging in most recent years continued in 2015-2016. Following the attention paid to structural reforms aimed at enhancing the adjustment capacity of labour markets, especially in countries most heavily hit by the crisis, the focus is now being primarily put on revising the tax and benefit systems, along with improving the capacity and quality of ALMPs, of the employment services and of social services in general. Reforms are also being pursued in those countries that had weathered the crisis relatively well. Making a better link between service provision and financial support through the development of effective welfare states is at the heart of policy action in many Member States.

Most recent reform trends reveal an increased awareness of the need to pursue broad structural reforms aimed at balancing the different elements of the employment and welfare fabric. Reforms are no longer driven by short-term considerations linked to macro-economic pressures as in the aftermath of the crisis, but they are guided by the willingness to sustainably equip national systems with a greater capacity to adapt to changing economic conditions, in exchange for greater support for and protection of workers.

With the significant acceleration of reform activity witnessed since the start of the crisis, the conduct of systematic analyses of the effects of reforms adopted or envisaged is also gaining in importance. This notably relates to the need to disentangle the short-term from the long-term effects of policy measures, taking into account their possible distributional implications and the effect on the ownership of the reforms themselves. A better awareness of the distributional implications of reforms may lead to reform designs that minimise their short-term costs. This, together with proper communication and transparency about both the expected costs and the intended benefits of policy measures, could be instrumental to increasing overall reform acceptance and ownership. The quality of institutions and underlying governance arrangements is also being increasingly recognised as a key factor to ensure the success of reform efforts and their effective implementation, including with regard to the capacity to minimise unintended side-effects.

Part II

Analytical Chapter

1. THE MACROECONOMIC IMPLICATIONS OF MINIMUM WAGES

This chapter assesses the macroeconomic implications of the minimum wage and how its institutional design influences these outcomes. First, the chapter looks at the institutional dimensions of statutory minimum wage setting; on the basis of this information, an indicator of institutional stringency is built to characterise the degree of predictability of minimum wage setting. The institutional design influences both the growth of the minimum wage and its response to underlying macroeconomic variables. Second, it explores the impact of minimum wage changes on total employment and employment of youth and low skilled. The effects on overall employment are on average small although they can be larger for low wage earners. Also the pass-through of minimum wage changes on prices is limited, implying that minimum wage is effective in protecting low-wage earners' purchasing powers. Indeed, econometric evidence confirms that minimum wage increases support more consumption of low than of high income earners. Third, the chapter looks at dynamics that follow minimum wage discretionary changes. The analysis suggests that discretionary changes in the minimum wage have temporary negative small effects on total employment which subsides quickly. Movements in response to minimum wage shocks are mainly driven by countries where the institutional design makes these changes less predictable and more discretionary.

1.1. INTRODUCTION

There is a high and increasing interest in the minimum wage as a policy tool to reward work, improve the income distribution and provide families relief from poverty. In the Political Guidelines for the Commission, President Juncker (2014) said "(…) I believe it is necessary for all EU Member States to put in place a minimum wage". Wages (including the minimum wage) is one of the 20 policy domains included in the European Pillar of Social Rights. In the context of the European Semester, several countries have received a Council Recommendation to improve the transparency of their minimum wage setting, or to ensure that their levels are supportive of job creation and competitiveness.

The minimum wage sets a floor to earned labour income and in that way can reduce the risks of in-work poverty associated with low pay. It may also reduce wage inequality, especially at the bottom of the wage distribution. As the labour market gets concentrated and certain types of labour fragmented, the relative bargaining power shifts in favour of the employer. In this case, the minimum wage would re-establish a balance in the bargaining position between the employer and workers. By contributing to *levelling the playing field*, a minimum wage, if not too high, could lead to higher wages and higher employment. ([41]) It may also provide incentives to search for a job more intensively, thereby overcoming the costs of job-search. On the other hand, if too low, the minimum wage might be an ineffective wage floor.

Yet, it interacts with various aspects of the economic and social situation. If too high, the positive effects on labour incomes of an increase in the minimum wage are offset by the negative effect on employment of those with productivity below the minimum wage, as predicted by the perfectly competitive labour market model (e.g. Cahuc et al. 2014, Manning, 2016).

The minimum wage may affect the broader wage distribution, putting upward pressure in particular on wages slightly above the minimum wage. By compressing the wage distribution, it may create distortions, for instance, reducing the incentives for upskilling or pushing low-wage activities into the informal economy. At the same time, its level and rate of change may also serve as a reference for further wage settlements, thus providing guidance for a significant part of the wage distribution, especially when wage-setting institutions are weak.

Minimum wages affect the broader economic context through their impact on consumer prices and aggregate consumption. In competitive labour and product markets, minimum wage updates increase the cost of labour and consumer prices.

([41]) In the monopsony model (Stigler, 1946), the wage paid to the additional hired worker is below its productivity and wages and employment outcomes are below those of a perfectly competitive labour market. Similarly, the presence of information asymmetries leads workers to refuse a job if the wage is too low.

This effect is potentially stronger in sectors with a high share of minimum wage earners. Thus, the impact on consumption is ambiguous and depends on the impact of minimum wage increases on consumer prices, wages, employment and the interaction with the tax-benefit system. The negative effects on employment through higher labour costs can however be mitigated by demand effects: increased purchasing power of low-wage earners may increase the demand for labour of other low-wage earners. Overall, the employment effect of the minimum wage is theoretically ambiguous, and it is left for empirical studies to estimate its effect.

The empirical evidence, mainly on the US, concludes that the effects on employment from minimum wage rises are of a small magnitude. Indeed, potential negative effects on the demand for labour are mitigated by a number of possible ways in which labour markets may depart from the hypothetical model of perfect competition, including, for instance, the bargaining of employers in their relationship with employees.

Finally, minimum wages also have an impact on how the economy adjusts to shocks and fluctuations and can contribute to the emergence or narrowing of macroeconomic imbalances. This underlines the importance of the minimum wage as a policy tool, especially considering that governments play a key role in the design of the minimum wage setting and in statutory minimum wage decisions, while they can only indirectly influence, if at all, other private sector wages. In more detail, for example, minimum wages may cushion fluctuations in aggregate demand and help avoiding the risk of wage *undershooting*, i.e., wages falling below levels warranted by fundamentals, or the risk of deflation. On the other hand, it may also hamper addressing an *overshooting* of wages, and have a bearing on the adjustment of the economy towards tradable sectors when that is necessary to absorb high unemployment.

This chapter studies various dimensions of the minimum wage. It provides an overview of the institutional framework for minimum-wage setting in the different EU Member States. Then, it studies the impact of minimum wages on employment, wages, prices, consumption and poverty as well as the interactions between minimum wage policies and these variables over time. The last section concludes.

1.2. INSTITUTIONAL DIMENSION OF MINIMUM WAGE POLICY

This section provides an overview of the different institutional frameworks for minimum wage setting in place in EU Member States. As a start, it reviews the institutions in place for setting wage floors, distinguishing between countries with and without a statutory minimum wage. Thereafter, it studies the different approaches in statutory minimum wage setting systems in more detail by discussing three important dimensions: (1) the actors involved and the level of government discretion in the decision-making process; (2) the timing of updates, including frequency and predictability; and (3) the criteria that should be taken into account in case of an update. Finally, for countries with a statutory minimum wage, an indicator of institutional flexibility is developed, based on characteristics of the minimum wage setting process.

1.2.1. Institutional framework for wage floors: Current situation in the EU

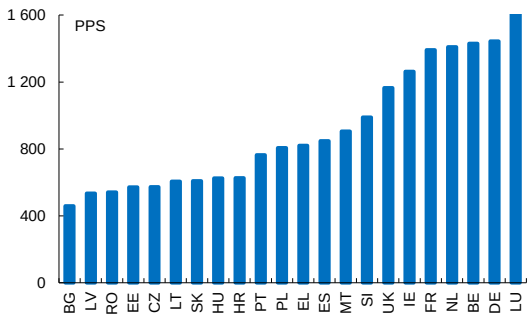
1.2.1.1. Countries with statutory minimum wage

In the EU, 22 Member States have a national statutory minimum wage in 2016: this is a legal or regulatory instrument making that wage floor legally binding for all workers in dependent employment. Some EU countries have introduced it in the recent past: the UK (1999), Ireland (2000), and Germany (2015).

The level of the minimum wage varies widely across countries; this is the case even when controlling for differences in price levels (i.e. by making minimum wage figures comparable across countries in terms of their purchasing power) (Graph II.1.1).

There is a substantial variation in the ratio of minimum wage to average, the so-called Kaitz ratio. For instance, while in Spain the proportion of the minimum wage over the mean wage is the lowest in the EU at only 33%, it is around 50% in France, Luxembourg and Slovenia (Graph II.1.2.

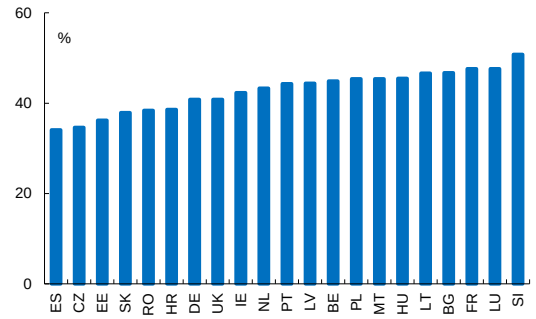
Graph II.1.1: **Minimum wage levels: July 2016 (PPS)**



(1) Minimum wage data for Portugal for January 2016.
Price levels expressed in purchasing power standard (PPS).
Source: Commission services, Eurostat

Some countries allow a differentiation of statutory minimum wage for certain categories of workers; sub-minimum rates or exemptions from minimum wage provisions can be set for certain groups, for instance youth, apprentices, labour market entrants, disabled workers, or long-term unemployed. Sub-minima tend to be defined as a share of the standard statutory minimum wage and thereby changes to the latter lead also to adjustment of the sub-minima.

Graph II.1.2: **Kaitz index: minimum wage as a proportion of the mean wage in 2015 (%)**



(1) 2016 data for Germany, Malta and Slovenia; 2014 for Belgium, Estonia, France, Latvia, Luxembourg, Hungary, Netherlands and Romania.
Source: European Commission, Eurostat

This possibility of hiring at rates below the standard minimum wage can be justified to prevent the loss of employment of those groups whose productive capacity is below that of the average minimum wage earner.

Most minimum wage exceptions concern sub-minima for youth or apprentices. At least nine Member States provide for these exceptions. In other countries, the statutory minimum wage is differentiated on the basis of the difficulty of the occupation (e.g., Czech Republic or Slovakia), skills or qualifications (Hungary or Luxembourg), employment tenure (Greece), or on their status of (re-)entrants into the labour market (Ireland, Poland or Germany with sub-minima in the first two cases and exemptions in the third one). For the same worker, these exceptions have a limited duration, either explicitly – e.g. in Germany long-term unemployed are exempted from minimum wage provisions for six months – or implicitly, with the youth sub-minima not being applicable once a certain age is reached.

In other cases, inability-to-pay clauses are foreseen to take into account the employer's financial situation. For instance, in Ireland, Luxembourg, Malta and the Netherlands, employers in difficulties may temporarily undercut the minimum wage if authorised to do so by a public authority (government or court depending on the country) (ILO, 2014). Collective agreements can undercut the statutory minimum wage by 5% in Croatia.

1.2.1.2. Countries without a statutory minimum wage

Six Member states do not have a nation-wide statutory minimum wage. Instead, wage floors are only set in collective agreements often at sector level, which altogether tend to cover a high share of the labour force. This is the case of Austria, Denmark, Finland, Italy and Sweden. In Cyprus, the government sets statutory minimum wages only for certain occupations where workers are considered to be in a week bargaining position.

The scope of collectively-bargained wage floor regimes depends on the robustness and coverage of collective bargaining. Countries with such bargained wage floor regimes generally have a comprehensive collective bargaining system, with high densities of both unions and employers associations (higher or even much higher than in most other EU Member States). As a result, a large proportion of workers are directly covered by a collective agreement.

Statutory minimum wages and collectively agreed wage floors are not directly comparable. The statutory minimum wage is a single floor for the

whole nation, which is under the direct control or influence by national authorities. It is a minimum guaranteed pay for those employees who are not covered by the (higher) wage floors laid down in collective agreements. Collectively-bargained wage floors are the outcome of bi-partite negotiations, which can be related to hundreds or even thousands of different agreements that in turn can, and often do, foresee quite complex and differentiated pay schedules, both at sectoral, firm or territorial level.

Statutory minimum wages and collectively-agreed wage floors can co-exist in the same country: the existence of minimum wage does not prevent sub-national wage bargaining. Instruments like the extension of collective agreements to non-signatory parties can broaden the coverage of collective agreements and wage floors set by those agreements, even in countries with statutory minimum wage and low social partners' density.

The relationships between collective bargaining and statutory minimum wage may be multiple. For instance, a high minimum wage may leave less room for bargaining and lead to lower social partners' density. However, high collective bargaining coverage and high density of social partners can help to make a better informed minimum wage policy.

Recent studies show that collectively bargained wage floors tend to be set higher as a percentage of the average wage than statutory minimum wages. ([42]) High wage floors under collective bargaining may come at the expense of non-coverage. Garnero, Kampelmann and Ryckx (2013) find evidence of a trade-off between high wage floors and more people being paid below those minima under collectively bargained minimum wages regimes.

([42]) See studies by Boeri (2012); Kampelmann, Garnero and Ryckx (2013); and Schulten et al (2015). Boeri (2012) states that, especially in countries with high unemployment, governments setting a statutory minimum wage are more likely to internalise macro-economic constraints and fiscal implications of an increase as compared to parties engaged in fragmented collective bargaining. To the extent that membership is more encompassing and collective bargaining is more strongly coordinated, negotiating parties are more likely to take such constraints into account when setting wage floors.

This may result from low-paying sectors, firms and individuals not covered by collective bargaining. Thus, if a large and increasing share of the workforce is not covered by collectively agreed minima, the case for introducing a statutory minimum wage becomes stronger. In this perspective, discussions on the introduction of a statutory minimum wage took place recently in Cyprus and Germany just introduced it.

1.2.2. The institutional features of statutory minimum wage setting systems

The mechanism used to fix the minimum wage in EU countries can be characterised along three dimensions: (1) government discretion and actors involved in the decision-making process; (2) timing of updates, including frequency and predictability of updates; and (3) criteria to be taken into account in case of an update. This section looks at these dimensions more in detail before providing a numerical characterisation of Member Sates' minimum wage setting regime.

1.2.2.1. Role of government and other actors in the decision process

There is a considerable cross-country variation in the role of the government, social partners and other actors in the decision-making process. Decisions on minimum wage levels can come from bilateral negotiations between social partners or tripartite agreements or just unilateral government decisions. In some countries, indexation to prices or wages or both are a dominant element of minimum wage setting.

Based on an extensive study of the national frameworks, three stylized models for minimum wage setting are identified on the basis of the role of government and other actors in the decision making process:

- Institutionalised decisions,
- Indexation to prices or wages, and
- Non-institutionalised processes.

Table II.1.1 summarises the different country cases.

Table II.1.1: **Role of the government and other actors in the decision-making process**

Statutory minimum wage							Non-statutory minimum wage
Institutionalised decisions					Indexation	Non-institutionalised decisions	
Independent experts-led process	Bilateral / social partners experts led process	Gov't following tripartite consultations process	Gov't after consulting social partners	Bipartite/tripartite negotiations possible, else government decides			
EL	DE	HU	ES	EE	BE	BG	AT
IE		LT	HR	PL	FR	CZ	CY
UK		LV	RO	SK	LU		DK
		PT			MT		FI
					NL		IT
					SI		SE

Source: Relevant national legislation; ILO Working Conditions Laws Database / Minimum wage fixing database

Institutionalised decisions

The key feature here is that the decision making process is well-established with relatively specific roles for the main actors. Still, it can include markedly different variants and combine bargaining, negotiation and consultations to different extents.

For example, the process can be led by a specialised body or emphasis can be put on consultation in a tri-partite format, with the final decision taken by the public authorities. Moreover, in some countries, negotiations between social partners or tri-partite deals have priority over government intervention (e.g. Slovakia in the former case, Poland in the latter), while in others negotiations are an option but a unilateral decision by the government is possible.

Admittedly, the distinction between different models is not so neat, especially once the actual behaviour of the players is taken into account. For example, in some cases requirements on consultation may be formal with consulted actors risking not having real influence on the minimum wage adjustment; the opposite may happen where the eventual decision is carefully prepared, despite a loosely-defined process.

In the UK, an independent specialised body – the *Low Pay Commission* (LPC) – plays a leading role in making recommendations to the government on the annual minimum wage adjustment. ([43]) The LPC makes only recommendations, with the final decision staying with the government; yet, if the latter deviates from the recommendations it has to lay a report before the Parliament on the reasons for such a decision. So far, the UK government has always followed the LPC proposals. ([44])

Ireland adopted in 2015 an approach similar to the UK's with a *LPC* which plays the same role as the *LPC* in the UK. The LPC advises the Minister, who can deviate from the *LPC* recommendation but has to justify his/her decision before the Parliament.

In Greece, newly adopted legislation (to enter into force as of 2017) foresees that the minimum wage will be set by the government after consultations with and advice from social partners and experts. As in the UK and Ireland, experts would play a specific role in making non-binding proposals after consultation with social partners and research institutions. In addition, consultations with and advice from social partners are foreseen as one of the steps of the procedure. Germany represents another case where a specialised body plays an important role. A committee appointed by social partners will propose updates to the level of the minimum wage. ([45]) The government can adopt or reject the commission's proposal, but it cannot change it. ([46]) The development of average wages laid down in collective agreements is a decisive benchmark to be taken into account. Overall, the minimum wage setting mechanism has a strong bargaining component owing to the bilateral nature of the social partners' committee as well as of the

([43]) The *LPC* consists of 9 members appointed by the government having a composition balanced between 3 profiles: trade unions, employers and independent experts, but all serving in their personal capacity.

([44]) In April 2017, the UK is introducing a National Living Wage as the pay floor for those aged 25 and over. When announcing it last autumn, the government set as objective to have it at 60% of median earnings by 2020 (GBP 9 per hour) subject to sustained growth. The path to get to such a target will still be proposed by the LPC like the wage floors for those younger than 25.

([45]) The committee is composed of 7 social partners' representatives and 2 no-voting advisors with academic backgrounds and proposed by social partners.

([46]) This process will take place with the first minimum wage update in January 2017; the initial minimum wage level that came into force in 2015 was set by the government.

explicit call to take into account developments in recent collective agreements.

Tri-partite approaches with the final decision being with the government characterise the system in Hungary, Lithuania, Latvia and Portugal – in the latter, an institutionalised tripartite body has to be consulted before the government takes a final decision.

Spain, Croatia and Romania share characteristics with the previous group of countries. Yet, the consultations with social partners do not have to take place in an institutionalised setting; instead the requirement is only to consult social partners, with the approach to consultations being left to government will; only in the case of Spain does the law go further and require the government to consult the most representative social partners.

In all, broad public consultations and disclosure of information on minimum wage policies add transparency, predictability and should allow for better consideration of the possible implications of minimum wage policies. Social partners' representatives and other stakeholders are also well-suited to voice the concerns of those more directly affected. Independent experts may be well-placed to make broader economic and social considerations, including on the necessary links between minimum wage choices and other relevant policy areas and their implication for working age groups.

Rule-based indexation

In 6 Member States, minimum wage updates are largely driven by indexation to prices, wages or both. That is the case at present of Belgium, France, Luxembourg, Malta, the Netherlands and Slovenia. Often, it is also possible to make discretionary changes on top of what is due to indexation.

In Belgium, indexation to consumer prices is the key driver of minimum wage updates and widely used also for other wages, even if the exact modalities vary across sub-national collective agreements. More specifically, the minimum wage is agreed within the framework of a bi-partite national collective agreement every other year (which is automatically extended to the whole economy). A specific consumer price index – the *health index* - is used (excluding items like tobacco, alcohol, petrol, diesel and the impact of taxes on energy products).

Luxembourg indexes wages to headline consumer price inflation, which is triggered when inflation reaches 2.5%. By law, all wages in the private and public sectors are subject to indexation. Every two years, the government reports on changes to the overall economic conditions and incomes, and on that basis it may propose increasing the minimum wage; the law does not set a role for social partners in these decisions.

In Slovenia, the minimum wage is adjusted every year by at least the increase in consumer prices in the previous year. The exact amount of the minimum wage is determined by the labour minister after prior consultation with the social partners.

Malta has a particular system of wage indexation: each year the government issues a national standard order increasing all salaries, including the minimum wage, by an absolute amount. This fixed pay increase known as the *cost-of-living adjustment* (COLA) reflects the change in the retail price index applied to a reference base wage, which is somewhat higher than the minimum wage The exact minimum wage level is set by the government after recommendations by the Employment Relations Board (which includes government's representatives as well as social partners and independent experts).

In the Netherlands, the indexation is relative to the average wage increases in recently-signed collective agreements and takes place twice a year (on 1 January and 1 July). However, there is the possibility of not updating the minimum wage rate if either the minimum wage revision implied by the average wage rise in collective agreements is considered too high with the risk of leading to higher unemployment or if the increase would lead to higher expenditure on social benefits (indexed to the minimum wage) with the risks of rising taxes or contribution to ensure financing of higher benefits.

In France, the minimum wage is linked to both price and wage developments: it should at least be indexed to the evolution of the consumer price index (for a consumption basket representative of

those at the bottom 20% of the income distribution) plus 50% of the increase in the purchasing power of the wages for workers and employees. There is also the possibility of topping up – so-called *coupe de pouce* – those increases by government decision after (sequential) opinions by groups of independent experts on the minimum wage and by the tripartite collective bargaining commission where unions and employers representatives seat (*La Commission Nationale de la Négociation Collective* – CNNC); the government may also submit its own report to the CNNC.

Indexation can be seen from different perspectives. It protects real wages against increases in the cost of living and may reduce uncertainty and conflict, providing a focal point for (minimum) minimum wage updates negotiations. Yet it makes real wages more rigid with negative implications for low wage employment. Real wage rigidity delays labour market adjustment in the case of temporary aggregate or permanent sector-specific productivity shocks that require, respectively, changes in aggregate or relative wages. This is an issue in particular when the minimum wage level is high and the possibility of inability to pay clauses limited or no-existent in practice. Finally, indexation can lead to wage-price spirals and make nominal shocks (e.g., a change in commodities prices in world markets) more persistent (see also European Commission, 2011).

A rigid indexation can be problematic especially when inflation is far away from the desired rate (from below or above) – risking consolidating deflationary or inflationary expectations respectively – and in times of low productivity and rising unemployment. In addition, indexing minimum wages to average wages may also be problematic, *inter alia*, when minimum wage earners have productivity developments different from the average.

Non-institutionalised processes

The minimum wage setting is non-institutionalised when governments can determine the adjustment of the statutory minimum wage, without any formal obligation of negotiations or consultation. In Bulgaria and the Czech Republic, the government determines the adjustment of the minimum wage without specific rules and any form of negotiations or institutionalised consultation with the social partners or with experts.

This does not mean that in other countries, notably those with more loosely defined processes, it cannot *de facto* boil down to unilateral government decision when bilateral negotiations did not bear fruit. At the same time, the lack of tri-partite agreements may also reflect a strategic behaviour whereby some players count more on a fall-back government decision than on consensual solutions.

The lack of transparent principles and guidelines can lead to unpredictability of outcomes. This can introduce too much volatility in minimum wages, making their setting more dependent on the electoral cycle or any other factor that steers minimum wage rates in an unchecked way instead of linked to underlying economic fundamentals. While on the one hand, in a wider discretionary framework, policy makers could be able to design the optimal policy response to unforeseen circumstances, on the other hand too much discretion may raise the risk of opportunistic decisions and no internalisation of economic constraints, with no checks and balances to foster sound decisions.

Thus, a rules-based framework forces the different players (including of course, politicians and social partners) to adhere to a consistent course of action across circumstances. Indeed, if the minimum wage setting regime is insulated from short-term electoral or other motivations, then the outcomes of minimum wage policies can be time consistent, meaning that the policy setting makes consistent short-term (e.g. income support and poverty alleviation) and broader long-term outcomes (i.e. sustainable job creation and economic dynamism).

1.2.2.2. Frequency of adjustment

The frequency and predictability of minimum wage adjustments affect how sensitive the minimum wage is to a changing context, while keeping its objectives intact across times and changing circumstances. EU countries differ considerably in their frequency of revising the minimum wage (see Table II.1.3). In most cases, the minimum wage is adjusted once a year, sometimes with precisely set calendars; in other cases, only the annual frequency is prescribed and

Table II.1.2: **Criteria taken into account in the minimum wage setting process**

		BE	BG	CZ	DE	EE	IE	EL	ES	FR	HR	LV	LT	LU	HU	MT	NL	PL	PT	RO	SI	SK	UK
Labour market	Employment/ unemployment/ Job creation				*		*	*							*			*			*	*	*
Broad economic situation	Economic developments and situation							*	*	*		*			*			*			*		
	Productivity						*	*	*									*	*				
	Trade, exchange rate, competitiveness, developments in trading partners						*	*				*											*
	Social benefits / Taxes and contributions / Fiscal impacts											*					*	*					
Wages and incomes	Other wages			*				*		*	*							*			*	*	
	Retrospective collective-agreements wage developments				*												*						
	Purchasing power / incomes & needs of MW earners or workers / income & prices policies						*	*	*									*	*			*	
Prices	Consumer prices (other than rule-based indexation)			*				*	*			*						*	*			*	
	Indexation and /or COLA	*								*				*		*					*		
	Consumer prices (next year's)							*										*					

Source: Relevant national legislation.

within this group some member states, prescribe the date of entry into force of the update (often January as for instance in France, Malta or Slovenia).

Table II.1.3: **Frequency of the minimum wage adjustments**

Infra-annual	Annual			Every 2 years	Other	Not specified
	With set calendar and procedures	*Only date of kick start or of entry into force is set*	*Without calendar or key dates set*			
NL (Jan & July)	EL IE LV PL [1] SK	CZ FR [2] HR MT SI	ES HU PT	DE BE [3] LU [3]	UK [4]	BG EE LT RO

(1) 1: twice a year (Jan-July) if inflations exceeds 5%; 2: (additional) automatic indexation whenever inflation exceeds 2% from the previous MW update; 3: on the top of indexation to consumer prices;
4: from time to time
Source: Relevant national legislation; ILO Working Conditions Laws Database / Minimum wage fixing database

In the Netherlands, the possible update takes place every six months (January and July). Germany sets minimum wage to be revised every two years as of 2017 the same frequency as in Belgium and Luxembourg – on top of the regular indexation. In the UK, the legal provisions require irregular minimum wage updates ("*from time to time*"), but in practice the minimum wage is revised every October. Finally, a few countries have not set any adjustment frequency (Bulgaria, Estonia, Lithuania, and Romania).

1.2.2.3. Criteria to be taken into account

The criteria or parameters taken into account for minimum wage updates guide the fixing of the actual minimum pay rates. In that way, they can foster stability of the minimum wage setting process and a balanced and widely-accepted choice of criteria can help in confirming the broad objectives of the minimum wage policy.

Labour market and economic conditions, overall wages and prices developments are the most common criteria in the national legislations (Table II.1.2). In some cases, workers' purchasing power and indexation to past inflation (in the cases of rule-based indexation) or productivity are also considered. On the other hand, social benefits or labour taxation are usually not taken into account. The same holds for minimum wage coverage.

Overall, the requirements are not exhaustive. Minimum wage legislations make only broad reference to them without stating how these parameters have to be used in practice. For instance, there is a general reference to the need of taking into account wage developments, but only for two Member States the legislation makes a link with the outcome of collective bargaining.

Table II.1.4: **Summary of the three institutional dimensions of the minimum wage setting framework**

Statutory minimum wage									p.m.: Non-statutory minimum wage
		Taxonomy							
			Institutionalised decisions						
		Non-institutionalised decisions	Gov't after consulting social partners	Gov't following tripartite consultations process	Bipartite/Tripartite negotiations possible, else government decides	Bilateral / social partners experts led process	Independent experts-led process	Indexation	
Frequency of revision	Infra-annual							NL	AT
	Annual: With set calendar and procedures			LV	PL		EL		CY
					SK		IE		DK
	Annual: Only date of kick start or of entry into force is set	CZ	HR					FR	FI
								MT	IT
								SI	SE
	Annual: Without calendar or key dates set		ES	HU					
				PT					
	Every 2 years					DE		BE	
								LU	
	Other						UK		
	Not specified	BG	RO	LT	EE				
Colour legend / number of criteria		0	1	2	3	4	5	6 or more	

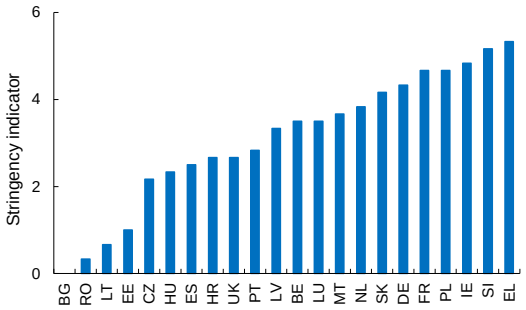
Source: Relevant national legislation.

1.2.3. An indicator of institutional stringency of minimum wage setting framework

Table II.1.4 puts together the three dimensions reviewed above (discretion, frequency of revisions, and criteria). Based on this qualitative information, an indicator of *institutional stringency* has been developed. This indicator provides a measure of the restrictiveness of the decision making process. Lower values point to more flexibility, higher ones to more stringency (i.e. less room for discretion and more predictability). The methodology to develop the indicator is explained in Box II.1.1.

Graph II.1.3 presents the value of the indicator for the EU Member States with a statutory minimum wage. On the basis of this indicator, the minimum wage setting process is more tightly regulated in Greece, Slovenia, Ireland, France and Poland. In contrast, it is the most flexible (i.e. *less predictable*) in Estonia, Lithuania, Romania and Bulgaria.

Graph II.1.3: **Indicator for the stringency of the minimum wage decision-making framework**



Source: Commission services, based on relevant national legislation

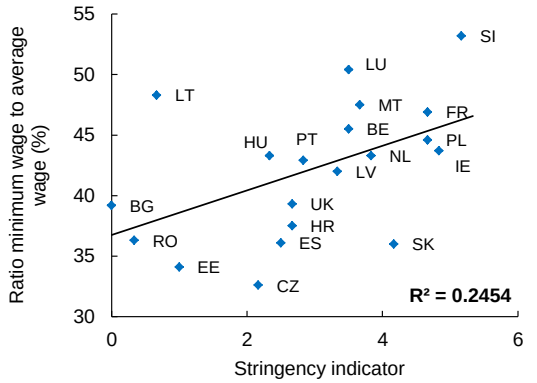
Intermediate values of the indicator may reflect a trade-off between the different dimensions of the indicator with stringency or flexibility in one or two dimensions being offset by stringency or flexibility in other dimensions.

Table II.1.5: **Determinants of minimum wage changes**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent variable: Minimum wage growth	Basic specification	Years following legislative elections	Countries with Institutional stringency index: higher than median	lower than median	higher than median	lower than median	higher than median	lower than median	higher than median	lower than median
Average wage growth	0.39 ***	0.48 ***	0.013	0.49 ***	0.012	0.55***	0.019	0.48 ***	-0.20	0.58***
	(0.13)	(0.23)	(0.16)	(0.17)	(0.16)	(0.18)	(0.15)	(0.17)	(0.13)	(0.16)
average wage growth in the year following elections									0.89***	-0.09
									(0.16)	(0.32)
Consumer price Inflation	0.39***	0.28	1.03***	0.29 *	1.02***	0.16	1.03***	0.28*	1.3 ***	0.12
	(0.13)	(0.23)	(0.15)	(0.16)	(0.16)	(0.17)	(0.15)	(0.16)	(0.15)	(0.16)
Consumer price inflation in the year following elections					0.013	0.13			-1.14 ***	0.21
					(0.11)	(0.08)			(0.21)	(0.81)
Lagged employment growth	0.33***	0.015	0.22**	0.35 *	0.22**	0.33*	0.44***	0.15	0.30 ***	0.14
	(0.12)	(0.27)	(0.11)	(0.18)	(0.12)	(0.18)	(0.13)	(0.23)	(0.12)	(0.23)
Lagged employment growth in the year before the elections							-0.48***	0.60***	-0.32***	0.52
							(0.17)	(0.35)	(0.16)	(0.35)
Constant	0.021 ***	0.028 ***	0.015 ***	0.028 ***	0.015***	1.3***	0.013 ***	0.028 ***	0.015 ***	0.029 ***
	(0.004)	(0.007)	(0.004)	(0.004)	(0.004)	(0.63)	(0.004)	(0.004)	(0.004)	(0.005)
Observations	383	103	192	163	192	163	192	163	192	163
R-squared	0.80	0.85	0.72	0.82	0.71	0.83	0.72	0.82	0.77	0.83
Number of countries	18.0	18.0	9.0	8.0	9.0	8.0	9.0	8.0	8.0	8.0

(1) Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. The sample includes Belgium, Czech Republic, Estonia, Spain, France, Hungary, Ireland, Lithuania, Luxembourg, Latvia, Netherlands, Poland, Portugal, Romania, Slovenia, Slovakia and the UK. Wage growth is measure by the rate of change of nominal compensation per employee.
Source: DG ECFIN AMECO database and Eurostat LFS.

Graph II.1.4: **Correlation between the stringency indicator and the level of the minimum wage**



Source: Commission services, based on Eurostat and relevant national legislation

Cross-country illustration of the main features of the minimum wage setting is provided in Graph II.1.4. At a first glance, countries with higher ratios between minimum and average wage (i.e., with higher Kaitz indexes) have more rigid minimum wage setting systems – i.e. relatively more predictable and less discretionary– (Graph II.1.4). ([47])

([47]) The correlation coefficient between the Kaitz index and the indicator of institutional stringency of the minimum wage setting system is 0.5. Moreover, about ¼ of the difference across countries in the Kaitz index is explained by the indicator of institutional stringency. These are simple correlations, which do not provide any information on the causality.

Table II.1.6 shows the correlation between the Kaitz index and various sub-components of the minimum wage stringency index. Only the correlation with *government discretion* (0.7) is statistically significant, while the other categories have small but statistically insignificant values. A positive correlation implies that the minimum wage is higher (relative to the median) when there is limited discretion by the government (i.e. or the minimum wage setting is mainly rule based).

Table II.1.6: **Correlation among sub-indices of indicator of minimum wage setting stringency and with Kaitz index**

	Flexibility of Minimum wage setting regime - sub-indexes			
	Government discretion	Frequency of Update	Predictability	Criteria called for a decision
Government discretion	1			
Frequency of Update	0.4	1		
Predictability	0.2	0.4	1	
Criteria called for a decision	0.3	0.5	0.6	1
Kaitz index	0.7	0.3	0.04	0.2

(1) High values of the Kaitz index imply a high minimum wage as percentage of the median wage. For sub-indices of minimum wage stringency a low value means high discretion , low frequency and predictability, limited criteria to be considered when updating the minimum wage.
Source: Commission services and Eurostat.

The high correlation between the Kaitz index and the overall index of institutional stringency of the minimum wage setting is driven by the high correlation with the sub-complement government discretion in minimum wage setting. The relation

Box II.1.1: **How flexible or stringent is minimum wage setting?**

In order to assess the flexibility or the stringency of the minimum wage setting framework, this box develops a "stringency index". The index is based on the conversion of qualitative information on three components of the legal minimum wage setting framework: government discretion in the decision process, timing of the update (frequency and predictability of the updating process) and the criteria used for the update. The information is collected in the course of an intensive literature review and relates to the institutional framework in place in the 22 EU Member states that have a statutory minimum wage in early 2016. The qualitative information on each of the dimensions is transformed into numbers on a scale (0-6) as indicated in Table 1.

The ranking is built to reflect the degree of discretion of the government in setting the minimum wage: lower ratings are assumed to reflect more flexibility (full flexibility at the extreme) while higher readings reflect less room for discretion, in other words, more stringency. Whereas there is of course some subjectivity in this choice of indicators and their weighting, the index allows a holistic view and especially a systematic way of characterising the flexibility or stringency of the minimum wage setting. The ratings just reflect the restrictiveness of the framework and do not have a normative value attached.

Table 1: Detailed items used to compile the stringency indicator

1. Government discretion, weight: 33.3 (in %)		Ratings
Non-institutionalised decisions		0
Institutionalised decisions	Gov't after consulting social partners	1
	Gov't following tripartite consultations process	2
	Bipartite / tripartite negotiations possible, else government decides	3
	Bilateral / social partners experts led process	4
	Independent experts-led process	5
Rules-based indexation to past prices or wages inflation or both		6
2. Timing of update, weight: 33.3 (in %) consisting of:		
2a. Frequency of update, weight: 16.6 (in %)		
Not specified		0
Infra-annual		2
Annual		4
Every 2 years		6
2b. Predictability of updating process, weight: 16.6 (in %)		
Without set calendar		0
Only data of entry into force is set		3
With set calendar (and procedures)		6
3. Criteria called for a decision on the update, weight: 33.3 (in %)		
0		0
1		1.5
2		3
3		4.5
4		6

between low government discretion and high levels of the minimum wage is influenced by the fact that the Kaitz index is high in countries where updates of the minimum wage occur mainly via indexation (e.g., Slovenia, Luxembourg and Malta). In addition, with intermediate degrees of institutionalisation, having more players and less discretion might lead to more moderate minimum wage changes as the interest of wide groups of workers are taken into account. Thus, in cross-country comparisons more rule-based minimum wage updating systems lead to a higher Kaitz index. ([48])

Table II.1.5 explores how the increase of minimum wage responds to changes in underlying macroeconomic variables (column 1) controlling for the political cycle (column 2) and for the characteristics of the minimum wage setting

([48]) Yet the correlation between the relevant institutional indicator and the Kaitz index is not statistically significant. Less compelling is the evidence for the other characteristics.

process identified on the basis of the stringency indicator (columns 3-10). ([49]) Values of the indicator below median represent regimes where the discretion in setting minimum wage is relatively high and the predictability low. A number of facts emerge from these estimates based on a panel of EU countries.

Minimum wage changes reflect, with approximately the same weight, changes in wage growth, consumer price inflation, and in the employment conditions (column 1). Controlling for the political cycle, as captured by the year of the elections, modifies the relative importance of the underlying macroeconomic conditions for minimum wages updates.

This is visible from the larger effect of wage growth and the lower impact of consumer price inflation (which also statistically insignificant, i.e. imprecisely estimated) (column 2). Thus, in electoral years governments take more into account redistribution (i.e. the wage distribution becomes more compressed when the minimum wage increases);

Columns 3 to 10 look more in detail at various specifications splitting the sample on the basis of value of their indicator of stringency of their minimum wage setting regime. The framework used to revise the minimum wage influences the size of its average change – visible from the size of the constant - and the relative weight of the variables usually taken into account for its update. Rules-based systems have an underlying growth of the minimum wage which is half as much as the average growth in more discretionary minimum wage setting frameworks.

Relative high government discretion in minimum wage setting raises the effect of average wage increase and of employment growth on minimum wage updates. Thus, distributional concerns and the overall growth of employment take a prominent role in the decision of changing the minimum wages, when governments have more direct control of their setting; with these effects becoming more important in electoral years (columns 3-10).

([49]) The political cycle is identified as a binary variable that equals 1 in the year of election and 0 otherwise. It is obtained from the Database of Political Institutions 2015 update Cruz et al. (2016). The effect in the year that follows elections is obtained lagging the dummy variable by one year.

1.3. A LOOK AT THE MACRO-EVIDENCE

1.3.1. Employment

1.3.1.1. Introduction

Its employment effect is one of the most debated issues related to the minimum wage. While there is no consensus in the literature, most studies find negative effects of the minimum wage on employment of low-wage groups (see, e.g., Neumark, 2014). These studies often focus on young workers or specific low-wage sectors in a particular country (often the US). Standard estimates of the employment elasticity of the minimum wage for young workers is between –0.1 and –0.2, which means that a 10% increase in the minimum wage is estimated to reduce the youth employment by about 1 or 2% (see, e.g., the overview of Neumark, 2014). Nevertheless, a number of studies find results that are close to zero or statistically not significant, and some have even found a positive employment effect of minimum wage increases in some sectors. The uncertainty about the employment effects of the minimum wage can well be explained by economic theory by invoking various labour market frictions as well as demand effects stemming from the increased consumption of minimum wage workers (see, e.g., Manning, 2016).

While there is a large literature on the employment effects of the minimum wage based on specific countries (see, e.g., the surveys of Brown, 1999; Neumark and Wascher, 2006; Belman and Wolfson, 2014, esp. Chapters 2 and 4; and Neumark, 2014), there are relatively few cross-country analyses. Virtually all existing work focuses on a sample of OECD countries. Early cross-country analyses include Dolado et al. (1996) and OECD (1998). In a seminal study, Neumark and Wascher (2004) found negative employment elasticities between –0.1 and –0.2 in most specifications for the age group 15-24. Dolton and Rosazza-Bondibene (2012) find an elasticity of about –0.2 for youth (ages 15-24) and of about –0.05 of adults (ages 25-54) in their baseline estimations. They also find that the negative employment effect of the minimum wage

is exacerbated in recessionary times for youth, but not for adults. Addison and Ozturk (2012) study the effect of the minimum wage on the employment of prime-aged women and find an elasticity of about –0.079 in a baseline specification, among a broad range of elasticities between –0.04 and –0.35 in various alternative specifications. Finally, Christl et al. (2015) find that the effect of the minimum wage on youth employment is non-linear: it turns negative only at a certain level, estimated to be at around 40% of the average wage. All contributions emphasise that the findings are sensitive to specification decisions (see discussion below on the specification).

The aim of this section is to provide estimates of the employment effects of the statutory minimum wage for a panel of EU Member States. The focus on EU countries allows the extension of the analysis to a number of members not in the OECD or recent members that were not included in earlier analyses. It also allows a comparison across a set of countries which are arguably more homogeneous, and whose economic data are more harmonised, than it is the case across the OECD at large.

The findings of this analysis are broadly consistent with the previous literature. First, it is documented that results are sensitive to the specification, in particular to how secular country-specific time trends in the employment rate of the relevant groups are controlled for. ([50]) Second, the effect of the minimum wage on the overall employment rate (age group 15-64) is negative but small and estimated with a degree of uncertainty that makes it statistically not significant in the most reliable specifications. Third, negative employment elasticities consistent with standard results in the literature are estimated for young workers, in particular for the age group 20-24, while results are not stable for the age group 15-24. Finally, statistically weakly significant negative effects, of a magnitude that is comparable to that for young age groups, are found for low-skilled workers, a group that has not been studied before in the literature.

([50]) This means that the *disemployment* effects of minimum wage are spurious and reflect pre-existing negative trends (e.g. skill-biased technological change) that pre-date the policy change (see also Dube et al., 2010).

1.3.1.2. Analytical approach

The analysis follows previous cross-country studies. As in most studies of the minimum wage, the employment rate (employment-to-population ratio) is chosen, as dependent variable. Regressions are run separately for various groups: the overall working-age population (age group 15-64); youth (age groups 15-24 and 20-24); and the low-skilled (ISCED level 0-2, i.e., those without an upper secondary education; age group 15-64). The main explanatory variable is the ratio of the minimum wage to the median wage (the Kaitz index). However, the minimum wage is not the only determinant of employment and to avoid biased estimates it is usual control for others as well. These control variables include:

- *Variables reflecting the economic environment at large:* the output gap (in specifications explaining the overall employment rate) or the unemployment rate of prime-age males (in specifications for particular groups);

- *demographic variables and variables relevant for the specific group studied:* the share of the specific age or skill group in the overall working-age population; the share of the relevant youth age group in formal or informal education or training;

- *labour market institutions:* spending on Active Labour Market Policies (ALMPs) as a percentage of GDP; the indicator for the strictness of Employment Protection Legislation (EPL) of regular workers; the replacement rate of unemployment benefits; tax wedge; union density.

Country and year fixed effects are added to each specification to control respectively for time-invariant differences between countries and for common trends across EU countries, as is standard in similar studies. Finally, each empirical relationship is studied both with and without the inclusion of a country-specific time trend. Including country-specific time trends helps account for country-specific factors that drive employment rates (e.g., industrial or cultural changes), beyond those explicitly captured by the other control variables included in the regressions. If country-specific employment trends are relevant but ignored, the resulting statistical findings can be

Table II.1.7: **The employment effect of the minimum wage: Summary of estimated elasticities**

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	No country-specific time trend				Country-specific time trend			
	Restricted sample			Unrestr'd sample, no controls	Restricted sample			Unrestr'd sample, no controls
	All controls	Stat. sign. controls	No controls		All controls	Stat. sign. controls	No controls	
Employment rate, overall working-age population (15-64)	-0.182*	-0.168**	-0.254*	-0.102	-0.047	-0.046	-0.055	-0.106
Employment rate, youth (15-24)	-0.268*	-0.199	-0.465	-0.308*	-0.137	-0.115	-0.104	-0.135
Employment rate, youth (20-24)	-0.130	-0.103	-0.246*	-0.228**	-0.151	-0.194**	-0.178**	-0.137**
Employment rate, low-skilled (ISCED 0-2; age group 15-64)	-0.217**	-0.201*	-0.212	-0.157	-0.173*	-0.162*	-0.162*	-0.193*

(1) The table lists elasticities, calculated by scaling the relevant estimated regression coefficients. (2) All regressions estimated by Fixed-Effects panel estimation with robust standard errors. (3) The minimum wage indicator used in all regressions is the minimum wage to median wage ratio. (4) "Controls" refer to five variables controlling for labour market institutions: ALMP spending as a percentage of GDP; the strictness of Employment Protection Legislation; the replacement rate of unemployment benefits; the tax wedge; and union density. (5) Asterisks mark estimated coefficients which are statistically significant at the 10% (*), 5% (**) or the 1% level (***).
Source: Own calculations.

spurious. For this reason it seems prudent to place more trust in the specifications with country-specific trends. ([51])

As discussed in the previous section, minimum wage updates are influenced by economic variables and by the institutional setting. This raises the question whether simple regressions estimating the relationship between the minimum wage and economic outcomes might be biased due to the possible endogeneity of minimum wages. This issue is addressed here, as in most of the literature, by lagging these variables by one year. ([52])

1.3.1.3. Variables and data

Information on the Kaitz index (the statutory minimum wage as a percentage of the median wage) is taken from the OECD earnings database (2015). The database has information on 18 EU countries: Belgium, Czech Republic, Estonia, France, Greece, Hungary, Ireland, Latvia, Lithuania, Luxembourg, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and the UK. Germany introduced a statutory minimum wage only in 2015 and is thus not included in the analysis as data are insufficient for a macro panel analysis. The database has no information on Bulgaria, Croatia, and Malta.

Employment rates and population shares are from Eurostat; output gap is from the AMECO database of the European Commission. Labour market institutions (ALMP spending, EPL, replacement rate of unemployment benefits, tax wedge, union density) are from the OECD. ALMP spending was complemented from the Eurostat labour market policy database. Union density is from the ICTWSS database (Visser, 2015). In the case of the other OECD variables, long historical (but discontinued) series have been complemented by up-to-date (but shorter) series also collected by the OECD.

Taking institutional characteristics of the labour market into account among the explanatory variables reduces the size of the sample. First, recent observations are lost because some institutional variables are not available for latest years. Second, the EPL indicator for the time period considered is not available for Latvia, Lithuania and Romania. In view of these data limitations, the robustness of the results is assessed running regressions with and without institutional variables, both on a restricted sample (15 countries and those years for which institutional variables are available) and on an unrestricted sample (18 countries and all available years).

1.3.1.4. Results

Results are presented for four socio-economic groups: the overall employment rate (age group 15-64), youth (age groups 15-24 and 20-24), and the low-skilled. Table II.1.7 provides a summary

([51]) The literature is not unequivocal on this specification issue: while most previous contributions have included country-specific time trends, some (e.g., Dolton and Rosazza-Bondibene, 2012) did not.
([52]) Only few contributions, e.g., Dolton and Rosazza-Bondibene (2012) attempted to solve this potential problem by an instrumental variable approach.

of the estimated elasticities. ([53]) The first four columns in the table show results from specifications excluding country-specific time trends, while the last four columns show specifications including trends. All five institutional control variables are included in columns (1) and (5). Only significant control variables are kept in columns (2) and (6). All institutional controls are excluded in columns (3) and (7). Finally, columns (4) and (8) repeat the regressions shown in columns (3) and (7), but for an unrestricted sample (i.e., a sample that is not restricted to the 15 countries, and to the years for which institutional controls are available).

Overall employment rate. The first row of Table 1 summarises the results for the age group 15-64. A number of conclusions can be drawn. First, in all specifications, the effect of the minimum wage on employment is estimated to be negative, but in the majority of the specifications it is not statistically significant.

Second, the results are sensitive to whether country-specific time trends are controlled for. The estimated elasticity is sizeable (between –0.18 and –0.26) and statistically significant at least at the 10% level in the restricted sample when country-specific time trends are not included, regardless of the inclusion of institutional controls. In contrast, the elasticity falls to around –0.05 and is never statistically significant when country-specific time trends are included. ([54])

Finally, since the results are more stable when country-specific trends are controlled for, and in view of the theoretical arguments presented discussing the analytical approach, the specifications that control for these trends are more reliable. Thus, in the most reliable estimates, the effect of the minimum wage on the overall employment rate appears to be small, and is not estimated precisely enough to be statistically significant. The point estimate is consistent with a fall in employment of about 0.5% to 1% after a 10% increase in the minimum wage.

Youth. The second and third row of Table 1 summarise the results for the age group 15-24 and 20-24, respectively. All the regressions on youth employment control for the size of the youth cohort relative to the working age population, and the enrolment rate of the youth cohort in training or education, besides the lagged prime-age male unemployment rate, which reflects the common economic cycle. Two observations can be made.

First, the estimated elasticities are in all cases negative, but they are only robust for the age group 20-24, while the results for the 15-24 age group are uncertain. The elasticities range from –0.1 to –0.5 for the age group 15-24, but in most cases they are not statistically significant. Elasticities fall in a narrower range of –0.1 to –0.25 and are in most cases statistically significant for the age group 20-24. The fact that results are more robust for this age group suggests that there are other determinants of teenage employment (ages 15-19), that are relevant beyond those that are already controlled for. This might introduce noise into the estimation for the cohort including teenagers.

Second, point estimates of the elasticity for the age group 20-24 are in the range of –0.13 and –0.2 when country-specific time trends are controlled for, and are in most cases statistically significant at the 5% level. Results for this age group are relatively robust to the exclusion of country-specific time trends, but the increased stability of results when these trends are controlled for lends further support to the view that their inclusion is necessary to isolate the effect of minimum wages from those of other factors affecting employment. ([55])

Low-skilled workers. The last row of Table 1 summarises the results for the low-skilled. Control variables include, beyond the unemployment rate of prime-aged males as a cyclical variable, the share of low- and high-skilled in the working age population.

The point estimates for the employment elasticity of the minimum wage are within a range of –0.15 and –0.22, and the estimations are fairly robust to alternative specifications. In the specifications with country-specific time trends, the range of

([53]) Estimated coefficients are transformed into elasticities to ease comparability with previous findings of the literature.

([54]) Allegretto et al. (2015) found for the US that including state-specific trends produces small and insignificant elasticities for teens.

([55]) Statistical tests strongly reject the hypothesis that country-specific time trends can be excluded.

estimated elasticities is between –0.16 and –0.2. The estimated effect is in most cases statistically significant at the 10% level. This provides some evidence for the hypothesis that high minimum wages have a negative employment effect on the low-skilled.

1.3.1.5. Conclusions

This section presented some estimations of the employment effect of the statutory minimum wage for various groups in 18 EU countries (15 in the restricted sample). The most reliable specifications found elasticities between –0.13 and –0.2 for young adults (age group 20-24) and elasticities between –0.16 and –0.2 for low-skilled workers. Results were not robust for the broader youth group (15-24) which included teenagers, while for the overall working age population, the estimated elasticities were small and negative (around –0.05) and estimated with a degree of uncertainty which made them statistically not significant. Overall, these findings support the view that, at conventional levels, minimum wages do not have a large negative employment effect, but may have some negative effects on the employment of low-wage groups. The method applied in this analysis did not allow identifying non-linearities in the relationship between employment and minimum wage. Thus, it is likely that policy-makers in most cases have to weigh the social benefits of a higher minimum wage against its social costs.

1.3.2. Prices

1.3.2.1. Literature review

Little attention has been paid to the implications of minimum wage increases on consumer prices, which is a topic that has been largely ignored in the analysis of minimum wage policies.

Theoretically, the impact of the minimum wage on prices depends on the structure of the labour market. On the one hand, under the assumption of a competitive labour market, an increase of the minimum wage above the market-clearing wage is entirely shifted to consumers as higher consumption prices. ([56]) On the other hand, under the assumption that employers have dominant position in the labour market and do not face competition in labour market for hiring employees, employers have some discretion in setting wages. As a consequence, the level of wages would be too low and the incentives to accept a job offer weak; a moderate increase in the minimum wage (above the wage paid by the monopsonist but below the wage paid by in perfect competition) increases the firm's average labour cost, but decreases the marginal cost of hiring an extra employee (as firms will not have to hire the wage level to attract more employees). The fall in the cost of employing an additional worker (marginal cost) reduces the price of producing an additional unit of output.

The first empirical studies on price pass-through using data on restaurants in New Jersey and Pennsylvania (Katz and Krueger, 1992; Card and Krueger, 1994) found no effect of minimum wage changes on consumer prices, confirming the hypothesis of monopsony in the fast-food industry in US. An important shortcoming of these studies was the small dataset and limited number of minimum wage changes used to identification the effects.

More recently, Aaronson (2001) exploits variation in minimum wages across time and states using data on fast-food prices from the US and Canada in 1978-1995. He finds an elasticity of fast-food prices to minimum wage which ranges between 0.07 and 0.16 depending on the dataset used. Subsequent studies (eg Aaronson et al., 2008; and Allegretto et al., 2015) found a small impact on prices, with elasticity in a ballpark of 0.06 ([57])

Outside the US or Canada, few studies have analysed the impact of minimum wage changes on prices. Compared to the US, the impact of minimum wage changes in France on prices of restaurants is slightly higher, with an elasticity of about 0.10 (e.g. Fougère et al., 2010). Harasztosi and Lindner (2015) found for Hungary that firms

([56]) The increase in the minimum wage is expected to lead to higher marginal cost per worker; firms will respond by shedding labour and increasing prices. Yet, the effect on employment is small if the elasticity of substitution between low-wage employment and capital is low.

([57]) Aaronson et al. (2008) analyse the impact of a federal minimum wage increase on restaurant prices in the US in the period 1996-1997 using detailed store-level micro-data. Allegretto and Reich (2015) used information on restaurant prices before and after a 25% increase in the minimum wage in San Jose.

in the manufacturing sector responded to the 2001 large and persistent increase in the minimum wage by raising output prices. In contrast, no significant impact on prices in the residential home care sector was found for the UK (Machin et al., 2003), partly owing to the effect of price regulation in the sector.

1.3.2.2. Data and econometric approach

This section provides an original analysis of the impact of the minimum wage on consumer prices for 12 product categories ([58]) in 20 EU Member States ([59]) with statutory minimum wage; the analysis on monthly data covers the period January 2005-March 2016. It follows a similar approach as Aaronson et al. (2008). The analysis proceeds in two steps.

First, descriptive evidence on price changes following an increase in minimum wage is presented. Price changes (increases and decreases) after an increase in the minimum wage are tabulated. Two cases are considered: (1) an increase in the minimum wage in the last two months and (2) no increase in the minimum wage in the last two months.

Second, the impact in a specific month of a minimum wage change on price is estimated using an econometric model lining the percentage change in consumer prices for a specific product category in a given country on the percentage change in the national statutory minimum wage of that country.

In addition to the contemporaneous and lagged percentage changes in the minimum wage, the model also includes the change in the minimum wage of the following year to control for potential expectations firms may have on *future* changes in the minimum wage. Further, the model controls for the lagged change in prices (to account for persistency overtime of price changes) and product–country, month–country, month-product and year fixed effects. These fixed effects are introduced to net out the remaining unobserved components affecting price changes and isolate the effects due to minimum wage changes.

Finally, the analysis also estimates the impact of minimum wage hikes on the price of the consumer basket by income level.

Data on the monthly consumer prices by product category are from Eurostat. Data on the monthly minimum wages are collected from Eurostat and national statistics. Data on consumer baskets refer to 2005 and are obtained from Eurostat.

1.3.2.1. Results

Table II.1.8 presents the results of the descriptive evidence on price changes following an increase in the minimum wage. The results show that in case there was an increase in the minimum wage in the two months before, there were significantly more increases in prices (60.1%) compared to periods when there was no increase in the minimum wage in the past two months (53.4%). The reverse hold for price decreases (ie price decreases are less frequent in two months that follow minimum wage rises). With respect to the magnitude of the price changes, the results suggest that price changes (both increases and decreases) are larger after minimum wage hikes but quite rare compared to the case of no minimum wage change.

Table II.1.8: **Descriptive evidence: Impact of minimum wage increases on consumer prices**

Minimum wage increase in the past two months	Yes	No
A. Share of price changes		
Percent increases	60.1	53.4***
Percent decreases	27.5	29.7***
B. Size of the price changes		
Mean price change (%) increase	0.74	0.82**
Mean price change (%) decrease	-1.72	-1.09***

(1) Asteriks indicate estimated effects that are statistically significant at 1% (***), 5% (**), or 10% (*) level.
Source: Commission services, based on data from Eurostat and national statistics

Table II.1.9 presents the results of the regressions for different specifications of the baseline model.

([58]) The product categories (COICOP categories - one digit) included are alcoholic beverages, tobacco and narcotics; clothing and footwear; communications; education; food and non-alcoholic beverages; furnishings, household equipment and routine household maintenance; health; housing, water, electricity, gas and other fuels; miscellaneous goods and services; recreation and culture; restaurants and hotels; and transport.

([59]) The EU Member states included are Belgium, Bulgaria, Czech Republic, Estonia, France, Croatia, Hungary, Ireland, Latvia, Lithuania, Luxemburg, Malta, Netherlands, Poland, Portugal, Romania, Slovenia, Slovakia, Spain and UK.

Table II.1.9: **Econometric evidence: Impact of minimum wage increases on consumer prices**

	(1) Model A	(3) Model B	(2) Model C	(5) Model D	(4) Model E
Lagged consumer prices, % change		-0.052	-0.153	-0.049	-0.148
		(0.11)	(0.12)	(0.11)	(0.12)
Minimum income, % change	0.0048	0.021***	0.062***	0.021***	0.061***
	(0.012)	(0.0070)	(0.013)	(0.0070)	(0.012)
Lagged minimum income, % change				0.010**	-0.012
				(0.0047)	(0.0085)
Two period lagged minimum income, % change				-0.0012	-0.013
				(0.0046)	(0.0086)
Future minimum income, % change				0.0051*	0.0044
				(0.0031)	(0.0042)
Product-country fixed-effects	Yes	Yes	Yes	Yes	Yes
Month-country fixed-effects	No	Yes	No	Yes	No
Month-product fixed-effects	No	No	Yes	No	Yes
Year fixed-effects	No	Yes	Yes	Yes	Yes
	0.202***	-0.099	0.089*	-0.087	0.108*
Constant	(0.0052)	(0.121)	(0.054)	(0.123)	(0.056)
Observations	32158	32158	32158	31439	31439
R-squared	0.000	0.073	0.335	0.073	0.337

(1) Asterisks indicate estimated effects that are statistically significant at the 1% (***), 5% (**), or 10% (*) level. Robust standard errors in parentheses.
Source: Commission services, based on data from Eurostat and national statistics

The results are relatively robust across the estimations. ([60])

The effect of the contemporaneous change in the minimum wages on prices is significant in all specifications except model A which includes the least control variables and can therefore be considered as less reliable. In case it is significant its effect ranges between 0.021 (model including month-country fixed effects) and 0.062 (model including month-product fixed effects). In addition, in case of model E, which includes month-country effects, the effects of the lagged and lead minimum wage increase are also found to be significant. The combined effect of a 10% increase in the minimum wage is expected to lead to a price increase of roughly 0.4% (0.02+0.01+0.01). ([61]) Hence, overall the results imply that a 10% increase in the minimum wage leads to 0.4% to 0.6% increase in consumer prices.

In order to provide some insights on the impact of minimum wage increases on prices for specific goods and services, the analysis is performed per product category. Graph II.1.5 presents the results of the combined (including the coefficients for the contemporaneous time period, lagged time period and lead period if significant) effect of a minimum wage increases on prices of particular product categories using a regression that include month and year fixed effects and is equivalent to model E.

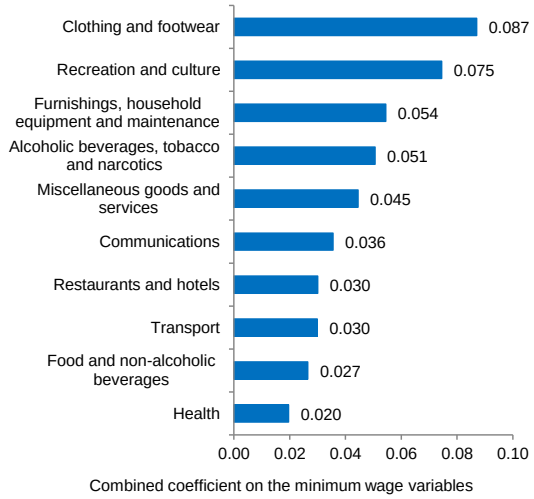
The combined impact ranges from 0.087 for clothing and footwear to 0.020 for health. No significant effect is been found for education and housing, water, electricity, gas and other fuels. The effect of the minimum wage on consumer prices is found to be the highest for the following three product categories: clothing and footwear;

([60]) In an additional robustness check, the probability of a price increase is used at the place of the price increases as outcome variable. Results are in line with expectations; an increase in the minimum wage significantly lowers the probability of a price increase.

([61]) Note that in the model that includes month-country fixed effects, the effect of a minimum wage increase is lower than in the other models. Month-country fixed effects allow controlling for country-specific seasonality of prices. However, in case for example minimum wage increases happen in January and price increases also mainly happen in January, this specification will attribute price increases to the seasonal price change (ie occurring every 1st January), rather than to an increase in the minimum wage.

recreation and culture; and furnishings, household equipment and routine household maintenance. This is not surprisingly as minimum wage earners are likely to represent a high share of the work force involved in the production and sales of these product categories. Unfortunately, there are no comparable cross-country data available on the exact share of minimum wage earners involved in the production or sales of each product category.

Graph II.1.5: **Combined effect of the minimum wage variables on prices by product category**



(1) Based on an estimation of equation (1) that includes month-country fixed effects and year fixed effects. Only effects significant at 10% (*) or lower levels or included in the combined effect.
Source: Commission services, based on data from Eurostat and national statistics.

These findings suggest that an increase in the minimum wage is only partly offset by increases in consumption prices. Yet, since there are differences in the consumption patterns of households depending on their income level, the overall impact of a minimum wage increase on household budgets may differ between income groups. Depending on whether low-income households consume relatively more or less products susceptible to price increases following a minimum wage change, the impact of minimum wage increase can be smaller or bigger for low-income households compared to high-income households. Simulations based on the average share of each product category in the 2005 consumption basket for the 20 countries included in the analysis show that those at the bottom of the income distribution will face a proportionally lower increase in consumer expenditures than those with a higher income level, but the differences are small. In the first quintile, a 10% increase in the minimum wage will lead to a 0.28% increase in price of their consumption basket, while in the last quintile this is 0.33%.

In summary, there is evidence of a positive pass-through of minimum wages to consumer prices, but the effect does not make the minimum wage an ineffective tool to protect purchasing power of workers at the end of the income distribution. The impact is the largest in the sectors that employ a relatively high share of minimum wage workers, such as clothing and footwear; recreation and culture; and routine household maintenance.

1.3.3. Consumption

1.3.3.1. Literature review

Few studies have looked at the impact of minimum wage on aggregate consumption. Theoretically, the impact is ambiguous and will depend on the interaction between the employment, wage and price effects of a minimum wage increase as well as the interaction with the tax and benefit system. The effect is likely to be small when *disemployment* effects and price increases are small.

Using detailed US micro-data, Aaronson et al. (2012) analyse the implications of minimum wage increases on household spending and debt. They find that following a minimum wage hike spending and debt substantially increases for low-income households. A $1 minimum wage increase is expected to increase household incomes by approximately $250 and spending by $700 per quarter in the year following the minimum wage hike. The increase in spending is mainly driven by an increase in collateralized debt to buy durables such as vehicles.

Tonin (2011) finds that a minimum wage increase can even decrease consumption for groups of workers who likely earn part of their wage in an undeclared way. In their case, the minimum wage increase results in increased declared wages and an increased tax burden rather than an increased net income.

Table II.1.10: **Econometric evidence: Impact of the minimum wage on consumption by income quintile**

Dependent variable: Mean consumption expenditure per adult equivalent, % in change in PPS	(1) Model A	(2) Model B	(3) Model C	(4) Model D
Minimum wage (MW), % in change in PPS	0.48**	0.33**		
	(0.19)	(0.14)		
Average wage, % in change in PPS	0.73***		0.73***	
	(0.20)		(0.19)	
GDP per capita, % in change in PPS		1.16***		1.16***
		(0.17)		(0.11)
First quintile* MW			0.80***	0.67***
			(0.20)	(0.13)
Second quintile* MW			0.67***	0.53***
			(0.21)	(0.11)
Third quintile* MW			0.48*	0.31***
			(0.25)	(0.11)
Fourth quintile* MW			0.34	0.19*
			(0.25)	(0.11)
Fifth quintile* MW			0.12	-0.04
			(0.26)	(0.12)
Constant	-0.087**	-0.059**	-0.087***	-0.059***
	(0.033)	(0.026)	(0.032)	(0.024)
Observations	80	90	80	90
R-squared	0.56	0.64	0.63	0.73

(1) OLS estimates. Robust standard errors. Model A and C which include the percentage change in the average wage as an explanatory variable does not include Estonia and Slovakia because of missing data. Asterisks indicate estimated coefficients that are statistically significant at the 1% (***), 5% (**), or 10% (*) level.
Source: Commission services, based on Eurostat.

1.3.3.2. Data and econometric approach

This analysis provides a tentative estimate of the impact of minimum wage on mean consumption expenditure by consumption quintile for 18 Member States. ([62]) Data on the percentage change in mean consumption expenditure per adult equivalent (in PPS) between 2005 and 2010 by quintile and country is obtained from the Household Budget Surveys. The main variable of interest is the percentage change in the monthly minimum wage in PPS. In order to test whether the effect of an increase in the minimum wage varies between consumption quintiles, interaction terms between quintile dummies and minimum wage growth are included. Finally, to isolate the effect of minimum wage changes from changes due to average wage, the percentage change between 2005 and 2010 in annual net earnings (in PPS) for a single individual earning 100% of the average wage is introduced in the regression as control variable. As a robustness check, the average wage is replaced with the percentage change in GDP per capita (in PPS) between 2005 and 2010 obtained from Eurostat.

1.3.3.3. Results

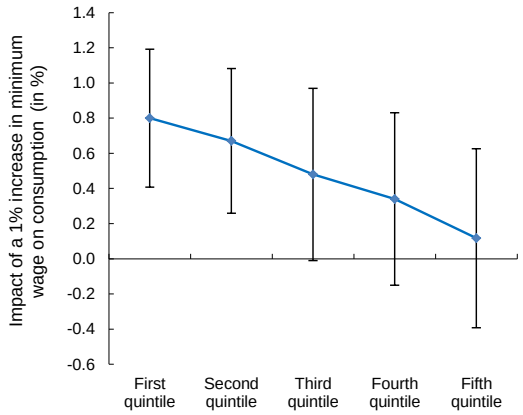
Table II.1.10 shows the results obtained from four different specifications. The first two columns present the result of a simple model that includes no interaction effects with the consumption quintile, but controls for respectively the average wage growth (Model A) and GDP per capita growth (Model B). The last two columns present estimations of the full model, including interaction terms with the consumption quintiles and respectively average wage growth (Model C) and GDP per capita growth (Model D). Interaction terms allow identifying the effect that is specific to each quintile.

The results indicate that there is a positive impact on aggregate consumption. Yet, this impact is more precisely estimated when the response of aggregate consumption is conditional to different

([62]) The Member States included are Belgium, Bulgaria, Czech Republic, Estonia, Greece, Spain, France, Ireland, Lithuania, Latvia, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia and the UK.

income quantiles. The effect of a minimum wage increase is found to be larger for the lowest quintile and gradually decreasing across the income distribution. The results presented by Model C and D show that a 1% increase in the minimum wage leads to an increase in consumption in the ballpark of 0.7% in the bottom quintile and of 0.6% in the second quintile. The effect decreases rapidly to respectively 0.4%-0.3% in the third quintile. There is no significant effect of minimum wage hikes on consumption for the two highest quintiles of the consumption distribution at a 5% significance level. Graph II.1.6 summarizes the impact of the minimum wage showing the effect per quintile and the corresponding confidence interval.

Graph II.1.6: **Impact of the minimum wage on consumption by income quintile**



(1) OLS estimates based on the results reported in Model C in Table II.1.7, using the percentage change in the average wage as an explanatory control variable.
Source: Commission services, based on Eurostat

A potential caveat of the analysis is that it does not include some time-varying factors that differ between countries, such as budgetary restrictions, which may affect both consumption and minimum wage. This may create endogeneity bias. An additional bias could come from the exclusion of factors that affect consumption in a specific quintile, such as indexation of benefits in line with minimum wage changes affecting incomes in the lowest quintiles. As result, the estimates can be biased and potentially overestimate the effect of the minimum wage. Yet, they show that minimum wage changes have a stronger impact on consumption at the bottom rather than at the higher part of the consumption distribution.

In summary, there is a positive relation between minimum increases and consumption. The impact differs across the consumption distribution and is the highest for the bottom of the consumption distribution and gradually increases across the distribution. This is not surprising as the low-income households are mostly affected by the minimum wage hike and most likely to be concentrated at the bottom of the consumption distribution.

1.3.4. The macroeconomic effects: A general framework

As evidenced in previous sections, the employment effects of minimum wage are often elusive, resulting in imprecise estimates for many working age groups. This may happen for a number of reasons. Low shares of minimum wage workers, low price elasticity of the product demand and low substitution with respect to other inputs may cause a weak response of labour demand to minimum wage changes. Thus, even when the average wage changes in response to minimum wage updates, the estimates of the employment effects may be small and highly uncertain (Manning, 2016, Cahuc et al 2014).

Accounting for the possible interactions between minimum wage, average wages, employment and consumption, including the lagged effects of these variables on minimum wage and of the latter on the former, provides a better representation of the relation linking minimum wages to employment.

1.3.4.1. Data and econometric approach

In this section, a more general specification is adopted to estimate the employment effects of minimum wage increases. A Vector Auto Regressive (VAR) model is a standard tool to take into account dynamic interrelationships between variables of interest. In particular, the aim is to assess the response of employment, wages and consumption to a discretionary minimum wage change (henceforth *shock*). One limitation of VAR is that the response to a shock is linear in the shock, i.e. it does not take into account the possibility of thresholds effects. This technical limitation is quite relevant as there is a consensus that negative effects on employment may emerge at high levels of minimum wage.

A VAR with 1 lag has been estimated for the following variables: the minimum wage level, the median wage, the total number of employees, the consumption-GDP ratio. ([63]) Excluding the self-employed helps to control for the effects of minimum wage on total employment stemming from substitution between employees and self-employed. The median wage is chosen instead of the average wage as the former is more stable with respect to changes in the extreme values. Consumption as a percentage of GDP captures the effect of minimum wage on consumption, while netting out the effect of trends in total expenditure.

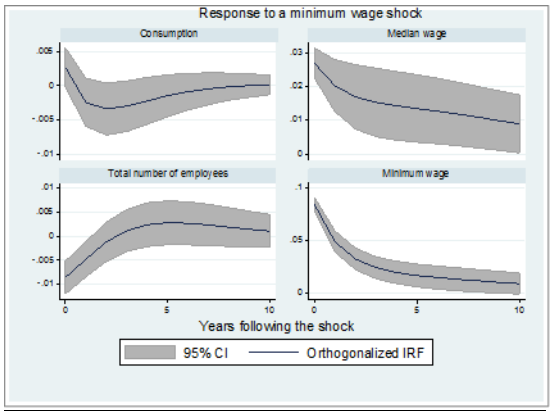
Annual data are used to estimate a VAR (Vector Auto Regression) model using the panel of available countries over the period 1985-2015; the panel is unbalanced. Panel VAR allows considering the interactions between the variables, while controlling for heterogeneity across countries in the level of variables. The analysis will describe the impulse-response functions, which show the dynamic response of one variable of interest (wages, employment, consumption) to a shock in the minimum wage. Shocks are identified based on the assumptions that a minimum wage shock affects the median wage, employment and consumption within the same year, while it responds to a shock to one of these variables only with a lag of 1 year. ([64]) Within the same year, wage shocks affect both employment and consumption, while shocks to these may affect wages with lag only. The causal structure implies that the minimum wage is the most exogenous variable, while consumption is the most endogenous.

Next, the availability of indicators describing the institutional flexibility of the minimum wage setting allows exploring whether the regime for minimum wage setting affects the response to discretionary minimum wage changes. The sample is split in two groups based on the median of the sub-components of the indicator describing the institutional flexibility of the minimum wage setting framework. In practice, countries are divided in two samples on the basis of predictability and frequency of discretionary changes in the minimum wage and the impulse responses are compared for the two groups. Two groups are formed according to whether the indicator of predictability and frequency of updates has value below or above the median; we called the first group *low* and *high* predictability. ([65])

1.3.4.2. Results

Graph II.1.7 shows the responses of the median wage, total number of employees and consumption to one-standard-deviation positive shock to the minimum wage; the panel with the minimum wage response displays the persistency of the minimum wage shock. In the chart, the horizontal axis represent years after the shock, while the vertical the changes in the variable of interest. Bands represent the confidence interval, so that all values within the bands have the same probability. When the band includes zero, the estimated values are considered statistically non different form zero.

Graph II.1.7: **Response to a minimum wage shock**



(1) The horizontal axis represents years after the shock. The vertical axis represents log points. Bands represent the 5% confidence interval generated by Monte Carlo simulations. All values within the bands are likely probable and if 0 is included in the band it cannot be excluded that the effect is zero.
Source: European Commission

([63]) All variables are in logs; the panel is estimated with GMM method.

([64]) By orthogonalising the impulse response, it is possible to identify the effect of a shock while keeping the other shocks equal to zero. Shocks are identified with Choleski decomposition of the variance-covariance matrix of reduced form residuals with the order: minimum wage, median wage, employment and consumption.

([65]) Countries belonging to the first group include Bulgaria, Estonia, Lithuania, Romania, UK, Spain, Hungary, Portugal, Netherlands; Belgium and Luxembourg coincide with the median.

The results suggest the following:

A minimum wage shock results in a variation of median wages, consumption and employment within the same year; the size of the minimum wage shock is about 10%. The shock is the minimum wage change not explained by past changes in the underlying variables, and can be interpreted as discretionary change.

Employment falls by less than 0.1% within one year, while the median wage rises by 0.3%. Consequently, the small increase in consumption by 0.03 reflects the offsetting effect of a temporary decline in employment and increase in median wage. This suggests that the increase in consumption for those in employment after the increase in the minimum wage offsets its fall for those who have lost a job after the increase of the minimum wage. ([66])

The effect on employment and consumption dissipates quite quickly. In contrast, the effect on median wages is more persistent. Thus, the minimum wage is quite effective in improving the wage distribution at the cost of small and transitory negative effects on employment.

Graph II.A1.1 (in the annex) reports the dynamic response of employment, consumption and the minimum wage splitting the countries on the basis of the frequency of updates and predictability of minimum wage changes. On impact the response of consumption is higher in the group with low predictability and frequency of updates; but the effects dies out rapidly with no major differences across the two samples. The median wage increases on impact in response to the minimum wage in the two samples; the pattern of response is very similar, although the median wage rises more (i.e. the wage distribution becomes more compressed) for the group with low predictability and frequency of minimum wage updates. Finally, in response to a minimum wage shock, employment drops temporarily in countries where changes in the minimum wage are infrequent and unpredictable, while it remains unchanged in the rest of the countries. Thus, it is likely that whenever minimum wage changes are predictable and frequent, the size of discretionary minimum wage changes (i.e. unexpected shock) is smaller than in countries where the minimum wage policy is more *erratic*. This is visible in the size of the shock which is higher in the former group of countries. Thus, unexpected changes of minimum wage reduce the gap between low and median wages; yet, the bigger size of the shock in countries with less frequent and predictable minimum wage changes lowers (temporarily) employment. Thus, minimum wage policy is better attuned with the underlying macroeconomic variables in countries where minimum wage changes are predictable.

1.4. EFFECT OF MINIMUM WAGE ON POVERTY

1.4.1.1. Literature review

There is a large literature examining the effect of minimum wages on inequality and poverty. Theoretically, the impact of an increase in the minimum wage on income inequality and poverty is ambiguous. On the one hand, an increase in the minimum wage compresses the bottom of the wage distribution and as such reduces income inequality. In addition, it allows employees at the bottom of the wage distribution to receive a higher wage and reduces their risk of poverty. On the other hand, a higher minimum wage may lead to individuals leaving or partially retreating from the formal labour market as they become unemployed, underemployed or start working in the informal labour market. ([67]) This may result in increased income inequality and poverty for those individuals excluded from the labour market.

Empirical studies analysing the impact of minimum wages on poverty have mainly used relative poverty rates as indicators of poverty (e.g. Card and Krueger, 1995; Gundersen and Ziliak, 2004), with some also assessing the impact on the poverty gap (e.g. Dube, 2013). ([68])The impact of minimum wage changes is measured as an elasticity, which is the percentage change in poverty due to the percentage change in the

([66]) Another other offsetting factor may include the effect of increasing the minimum wage on consumption those that were unemployed before the increase.

([67]) However, in a search and matching framework, an increase in the minimum wage rises workers' outside option in the informal sector rising labour costs and lowering employment (eg Moser and Stahler 2009).

([68]) Some studies also evaluate the impact on hardship and food security (Heflin, 2009; Sabia and Nielsen, 2015).

minimum wage. A positive elasticity implies that an increase in the minimum wage leads to an increase in poverty; a negative elasticity implies that an increase in the minimum wage leads to a decrease in poverty.

Available evidence suggests that, if the effect is at all significant, an increase in the minimum wage leads to a small decrease in poverty (e.g. Addison and Blackburn, 1999; Stevens and Sessions, 2001; Neumark and Wascher, 2011; Gunderson and Ziliak, 2004; Dube, 2013). The effect is likely to depend on demographic factors such as age, education and family composition of minimum wage earners. In a detailed review of 11 studies, Dube (2013) finds that a simple average of 53 minimum wage elasticities across different demographic groups yields an elasticity of -0.20 and an average elasticity of -0.15 in case only overall poverty rates (as opposed to for narrow subgroups) are taken into account. ([69]). This implies that a 10% increase in the minimum wage would decrease the poverty rate by about 2%.

1.4.1.2. Data and empirical approach

The empirical analysis presented in this section consists of two parts. First, the analysis sheds light on the relationship between the minimum wage and the poverty rate. In this respect the following two questions are considered: Are minimum wage earners poor? Are the poor earning the minimum wage? Second, the analysis simulates what happens to poverty in case the minimum wage is increased under three different scenarios. Poverty rates are compared before and after the increase in the minimum wage, assuming constant as well as adjusted poverty lines.

The data cover 21 Member States ([70]) and are based on the 2013 micro-level data of the European Statistics on Income and Living Conditions (EU-SILC). EU-SILC data are complemented with information on national statutory minimum wages from Eurostat.

1.4.1.3. Results

Are minimum wage earners poor?

In order to explore the likelihood of being poor for minimum wage earners, poverty outcomes for minimum wage earners are compared with poverty outcomes for other population groups. Five groups are considered: employees who earn a wage above 105% of the minimum wage; minimum wage earners ([71]); self-employed, unemployed and inactive individuals. Two poverty variables are considered: the poverty rate and the poverty gap. The first measures the incidence of poverty based on the share of individuals in the population with an equivalised disposable household income below 60% of the national median income (referred as the "poverty line").. The second is an indicator for the depth of poverty and is measured as the difference between the median equivalised household income of households below the poverty line and the poverty line itself, expressed as a percentage of the poverty line.

Graph II.1.8 shows that the poverty rate for minimum wage earners is at the same level or higher than aggregate poverty rates. The poverty rate for minimum wage earners is the lowest (15% or below) in Ireland and the Netherlands, and highest (30% and up) in Bulgaria, Greece, Spain, Luxemburg and Latvia. Poverty among minimum wage earners is considerably higher than for higher wage earners, but at the same time significantly lower than for unemployed individuals. In several countries, the poverty rate for unemployed is (more than) twice as high as for minimum wage earners. Poverty rates for minimum wage earners are similar to those for self-employed and inactive individuals in most countries. ([72])

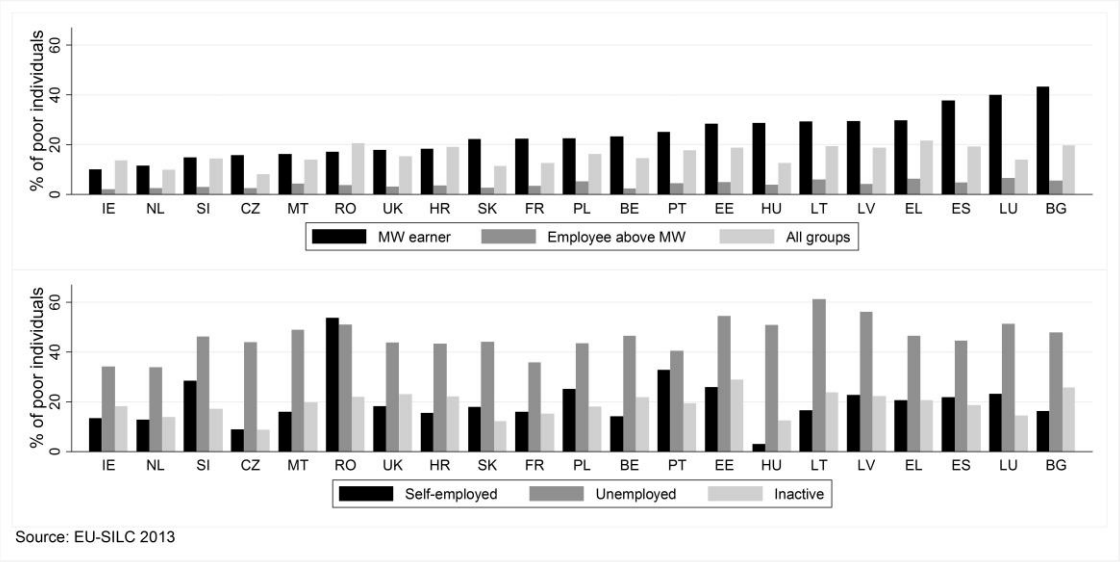
([69]) Elasticities are more precisely estimated for youngsters and low-skilled workers (between -0.50 and -0.21 - found by Addison and Blackburn, 1999) and children (elasticities between -0.46 and -0.35 found by Morgan and Kickham, 2001 and Defina, 2008). Others find no significant impact on poverty (Card and Krueger, 1995; Neumark and Wascher, 2002; Burkhauser and Sabia, 2007; Sabia, 2008; Sabia and Burkhauser, 2010; Sabia and Nielsen, 2015).

([70]) The Member states included are Belgium, Bulgaria, Czech Republic, Estonia, Greece, Spain, France, Croatia, Hungary, Ireland, Lithuania, Luxemburg, Latvia, Malta, Netherlands, Poland, Portugal, Romania, Slovenia, Slovakia and United Kingdom.

([71]) Minimum wage earners are defined as the employees (older than 15 years) who earn not more than 105% of the national statutory minimum wage (in full-time equivalents).

([72]) Exceptions are Portugal and Romania where poverty among self-employed individuals is almost as high as among the unemployed. In particularly, for Romania this finding could be related to a high share of self-employment on semi-subsistence farms in the agricultural sector.

Graph II.1.8: **Incidence of poverty by employment status**



(1) The poverty rate measures the incidence of poverty which is the share of individuals in the population with an equivalised disposable household income below 60% of the national median equivalised disposable household income. It is measured at the household level. The figures should be interpreted as follows: in Ireland 10% of the employees earning the minimum wage are living in a household that is poor; 2% of the employees earning a wage above the minimum wage are living in a household that is poor and there is an overall poverty rate of 14%. The employment status of an individual (older than 15 years) is determined based on the status of the individual in most of the months during the income reference period.
Source: Commission services, based on EU-SILC

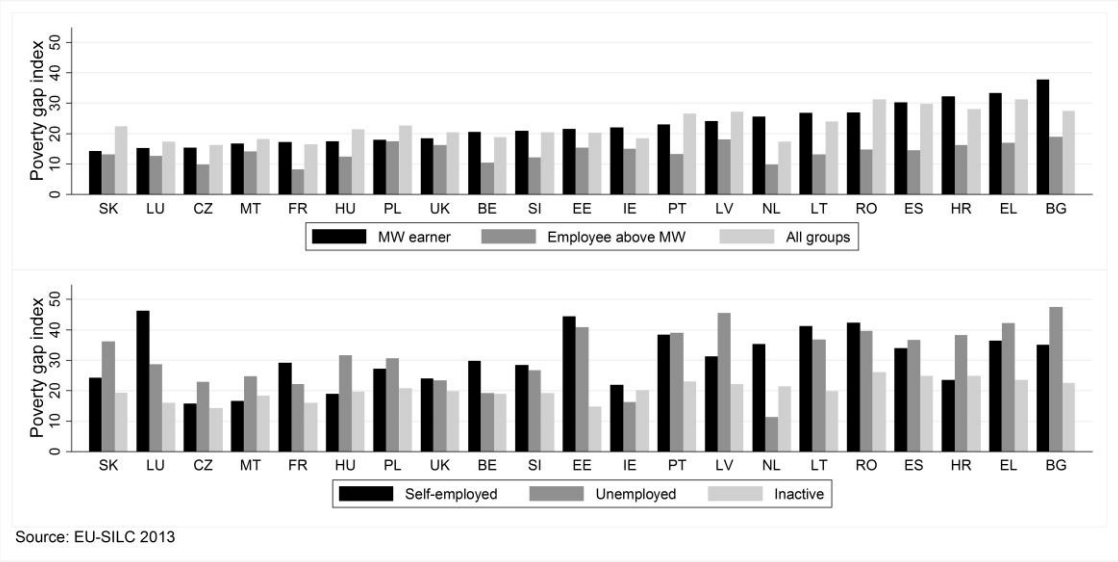
Graph II.1.9 shows that for most countries, the poverty gap for minimum wage earners is in the same range as for the inactive, while the poverty gap for the unemployed and self-employed is in general higher. The poverty gap for those earning the minimum wage is the lowest in Slovakia (14%) and Czech Republic (15%), implying that the income of poor minimum wage earners in these countries is just below the poverty line. In combination with the low observed poverty rate, these findings suggest that poverty-related problems among minimum wage earners are less of a concern for these countries. In contrast, in Bulgaria, Greece or Spain, both the poverty rate and the poverty gap are high, implying that a large share of the minimum wage earners are poor and that their incomes are well below the poverty line. While poverty-related problems among minimum wage earners are more pertinent in these countries, the likelihood that an increase of the minimum wage would lift them out of poverty will be lower.

Are the poor earning the minimum wage?

Overall, the share of minimum wage earners in the total number of poor individuals is relatively low, notably below 18% in all EU Member States (Graph II.1.11). The majority of the poor are either inactive or unemployed. Minimum wage earners constitute the largest share of the poor in France (16%), Luxembourg (17%), and United Kingdom (16%). This is the result of the interplay between the weight of different population groups in the population, and the poverty rates among these population groups.

For example, in Luxembourg, the high share of minimum wage earners is being driven by the poverty rate among minimum wage earners, which is relatively high as compared to other population groups. In France and UK, the difference in poverty rates between minimum wage earners and the rest of the population is less pronounced, but these have a higher share of minimum wage earners among employees, as well as in the overall population. Conversely, in Bulgaria, one of the countries with the most severe poverty outcomes, the minimum wage earners make up only 3.3% of all poor individuals; and the vast majority of the poor (82%) are either unemployed or inactive.

Graph II.1.9: **Depth of poverty by employment status**



(1) The poverty gap measures the depth or intensity of poverty and provides complementary information to the incidence of poverty. It is measured at the household level. It looks at how far below the poverty line the income of the poor is, and is measured as the difference between the median equivalised household income of households below the poverty line and the poverty line itself, expressed as a percentage of the poverty line. The poverty gap is a useful measure to assess how much extra income would be required to lift a poor household over the poverty line and reduce poverty. If the poverty gap is small, a relatively small income increase can be sufficient to lift a household out of poverty. The figures should be interpreted as follows: in Slovakia the median equivalised income of poor households with a minimum wage earner is 19% lower than the equivalised household income of those households at the poverty line. The employment status of an individual (older than 15 years) is determined based on the status of the individual in most of the months during the income reference period.
Source: Commission services, based on EU-SILC

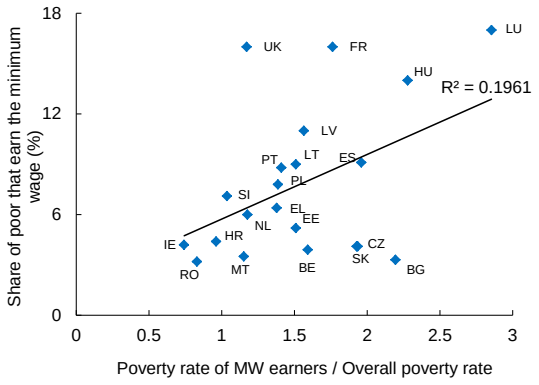
It is easier to understand the drivers of the share of minimum wage earners among the poor (which determines the magnitude of the expected impact of a minimum wage increase on aggregate poverty) by disaggregating the share of minimum wage earners among the poor into two components as follows:

$$Share\ of\ MW\ among\ poor$$

$$= \frac{Poverty\ rate\ MW}{Overall\ poverty\ rate} * \frac{MW\ earners}{Population}$$

The first term in this formula is an indicator for relative poverty among minimum wage earners, measured as the ratio of the poverty rate for minimum wage earners over the aggregate poverty rate. This is referred to as the "probability-effect", as it relates to the likelihood of minimum wage earners being poor. Graph II.1.10 presents the correlation between the share of minimum wage earners and the ratio of the poverty rate for minimum wage earners over the overall poverty rate.

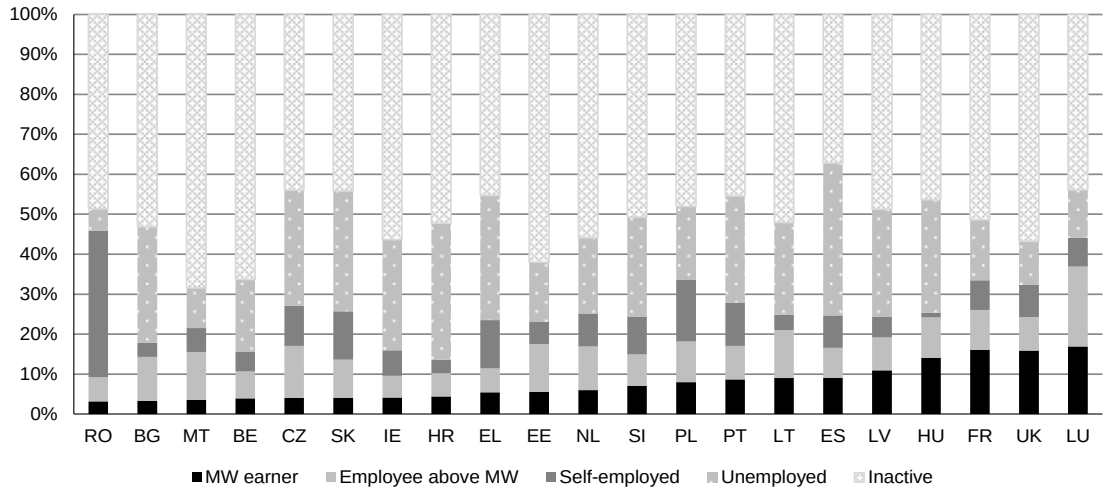
Graph II.1.10: **Main divers of the impact of the minimum wage on overall poverty: Probability effect**



Source: Commission services, based on EU-SILC

The second term measures the share of minimum wage earners in the total population. It provides an indication of the relative importance of the

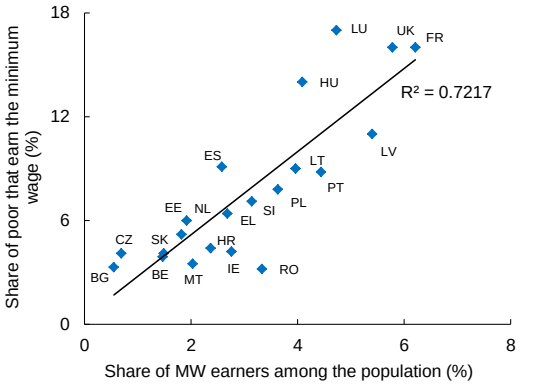
Graph II.1.11: **Distribution of poor individuals by employment status**



(1) The distribution includes only individuals older than 15 years for whom the employment status was given. The figure should be interpreted as follows: in Luxemburg 17% of the poor are minimum wage earners, 20% are employees earning a wage above the minimum wage, 7.2% are self-employed and 44% are inactive. The employment status of an individual (older than 15 years) is determined based on the status of the individual in most of the months during the income reference period.
Source: Commission services, based on EU-SILC

affected individuals in the population; therefore it is referred to as the *volume-effect*.

Graph II.1.12: **Main divers of the impact of the minimum wage on overall poverty: Volume effect**



Source: Commission services, based on EU-SILC

Graph II.1.12 presents the correlation between the share of minimum wage earners in the population and the share of minimum wage earners among the population. These charts reveal that differences across countries in the share of poor earning the minimum wages are more strictly related to differences in the relevance of the *volume effect* than to differences across countries in the *probability effect*; indeed, simple correlations suggest that the *volume-effect* outweighs the *probability-effect*.

Simulations: What is the impact of an increase in the minimum wage on poverty?

The impact of an increase in the minimum wage is simulated under three different scenarios: (A) an increase in the monthly minimum wage for all countries by 10%; (B) an increase in the monthly minimum wage to 40% of the average wage for those countries where the ratio was below 40%; and (C) an increase in the monthly minimum wage to 50% of the median wage for those countries where the ratio was below 50%.

First, *in case the poverty line is kept unadjusted*, aggregate poverty rate is expected to decline, as household incomes increase for a part of the population, and some households will be lifted over the poverty line. ([73]) The simulations show that aggregate poverty outcomes significantly decline across all scenarios and across all countries (except for Czech Republic) (Table II.1.11). The table shows the poverty rate in the population and

([73]) The impact on the aggregate poverty gap is not clear ex ante, as it depends on the income distribution among the poor households. More detailed analysis can be found in Van Herck and Vandeplas (2016).

the percentage point change under different assumption of minimum wage increases and under the assumption of no effects on employment.

Table II.1.11: **Impact on the aggregate poverty rate (unadjusted poverty line)**

	Baseline	Scenario 1: 10% increase	Scenario 2: Min. 40% of average wage	Scenario 3: Min. 50% of median wage
Belgium	14.66	-0.14	-	-0.14
Bulgaria	19.78	-0.08	-	-0.08
Czech Republic	8.18	0	-0.01	-0.05
Estonia	18.86	-0.17	-0.31	-0.28
Greece	21.66	-0.27	-	-
Spain	19.32	-0.37	-0.35	-0.45
France	12.7	-0.83	-	-
Croatia	19.12	-0.05	-	-
Hungary	12.63	-0.44	-	-
Ireland	13.65	-0.11	-0.11	-0.07
Lithuania	19.46	-0.29	-0.28	-0.28
Luxemburg	14.03	-0.64	-	-0.49
Latvia	18.9	-0.68	-0.52	-
Malta	14.06	-0.15	-	-0.11
Netherlands	9.92	-0.11	-0.11	-0.18
Poland	16.25	-0.31	-	-
Portugal	17.78	-0.39	-	-
Romania	20.63	-0.21	-	-
Slovenia	14.42	-0.31	-	-
Slovakia	11.52	-0.16	-	-0.07
United Kingdom	15.36	-0.36	-	-

(1) Poverty line is unadjusted compared to the baseline scenario. The impact is measured in percentage points.
Source: Commission services, based on EU-SILC

The overall impact on aggregate poverty is however rather small as minimum wage earners only represent a small share of the poor. In fact, the majority of the poor are unemployed or inactive and therefore not affected by the increase in the minimum wage. Still, there are differences in the impact on poverty between countries. For the first scenario, the largest impact on the poverty rate is observed in France (-0.83 pps or -6.5%), Luxemburg (-0.64 pps or -4.6%) and Latvia (-0.68 pps or -3.6%). The smallest impact is found in the Czech Republic (0.0 pps or 0.0%), Croatia (-0.05 pps or -0.3%) and Bulgaria (-0.08 pps or -0.4%). Not surprisingly the impact of minimum wage increase is positively correlated with the share of minimum wage earners among the poor and in particular with the share of minimum wage earners among the population (*volume effect*).

Second, *in case the poverty line is allowed to adjust* to the new wages received, the impact of a change in the minimum wage on the poverty rate becomes unclear a priori and will depend on the income distribution in the country. In case the minimum wage increases, the income of minimum wage earners increases, and they may be lifted over the poverty line. However, the poverty line in itself is expected to shift upwards, as the national median equivalised disposable household income will increase. This may offset the former effects.

The results show that the impact differs between countries (Table II.1.12). For Romania the poverty rate slightly increases compared to the baseline under the relevant scenarios. Also in Belgium, Croatia and Ireland, there was an increase with respect to the baseline scenario, although this increase was not statistically significant. In the other countries, the poverty rate decreases under the relevant scenarios. However, the impact is relatively modest and in most countries the change in the poverty rate compared to the baseline is lower than 1%. A larger impact than 1% is being found in Greece, France, Hungary, Luxemburg, Latvia (scenario 1), Portugal and Slovakia. The impact is the largest in France, where as a result of a minimum wage increase of 10% the poverty rate decreases by 0.55 percentage points or 4.33%.

Table II.1.12: **Impact on the aggregate poverty rate (adjusted poverty line)**

	Baseline	Scenario 1: 10% increase	Scenario 2: Min. 40% of average wage	Scenario 3: Min. 50% of median wage
Belgium	14.66	0.06	-	0.04
Bulgaria	19.78	-0.08	-	-0.08
Czech Republic	8.18	0	-0.01	-0.05
Estonia	18.86	-0.17	-0.16	-0.13
Greece	21.66	-0.23	-	-
Spain	19.32	-0.18	-0.17	-0.25
France	12.7	-0.55	-	-
Croatia	19.12	0.03	-	-
Hungary	12.63	-0.4	-	-
Ireland	13.65	-0.01	0	0.02
Lithuania	19.46	-0.08	-0.08	-0.08
Luxemburg	14.03	-0.57	-	-0.39
Latvia	18.9	-0.38	-0.27	-
Malta	14.06	-0.12	-	-0.09
Netherlands	9.92	-0.03	-0.03	-0.1
Poland	16.25	-0.23	-	-
Portugal	17.78	-0.31	-	-
Romania	20.63	0.15	-	-
Slovenia	14.42	-0.05	-	-
Slovakia	11.52	-0.16	-	-0.07
United Kingdom	15.36	-0.09	-	-

(1) Poverty line is adjusted in each scenario compared to the baseline scenario. The impact is measured in percentage points.
Source: Commission services, based on EU-SILC

Overall, these simulations show that in general increases in the minimum wage may reduce aggregate poverty. The impact differs between member states and is especially higher in countries where the minimum wage earners represent a higher share of the population. However, it is

important to acknowledge that this analysis does not take into account the negative impact that an increase in the minimum wage may have on employment.

1.5. CONCLUSIONS

Statutory minimum wages are a policy tool to guarantee a *fair* wage for those in low pay jobs and address cases in which workers are in a weak bargaining position. As evidenced by this chapter, the minimum wage is an effective tool to improve distribution and support consumption of low wage earners, with small negative effects on employment that disappear over time.

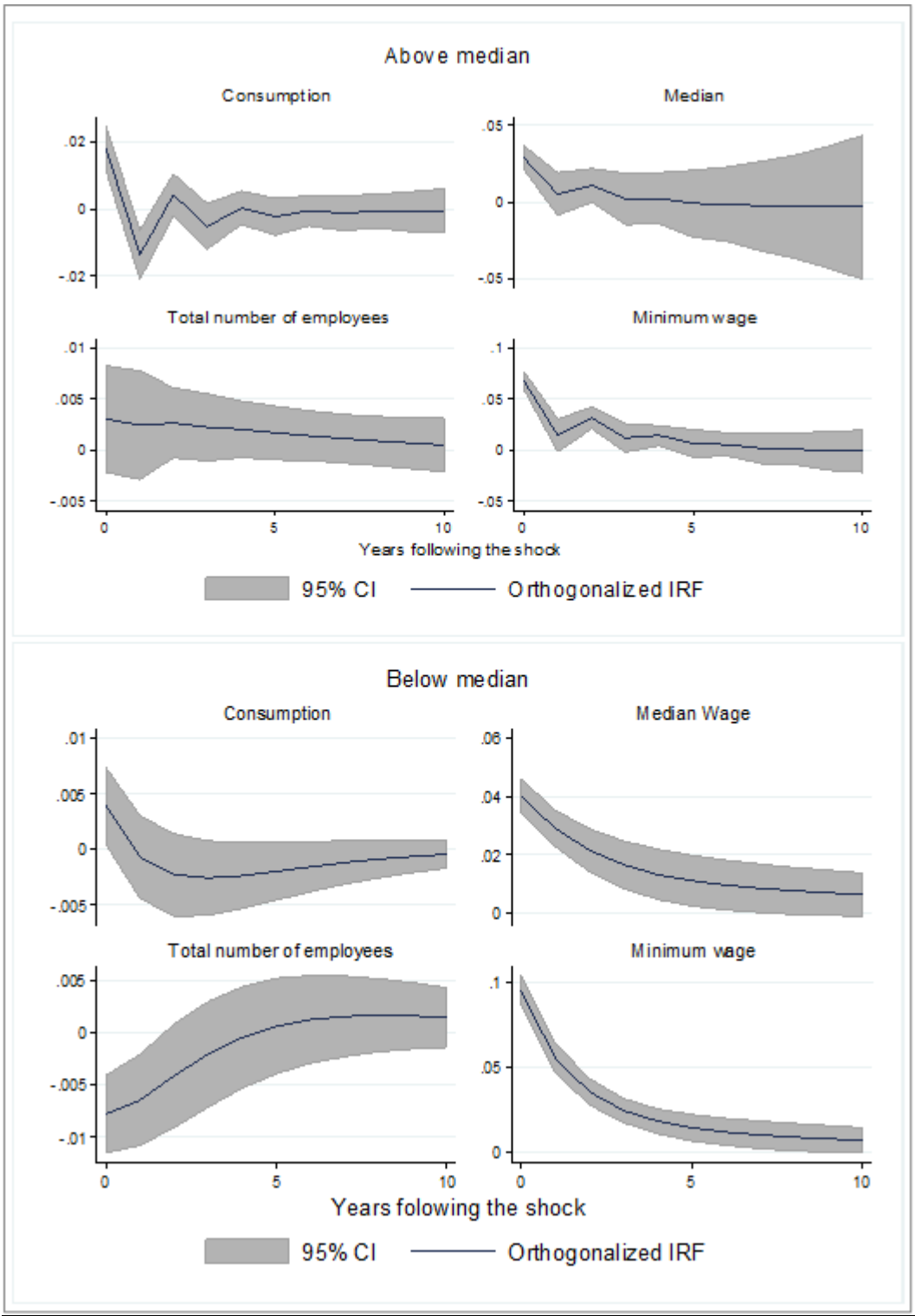
EU countries differ in their minimum wage setting regime. Differences concern not only the level of minimum wage as proportion to the average wage, but also its institutional setting for minimum wage updates. Differences are considerable in the role played by the government and factors taken into account when adjusting the minimum wage. Systems where governments can reset the minimum wage without early consultation of social partners and other stakeholders and clear criteria may allow responding to unexpected shocks, but at the cost of making the updating unpredictable and at the mercy of the electoral cycle. Irregular increases of the minimum wage may lead to larger revisions than more regular and gradual updates. Rule-based systems reduce the *political bias* and, being *predictable* and *transparent*, allow employers and employees to make their plans. Yet, rule-based systems may introduce real wage rigidity for low wage earners and lead to excessive rippling (spill over) effects on wages close to the minimum.

A properly designed institutional setting has to balance the need of achieving the objectives of a minimum wage policy with the uncertainty that an unclear and unpredictable framework may entail. Moreover, institutional arrangements that allows some flexibility in the minimum wage setting policy (e.g. through inability-to-pay clauses or consensual suspensions of minimum wage payments by bipartite or tri-partite agreements) could provide the additional lever to deal with shocks that hit the most vulnerable more strongly.

The chapter leaves open a number of questions that may be taken on for future analysis. First, the minimum wage is one policy lever to reduce in-work poverty and redistribute income. The design of the tax and benefit system and the availability of in-work benefits can also be alternative tools. The relative effectiveness of these two policy levers will have to assessed against the design of minimum wage policies and the tax and benefit systems. Second, the effect of the minimum wage on profits, in particular of companies employing a large number of low-wage workers, is less prominent. The study of the effect of minimum wage on profitability is relevant to determine the role of the minimum wage in determining international costs competiveness.

APPENDIX 1

Graph II.A1.1: **Response to a minimum wage shock: value of government and frequency index above median (ie rule based minimum wage setting systems) and below median (ie more discretionary minimum wage setting systems)**



(1) The horizontal axis represents years after the shock. The vertical axis represents log points. Bands represent the 5% confidence interval generated by Monte Carlo simulations. All values within the bands are likely probable and if 0 is included in the band it cannot be excluded that the effect is zero.
Source: European Commission.

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Statistical annex

APPENDIX 1
Labour market data

Belgium	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	10978	11054	11105	11157	11212	0.5 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	7220	7242	7257	7266	7281	0.2 %
(% of total population)	65.8	65.5	65.3	65.1	64.9	-0.2 pps
3 - **Labour force** (15-64, 1000 pers.)	4817	4847	4901	4920	4921	0.0 %
Male	2623	2637	2651	2644	2640	-0.2 %
Female	2194	2210	2250	2277	2281	0.2 %
4 - **Activity rate** (% of population 15-64)	66.7	66.9	67.5	67.7	67.6	-0.1 pps
Young (15-24)	32.0	31.5	31.0	30.2	30.0	-0.2 pps
Prime age (25-54)	84.7	85.0	85.3	85.6	85.1	-0.6 pps
Older (55-64)	40.3	41.4	44.1	45.1	46.6	1.6 pps
Nationals (15-64)	67.2	67.4	68.0	68.1	67.9	-0.1 pps
Non-nationals (15-64)	62.9	63.3	63.7	65.0	65.0	0.0 pps
Male	72.3	72.5	72.7	72.4	72.2	-0.3 pps
Young (15-24)	34.1	35.0	33.7	32.3	32.8	0.5 pps
Prime age (25-54)	90.7	90.7	90.8	90.7	89.9	-0.8 pps
Older (55-64)	47.8	47.9	50.5	51.3	52.2	0.9 pps
Female	61.1	61.3	62.3	63.0	63.0	0.0 pps
Young (15-24)	29.8	27.9	28.2	28.1	27.1	-1.0 pps
Prime age (25-54)	78.7	79.1	79.7	80.6	80.2	-0.4 pps
Older (55-64)	33.0	34.9	37.8	39.0	41.2	2.2 pps
5 - **Employment rate** (% of population 15-64)	61.9	61.8	61.8	61.9	61.8	-0.1 pps
Young (15-24)	26.0	25.3	23.6	23.2	23.4	0.2 pps
Prime age (25-54)	79.3	79.3	79.0	79.1	78.5	-0.6 pps
Older (55-64)	38.7	39.5	41.7	42.6	44.0	1.4 pps
Low-skilled (15-64)	38.4	38.1	37.5	37.3	36.0	-1.2 pps
Medium-skilled (15-64)	65.6	65.2	65.3	63.8	64.0	0.2 pps
High-skilled (15-64)	82.0	81.7	81.0	82.0	81.8	-0.1 pps
Nationals (15-64)	63.0	63.0	62.9	62.9	62.8	-0.2 pps
Non-nationals (15-64)	53.1	52.4	52.5	53.7	55.0	1.3 pps
Male	67.1	66.9	66.4	65.8	65.5	-0.3 pps
Young (15-24)	27.7	27.8	25.3	24.5	25.0	0.5 pps
Prime age (25-54)	84.9	84.5	84.0	83.2	82.5	-0.7 pps
Older (55-64)	46.0	46.0	47.7	48.5	48.9	0.4 pps
Female	56.7	56.8	57.2	57.9	58.0	0.1 pps
Young (15-24)	24.2	22.6	21.9	21.8	21.7	-0.1 pps
Prime age (25-54)	73.8	73.9	74.0	75.0	74.5	-0.5 pps
Older (55-64)	31.6	33.1	35.8	37.0	39.3	2.3 pps
6 - **Employed persons** (15-64, 1000 pers.)	4470.5	4479.0	4484.5	4497.3	4499.3	0.0 %
7 - **Employment growth** (%, National accounts)	1.4	0.4	-0.4	0.3	0.9	0.6 pps
Employment growth (%, 15-64, LFS)	0.4	0.2	0.1	0.3	0.0	-0.2 pps
Male	0.1	0.0	-0.6	-0.7	-0.2	0.5 pps
Female	0.9	0.5	0.9	1.5	0.4	-1.1 pps
8 - **Self employed** (15-64, % of total employment)	12.8	13.0	13.7	13.2	13.8	0.5 pps
Male	16.5	16.5	17.8	16.8	17.5	0.8 pps
Female	8.4	8.9	9.0	9.1	9.5	0.3 pps
9 - **Temporary employment** (15-64, % of total employment)	8.9	8.1	8.1	8.6	9.0	0.4 pps
Male	7.7	7.0	7.2	7.6	8.3	0.7 pps
Female	10.3	9.3	9.1	9.7	9.7	0.0 pps
10 - **Part-time** (15-64, % of total employment)	24.7	24.7	24.3	23.7	24.3	0.6 pps
Male	9.2	9.0	8.7	8.4	9.3	0.9 pps
Female	43.3	43.5	42.5	41.2	41.4	0.2 pps
11 - **Unemployment rate** (harmonised:15-74)	7.2	7.6	8.4	8.5	8.5	0.0 pps
Young (15-24)	18.7	19.8	23.7	23.2	22.1	-1.1 pps
Prime age (25-49)	6.4	6.7	7.4	7.6	7.7	0.1 pps
Older (55-64)	4.0	4.5	5.4	5.4	5.6	0.2 pps
Low-skilled (15-64)	14.1	14.2	16.0	16.4	17.0	0.6 pps
Medium-skilled (15-64)	6.8	7.8	8.3	8.8	8.7	-0.1 pps
High-skilled (15-64)	3.8	4.0	4.9	4.7	4.6	-0.1 pps
Nationals (15-64)	6.3	6.5	7.4	7.5	7.6	0.1 pps
Non-nationals (15-64)	15.6	17.2	17.7	17.3	15.4	-1.9 pps
Male	7.1	7.7	8.7	9.0	9.1	0.1 pps
Female	7.2	7.4	8.2	7.9	7.8	-0.1 pps
12 - **Long-term unemployment** (% of total unemployment)	48.4	44.7	46.1	49.9	51.7	1.8 pps
13 - **Worked hours** (full-time, average actual weekly hours)	41.4	41.1	41.3	41.1	41.3	0.5 %
Male	42.4	42.1	42.3	42.0	42.3	0.7 %
Female	39.4	39.1	39.2	39.3	39.3	0.0 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-4.0	-1.5	-1.8	-0.8	-0.8	0.0 pps
Building and construction	1.9	0.5	-1.3	-1.7	-0.9	0.8 pps
Services	1.6	0.3	-0.2	0.8	1.6	0.8 pps
Manufacturing industry	0.3	-1.5	-2.3	-2.1	-1.5	0.6 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	3.1	3.2	2.6	0.9	0.3	-0.6 pps
Real compensation per employee based on GDP	1.1	1.2	1.2	0.3	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	2.8	2.9	1.9	0.9	0.1	-0.8 pps
Labour cost index (wages and salaries, total)	2.8	2.9	1.9	0.9	0.1	-0.8 pps
Labour productivity (GDP/person employed)	0.4	-0.2	0.4	0.9	0.5	-0.4 pps

Bulgaria	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	7348	7306	7265	7224	7197	-0.4 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	5010	4924	4859	4796	4727	-1.4 %
(% of total population)	68.2	67.4	66.9	66.4	65.7	-0.7 pps
3 - **Labour force** (15-64, 1000 pers.)	3302	3304	3323	3309	3276	-1.0 %
Male	1760	1758	1766	1763	1744	-1.1 %
Female	1543	1546	1557	1546	1532	-0.9 %
4 - **Activity rate** (% of population 15-64)	65.9	67.1	68.4	69.0	69.3	0.3 pps
Young (15-24)	29.4	30.4	29.6	27.2	26.0	-1.3 pps
Prime age (25-54)	81.9	82.3	83.1	83.3	83.2	-0.1 pps
Older (55-64)	48.9	51.1	54.1	56.6	58.0	1.4 pps
Nationals (15-64)	65.9	67.1	68.4	69.0	69.3	0.3 pps
Non-nationals (15-64)	50.0	72.3	60.9	54.2	48.9	-5.3 pps
Male	69.9	71.0	72.2	72.9	73.2	0.2 pps
Young (15-24)	33.9	35.3	34.3	31.5	30.5	-1.1 pps
Prime age (25-54)	84.5	84.8	85.7	86.2	86.4	0.1 pps
Older (55-64)	55.8	57.3	59.9	62.5	62.7	0.1 pps
Female	61.9	63.2	64.5	65.0	65.4	0.4 pps
Young (15-24)	24.8	25.3	24.7	22.6	21.2	-1.5 pps
Prime age (25-54)	79.3	79.8	80.3	80.2	79.8	-0.4 pps
Older (55-64)	42.8	45.5	49.0	51.4	53.8	2.4 pps
5 - **Employment rate** (% of population 15-64)	58.4	58.8	59.5	61.0	62.9	1.9 pps
Young (15-24)	22.1	21.9	21.2	20.7	20.3	-0.4 pps
Prime age (25-54)	73.3	73.1	73.3	74.5	76.1	1.6 pps
Older (55-64)	44.6	45.7	47.4	50.0	53.0	2.9 pps
Low-skilled (15-64)	27.5	27.4	27.8	29.7	29.6	-0.1 pps
Medium-skilled (15-64)	63.5	63.4	63.6	65.2	67.2	2.1 pps
High-skilled (15-64)	81.2	81.1	80.7	81.7	84.0	2.3 pps
Nationals (15-64)	58.5	58.8	59.5	61.1	62.9	1.9 pps
Non-nationals (15-64)	44.9	60.0	51.7	52.1	45.5	-6.6 pps
Male	61.2	61.3	62.1	63.9	65.9	2.1 pps
Young (15-24)	25.1	24.9	24.0	24.0	24.0	0.0 pps
Prime age (25-54)	74.7	74.3	75.0	76.4	78.5	2.1 pps
Older (55-64)	50.5	50.8	51.9	54.5	56.8	2.3 pps
Female	55.6	56.3	56.8	58.2	59.8	1.6 pps
Young (15-24)	19.0	18.7	18.4	17.3	16.5	-0.8 pps
Prime age (25-54)	71.9	71.8	71.5	72.5	73.6	1.1 pps
Older (55-64)	39.4	41.3	43.4	46.0	49.5	3.5 pps
6 - **Employed persons** (15-64, 1000 pers.)	2927.5	2894.9	2889.4	2927.4	2973.5	1.6 %
7 - **Employment growth** (%, National accounts)	-2.2	-2.5	-0.4	0.4	0.4	0.0 pps
Employment growth (%, 15-64, LFS)	-3.6	-1.1	-0.2	1.3	1.6	0.3 pps
Male	-4.5	-1.6	0.1	1.7	1.8	0.2 pps
Female	-2.6	-0.6	-0.5	0.9	1.3	0.4 pps
8 - **Self employed** (15-64, % of total employment)	10.8	10.5	11.2	11.5	11.1	-0.4 pps
Male	13.4	13.2	14.2	14.6	14.1	-0.4 pps
Female	8.0	7.5	8.0	8.1	7.7	-0.4 pps
9 - **Temporary employment** (15-64, % of total employment)	4.0	4.4	5.6	5.3	4.4	-0.9 pps
Male	4.4	4.9	6.1	5.6	4.7	-0.9 pps
Female	3.7	4.0	5.1	4.9	4.1	-0.8 pps
10 - **Part-time** (15-64, % of total employment)	2.2	2.2	2.5	2.5	2.2	-0.3 pps
Male	2.0	2.0	2.0	2.2	1.9	-0.3 pps
Female	2.4	2.5	3.0	2.8	2.5	-0.3 pps
11 - **Unemployment rate** (harmonised:15-74)	11.3	12.3	13.0	11.4	9.2	-2.2 pps
Young (15-24)	25.0	28.1	28.4	23.8	21.6	-2.2 pps
Prime age (25-49)	10.5	11.3	11.8	10.5	8.5	-2.0 pps
Older (55-64)	8.8	10.4	12.4	11.7	8.7	-3.0 pps
Low-skilled (15-64)	26.9	28.5	30.3	28.6	25.5	-3.1 pps
Medium-skilled (15-64)	10.5	11.7	12.4	10.7	8.4	-2.3 pps
High-skilled (15-64)	5.1	5.9	6.4	5.2	4.0	-1.2 pps
Nationals (15-64)	11.4	12.4	13.0	11.5	9.2	-2.3 pps
Non-nationals (15-64)	0.0	0.0	0.0	0.0	0.0	0.0 pps
Male	12.3	13.5	13.9	12.3	9.8	-2.5 pps
Female	10.1	10.8	11.8	10.4	8.4	-2.0 pps
12 - **Long-term unemployment** (% of total unemployment)	55.7	55.2	57.3	60.3	61.1	0.8 pps
13 - **Worked hours** (full-time, average actual weekly hours)	40.6	40.5	40.4	40.5	40.5	0.0 %
Male	40.8	40.8	40.6	40.7	40.8	0.2 %
Female	40.4	40.3	40.2	40.2	40.2	0.0 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-2.9	-5.9	1.2	1.6	-2.6	-4.2 pps
Building and construction	-11.8	-6.3	-3.5	-0.8	2.5	3.3 pps
Services	-0.9	-2.3	0.1	0.0	1.0	0.9 pps
Manufacturing industry	-1.4	-1.9	-3.2	0.5	2.3	1.8 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	6.8	7.7	8.8	5.6	1.8	-3.8 pps
Real compensation per employee based on GDP	-0.1	6.1	9.6	5.1	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	9.0	3.3	4.2	6.5	7.3	0.8 pps
Labour cost index (wages and salaries, total)	9.0	3.7	4.2	6.2	7.6	1.4 pps
Labour productivity (GDP/person employed)	3.9	2.8	1.7	1.2	2.6	1.4 pps

Czech Republic	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	10497	10509	10511	10525	10543	0.2 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	7296	7229	7154	7081	7026	-0.8 %
(% of total population)	69.5	68.8	68.1	67.3	66.6	-0.6 pps
3 - **Labour force** (15-64, 1000 pers.)	5146	5175	5213	5206	5201	-0.1 %
Male	2903	2909	2917	2914	2900	-0.5 %
Female	2242	2266	2297	2292	2301	0.4 %
4 - **Activity rate** (% of population 15-64)	70.5	71.6	72.9	73.5	74.0	0.5 pps
Young (15-24)	29.9	31.3	31.6	32.2	32.5	0.3 pps
Prime age (25-54)	88.0	88.4	89.1	88.8	88.6	-0.2 pps
Older (55-64)	50.6	52.4	54.8	56.8	58.0	1.2 pps
Nationals (15-64)	70.4	71.5	72.7	73.4	73.9	0.5 pps
Non-nationals (15-64)	77.1	77.9	81.0	78.8	78.0	-0.9 pps
Male	78.7	79.5	80.5	81.2	81.4	0.1 pps
Young (15-24)	35.5	36.4	36.8	38.1	37.4	-0.7 pps
Prime age (25-54)	95.3	95.5	95.8	95.6	95.4	-0.2 pps
Older (55-64)	62.6	64.0	66.1	67.9	68.3	0.3 pps
Female	62.2	63.5	65.1	65.6	66.5	0.9 pps
Young (15-24)	24.1	25.9	26.1	26.1	27.4	1.3 pps
Prime age (25-54)	80.4	80.9	81.9	81.6	81.4	-0.1 pps
Older (55-64)	39.4	41.5	44.2	46.3	48.3	1.9 pps
5 - **Employment rate** (% of population 15-64)	65.7	66.5	67.7	69.0	70.2	1.3 pps
Young (15-24)	24.5	25.2	25.6	27.1	28.4	1.3 pps
Prime age (25-54)	82.8	82.9	83.5	83.8	84.5	0.7 pps
Older (55-64)	47.7	49.3	51.6	54.0	55.5	1.4 pps
Low-skilled (15-64)	21.4	21.1	22.0	22.9	22.3	-0.6 pps
Medium-skilled (15-64)	71.0	71.7	72.4	73.6	75.4	1.8 pps
High-skilled (15-64)	81.1	81.2	82.5	82.2	82.6	0.4 pps
Nationals (15-64)	65.6	66.4	67.6	68.9	70.1	1.3 pps
Non-nationals (15-64)	72.7	73.4	75.3	74.1	74.4	0.4 pps
Male	74.0	74.6	75.7	77.0	77.9	0.8 pps
Young (15-24)	29.0	29.2	29.9	32.3	33.1	0.8 pps
Prime age (25-54)	90.9	90.9	91.2	91.5	91.9	0.4 pps
Older (55-64)	58.9	60.3	62.5	64.8	65.5	0.7 pps
Female	57.2	58.2	59.6	60.7	62.4	1.7 pps
Young (15-24)	19.8	21.0	21.0	21.6	23.4	1.8 pps
Prime age (25-54)	74.3	74.6	75.5	75.7	76.7	1.0 pps
Older (55-64)	37.1	39.0	41.4	43.8	45.9	2.1 pps
6 - **Employed persons** (15-64, 1000 pers.)	4796.4	4810.3	4845.9	4883.5	4934.3	1.0 %
7 - **Employment growth** (%, National accounts)	-0.3	0.4	0.3	0.6	1.4	0.8 pps
Employment growth (%, 15-64, LFS)	-0.3	0.3	0.7	0.8	1.0	0.3 pps
Male	-0.7	0.0	0.4	0.8	0.4	-0.4 pps
Female	0.3	0.7	1.2	0.8	1.8	1.1 pps
8 - **Self employed** (15-64, % of total employment)	17.2	17.5	16.5	17.0	16.3	-0.7 pps
Male	21.4	21.6	20.3	21.3	20.2	-1.1 pps
Female	11.7	12.2	11.6	11.5	11.4	-0.1 pps
9 - **Temporary employment** (15-64, % of total employment)	8.0	8.3	9.1	9.7	10.0	0.3 pps
Male	6.7	6.9	7.6	8.4	8.4	0.0 pps
Female	9.5	9.9	10.9	11.3	11.9	0.6 pps
10 - **Part-time** (15-64, % of total employment)	4.7	5.0	5.8	5.5	5.3	-0.2 pps
Male	1.8	2.2	2.5	2.5	2.2	-0.3 pps
Female	8.5	8.6	10.0	9.5	9.3	-0.2 pps
11 - **Unemployment rate** (harmonised:15-74)	6.7	7.0	7.0	6.1	5.1	-1.0 pps
Young (15-24)	18.1	19.5	19.0	15.9	12.6	-3.3 pps
Prime age (25-49)	5.9	6.1	6.2	5.6	4.6	-1.0 pps
Older (55-64)	5.8	5.8	5.8	4.9	4.4	-0.5 pps
Low-skilled (15-64)	24.6	28.8	26.0	22.4	23.1	0.7 pps
Medium-skilled (15-64)	6.5	6.5	6.9	6.1	4.8	-1.3 pps
High-skilled (15-64)	2.9	2.9	2.8	2.9	2.4	-0.5 pps
Nationals (15-64)	6.8	7.1	7.0	6.2	5.1	-1.1 pps
Non-nationals (15-64)	5.7	5.7	7.2	6.1	4.5	-1.6 pps
Male	5.8	6.0	5.9	5.1	4.2	-0.9 pps
Female	7.9	8.2	8.3	7.4	6.1	-1.3 pps
12 - **Long-term unemployment** (% of total unemployment)	40.6	43.4	43.4	43.6	47.4	3.8 pps
13 - **Worked hours** (full-time, average actual weekly hours)	41.4	41.1	40.6	40.4	40.2	-0.5 %
Male	42.6	42.2	41.6	41.4	41.2	-0.5 %
Female	39.6	39.4	39.1	38.9	38.7	-0.5 %
14 - **Sectoral employment growth** (% change)						
Agriculture	2.4	1.6	1.0	-0.9	-4.0	-3.1 pps
Building and construction	-5.1	-1.3	-2.4	-4.6	-0.1	4.5 pps
Services	-1.7	0.8	0.8	0.6	1.2	0.6 pps
Manufacturing industry	3.6	1.0	-0.2	1.3	3.2	1.9 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	2.9	1.7	-0.3	2.6	2.6	0.0 pps
Real compensation per employee based on GDP	2.8	0.3	-1.7	0.1	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	4.0	2.6	1.2	2.6	3.6	1.0 pps
Labour cost index (wages and salaries, total)	3.9	2.9	0.8	2.8	3.7	0.9 pps
Labour productivity (GDP/person employed)	2.3	-1.2	-0.8	2.2	3.1	0.9 pps

Denmark	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	5570	5591	5613	5643	5682	0.7 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	3613	3611	3615	3626	3644	0.5 %
(% of total population)	64.9	64.6	64.4	64.3	64.1	-0.1 pps
3 - **Labour force** (15-64, 1000 pers.)	2864	2840	2824	2831	2859	1.0 %
Male	1498	1482	1467	1482	1500	1.2 %
Female	1366	1358	1357	1350	1359	0.7 %
4 - **Activity rate** (% of population 15-64)	79.3	78.6	78.1	78.1	78.5	0.4 pps
Young (15-24)	67.1	64.1	61.7	61.5	62.1	0.6 pps
Prime age (25-54)	88.2	87.8	87.5	87.1	87.1	0.1 pps
Older (55-64)	63.2	64.4	65.0	66.4	67.6	1.2 pps
Nationals (15-64)	79.8	79.3	78.8	78.6	79.1	0.5 pps
Non-nationals (15-64)	72.5	71.5	71.7	73.2	73.0	-0.2 pps
Male	82.3	81.4	80.6	81.1	81.6	0.5 pps
Young (15-24)	67.1	64.1	61.0	61.0	61.7	0.7 pps
Prime age (25-54)	91.5	90.6	90.2	90.3	90.8	0.5 pps
Older (55-64)	68.3	69.9	70.2	72.6	72.8	0.1 pps
Female	76.1	75.8	75.6	75.0	75.3	0.3 pps
Young (15-24)	67.1	64.0	62.4	62.0	62.5	0.5 pps
Prime age (25-54)	84.7	84.9	84.8	83.8	83.4	-0.4 pps
Older (55-64)	58.0	58.9	59.9	60.3	62.6	2.3 pps
5 - **Employment rate** (% of population 15-64)	73.1	72.6	72.5	72.8	73.5	0.7 pps
Young (15-24)	57.5	55.0	53.7	53.7	55.4	1.6 pps
Prime age (25-54)	82.3	81.9	82.0	82.0	82.1	0.2 pps
Older (55-64)	59.6	60.8	61.7	63.2	64.7	1.4 pps
Low-skilled (15-64)	57.7	55.5	54.3	54.2	54.3	0.1 pps
Medium-skilled (15-64)	77.4	76.7	77.2	77.1	78.2	1.0 pps
High-skilled (15-64)	85.5	86.0	86.1	85.5	85.6	0.0 pps
Nationals (15-64)	74.1	73.7	73.5	73.8	74.7	0.9 pps
Non-nationals (15-64)	60.6	60.1	62.5	63.3	63.6	0.2 pps
Male	75.9	75.2	75.0	75.8	76.6	0.8 pps
Young (15-24)	56.6	54.6	52.3	52.7	54.6	1.9 pps
Prime age (25-54)	85.7	84.6	85.0	85.5	85.9	0.5 pps
Older (55-64)	63.8	65.9	66.5	68.9	69.8	0.9 pps
Female	70.4	70.0	70.0	69.8	70.4	0.6 pps
Young (15-24)	58.5	55.4	55.0	54.9	56.2	1.3 pps
Prime age (25-54)	78.9	79.1	79.0	78.4	78.3	-0.1 pps
Older (55-64)	55.3	55.8	56.8	57.6	59.6	2.0 pps
6 - **Employed persons** (15-64, 1000 pers.)	2643.1	2621.3	2622.1	2640.1	2678.3	1.4 %
7 - **Employment growth** (%, National accounts)	-0.1	-0.6	0.1	0.8	1.1	0.3 pps
Employment growth (%, 15-64, LFS)	-0.4	-0.8	0.0	0.7	1.4	0.8 pps
Male	0.2	-1.0	-0.2	1.4	1.7	0.3 pps
Female	-1.1	-0.7	0.2	-0.1	1.1	1.2 pps
8 - **Self employed** (15-64, % of total employment)	8.4	8.3	8.2	8.0	7.8	-0.2 pps
Male	11.6	11.4	11.1	10.8	10.5	-0.3 pps
Female	4.8	4.9	5.0	4.9	4.8	0.0 pps
9 - **Temporary employment** (15-64, % of total employment)	8.9	8.6	8.8	8.6	8.7	0.1 pps
Male	8.3	7.9	8.1	8.2	7.9	-0.3 pps
Female	9.4	9.3	9.5	9.0	9.4	0.4 pps
10 - **Part-time** (15-64, % of total employment)	25.1	24.8	24.7	24.6	24.7	0.1 pps
Male	14.2	14.8	14.8	15.2	15.6	0.4 pps
Female	37.0	35.8	35.3	35.0	34.7	-0.3 pps
11 - **Unemployment rate** (harmonised:15-74)	7.6	7.5	7.0	6.6	6.2	-0.4 pps
Young (15-24)	14.2	14.1	13.1	12.6	10.8	-1.8 pps
Prime age (25-49)	6.6	6.7	6.3	5.9	5.7	-0.2 pps
Older (55-64)	5.7	5.5	5.1	4.8	4.4	-0.4 pps
Low-skilled (15-64)	11.6	12.1	11.4	10.6	10.0	-0.6 pps
Medium-skilled (15-64)	6.8	6.9	6.4	6.1	5.4	-0.7 pps
High-skilled (15-64)	5.3	4.9	4.7	4.8	4.9	0.1 pps
Nationals (15-64)	7.1	7.0	6.7	6.1	5.6	-0.5 pps
Non-nationals (15-64)	16.5	16.0	12.9	13.5	12.9	-0.6 pps
Male	7.7	7.5	6.7	6.4	5.9	-0.5 pps
Female	7.5	7.5	7.3	6.8	6.4	-0.4 pps
12 - **Long-term unemployment** (% of total unemployment)	24.4	28.0	25.5	25.2	26.9	1.7 pps
13 - **Worked hours** (full-time, average actual weekly hours)	39.8	39.6	39.5	39.4	39.6	0.5 %
Male	41.1	40.8	40.7	40.6	40.7	0.2 %
Female	37.8	37.8	37.7	37.7	37.8	0.3 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-2.8	1.4	1.4	0.0	-1.4	-1.4 pps
Building and construction	-0.6	-0.6	0.0	1.2	3.0	1.8 pps
Services	1.1	-0.1	0.8	1.7	1.7	0.1 pps
Manufacturing industry	0.0	-1.4	-1.7	1.1	0.7	-0.4 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	1.4	1.7	1.2	1.8	1.9	0.1 pps
Real compensation per employee based on GDP	0.6	-1.0	-0.2	1.0	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	2.5	1.6	1.5	1.9	1.7	-0.2 pps
Labour cost index (wages and salaries, total)	2.8	1.5	1.4	1.6	1.6	0.0 pps
Labour productivity (GDP/person employed)	1.2	0.5	-0.4	0.5	-0.1	-0.6 pps

Germany	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	80275	80426	80646	80983	81681	0.9 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	52314	52487	52577	52729	52964	0.4 %
(% of total population)	65.2	65.3	65.2	65.1	64.8	-0.3 pps
3 - **Labour force** (15-64, 1000 pers.)	40437	40538	40814	40990	41117	0.3 %
Male	21669	21744	21811	21881	21926	0.2 %
Female	18769	18794	19003	19109	19191	0.4 %
4 - **Activity rate** (% of population 15-64)	77.3	77.2	77.6	77.7	77.6	-0.1 pps
Young (15-24)	52.4	50.7	50.8	49.9	48.8	-1.1 pps
Prime age (25-54)	87.7	87.7	87.7	87.6	87.6	0.0 pps
Older (55-64)	64.1	65.4	67.5	69.1	69.4	0.3 pps
Nationals (15-64)	78.2	78.1	78.6	78.8	78.7	0.0 pps
Non-nationals (15-64)	68.5	69.2	69.2	69.4	69.3	-0.1 pps
Male	82.7	82.6	82.6	82.5	82.1	-0.4 pps
Young (15-24)	54.8	53.2	52.9	52.0	50.5	-1.6 pps
Prime age (25-54)	93.2	93.1	92.9	92.6	92.5	-0.1 pps
Older (55-64)	71.8	73.1	74.5	75.5	75.3	-0.3 pps
Female	71.9	71.9	72.6	72.9	73.1	0.2 pps
Young (15-24)	50.0	48.0	48.7	47.7	47.1	-0.6 pps
Prime age (25-54)	82.1	82.3	82.4	82.5	82.5	0.1 pps
Older (55-64)	56.8	58.2	60.8	62.9	63.8	0.9 pps
5 - **Employment rate** (% of population 15-64)	72.7	73.0	73.5	73.8	74.0	0.2 pps
Young (15-24)	47.9	46.6	46.9	46.1	45.3	-0.8 pps
Prime age (25-54)	83.0	83.3	83.4	83.5	83.7	0.3 pps
Older (55-64)	60.0	61.6	63.6	65.6	66.2	0.6 pps
Low-skilled (15-64)	52.8	52.7	53.3	46.0	46.1	0.1 pps
Medium-skilled (15-64)	76.1	76.5	77.0	77.7	78.0	0.3 pps
High-skilled (15-64)	87.8	87.7	87.6	87.7	87.8	0.0 pps
Nationals (15-64)	74.0	74.2	74.8	75.1	75.4	0.3 pps
Non-nationals (15-64)	60.9	62.1	62.5	62.8	62.9	0.1 pps
Male	77.6	77.9	78.0	78.1	78.0	-0.1 pps
Young (15-24)	49.7	48.6	48.4	47.7	46.5	-1.2 pps
Prime age (25-54)	88.0	88.4	88.2	88.0	88.1	0.1 pps
Older (55-64)	67.1	68.6	69.9	71.4	71.3	0.0 pps
Female	67.8	68.1	69.0	69.5	69.9	0.4 pps
Young (15-24)	46.1	44.5	45.2	44.3	44.0	-0.3 pps
Prime age (25-54)	77.9	78.2	78.6	78.8	79.2	0.4 pps
Older (55-64)	53.2	54.9	57.6	60.0	61.2	1.2 pps
6 - **Employed persons** (15-64, 1000 pers.)	38045.4	38320.6	38640.0	38907.7	39175.9	0.7 %
7 - **Employment growth** (%, National accounts)	1.4	1.2	0.6	0.8	0.9	0.1 pps
Employment growth (%, 15-64, LFS)	1.9	0.7	0.8	0.7	0.7	0.0 pps
Male	1.6	0.9	0.4	0.6	0.5	0.0 pps
Female	2.3	0.6	1.4	0.9	0.9	0.0 pps
8 - **Self employed** (15-64, % of total employment)	10.5	10.4	10.1	9.8	9.6	-0.2 pps
Male	13.3	13.2	12.7	12.4	12.1	-0.2 pps
Female	7.3	7.2	7.1	6.9	6.8	-0.2 pps
9 - **Temporary employment** (15-64, % of total employment)	14.6	13.8	13.4	13.1	13.2	0.1 pps
Male	14.5	13.8	13.3	13.1	13.1	0.0 pps
Female	14.8	13.8	13.5	13.2	13.2	0.0 pps
10 - **Part-time** (15-64, % of total employment)	25.9	25.8	26.7	26.5	26.8	0.3 pps
Male	8.9	8.9	9.1	9.2	9.3	0.1 pps
Female	45.4	45.3	46.7	46.3	46.6	0.3 pps
11 - **Unemployment rate** (harmonised:15-74)	5.8	5.4	5.2	5.0	4.6	-0.4 pps
Young (15-24)	8.5	8.0	7.8	7.7	7.2	-0.5 pps
Prime age (25-49)	5.4	5.0	4.9	4.7	4.4	-0.3 pps
Older (55-64)	6.4	5.9	5.7	5.1	4.7	-0.4 pps
Low-skilled (15-64)	13.2	12.4	12.0	12.0	11.4	-0.6 pps
Medium-skilled (15-64)	5.8	5.3	5.2	4.7	4.3	-0.4 pps
High-skilled (15-64)	2.4	2.4	2.4	2.5	2.4	-0.1 pps
Nationals (15-64)	5.4	5.0	4.9	4.6	4.2	-0.4 pps
Non-nationals (15-64)	11.1	10.3	9.8	9.4	9.2	-0.2 pps
Male	6.1	5.6	5.5	5.3	5.0	-0.3 pps
Female	5.6	5.2	4.9	4.6	4.2	-0.4 pps
12 - **Long-term unemployment** (% of total unemployment)	47.9	45.4	44.6	44.3	44.0	-0.3 pps
13 - **Worked hours** (full-time, average actual weekly hours)	41.8	41.6	41.4	41.4	41.2	-0.5 %
Male	42.7	42.5	42.2	42.1	42.0	-0.2 %
Female	40.1	40.0	39.9	39.9	39.8	-0.3 %
14 - **Sectoral employment growth** (% change)						
Agriculture	1.4	-0.4	-3.9	1.2	-1.8	-3.0 pps
Building and construction	1.9	1.5	0.6	0.4	-0.2	-0.6 pps
Services	2.0	1.2	0.7	0.7	1.0	0.2 pps
Manufacturing industry	2.1	1.8	0.3	0.6	0.3	-0.3 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	3.0	2.5	1.8	2.8	2.4	-0.4 pps
Real compensation per employee based on GDP	1.9	1.0	-0.2	1.0	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	2.8	3.1	1.2	1.9	2.8	0.9 pps
Labour cost index (wages and salaries, total)	3.1	3.3	1.2	1.8	3.0	1.2 pps
Labour productivity (GDP/person employed)	2.3	-0.7	-0.1	0.8	0.8	0.0 pps

Estonia	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	1330	1325	1320	1316	1313	-0.2 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	890	880	871	862	853	-1.0 %
(% of total population)	67.0	66.4	66.0	65.5	65.0	-0.5 pps
3 - **Labour force** (15-64, 1000 pers.)	665	659	655	648	654	0.9 %
Male	340	337	336	336	338	0.8 %
Female	325	321	319	313	316	1.1 %
4 - **Activity rate** (% of population 15-64)	74.7	74.8	75.1	75.2	76.7	1.4 pps
Young (15-24)	40.1	40.8	39.8	39.2	41.8	2.6 pps
Prime age (25-54)	88.4	87.8	87.6	87.1	87.9	0.8 pps
Older (55-64)	65.1	65.1	66.6	67.7	68.7	1.0 pps
Nationals (15-64)	73.8	74.3	74.9	75.3	77.0	1.7 pps
Non-nationals (15-64)	79.9	77.5	76.4	74.9	75.0	0.1 pps
Male	78.1	78.4	78.6	79.3	80.4	1.1 pps
Young (15-24)	43.4	44.2	41.4	41.3	45.8	4.4 pps
Prime age (25-54)	92.1	92.1	92.3	92.2	92.6	0.5 pps
Older (55-64)	67.0	65.3	66.8	69.2	67.7	-1.5 pps
Female	71.5	71.4	71.8	71.3	73.0	1.7 pps
Young (15-24)	36.5	37.3	38.1	37.0	37.8	0.8 pps
Prime age (25-54)	84.7	83.5	82.9	82.0	83.0	1.1 pps
Older (55-64)	63.5	64.9	66.4	66.5	69.5	3.0 pps
5 - **Employment rate** (% of population 15-64)	65.3	67.1	68.5	69.6	71.9	2.3 pps
Young (15-24)	31.1	32.2	32.4	33.4	36.3	2.9 pps
Prime age (25-54)	78.2	79.5	80.4	80.9	83.0	2.1 pps
Older (55-64)	57.5	60.5	62.6	64.0	64.5	0.5 pps
Low-skilled (15-64)	30.9	31.6	35.4	37.0	36.9	-0.2 pps
Medium-skilled (15-64)	68.8	69.8	70.0	70.5	73.5	3.0 pps
High-skilled (15-64)	79.0	81.5	82.2	83.2	85.2	2.0 pps
Nationals (15-64)	65.8	67.9	69.1	70.3	72.5	2.2 pps
Non-nationals (15-64)	62.5	63.3	65.3	65.2	68.0	2.8 pps
Male	67.8	69.7	71.3	73.0	75.3	2.4 pps
Young (15-24)	33.1	34.2	34.1	33.4	39.4	6.0 pps
Prime age (25-54)	81.6	83.1	84.7	85.6	87.7	2.1 pps
Older (55-64)	57.2	59.2	61.4	65.2	63.0	-2.2 pps
Female	63.0	64.7	65.7	66.3	68.5	2.2 pps
Young (15-24)	29.0	30.4	30.7	33.3	33.1	-0.2 pps
Prime age (25-54)	75.0	75.9	76.1	76.1	78.2	2.1 pps
Older (55-64)	57.7	61.4	63.6	63.1	65.8	2.7 pps
6 - **Employed persons** (15-64, 1000 pers.)	581.5	591.0	596.6	599.5	613.1	2.3 %
7 - **Employment growth** (%, National accounts)	6.5	1.6	1.2	0.8	2.9	2.1 pps
Employment growth (%, 15-64, LFS)	6.1	1.6	0.9	0.5	2.3	1.8 pps
Male	9.5	1.7	1.7	1.3	2.6	1.2 pps
Female	2.8	1.6	0.2	-0.4	1.9	2.3 pps
8 - **Self employed** (15-64, % of total employment)	8.3	8.5	8.8	8.8	9.3	0.5 pps
Male	11.8	12.2	12.1	12.1	11.9	-0.2 pps
Female	4.7	4.7	5.4	5.4	6.4	1.1 pps
9 - **Temporary employment** (15-64, % of total employment)	4.5	3.5	3.5	3.1	3.4	0.3 pps
Male	5.7	4.7	4.1	3.3	3.9	0.6 pps
Female	3.4	2.4	2.9	3.0	3.0	0.0 pps
10 - **Part-time** (15-64, % of total employment)	9.3	9.2	8.9	8.3	9.5	1.2 pps
Male	5.0	5.1	5.5	5.7	6.0	0.3 pps
Female	13.8	13.3	12.4	11.2	13.4	2.2 pps
11 - **Unemployment rate** (harmonised:15-74)	12.3	10.0	8.6	7.4	6.2	-1.2 pps
Young (15-24)	22.4	20.9	18.7	15.0	13.1	-1.9 pps
Prime age (25-49)	11.5	9.5	8.3	7.2	5.5	-1.7 pps
Older (55-64)	11.6	7.2	6.0	5.4	6.0	0.6 pps
Low-skilled (15-64)	26.9	24.3	15.7	13.8	13.8	0.0 pps
Medium-skilled (15-64)	12.9	10.7	9.8	8.4	6.8	-1.6 pps
High-skilled (15-64)	8.2	6.1	5.9	4.9	4.0	-0.9 pps
Nationals (15-64)	10.8	8.7	7.8	6.6	5.8	-0.8 pps
Non-nationals (15-64)	21.8	18.3	14.5	12.8	9.3	-3.5 pps
Male	13.1	10.9	9.1	7.9	6.2	-1.7 pps
Female	11.6	9.1	8.2	6.8	6.1	-0.7 pps
12 - **Long-term unemployment** (% of total unemployment)	57.3	54.7	44.5	45.2	38.8	-6.4 pps
13 - **Worked hours** (full-time, average actual weekly hours)	40.6	40.3	40.1	39.7	39.7	0.0 %
Male	41.1	40.9	40.7	40.2	40.2	0.0 %
Female	40.0	39.6	39.5	39.1	39.2	0.3 %
14 - **Sectoral employment growth** (% change)						
Agriculture	12.7	3.1	-6.0	-9.2	7.5	16.7 pps
Building and construction	24.7	2.6	0.2	1.7	8.1	6.4 pps
Services	5.7	2.0	3.8	2.0	0.8	-1.1 pps
Manufacturing industry	12.6	-4.1	1.2	-2.3	5.8	8.1 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	0.8	6.6	4.6	4.2	5.7	1.5 pps
Real compensation per employee based on GDP	-4.2	3.3	0.7	2.5	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	4.8	6.6	7.9	6.1	4.7	-1.4 pps
Labour cost index (wages and salaries, total)	4.9	6.4	8.1	6.3	4.8	-1.5 pps
Labour productivity (GDP/person employed)	1.0	2.6	0.2	2.0	-1.4	-3.4 pps

Ireland	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	4577	4590	4602	4615	4642	0.6 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	3064	3042	3022	3007	3002	-0.2 %
(% of total population)	66.9	66.3	65.7	65.2	64.7	-0.5 pps
3 - **Labour force** (15-64, 1000 pers.)	2120	2105	2109	2098	2102	0.2 %
Male	1169	1156	1156	1149	1149	0.0 %
Female	951	949	954	949	952	0.3 %
4 - **Activity rate** (% of population 15-64)	69.2	69.2	69.8	69.8	70.0	0.2 pps
Young (15-24)	41.5	40.5	39.7	37.3	36.3	-1.0 pps
Prime age (25-54)	80.2	80.4	80.8	81.0	81.2	0.2 pps
Older (55-64)	55.4	55.1	57.4	58.4	60.1	1.7 pps
Nationals (15-64)	68.6	68.7	69.3	69.5	69.9	0.4 pps
Non-nationals (15-64)	72.6	72.1	72.9	71.3	70.7	-0.7 pps
Male	76.6	76.5	77.0	77.1	77.4	0.3 pps
Young (15-24)	42.7	41.3	40.6	38.8	38.3	-0.5 pps
Prime age (25-54)	89.0	89.3	89.2	89.6	89.6	0.0 pps
Older (55-64)	65.0	64.6	67.9	69.0	71.5	2.5 pps
Female	61.9	62.0	62.7	62.6	62.8	0.2 pps
Young (15-24)	40.4	39.7	38.7	35.8	34.2	-1.7 pps
Prime age (25-54)	71.5	71.7	72.5	72.7	73.2	0.5 pps
Older (55-64)	45.7	45.6	47.1	48.0	49.0	1.0 pps
5 - **Employment rate** (% of population 15-64)	58.9	58.8	60.5	61.7	63.3	1.5 pps
Young (15-24)	29.5	28.2	29.0	28.4	28.7	0.3 pps
Prime age (25-54)	69.3	69.5	71.0	72.6	74.1	1.6 pps
Older (55-64)	50.0	49.3	51.3	53.0	55.6	2.6 pps
Low-skilled (15-64)	35.2	33.8	35.4	33.9	35.0	1.1 pps
Medium-skilled (15-64)	59.4	59.6	60.7	62.7	63.8	1.1 pps
High-skilled (15-64)	79.3	78.9	79.2	80.2	81.2	1.0 pps
Nationals (15-64)	58.7	58.7	60.4	61.8	63.4	1.6 pps
Non-nationals (15-64)	60.0	59.4	61.0	61.4	62.5	1.1 pps
Male	62.6	62.7	65.1	66.9	68.7	1.8 pps
Young (15-24)	27.8	26.3	28.5	28.5	29.3	0.8 pps
Prime age (25-54)	74.0	74.5	76.7	78.8	80.5	1.7 pps
Older (55-64)	57.1	55.8	59.3	61.4	64.9	3.6 pps
Female	55.1	55.1	55.9	56.7	57.9	1.3 pps
Young (15-24)	31.2	30.2	29.6	28.3	28.2	-0.2 pps
Prime age (25-54)	64.6	64.6	65.6	66.6	68.1	1.5 pps
Older (55-64)	43.0	42.7	43.4	44.7	46.4	1.6 pps
6 - **Employed persons** (15-64, 1000 pers.)	1803.6	1790.1	1828.0	1856.3	1899.5	2.3 %
7 - **Employment growth** (%, National accounts)	-0.5	-0.6	2.5	1.7	2.5	0.8 pps
Employment growth (%, 15-64, LFS)	-1.8	-0.7	2.1	1.5	2.3	0.8 pps
Male	-2.2	-1.0	3.3	2.0	2.4	0.4 pps
Female	-1.5	-0.4	0.8	1.0	2.3	1.2 pps
8 - **Self employed** (15-64, % of total employment)	14.7	14.5	15.2	15.1	14.9	-0.2 pps
Male	22.1	21.7	22.4	22.3	21.8	-0.6 pps
Female	6.5	6.4	6.9	6.8	6.9	0.1 pps
9 - **Temporary employment** (15-64, % of total employment)	10.2	10.1	10.0	9.3	8.7	-0.6 pps
Male	9.8	9.9	10.1	9.2	8.7	-0.5 pps
Female	10.6	10.4	9.8	9.4	8.6	-0.8 pps
10 - **Part-time** (15-64, % of total employment)	23.1	23.5	23.5	23.0	22.2	-0.8 pps
Male	12.5	13.3	13.5	13.1	12.2	-0.9 pps
Female	35.2	34.9	35.0	34.4	33.8	-0.6 pps
11 - **Unemployment rate** (harmonised:15-74)	14.7	14.7	13.1	11.3	9.4	-1.9 pps
Young (15-24)	29.1	30.4	26.8	23.9	20.9	-3.0 pps
Prime age (25-49)	13.7	13.5	12.0	10.4	8.7	-1.7 pps
Older (55-64)	9.6	10.5	10.6	9.3	7.6	-1.7 pps
Low-skilled (15-64)	24.4	25.9	22.2	20.4	17.6	-2.8 pps
Medium-skilled (15-64)	17.4	17.7	16.1	13.7	11.5	-2.2 pps
High-skilled (15-64)	7.9	7.6	7.3	6.6	5.5	-1.1 pps
Nationals (15-64)	14.4	14.5	12.8	11.1	9.3	-1.8 pps
Non-nationals (15-64)	17.5	17.6	16.3	13.8	11.5	-2.3 pps
Male	17.8	17.7	15.0	12.9	10.9	-2.0 pps
Female	10.8	11.0	10.7	9.4	7.7	-1.7 pps
12 - **Long-term unemployment** (% of total unemployment)	59.3	61.7	60.6	59.2	57.6	-1.6 pps
13 - **Worked hours** (full-time, average actual weekly hours)	39.7	39.8	40.1	40.1	39.9	-0.5 %
Male	41.6	41.7	42.0	42.0	41.9	-0.2 %
Female	36.5	36.6	36.9	36.9	36.6	-0.8 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-2.7	3.3	24.5	2.1	0.9	-1.2 pps
Building and construction	-0.2	-4.9	0.2	6.3	12.8	6.5 pps
Services	5.5	-0.4	2.2	2.2	1.1	-1.1 pps
Manufacturing industry	-9.8	-2.5	2.9	-0.1	3.6	3.7 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	0.4	0.8	1.4	1.8	2.8	1.0 pps
Real compensation per employee based on GDP	-3.1	-1.8	0.0	3.1	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	-1.1	2.2	0.6	0.5	1.0	0.5 pps
Labour cost index (wages and salaries, total)	-0.3	1.4	0.4	1.0	1.1	0.1 pps
Labour productivity (GDP/person employed)	0.5	-0.5	-1.4	6.7	23.2	16.5 pps

Greece	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	11105	11045	10965	10892	10858	-0.3 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	7224	7156	7090	7040	6987	-0.8 %
(% of total population)	65.1	64.8	64.7	64.6	64.4	-0.3 pps
3 - **Labour force** (15-64, 1000 pers.)	4859	4828	4784	4747	4738	-0.2 %
Male	2763	2719	2692	2646	2621	-0.9 %
Female	2096	2109	2092	2101	2117	0.7 %
4 - **Activity rate** (% of population 15-64)	67.3	67.5	67.5	67.4	67.8	0.4 pps
Young (15-24)	29.1	29.1	28.4	28.0	26.0	-2.1 pps
Prime age (25-54)	83.1	83.7	83.9	84.3	85.4	1.0 pps
Older (55-64)	43.1	42.1	42.4	41.1	41.6	0.5 pps
Nationals (15-64)	66.6	66.9	66.9	66.8	67.4	0.6 pps
Non-nationals (15-64)	74.1	73.6	74.9	75.0	73.8	-1.2 pps
Male	77.2	76.9	76.9	76.0	75.9	-0.2 pps
Young (15-24)	31.7	31.2	31.6	30.0	27.7	-2.3 pps
Prime age (25-54)	93.5	93.6	93.6	93.1	93.1	-0.1 pps
Older (55-64)	57.3	55.2	55.0	53.4	54.9	1.5 pps
Female	57.5	58.3	58.3	59.0	59.9	0.9 pps
Young (15-24)	26.6	27.0	25.3	26.1	24.3	-1.8 pps
Prime age (25-54)	72.8	74.0	74.3	75.6	77.7	2.1 pps
Older (55-64)	29.9	30.1	31.0	29.9	29.5	-0.3 pps
5 - **Employment rate** (% of population 15-64)	55.1	50.8	48.8	49.4	50.8	1.4 pps
Young (15-24)	16.1	13.0	11.8	13.3	13.0	-0.3 pps
Prime age (25-54)	68.8	63.9	61.3	62.4	64.5	2.1 pps
Older (55-64)	39.5	36.5	35.6	34.0	34.3	0.3 pps
Low-skilled (15-64)	45.2	40.4	38.3	39.0	39.7	0.7 pps
Medium-skilled (15-64)	53.8	49.1	46.3	47.0	48.8	1.8 pps
High-skilled (15-64)	74.0	70.2	68.2	67.6	67.9	0.3 pps
Nationals (15-64)	54.7	51.0	49.0	49.3	50.8	1.4 pps
Non-nationals (15-64)	58.7	49.0	46.3	50.4	51.0	0.6 pps
Male	65.4	60.1	57.9	58.0	59.3	1.3 pps
Young (15-24)	19.4	16.1	14.6	15.8	15.1	-0.6 pps
Prime age (25-54)	79.9	73.9	71.4	71.7	73.7	1.9 pps
Older (55-64)	52.3	47.7	46.0	44.0	44.9	1.0 pps
Female	45.0	41.7	39.9	41.1	42.5	1.4 pps
Young (15-24)	12.9	10.0	9.1	10.9	10.9	0.0 pps
Prime age (25-54)	57.8	53.9	51.4	53.1	55.4	2.3 pps
Older (55-64)	27.5	26.1	26.0	25.0	24.7	-0.3 pps
6 - **Employed persons** (15-64, 1000 pers.)	3979.0	3636.0	3459.0	3479.5	3548.0	2.0 %
7 - **Employment growth** (%, National accounts)	-6.9	-6.3	-3.6	0.1	1.9	1.8 pps
Employment growth (%, 15-64, LFS)	-7.6	-8.6	-4.9	0.6	2.0	1.4 pps
Male	-8.0	-9.1	-4.6	-0.5	1.6	2.1 pps
Female	-7.0	-8.0	-5.2	2.2	2.5	0.4 pps
8 - **Self employed** (15-64, % of total employment)	30.0	31.1	31.7	30.7	29.9	-0.9 pps
Male	35.4	36.6	37.1	36.4	35.3	-1.2 pps
Female	22.4	23.3	23.9	22.9	22.5	-0.4 pps
9 - **Temporary employment** (15-64, % of total employment)	11.8	10.2	10.2	11.6	11.9	0.3 pps
Male	10.7	8.9	9.3	11.0	11.4	0.4 pps
Female	13.2	11.8	11.3	12.4	12.6	0.2 pps
10 - **Part-time** (15-64, % of total employment)	6.7	7.7	8.4	9.3	9.4	0.1 pps
Male	4.3	4.7	5.4	6.5	6.7	0.2 pps
Female	10.1	11.8	12.6	13.0	13.1	0.1 pps
11 - **Unemployment rate** (harmonised:15-74)	17.9	24.5	27.5	26.5	24.9	-1.6 pps
Young (15-24)	44.7	55.3	58.3	52.4	49.8	-2.6 pps
Prime age (25-49)	17.2	23.7	26.9	26.0	24.4	-1.6 pps
Older (55-64)	8.4	13.5	16.2	17.2	17.5	0.3 pps
Low-skilled (15-64)	18.6	26.5	30.2	28.7	27.2	-1.5 pps
Medium-skilled (15-64)	20.4	27.8	31.3	30.3	27.7	-2.6 pps
High-skilled (15-64)	14.3	18.5	20.5	20.1	20.0	-0.1 pps
Nationals (15-64)	17.8	23.8	26.7	26.1	24.6	-1.5 pps
Non-nationals (15-64)	20.8	33.4	38.2	32.8	30.9	-1.9 pps
Male	15.2	21.6	24.5	23.7	21.8	-1.9 pps
Female	21.5	28.2	31.4	30.2	28.9	-1.3 pps
12 - **Long-term unemployment** (% of total unemployment)	49.3	59.1	67.0	73.4	73.0	-0.4 pps
13 - **Worked hours** (full-time, average actual weekly hours)	42.4	42.6	42.8	42.8	42.8	0.0 %
Male	43.5	43.7	44.0	44.1	44.2	0.2 %
Female	40.6	40.7	40.8	40.7	40.6	-0.2 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-6.6	-1.7	-0.3	-0.2	-1.4	-1.2 pps
Building and construction	-23.1	-14.3	-16.5	-6.6	-3.9	2.7 pps
Services	-5.5	-5.7	-3.3	1.4	4.4	3.0 pps
Manufacturing industry	-9.0	-8.3	-5.9	-1.8	5.5	7.3 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	-3.8	-3.0	-7.0	-2.1	-1.7	0.4 pps
Real compensation per employee based on GDP	-4.5	-2.7	-4.6	0.1	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	-5.6	-5.5	-6.5	-0.7	-3.7	-3.0 pps
Labour cost index (wages and salaries, total)	-4.6	-5.6	-11.6	-1.0	-2.8	-1.8 pps
Labour productivity (GDP/person employed)	-2.4	-1.1	0.4	0.5	-2.1	-2.6 pps

Spain		2011	2012	2013	2014	2015	2014-2015
1	- **Population** (LFS, total, 1000 pers.)	46736	46766	46593	46464	46426	-0.1 %
2	- **Population** (LFS, working age:15-64, 1000 pers.)	31496	31348	31024	30750	30642	-0.4 %
	(% of total population)	67.4	67.0	66.6	66.2	66.0	-0.2 pps
3	- **Labour force** (15-64, 1000 pers.)	23280	23281	23043	22814	22767	-0.2 %
	Male	12773	12648	12437	12277	12232	-0.4 %
	Female	10508	10633	10606	10537	10535	0.0 %
4	- **Activity rate** (% of population 15-64)	73.9	74.3	74.3	74.2	74.3	0.1 pps
	Young (15-24)	40.9	39.0	37.8	35.7	34.7	-1.0 pps
	Prime age (25-54)	86.2	86.9	87.2	87.3	87.4	0.0 pps
	Older (55-64)	52.4	53.5	54.1	55.4	57.6	2.2 pps
	Nationals (15-64)	73.0	73.5	73.7	73.7	73.8	0.1 pps
	Non-nationals (15-64)	79.7	79.2	78.4	77.7	78.0	0.3 pps
	Male	80.4	80.1	79.8	79.5	79.5	0.0 pps
	Young (15-24)	42.6	40.3	39.6	37.3	36.2	-1.2 pps
	Prime age (25-54)	92.5	92.6	92.4	92.6	92.6	0.0 pps
	Older (55-64)	63.5	63.6	63.3	64.3	66.2	2.0 pps
	Female	67.3	68.4	68.7	68.8	69.0	0.2 pps
	Young (15-24)	39.2	37.6	35.9	34.0	33.2	-0.8 pps
	Prime age (25-54)	79.7	81.1	81.8	82.0	82.0	0.0 pps
	Older (55-64)	41.8	43.9	45.2	46.9	49.4	2.5 pps
5	- **Employment rate** (% of population 15-64)	58.0	55.8	54.8	56.0	57.8	1.9 pps
	Young (15-24)	22.0	18.4	16.8	16.7	17.9	1.2 pps
	Prime age (25-54)	69.1	66.7	65.8	67.4	69.4	2.0 pps
	Older (55-64)	44.5	43.9	43.2	44.3	46.9	2.6 pps
	Low-skilled (15-64)	47.4	44.2	43.2	44.0	46.2	2.2 pps
	Medium-skilled (15-64)	59.0	57.0	55.2	56.0	57.5	1.5 pps
	High-skilled (15-64)	76.9	75.2	74.1	75.3	76.7	1.3 pps
	Nationals (15-64)	58.7	56.5	55.6	56.6	58.3	1.6 pps
	Non-nationals (15-64)	53.6	50.7	49.4	50.8	54.2	3.3 pps
	Male	63.4	60.3	59.2	60.7	62.9	2.3 pps
	Young (15-24)	22.1	18.5	17.3	17.4	18.6	1.2 pps
	Prime age (25-54)	74.6	71.3	70.4	72.5	75.1	2.6 pps
	Older (55-64)	53.8	52.1	50.5	51.2	54.0	2.8 pps
	Female	52.6	51.2	50.3	51.2	52.7	1.4 pps
	Young (15-24)	22.0	18.3	16.3	16.0	17.3	1.3 pps
	Prime age (25-54)	63.4	62.0	61.2	62.3	63.7	1.4 pps
	Older (55-64)	35.6	36.0	36.3	37.8	40.1	2.4 pps
6	- **Employed persons** (15-64, 1000 pers.)	18270.9	17476.8	17001.6	17210.5	17717.5	2.9 %
7	- **Employment growth** (%, National accounts)	-2.7	-4.1	-2.9	0.9	2.9	2.0 pps
	Employment growth (%, 15-64, LFS)	-1.6	-4.3	-2.7	1.2	2.9	1.7 pps
	Male	-2.6	-5.4	-3.0	1.4	3.3	2.0 pps
	Female	-0.4	-3.0	-2.4	1.1	2.5	1.4 pps
8	- **Self employed** (15-64, % of total employment)	15.4	16.3	16.9	16.7	16.4	-0.3 pps
	Male	18.9	20.2	21.0	20.7	20.2	-0.5 pps
	Female	11.0	11.6	12.0	11.9	11.8	-0.1 pps
9	- **Temporary employment** (15-64, % of total employment)	25.2	23.4	23.2	24.0	25.2	1.2 pps
	Male	24.0	22.1	22.2	23.6	25.1	1.5 pps
	Female	26.5	25.0	24.2	24.6	25.3	0.7 pps
10	- **Part-time** (15-64, % of total employment)	13.5	14.4	15.7	15.8	15.6	-0.2 pps
	Male	5.8	6.4	7.7	7.7	7.8	0.1 pps
	Female	22.8	23.9	25.2	25.5	25.1	-0.4 pps
11	- **Unemployment rate** (harmonised:15-74)	21.4	24.8	26.1	24.5	22.1	-2.4 pps
	Young (15-24)	46.2	52.9	55.5	53.2	48.3	-4.9 pps
	Prime age (25-49)	19.9	23.3	24.5	22.8	20.6	-2.2 pps
	Older (55-64)	15.1	18.0	20.0	20.0	18.6	-1.4 pps
	Low-skilled (15-64)	29.0	33.9	35.5	34.0	31.2	-2.8 pps
	Medium-skilled (15-64)	21.2	24.2	25.9	24.2	21.6	-2.6 pps
	High-skilled (15-64)	12.6	15.0	16.1	14.8	13.3	-1.5 pps
	Nationals (15-64)	19.6	23.1	24.6	23.2	21.0	-2.2 pps
	Non-nationals (15-64)	32.7	36.0	37.0	34.6	30.5	-4.1 pps
	Male	21.1	24.6	25.6	23.6	20.8	-2.8 pps
	Female	21.8	25.1	26.7	25.4	23.6	-1.8 pps
12	- **Long-term unemployment** (% of total unemployment)	41.6	44.3	49.7	52.8	51.6	-1.2 pps
13	- **Worked hours** (full-time, average actual weekly hours)	40.7	40.6	40.9	40.7	40.6	-0.2 %
	Male	41.6	41.5	41.8	41.7	41.5	-0.5 %
	Female	39.2	39.2	39.5	39.3	39.1	-0.5 %
14	- **Sectoral employment growth** (% change)						
	Agriculture	-4.3	-2.5	-0.7	-1.4	0.9	2.3 pps
	Building and construction	-15.2	-17.6	-13.6	-3.9	6.3	10.2 pps
	Services	-1.4	-3.4	-2.2	1.8	3.5	1.7 pps
	Manufacturing industry	:	:	-4.3	0.4	3.0	2.6 pps
15	- **Indicator board on wage developments** (% change)						
	Compensation per employee	0.7	-1.4	0.6	0.0	0.5	0.4 pps
	Real compensation per employee based on GDP	0.8	-0.6	1.0	0.2	:	: pps
	Labour cost index (compens. of employees plus taxes minus subs.)	2.8	1.1	0.3	0.1	0.2	0.1 pps
	Labour cost index (wages and salaries, total)	2.6	1.2	-0.1	0.5	0.8	0.3 pps
	Labour productivity (GDP/person employed)	1.7	1.2	1.3	0.5	0.3	-0.2 pps

France	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	65294	65615	65927	66227	66504	0.4 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	40010	39939	39876	40973	40927	-0.1 %
(% of total population)	61.3	60.9	60.5	61.9	61.5	-0.3 pps
3 - **Labour force** (15-64, 1000 pers.)	28051	28242	28368	29148	29164	0.1 %
Male	14676	14776	14787	15132	15127	0.0 %
Female	13375	13467	13580	14016	14037	0.1 %
4 - **Activity rate** (% of population 15-64)	70.1	70.7	71.1	71.1	71.3	0.1 pps
Young (15-24)	37.9	37.4	37.4	36.9	37.1	0.1 pps
Prime age (25-54)	88.2	88.2	88.3	87.9	87.5	-0.4 pps
Older (55-64)	43.9	47.4	49.0	50.7	52.6	1.9 pps
Nationals (15-64)	70.5	71.1	71.5	71.5	71.8	0.3 pps
Non-nationals (15-64)	65.1	64.9	65.9	65.5	64.1	-1.4 pps
Male	74.6	75.3	75.5	75.3	75.3	0.1 pps
Young (15-24)	41.3	40.8	40.8	40.3	40.2	-0.1 pps
Prime age (25-54)	93.7	93.6	93.3	92.9	92.4	-0.5 pps
Older (55-64)	46.8	50.8	52.3	53.1	55.1	2.0 pps
Female	65.7	66.3	66.9	67.2	67.3	0.2 pps
Young (15-24)	34.5	34.0	33.9	33.5	33.9	0.4 pps
Prime age (25-54)	83.0	83.0	83.5	83.0	82.7	-0.4 pps
Older (55-64)	41.2	44.3	46.0	48.5	50.3	1.8 pps
5 - **Employment rate** (% of population 15-64)	63.9	64.0	64.0	63.8	63.8	0.0 pps
Young (15-24)	29.6	28.6	28.4	28.0	27.9	-0.1 pps
Prime age (25-54)	81.5	80.9	80.6	79.8	79.4	-0.4 pps
Older (55-64)	41.4	44.5	45.6	46.9	48.7	1.8 pps
Low-skilled (15-64)	45.2	44.7	42.9	41.2	39.7	-1.5 pps
Medium-skilled (15-64)	67.3	66.8	66.2	65.7	65.9	0.2 pps
High-skilled (15-64)	80.5	80.9	81.3	81.1	81.4	0.3 pps
Nationals (15-64)	64.6	64.8	64.8	64.6	64.8	0.2 pps
Non-nationals (15-64)	53.8	52.9	53.3	52.5	50.8	-1.6 pps
Male	68.2	68.1	67.9	67.3	67.1	-0.1 pps
Young (15-24)	32.5	31.0	31.0	30.2	29.9	-0.3 pps
Prime age (25-54)	86.8	86.0	85.2	84.4	83.7	-0.7 pps
Older (55-64)	44.1	47.5	48.4	48.9	50.7	1.9 pps
Female	59.7	60.1	60.4	60.4	60.6	0.2 pps
Young (15-24)	26.7	26.1	25.6	25.8	26.0	0.2 pps
Prime age (25-54)	76.2	76.0	76.2	75.4	75.2	-0.2 pps
Older (55-64)	38.9	41.6	43.0	45.2	46.9	1.7 pps
6 - **Employed persons** (15-64, 1000 pers.)	25564.0	25568.1	25540.1	26128.8	26118.5	0.0 %
7 - **Employment growth** (%, National accounts)	0.8	0.3	0.3	0.5	0.5	0.0 pps
Employment growth (%, 15-64, LFS)	-0.1	0.0	-0.1	2.3	0.0	-2.3 pps
Male	-0.1	-0.3	-0.6	1.7	-0.3	-2.1 pps
Female	0.0	0.4	0.4	2.9	0.3	-2.6 pps
8 - **Self employed** (15-64, % of total employment)	10.9	10.7	10.6	10.8	10.8	0.0 pps
Male	14.6	14.3	14.0	14.2	14.1	-0.1 pps
Female	6.7	6.8	6.8	7.2	7.3	0.1 pps
9 - **Temporary employment** (15-64, % of total employment)	15.3	15.2	15.3	15.3	16.0	0.7 pps
Male	14.6	14.3	14.7	14.5	15.4	0.9 pps
Female	16.0	16.1	16.0	16.1	16.6	0.5 pps
10 - **Part-time** (15-64, % of total employment)	17.6	17.7	18.1	18.6	18.4	-0.2 pps
Male	6.5	6.4	6.7	7.4	7.4	0.0 pps
Female	29.9	30.0	30.4	30.6	30.1	-0.5 pps
11 - **Unemployment rate** (harmonised:15-74)	9.2	9.8	10.3	10.3	10.4	0.1 pps
Young (15-24)	21.9	23.7	24.1	24.2	24.7	0.5 pps
Prime age (25-49)	7.7	8.3	8.7	9.2	9.3	0.1 pps
Older (55-64)	5.7	6.2	7.0	7.4	7.4	0.0 pps
Low-skilled (15-64)	14.5	15.4	16.4	17.3	17.8	0.5 pps
Medium-skilled (15-64)	8.5	9.5	10.1	10.7	10.9	0.2 pps
High-skilled (15-64)	5.2	5.5	6.0	6.4	6.4	0.0 pps
Nationals (15-64)	8.3	8.9	9.4	9.7	9.8	0.1 pps
Non-nationals (15-64)	17.4	18.4	19.1	19.9	20.7	0.8 pps
Male	8.9	9.8	10.4	10.6	10.8	0.2 pps
Female	9.6	9.8	10.2	10.0	9.9	-0.1 pps
12 - **Long-term unemployment** (% of total unemployment)	41.1	39.9	40.4	44.2	44.2	0.0 pps
13 - **Worked hours** (full-time, average actual weekly hours)	39.8	39.6	38.9	38.8	38.8	0.0 %
Male	41.0	40.7	40.0	39.8	39.9	0.3 %
Female	38.0	37.9	37.2	37.2	37.3	0.3 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-0.8	0.0	-0.3	0.4	0.7	0.3 pps
Building and construction	-0.1	-0.4	-0.1	-1.3	-2.3	-1.0 pps
Services	2.0	0.7	-0.1	0.6	1.0	0.4 pps
Manufacturing industry	-0.9	-0.6	-0.9	-1.0	-1.2	-0.2 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	2.3	2.2	1.6	1.1	1.1	0.0 pps
Real compensation per employee based on GDP	1.6	1.2	0.8	0.7	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	3.4	2.2	0.4	1.0	1.2	0.2 pps
Labour cost index (wages and salaries, total)	2.8	2.1	2.0	1.7	1.6	-0.1 pps
Labour productivity (GDP/person employed)	1.3	-0.1	0.3	0.2	0.8	0.6 pps

Croatia	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	4282	4268	4257	4233	4213	-0.5 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	2870	2857	2844	2826	2802	-0.9 %
(% of total population)	67.0	66.9	66.8	66.8	66.5	-0.3 pps
3 - **Labour force** (15-64, 1000 pers.)	1841	1825	1811	1868	1872	0.2 %
Male	1013	997	979	1003	1002	0.0 %
Female	828	828	832	865	870	0.6 %
4 - **Activity rate** (% of population 15-64)	64.1	63.9	63.7	66.1	66.8	0.7 pps
Young (15-24)	32.5	30.1	29.9	33.6	33.3	-0.3 pps
Prime age (25-54)	80.6	80.9	80.8	84.1	84.4	0.3 pps
Older (55-64)	41.4	41.8	41.9	41.0	44.1	3.2 pps
Nationals (15-64)	64.2	63.9	63.7	66.1	66.9	0.8 pps
Non-nationals (15-64)	56.0	53.6	55.2	53.8	44.4	-9.4 pps
Male	70.7	69.8	68.9	70.9	71.5	0.6 pps
Young (15-24)	37.8	34.6	34.7	38.5	38.3	-0.2 pps
Prime age (25-54)	85.4	85.2	84.7	86.6	86.8	0.2 pps
Older (55-64)	54.2	53.9	51.0	52.1	54.7	2.6 pps
Female	57.6	58.0	58.5	61.3	62.2	0.9 pps
Young (15-24)	26.9	25.3	24.8	28.5	28.2	-0.4 pps
Prime age (25-54)	75.8	76.6	76.8	81.5	81.9	0.4 pps
Older (55-64)	29.6	30.6	33.4	30.6	34.2	3.6 pps
5 - **Employment rate** (% of population 15-64)	55.2	53.5	52.5	54.6	55.8	1.3 pps
Young (15-24)	20.6	17.4	14.9	18.3	19.0	0.7 pps
Prime age (25-54)	70.6	69.2	68.3	71.2	72.2	1.0 pps
Older (55-64)	38.2	37.5	37.8	36.2	39.0	2.8 pps
Low-skilled (15-64)	32.7	29.5	27.5	26.9	28.2	1.2 pps
Medium-skilled (15-64)	59.0	56.7	55.5	57.0	58.0	1.0 pps
High-skilled (15-64)	77.4	76.5	75.7	78.4	78.6	0.3 pps
Nationals (15-64)	55.2	53.5	52.5	54.6	55.9	1.3 pps
Non-nationals (15-64)	50.0	42.0	44.8	40.0	38.9	-1.1 pps
Male	60.9	58.5	56.5	59.1	60.1	1.0 pps
Young (15-24)	23.8	20.0	17.4	21.2	22.3	1.0 pps
Prime age (25-54)	75.1	73.0	71.6	74.5	75.2	0.7 pps
Older (55-64)	49.6	48.0	45.0	45.8	48.0	2.2 pps
Female	49.5	48.5	48.5	50.0	51.5	1.5 pps
Young (15-24)	17.2	14.7	12.4	15.3	15.6	0.3 pps
Prime age (25-54)	66.1	65.2	64.9	67.9	69.1	1.2 pps
Older (55-64)	27.7	27.7	31.0	27.3	30.6	3.3 pps
6 - **Employed persons** (15-64, 1000 pers.)	1583.8	1528.1	1493.6	1541.8	1563.7	1.4 %
7 - **Employment growth** (%, National accounts)	-3.9	-3.5	-2.7	2.7	1.5	-1.2 pps
Employment growth (%, 15-64, LFS)	-3.9	-3.5	-2.3	3.2	1.4	-1.8 pps
Male	-3.0	-4.3	-3.8	4.0	0.9	-3.2 pps
Female	-5.1	-2.6	-0.4	2.3	2.1	-0.2 pps
8 - **Self employed** (15-64, % of total employment)	17.7	16.0	15.4	13.4	12.9	-0.5 pps
Male	19.9	18.5	18.2	16.7	16.3	-0.4 pps
Female	15.0	13.1	12.1	9.6	8.8	-0.7 pps
9 - **Temporary employment** (15-64, % of total employment)	13.5	13.3	14.5	16.9	20.3	3.4 pps
Male	13.1	13.3	14.8	16.6	20.5	3.9 pps
Female	14.0	13.4	14.1	17.1	20.0	2.9 pps
10 - **Part-time** (15-64, % of total employment)	7.2	5.6	5.4	5.3	5.9	0.6 pps
Male	5.6	4.6	4.6	4.2	4.7	0.5 pps
Female	9.2	6.9	6.4	6.7	7.3	0.6 pps
11 - **Unemployment rate** (harmonised:15-74)	13.7	16.0	17.3	17.3	16.3	-1.0 pps
Young (15-24)	36.7	42.1	50.0	45.5	43.0	-2.5 pps
Prime age (25-49)	12.4	14.5	15.5	15.3	14.4	-0.9 pps
Older (55-64)	7.7	10.4	9.9	11.6	11.6	0.0 pps
Low-skilled (15-64)	18.7	19.9	22.7	26.4	22.8	-3.6 pps
Medium-skilled (15-64)	14.3	17.4	18.7	18.8	18.2	-0.6 pps
High-skilled (15-64)	9.3	10.8	11.4	9.6	9.4	-0.2 pps
Nationals (15-64)	14.0	16.2	17.5	17.4	16.5	-0.9 pps
Non-nationals (15-64)	0.0	0.0	0.0	0.0	0.0	0.0 pps
Male	13.7	16.0	17.7	16.5	15.7	-0.8 pps
Female	13.8	16.1	16.8	18.3	17.0	-1.3 pps
12 - **Long-term unemployment** (% of total unemployment)	61.4	63.7	63.6	58.5	63.0	4.5 pps
13 - **Worked hours** (full-time, average actual weekly hours)	41.2	40.7	40.4	40.4	39.6	-2.0 %
Male	41.7	41.1	40.8	40.8	40.1	-1.7 %
Female	40.5	40.1	39.9	39.8	38.9	-2.3 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-1.6	-19.1	-14.3	-9.4	-2.2	7.2 pps
Building and construction	-7.5	-7.5	-0.7	-3.8	5.1	8.9 pps
Services	-3.9	-0.6	-2.6	4.9	2.9	-2.0 pps
Manufacturing industry	-0.2	-2.3	-4.5	2.8	-0.9	-3.7 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	4.4	0.1	-0.6	-5.4	-0.3	5.0 pps
Real compensation per employee based on GDP	2.7	-1.5	-1.4	-5.4	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	3.2	3.6	1.8	-0.5	1.7	2.2 pps
Labour cost index (wages and salaries, total)	2.5	2.6	1.4	-0.5	1.8	2.3 pps
Labour productivity (GDP/person employed)	3.8	1.4	1.7	-3.0	0.1	3.1 pps

Italy		2011	2012	2013	2014	2015	2014-2015
1	- **Population** (LFS, total, 1000 pers.)	60060	60339	60646	60789	60731	-0.1 %
2	- **Population** (LFS, working age:15-64, 1000 pers.)	39115	39108	39172	39161	39035	-0.3 %
	(% of total population)	65.1	64.8	64.6	64.4	64.3	-0.1 pps
3	- **Labour force** (15-64, 1000 pers.)	24272	24832	24816	25039	24997	-0.2 %
	Male	14131	14303	14253	14327	14382	0.4 %
	Female	10141	10530	10563	10712	10615	-0.9 %
4	- **Activity rate** (% of population 15-64)	62.1	63.5	63.4	63.9	64.0	0.1 pps
	Young (15-24)	27.1	28.6	27.1	27.1	26.2	-1.0 pps
	Prime age (25-54)	76.9	77.8	77.1	77.0	76.8	-0.2 pps
	Older (55-64)	39.3	42.5	45.3	48.9	51.1	2.2 pps
	Nationals (15-64)	61.3	62.8	62.6	63.2	63.3	0.1 pps
	Non-nationals (15-64)	70.9	70.5	70.5	70.4	70.3	-0.1 pps
	Male	72.8	73.7	73.3	73.6	74.1	0.5 pps
	Young (15-24)	31.2	32.9	30.7	31.0	30.4	-0.5 pps
	Prime age (25-54)	89.2	89.4	88.3	87.7	87.7	0.0 pps
	Older (55-64)	50.5	53.6	56.6	60.2	63.3	3.1 pps
	Female	51.4	53.4	53.6	54.4	54.1	-0.3 pps
	Young (15-24)	22.8	24.0	23.4	23.1	21.7	-1.4 pps
	Prime age (25-54)	64.7	66.5	66.1	66.4	65.9	-0.5 pps
	Older (55-64)	28.8	32.2	34.7	38.3	39.6	1.3 pps
5	- **Employment rate** (% of population 15-64)	56.8	56.6	55.5	55.7	56.3	0.6 pps
	Young (15-24)	19.2	18.5	16.3	15.6	15.6	0.1 pps
	Prime age (25-54)	71.1	70.4	68.5	67.9	68.2	0.3 pps
	Older (55-64)	37.8	40.3	42.7	46.2	48.2	2.0 pps
	Low-skilled (15-64)	43.4	43.3	42.0	41.8	42.2	0.4 pps
	Medium-skilled (15-64)	65.0	64.1	62.5	62.6	62.9	0.3 pps
	High-skilled (15-64)	77.1	76.7	75.9	75.5	76.3	0.8 pps
	Nationals (15-64)	56.3	56.3	55.2	55.4	56.0	0.6 pps
	Non-nationals (15-64)	62.3	60.6	58.3	58.5	58.9	0.4 pps
	Male	67.3	66.3	64.7	64.7	65.5	0.8 pps
	Young (15-24)	22.8	21.8	18.7	18.2	18.6	0.4 pps
	Prime age (25-54)	83.4	81.7	79.2	78.2	78.6	0.4 pps
	Older (55-64)	48.2	50.4	52.8	56.5	59.3	2.7 pps
	Female	46.5	47.1	46.5	46.8	47.2	0.3 pps
	Young (15-24)	15.5	15.0	13.7	12.8	12.4	-0.3 pps
	Prime age (25-54)	59.0	59.2	58.0	57.6	57.9	0.2 pps
	Older (55-64)	28.1	30.8	33.2	36.6	37.9	1.3 pps
6	- **Employed persons** (15-64, 1000 pers.)	22214.9	22149.2	21755.3	21809.5	21972.6	0.7 %
7	- **Employment growth** (%, National accounts)	0.3	-0.3	-1.8	0.1	0.6	0.5 pps
	Employment growth (%, 15-64, LFS)	0.3	-0.3	-1.8	0.2	0.7	0.5 pps
	Male	-0.3	-1.4	-2.2	0.0	1.0	1.0 pps
	Female	1.1	1.2	-1.1	0.5	0.4	-0.1 pps
8	- **Self employed** (15-64, % of total employment)	22.6	22.5	22.4	22.2	21.9	-0.3 pps
	Male	27.5	27.3	27.2	26.7	26.2	-0.5 pps
	Female	15.6	15.9	15.8	16.0	15.9	-0.1 pps
9	- **Temporary employment** (15-64, % of total employment)	13.3	13.8	13.2	13.6	14.1	0.5 pps
	Male	12.2	12.9	12.4	13.1	13.6	0.5 pps
	Female	14.6	14.9	14.2	14.2	14.6	0.4 pps
10	- **Part-time** (15-64, % of total employment)	15.2	16.8	17.6	18.1	18.3	0.2 pps
	Male	5.4	6.6	7.4	7.8	8.0	0.2 pps
	Female	29.1	30.9	31.7	32.1	32.4	0.3 pps
11	- **Unemployment rate** (harmonised:15-74)	8.4	10.7	12.1	12.7	11.9	-0.8 pps
	Young (15-24)	29.2	35.3	40.0	42.7	40.3	-2.4 pps
	Prime age (25-49)	7.5	9.6	11.2	11.8	11.2	-0.6 pps
	Older (55-64)	3.8	5.3	5.7	5.5	5.5	0.0 pps
	Low-skilled (15-64)	10.8	13.9	16.2	17.0	15.9	-1.1 pps
	Medium-skilled (15-64)	7.9	10.1	11.5	12.0	11.5	-0.5 pps
	High-skilled (15-64)	5.4	6.7	7.3	8.0	7.2	-0.8 pps
	Nationals (15-64)	8.1	10.4	11.7	12.4	11.6	-0.8 pps
	Non-nationals (15-64)	12.1	14.1	17.3	17.0	16.3	-0.7 pps
	Male	7.5	9.8	11.5	11.9	11.3	-0.6 pps
	Female	9.5	11.8	13.1	13.8	12.7	-1.1 pps
12	- **Long-term unemployment** (% of total unemployment)	52.0	53.1	56.9	61.4	58.9	-2.5 pps
13	- **Worked hours** (full-time, average actual weekly hours)	39.9	39.5	39.6	39.6	39.7	0.3 %
	Male	41.2	40.7	40.8	40.8	40.9	0.2 %
	Female	37.4	37.2	37.4	37.5	37.5	0.0 %
14	- **Sectoral employment growth** (% change)						
	Agriculture	-1.8	-2.5	-2.9	-0.2	2.2	2.4 pps
	Building and construction	-2.3	-4.8	-7.6	-4.0	-1.6	2.4 pps
	Services	1.3	0.6	-1.2	0.5	1.3	0.8 pps
	Manufacturing industry	-0.7	-1.9	-2.9	-1.8	-0.9	0.9 pps
15	- **Indicator board on wage developments** (% change)						
	Compensation per employee	1.0	-1.1	0.8	0.1	0.8	0.8 pps
	Real compensation per employee based on GDP	-0.3	-1.0	0.1	-1.0	:	: pps
	Labour cost index (compens. of employees plus taxes minus subs.)	2.4	2.0	2.2	0.5	-0.1	-0.6 pps
	Labour cost index (wages and salaries, total)	2.3	2.1	1.9	0.5	0.5	0.0 pps
	Labour productivity (GDP/person employed)	0.3	-2.5	0.1	0.0	0.2	0.2 pps

Cyprus		2011	2012	2013	2014	2015	2014-2015
1	- **Population** (LFS, total, 1000 pers.)	851	864	862	853	848	-0.6 %
2	- **Population** (LFS, working age:15-64, 1000 pers.)	571	580	578	572	559	-2.3 %
	(% of total population)	67.1	67.2	67.0	67.0	65.9	-1.1 pps
3	- **Labour force** (15-64, 1000 pers.)	420	426	425	425	413	-2.8 %
	Male	219	223	221	218	210	-3.3 %
	Female	202	204	204	207	202	-2.3 %
4	- **Activity rate** (% of population 15-64)	73.6	73.5	73.6	74.3	73.9	-0.4 pps
	Young (15-24)	38.8	38.9	38.4	40.3	37.8	-2.5 pps
	Prime age (25-54)	87.3	87.6	87.7	88.4	87.9	-0.5 pps
	Older (55-64)	57.6	56.1	56.6	56.0	57.4	1.4 pps
	Nationals (15-64)	71.9	71.7	72.4	73.2	72.9	-0.3 pps
	Non-nationals (15-64)	79.6	79.9	78.4	79.4	78.3	-1.0 pps
	Male	80.4	80.7	80.6	80.0	78.8	-1.2 pps
	Young (15-24)	41.4	42.7	40.7	41.1	36.9	-4.2 pps
	Prime age (25-54)	93.1	93.8	94.0	93.5	92.6	-0.9 pps
	Older (55-64)	72.9	71.2	71.3	69.9	70.0	0.1 pps
	Female	67.4	66.9	67.2	69.1	69.4	0.3 pps
	Young (15-24)	36.5	35.6	36.3	39.5	38.9	-0.6 pps
	Prime age (25-54)	82.0	82.0	82.0	83.9	83.8	-0.1 pps
	Older (55-64)	42.8	41.3	42.3	42.3	45.3	3.0 pps
5	- **Employment rate** (% of population 15-64)	67.6	64.6	61.7	62.1	62.7	0.5 pps
	Young (15-24)	30.2	28.2	23.4	25.8	25.4	-0.4 pps
	Prime age (25-54)	81.3	78.4	75.5	76.2	76.5	0.3 pps
	Older (55-64)	54.9	50.6	49.6	46.9	48.5	1.6 pps
	Low-skilled (15-64)	50.3	43.7	40.5	40.4	40.7	0.3 pps
	Medium-skilled (15-64)	68.5	66.0	62.4	62.5	62.4	-0.1 pps
	High-skilled (15-64)	81.2	78.8	76.3	77.3	78.3	1.0 pps
	Nationals (15-64)	66.5	63.3	60.7	60.8	61.6	0.7 pps
	Non-nationals (15-64)	71.8	69.3	65.9	68.1	67.5	-0.6 pps
	Male	73.7	70.4	67.0	66.1	66.7	0.6 pps
	Young (15-24)	31.8	30.4	24.0	25.9	24.0	-1.8 pps
	Prime age (25-54)	86.4	83.3	80.4	79.6	80.6	1.0 pps
	Older (55-64)	69.2	63.6	61.1	57.2	57.7	0.5 pps
	Female	62.2	59.4	56.9	58.6	59.0	0.4 pps
	Young (15-24)	28.8	26.0	23.0	25.8	26.7	0.9 pps
	Prime age (25-54)	76.7	74.0	71.1	73.1	72.7	-0.4 pps
	Older (55-64)	40.7	38.2	38.4	36.9	39.4	2.5 pps
6	- **Employed persons** (15-64, 1000 pers.)	386.3	375.0	356.7	355.1	350.0	-1.4 %
7	- **Employment growth** (%, National accounts)	0.0	-3.2	-5.9	-1.9	0.8	2.7 pps
	Employment growth (%, 15-64, LFS)	1.0	-2.9	-4.9	-0.4	-1.4	-1.0 pps
	Male	0.6	-3.1	-5.2	-2.4	-0.9	1.4 pps
	Female	1.6	-2.8	-4.5	1.7	-1.9	-3.6 pps
8	- **Self employed** (15-64, % of total employment)	14.7	13.7	14.9	15.2	13.0	-2.3 pps
	Male	19.9	18.9	20.4	20.3	15.9	-4.4 pps
	Female	9.1	8.1	9.0	10.0	9.9	-0.1 pps
9	- **Temporary employment** (15-64, % of total employment)	14.2	15.1	17.5	19.0	18.4	-0.6 pps
	Male	7.1	9.0	10.3	13.1	13.2	0.1 pps
	Female	20.9	20.9	24.2	24.4	23.4	-1.0 pps
10	- **Part-time** (15-64, % of total employment)	9.0	9.7	11.9	13.5	13.0	-0.5 pps
	Male	6.1	6.4	8.4	10.3	10.3	0.0 pps
	Female	12.1	13.1	15.6	16.8	15.8	-1.0 pps
11	- **Unemployment rate** (harmonised:15-74)	7.9	11.9	15.9	16.1	15.0	-1.1 pps
	Young (15-24)	22.4	27.7	38.9	36.0	32.8	-3.2 pps
	Prime age (25-49)	6.8	10.5	13.9	13.9	13.1	-0.8 pps
	Older (55-64)	4.9	9.7	12.4	16.3	15.6	-0.7 pps
	Low-skilled (15-64)	7.9	14.2	20.2	20.3	19.4	-0.9 pps
	Medium-skilled (15-64)	8.9	12.9	17.2	18.4	16.7	-1.7 pps
	High-skilled (15-64)	7.3	10.3	13.3	13.0	12.1	-0.9 pps
	Nationals (15-64)	7.5	11.7	16.1	16.9	15.5	-1.4 pps
	Non-nationals (15-64)	9.8	13.2	15.9	14.1	13.7	-0.4 pps
	Male	8.1	12.6	16.6	17.1	15.1	-2.0 pps
	Female	7.7	11.1	15.2	15.1	14.8	-0.3 pps
12	- **Long-term unemployment** (% of total unemployment)	20.8	30.0	38.2	47.7	45.6	-2.1 pps
13	- **Worked hours** (full-time, average actual weekly hours)	40.7	40.9	40.8	40.5	40.5	0.0 %
	Male	41.6	41.7	41.6	41.7	41.7	0.0 %
	Female	39.6	39.9	39.7	39.3	39.1	-0.5 %
14	- **Sectoral employment growth** (% change)						
	Agriculture	-7.5	0.3	-12.0	-3.9	-1.8	2.1 pps
	Building and construction	-5.8	-14.0	-20.1	-9.5	-2.3	7.2 pps
	Services	1.1	-1.6	-3.7	0.1	2.2	2.1 pps
	Manufacturing industry	-3.3	-7.3	-9.9	-4.7	0.9	5.6 pps
15	- **Indicator board on wage developments** (% change)						
	Compensation per employee	2.0	0.6	-3.4	-4.0	-0.9	3.1 pps
	Real compensation per employee based on GDP	0.2	-1.4	-2.1	-2.8	:	: pps
	Labour cost index (compens. of employees plus taxes minus subs.)	1.6	0.2	-2.9	-3.3	-0.8	2.5 pps
	Labour cost index (wages and salaries, total)	1.6	0.0	-2.6	-3.7	-0.7	3.0 pps
	Labour productivity (GDP/person employed)	0.4	0.8	0.0	-0.6	0.8	1.4 pps

Latvia	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	2059	2034	2013	1995	1978	-0.8 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	1382	1352	1333	1295	1275	-1.6 %
(% of total population)	67.1	66.5	66.2	64.9	64.4	-0.5 pps
3 - **Labour force** (15-64, 1000 pers.)	1007	1006	986	966	965	-0.1 %
Male	502	499	491	486	486	0.1 %
Female	505	507	495	480	479	-0.2 %
4 - **Activity rate** (% of population 15-64)	72.8	74.4	74.0	74.6	75.7	1.2 pps
Young (15-24)	37.5	40.2	39.4	40.4	41.3	0.9 pps
Prime age (25-54)	88.0	88.4	87.6	87.2	87.6	0.4 pps
Older (55-64)	59.4	61.9	61.2	62.6	65.5	2.9 pps
Nationals (15-64)	72.6	74.3	74.3	74.9	76.1	1.2 pps
Non-nationals (15-64)	74.1	75.0	72.0	72.6	73.3	0.7 pps
Male	75.8	77.1	76.6	77.8	78.9	1.1 pps
Young (15-24)	41.2	44.0	42.6	45.3	45.2	-0.1 pps
Prime age (25-54)	90.9	91.2	90.6	90.5	90.7	0.2 pps
Older (55-64)	62.5	63.2	62.2	63.7	68.0	4.3 pps
Female	70.1	72.0	71.6	71.6	72.8	1.2 pps
Young (15-24)	33.6	36.0	36.0	35.3	37.1	1.8 pps
Prime age (25-54)	85.4	85.8	84.8	84.0	84.6	0.6 pps
Older (55-64)	57.1	60.9	60.5	61.7	63.6	1.8 pps
5 - **Employment rate** (% of population 15-64)	60.8	63.0	65.0	66.3	68.1	1.8 pps
Young (15-24)	25.8	28.7	30.2	32.5	34.5	2.0 pps
Prime age (25-54)	75.0	76.3	77.9	78.2	79.2	1.1 pps
Older (55-64)	50.5	52.7	54.8	56.4	59.4	3.0 pps
Low-skilled (15-64)	29.0	31.5	31.8	32.6	34.7	2.0 pps
Medium-skilled (15-64)	62.4	62.8	65.6	67.7	68.8	1.1 pps
High-skilled (15-64)	83.4	85.3	84.2	83.4	85.1	1.7 pps
Nationals (15-64)	61.4	64.0	66.0	67.0	68.8	1.8 pps
Non-nationals (15-64)	57.6	57.8	59.4	61.9	63.6	1.7 pps
Male	61.5	64.4	66.8	68.4	69.9	1.5 pps
Young (15-24)	28.2	31.7	33.2	36.5	37.1	0.6 pps
Prime age (25-54)	75.1	77.6	79.9	80.3	81.2	0.8 pps
Older (55-64)	51.7	53.2	55.1	56.4	60.1	3.8 pps
Female	60.2	61.7	63.4	64.4	66.4	2.1 pps
Young (15-24)	23.4	25.4	27.0	28.2	31.9	3.7 pps
Prime age (25-54)	74.8	75.0	76.1	76.0	77.3	1.3 pps
Older (55-64)	49.7	52.4	54.6	56.4	58.9	2.5 pps
6 - **Employed persons** (15-64, 1000 pers.)	840.6	851.8	866.5	858.6	867.9	1.1 %
7 - **Employment growth** (%, National accounts)	1.5	1.4	2.3	-1.3	1.4	2.7 pps
Employment growth (%, 15-64, LFS)	1.4	1.3	1.7	-0.9	1.1	2.0 pps
Male	3.5	2.5	2.6	-0.3	1.0	1.2 pps
Female	-0.4	0.2	0.9	-1.5	1.2	2.8 pps
8 - **Self employed** (15-64, % of total employment)	10.1	10.2	10.5	10.6	11.6	1.0 pps
Male	12.4	12.6	12.6	13.2	14.7	1.5 pps
Female	7.9	8.0	8.4	8.0	8.5	0.5 pps
9 - **Temporary employment** (15-64, % of total employment)	6.7	4.7	4.3	3.3	3.8	0.5 pps
Male	8.0	6.3	5.3	4.3	4.6	0.3 pps
Female	5.5	3.3	3.4	2.4	3.0	0.6 pps
10 - **Part-time** (15-64, % of total employment)	8.8	8.9	7.5	6.8	7.2	0.4 pps
Male	7.0	6.7	5.7	4.7	4.5	-0.2 pps
Female	10.4	11.0	9.4	8.9	10.0	1.1 pps
11 - **Unemployment rate** (harmonised:15-74)	16.2	15.0	11.9	10.8	9.9	-0.9 pps
Young (15-24)	31.0	28.5	23.2	19.6	16.3	-3.3 pps
Prime age (25-49)	14.8	13.7	11.0	10.4	9.5	-0.9 pps
Older (55-64)	14.9	14.7	10.5	9.9	9.3	-0.6 pps
Low-skilled (15-64)	30.0	27.4	25.7	24.5	22.3	-2.2 pps
Medium-skilled (15-64)	18.5	17.8	13.3	11.9	11.1	-0.8 pps
High-skilled (15-64)	7.3	6.6	6.1	5.7	5.0	-0.7 pps
Nationals (15-64)	15.4	13.9	11.3	10.5	9.6	-0.9 pps
Non-nationals (15-64)	22.2	22.9	17.5	14.8	13.2	-1.6 pps
Male	18.6	16.2	12.6	11.8	11.1	-0.7 pps
Female	13.8	14.0	11.1	9.8	8.6	-1.2 pps
12 - **Long-term unemployment** (% of total unemployment)	54.5	52.1	48.7	43.0	45.5	2.5 pps
13 - **Worked hours** (full-time, average actual weekly hours)	40.3	40.1	39.9	40.0	39.8	-0.5 %
Male	40.8	40.5	40.3	40.3	40.1	-0.5 %
Female	39.8	39.7	39.5	39.7	39.5	-0.5 %
14 - **Sectoral employment growth** (% change)						
Agriculture	3.6	-0.9	-0.3	-3.8	8.6	12.4 pps
Building and construction	5.6	-1.4	6.2	3.3	2.7	-0.6 pps
Services	-0.5	1.8	3.6	0.5	2.0	1.5 pps
Manufacturing industry	3.3	4.7	0.1	-5.0	-1.0	4.0 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	3.7	6.1	5.0	8.5	7.0	-1.5 pps
Real compensation per employee based on GDP	-2.5	2.5	3.7	7.2	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	3.4	4.2	4.8	5.9	7.4	1.5 pps
Labour cost index (wages and salaries, total)	3.8	4.3	4.9	7.1	7.4	0.3 pps
Labour productivity (GDP/person employed)	4.6	2.5	0.7	3.8	1.4	-2.4 pps

Lithuania	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	3028	2988	2958	2932	2905	-0.9 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	2037	2007	1984	1961	1935	-1.3 %
(% of total population)	67.3	67.2	67.1	66.9	66.6	-0.3 pps
3 - **Labour force** (15-64, 1000 pers.)	1454	1441	1436	1446	1434	-0.8 %
Male	722	713	716	721	710	-1.5 %
Female	732	728	721	724	724	-0.1 %
4 - **Activity rate** (% of population 15-64)	71.4	71.8	72.4	73.7	74.1	0.4 pps
Young (15-24)	28.2	29.3	31.5	34.2	33.8	-0.4 pps
Prime age (25-54)	89.8	89.7	89.5	89.7	89.3	-0.5 pps
Older (55-64)	58.0	58.7	60.1	63.0	66.2	3.2 pps
Nationals (15-64)	71.4	71.8	72.4	73.7	74.1	0.5 pps
Non-nationals (15-64)	64.6	79.3	81.7	82.1	73.3	-8.8 pps
Male	73.5	73.7	74.7	76.0	75.8	-0.1 pps
Young (15-24)	32.1	32.4	35.8	38.6	36.7	-1.9 pps
Prime age (25-54)	90.7	90.5	90.6	90.8	90.4	-0.4 pps
Older (55-64)	64.3	64.6	65.3	68.2	69.8	1.7 pps
Female	69.4	70.1	70.3	71.6	72.5	0.9 pps
Young (15-24)	24.1	26.1	27.0	29.6	30.8	1.2 pps
Prime age (25-54)	88.9	89.0	88.3	88.7	88.2	-0.5 pps
Older (55-64)	53.1	54.2	56.1	58.9	63.3	4.4 pps
5 - **Employment rate** (% of population 15-64)	60.2	62.0	63.7	65.7	67.2	1.5 pps
Young (15-24)	19.0	21.5	24.6	27.6	28.3	0.7 pps
Prime age (25-54)	76.9	78.5	79.6	80.8	81.6	0.7 pps
Older (55-64)	50.2	51.7	53.4	56.2	60.4	4.2 pps
Low-skilled (15-64)	14.4	15.7	17.1	19.5	19.9	0.4 pps
Medium-skilled (15-64)	59.7	61.7	63.0	64.6	66.1	1.4 pps
High-skilled (15-64)	87.2	87.0	87.6	88.4	88.7	0.3 pps
Nationals (15-64)	60.3	62.0	63.7	65.6	67.2	1.6 pps
Non-nationals (15-64)	49.6	64.7	73.1	72.6	67.5	-5.1 pps
Male	60.1	62.3	64.7	66.6	68.0	1.5 pps
Young (15-24)	20.9	22.8	27.6	31.0	30.9	-0.1 pps
Prime age (25-54)	75.7	77.7	79.8	80.7	81.8	1.1 pps
Older (55-64)	54.1	55.9	56.1	58.8	62.4	3.6 pps
Female	60.2	61.8	62.8	64.9	66.5	1.6 pps
Young (15-24)	17.0	20.1	21.5	24.0	25.7	1.6 pps
Prime age (25-54)	78.1	79.1	79.4	80.9	81.4	0.4 pps
Older (55-64)	47.2	48.6	51.2	54.3	58.8	4.5 pps
6 - **Employed persons** (15-64, 1000 pers.)	1225.7	1244.4	1264.3	1288.0	1300.6	1.0 %
7 - **Employment growth** (%, National accounts)	0.5	1.8	1.3	2.0	1.3	-0.7 pps
Employment growth (%, 15-64, LFS)	0.1	1.5	1.6	1.9	1.0	-0.9 pps
Male	2.0	2.1	2.9	1.9	0.9	-1.0 pps
Female	-1.5	1.0	0.4	1.9	1.1	-0.8 pps
8 - **Self employed** (15-64, % of total employment)	9.0	9.6	10.5	10.6	10.8	0.3 pps
Male	11.0	12.0	13.0	12.6	13.4	0.8 pps
Female	7.1	7.3	8.1	8.6	8.4	-0.2 pps
9 - **Temporary employment** (15-64, % of total employment)	2.7	2.6	2.7	2.8	2.1	-0.7 pps
Male	3.7	3.5	3.5	3.6	2.4	-1.2 pps
Female	1.8	1.9	1.9	2.0	1.8	-0.2 pps
10 - **Part-time** (15-64, % of total employment)	8.3	8.9	8.4	8.6	7.6	-1.0 pps
Male	6.7	6.9	6.4	6.4	5.5	-0.9 pps
Female	9.9	10.7	10.2	10.6	9.7	-0.9 pps
11 - **Unemployment rate** (harmonised:15-74)	15.4	13.4	11.8	10.7	9.1	-1.6 pps
Young (15-24)	32.6	26.7	21.9	19.3	16.3	-3.0 pps
Prime age (25-49)	14.3	12.6	11.0	9.9	8.6	-1.3 pps
Older (55-64)	13.4	11.9	11.2	10.7	8.7	-2.0 pps
Low-skilled (15-64)	40.2	36.2	33.9	30.7	27.3	-3.4 pps
Medium-skilled (15-64)	19.2	16.7	14.5	13.7	11.9	-1.8 pps
High-skilled (15-64)	6.3	5.7	5.2	4.3	3.7	-0.6 pps
Nationals (15-64)	15.6	13.6	12.0	10.9	9.3	-1.6 pps
Non-nationals (15-64)	0.0	0.0	0.0	0.0	0.0	0.0 pps
Male	17.9	15.2	13.1	12.2	10.1	-2.1 pps
Female	12.9	11.6	10.5	9.2	8.2	-1.0 pps
12 - **Long-term unemployment** (% of total unemployment)	52.1	49.2	42.9	44.6	42.8	-1.8 pps
13 - **Worked hours** (full-time, average actual weekly hours)	39.9	39.8	39.7	39.6	39.6	0.0 %
Male	40.4	40.2	40.2	40.1	40.1	0.0 %
Female	39.4	39.3	39.2	39.1	39.1	0.0 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-3.4	5.5	-3.0	11.0	0.2	-10.8 pps
Building and construction	-2.0	5.1	10.9	0.0	5.8	5.8 pps
Services	1.8	1.6	2.0	2.6	-0.1	-2.7 pps
Manufacturing industry	1.6	2.8	-0.4	-0.4	2.1	2.5 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	6.4	4.2	5.4	3.8	4.6	0.7 pps
Real compensation per employee based on GDP	1.1	1.5	4.0	2.6	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	2.9	4.9	6.8	4.5	5.5	1.0 pps
Labour cost index (wages and salaries, total)	3.1	4.1	6.4	4.9	5.9	1.0 pps
Labour productivity (GDP/person employed)	5.5	2.0	2.2	1.0	0.3	-0.7 pps

Luxembourg	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	519	532	545	558	569	1.9 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	344	355	359	364	386	5.9 %
(% of total population)	66.3	66.8	65.9	65.3	67.9	2.6 pps
3 - **Labour force** (15-64, 1000 pers.)	234	247	251	258	274	6.0 %
Male	131	137	139	143	149	4.5 %
Female	103	110	112	116	125	7.9 %
4 - **Activity rate** (% of population 15-64)	68.0	69.4	69.8	70.8	70.9	0.1 pps
Young (15-24)	24.9	26.8	25.9	26.4	35.2	8.9 pps
Prime age (25-54)	85.7	87.0	87.6	88.0	87.7	-0.3 pps
Older (55-64)	40.3	41.9	42.5	44.4	40.4	-3.9 pps
Nationals (15-64)	63.7	64.7	65.1	66.3	66.8	0.5 pps
Non-nationals (15-64)	72.8	74.7	75.0	75.6	75.1	-0.6 pps
Male	75.0	75.9	76.3	77.2	76.0	-1.2 pps
Young (15-24)	26.2	29.0	30.0	29.5	36.3	6.8 pps
Prime age (25-54)	93.9	94.7	94.4	95.0	93.9	-1.1 pps
Older (55-64)	48.4	48.3	50.7	52.0	45.4	-6.6 pps
Female	60.7	62.8	63.2	64.2	65.6	1.4 pps
Young (15-24)	23.2	24.6	21.9	22.9	34.2	11.3 pps
Prime age (25-54)	77.1	79.1	80.5	80.9	81.4	0.4 pps
Older (55-64)	32.0	35.0	34.4	36.5	35.1	-1.4 pps
5 - **Employment rate** (% of population 15-64)	64.6	65.8	65.7	66.6	66.1	-0.5 pps
Young (15-24)	20.7	21.7	21.9	20.3	29.0	8.7 pps
Prime age (25-54)	82.0	83.1	82.9	83.8	82.6	-1.2 pps
Older (55-64)	39.2	41.1	40.6	42.5	38.4	-4.1 pps
Low-skilled (15-64)	44.2	44.7	43.2	41.9	46.8	4.8 pps
Medium-skilled (15-64)	64.4	65.8	65.4	65.9	65.9	0.0 pps
High-skilled (15-64)	83.7	83.5	82.9	83.0	83.3	0.3 pps
Nationals (15-64)	61.5	62.6	62.8	63.8	63.9	0.1 pps
Non-nationals (15-64)	68.2	69.4	69.0	69.7	68.4	-1.3 pps
Male	72.1	72.4	72.1	72.6	71.3	-1.3 pps
Young (15-24)	22.8	23.5	24.2	21.9	29.5	7.6 pps
Prime age (25-54)	90.8	91.1	90.1	90.6	89.3	-1.3 pps
Older (55-64)	47.0	47.2	48.3	49.7	42.9	-6.7 pps
Female	56.9	59.1	59.1	60.5	60.8	0.3 pps
Young (15-24)	18.4	19.9	19.5	18.8	28.9	10.2 pps
Prime age (25-54)	72.8	75.0	75.5	76.8	75.7	-1.1 pps
Older (55-64)	31.2	34.3	32.3	35.2	33.5	-1.6 pps
6 - **Employed persons** (15-64, 1000 pers.)	222.4	233.7	236.1	242.8	255.2	5.1 %
7 - **Employment growth** (%, National accounts)	3.0	2.4	1.8	2.5	2.5	0.0 pps
Employment growth (%, 15-64, LFS)	1.7	5.1	1.0	2.8	5.1	2.3 pps
Male	1.9	3.6	0.9	1.9	4.3	2.4 pps
Female	1.7	6.9	1.1	4.1	6.1	2.0 pps
8 - **Self employed** (15-64, % of total employment)	7.7	8.0	7.9	7.8	8.6	0.8 pps
Male	8.7	8.7	8.4	9.0	9.4	0.5 pps
Female	6.4	7.1	7.2	6.4	7.5	1.0 pps
9 - **Temporary employment** (15-64, % of total employment)	7.1	7.6	7.0	8.1	10.2	2.1 pps
Male	6.3	7.2	5.6	7.1	10.2	3.1 pps
Female	8.2	8.2	8.8	9.2	10.2	1.0 pps
10 - **Part-time** (15-64, % of total employment)	18.0	18.5	18.7	18.5	18.5	0.0 pps
Male	4.3	4.7	5.1	4.7	5.6	0.9 pps
Female	35.9	36.1	35.9	35.6	34.2	-1.4 pps
11 - **Unemployment rate** (harmonised:15-74)	4.8	5.1	5.9	6.0	6.4	0.4 pps
Young (15-24)	16.8	18.8	15.5	22.6	17.3	-5.3 pps
Prime age (25-49)	4.3	4.5	5.3	4.9	5.8	0.9 pps
Older (55-64)	2.8	2.1	4.7	4.3	4.7	0.4 pps
Low-skilled (15-64)	8.3	8.5	10.3	10.2	10.7	0.5 pps
Medium-skilled (15-64)	4.4	5.2	5.9	6.3	6.3	0.0 pps
High-skilled (15-64)	3.7	3.6	3.9	4.0	4.7	0.7 pps
Nationals (15-64)	3.5	3.3	3.6	3.8	4.3	0.5 pps
Non-nationals (15-64)	6.4	7.0	8.1	7.8	8.9	1.1 pps
Male	3.9	4.5	5.6	5.8	5.9	0.1 pps
Female	6.0	5.8	6.2	6.4	7.1	0.7 pps
12 - **Long-term unemployment** (% of total unemployment)	28.6	30.3	30.4	27.3	28.4	1.1 pps
13 - **Worked hours** (full-time, average actual weekly hours)	41.3	41.8	41.4	41.5	41.3	-0.5 %
Male	42.1	42.5	42.2	42.1	42.2	0.2 %
Female	39.6	40.4	39.9	40.3	39.7	-1.5 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-2.4	0.4	-0.4	-0.3	-0.7	-0.4 pps
Building and construction	2.2	1.2	-0.1	1.0	1.8	0.8 pps
Services	3.1	2.5	2.1	2.8	3.1	0.3 pps
Manufacturing industry	1.0	-1.2	-2.2	-0.6	1.1	1.7 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	2.0	1.6	3.6	2.9	0.8	-2.1 pps
Real compensation per employee based on GDP	-2.1	-2.4	1.3	2.0	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	3.0	2.7	3.3	3.2	0.6	-2.6 pps
Labour cost index (wages and salaries, total)	3.1	2.6	3.3	3.4	0.7	-2.7 pps
Labour productivity (GDP/person employed)	-0.4	-3.2	2.5	1.5	2.3	0.8 pps

Hungary	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	9972	9920	9893	9866	9843	-0.2 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	6719	6694	6647	6588	6530	-0.9 %
(% of total population)	67.4	67.5	67.2	66.8	66.3	-0.4 pps
3 - **Labour force** (15-64, 1000 pers.)	4190	4265	4300	4413	4483	1.6 %
Male	2252	2291	2324	2384	2426	1.7 %
Female	1938	1974	1977	2029	2057	1.4 %
4 - **Activity rate** (% of population 15-64)	62.4	63.7	64.7	67.0	68.6	1.7 pps
Young (15-24)	24.3	25.7	27.4	29.5	31.0	1.5 pps
Prime age (25-54)	81.3	82.9	83.3	85.0	85.8	0.8 pps
Older (55-64)	38.8	39.5	41.2	44.6	48.1	3.5 pps
Nationals (15-64)	62.3	63.7	64.6	66.9	68.6	1.7 pps
Non-nationals (15-64)	64.5	68.8	72.6	74.9	70.6	-4.3 pps
Male	68.4	69.6	71.0	73.4	75.3	1.8 pps
Young (15-24)	27.0	27.9	31.0	33.0	34.4	1.4 pps
Prime age (25-54)	88.2	89.4	89.5	91.2	92.0	0.8 pps
Older (55-64)	43.7	45.4	49.0	53.2	57.8	4.6 pps
Female	56.6	58.0	58.6	60.7	62.2	1.5 pps
Young (15-24)	21.5	23.4	23.6	25.9	27.5	1.6 pps
Prime age (25-54)	74.4	76.5	77.1	78.8	79.6	0.8 pps
Older (55-64)	34.8	34.5	34.7	37.4	39.9	2.5 pps
5 - **Employment rate** (% of population 15-64)	55.4	56.7	58.1	61.8	63.9	2.2 pps
Young (15-24)	18.0	18.4	20.1	23.5	25.7	2.2 pps
Prime age (25-54)	73.0	74.6	75.7	79.2	80.6	1.4 pps
Older (55-64)	35.3	36.1	37.9	41.8	45.3	3.6 pps
Low-skilled (15-64)	25.5	26.0	26.9	31.5	33.9	2.5 pps
Medium-skilled (15-64)	60.8	61.9	63.3	66.7	68.8	2.1 pps
High-skilled (15-64)	78.5	78.5	78.8	80.8	82.1	1.3 pps
Nationals (15-64)	55.4	56.6	58.0	61.7	63.9	2.2 pps
Non-nationals (15-64)	58.3	61.2	64.6	71.0	67.5	-3.5 pps
Male	60.7	61.6	63.7	67.8	70.3	2.4 pps
Young (15-24)	19.7	19.8	23.0	26.4	28.1	1.7 pps
Prime age (25-54)	79.5	80.2	81.4	85.3	86.8	1.6 pps
Older (55-64)	39.3	41.4	44.8	49.6	54.4	4.8 pps
Female	50.3	51.9	52.6	55.9	57.8	1.9 pps
Young (15-24)	16.2	17.0	17.0	20.5	23.1	2.6 pps
Prime age (25-54)	66.6	69.0	70.0	73.2	74.4	1.2 pps
Older (55-64)	31.9	31.7	32.1	35.2	37.7	2.5 pps
6 - **Employed persons** (15-64, 1000 pers.)	3724.2	3792.8	3860.0	4069.9	4175.8	2.6 %
7 - **Employment growth** (%, National accounts)	0.0	0.1	0.9	4.8	2.7	-2.1 pps
Employment growth (%, 15-64, LFS)	0.6	1.8	1.8	5.4	2.6	-2.8 pps
Male	1.3	1.4	2.8	5.7	2.8	-2.9 pps
Female	-0.2	2.4	0.6	5.2	2.4	-2.8 pps
8 - **Self employed** (15-64, % of total employment)	11.4	11.0	10.6	10.3	10.2	-0.1 pps
Male	14.6	13.7	13.2	13.0	12.6	-0.4 pps
Female	7.7	8.0	7.5	7.1	7.4	0.2 pps
9 - **Temporary employment** (15-64, % of total employment)	9.1	9.5	10.9	10.8	11.4	0.6 pps
Male	9.7	10.5	11.4	11.2	11.6	0.4 pps
Female	8.4	8.5	10.4	10.3	11.1	0.8 pps
10 - **Part-time** (15-64, % of total employment)	6.4	6.7	6.4	6.0	5.7	-0.3 pps
Male	4.4	4.3	4.2	4.1	4.0	-0.1 pps
Female	8.7	9.4	9.0	8.3	7.7	-0.6 pps
11 - **Unemployment rate** (harmonised:15-74)	11.0	11.0	10.2	7.7	6.8	-0.9 pps
Young (15-24)	26.0	28.2	26.6	20.4	17.3	-3.1 pps
Prime age (25-49)	10.2	10.0	9.1	6.8	6.0	-0.8 pps
Older (55-64)	9.2	8.4	8.1	6.4	5.8	-0.6 pps
Low-skilled (15-64)	25.2	25.0	23.8	18.6	17.4	-1.2 pps
Medium-skilled (15-64)	10.7	10.8	10.0	7.4	6.4	-1.0 pps
High-skilled (15-64)	4.3	4.5	4.0	3.2	2.4	-0.8 pps
Nationals (15-64)	11.1	11.1	10.2	7.8	6.9	-0.9 pps
Non-nationals (15-64)	9.8	11.1	10.9	0.0	0.0	0.0 pps
Male	11.1	11.3	10.2	7.6	6.6	-1.0 pps
Female	11.0	10.6	10.1	7.9	7.0	-0.9 pps
12 - **Long-term unemployment** (% of total unemployment)	47.6	45.4	48.5	47.4	45.5	-1.9 pps
13 - **Worked hours** (full-time, average actual weekly hours)	40.3	39.6	39.4	39.3	39.3	0.0 %
Male	40.9	40.3	40.0	39.8	39.9	0.3 %
Female	39.5	38.9	38.6	38.7	38.6	-0.3 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-3.9	4.3	-2.7	1.5	3.5	2.0 pps
Building and construction	-2.3	-0.6	0.0	3.3	1.4	-1.9 pps
Services	0.7	1.7	3.2	4.6	2.4	-2.2 pps
Manufacturing industry	3.4	-3.3	-5.7	6.7	2.3	-4.4 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	3.1	2.1	1.8	0.9	3.5	2.6 pps
Real compensation per employee based on GDP	0.9	-1.4	-1.2	-2.3	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	5.6	5.7	2.3	3.5	3.8	0.3 pps
Labour cost index (wages and salaries, total)	5.5	5.7	3.8	3.9	4.2	0.3 pps
Labour productivity (GDP/person employed)	1.7	-1.8	0.9	-1.1	0.2	1.3 pps

Malta		2011	2012	2013	2014	2015	2014-2015
1	- **Population** (LFS, total, 1000 pers.)	416	419	423	427	432	1.1 %
2	- **Population** (LFS, working age:15-64, 1000 pers.)	284	284	285	285	285	0.1 %
	(% of total population)	68.3	67.7	67.2	66.7	66.0	-0.6 pps
3	- **Labour force** (15-64, 1000 pers.)	176	179	185	189	193	2.0 %
	Male	113	113	115	116	118	1.3 %
	Female	63	67	70	73	75	3.0 %
4	- **Activity rate** (% of population 15-64)	61.9	63.1	65.0	66.3	67.6	1.2 pps
	Young (15-24)	51.9	51.0	52.7	52.3	51.7	-0.6 pps
	Prime age (25-54)	74.7	76.5	78.1	79.6	80.9	1.4 pps
	Older (55-64)	34.2	36.0	38.5	40.3	42.3	2.0 pps
	Nationals (15-64)	61.8	62.9	65.0	66.2	67.5	1.3 pps
	Non-nationals (15-64)	61.6	67.4	65.3	68.3	68.3	-0.1 pps
	Male	78.6	78.3	79.3	79.9	80.8	0.8 pps
	Young (15-24)	55.8	54.1	56.0	52.9	53.3	0.4 pps
	Prime age (25-54)	94.9	94.3	94.5	95.1	95.4	0.3 pps
	Older (55-64)	53.1	54.9	57.1	60.1	62.2	2.2 pps
	Female	44.7	47.5	50.2	52.2	53.8	1.6 pps
	Young (15-24)	47.8	47.8	49.6	51.7	50.0	-1.7 pps
	Prime age (25-54)	53.9	58.2	61.1	63.5	65.8	2.3 pps
	Older (55-64)	15.5	17.2	19.7	20.7	22.8	2.1 pps
5	- **Employment rate** (% of population 15-64)	57.8	59.1	60.8	62.4	63.9	1.4 pps
	Young (15-24)	45.0	43.7	46.0	46.2	45.6	-0.6 pps
	Prime age (25-54)	70.6	72.6	74.0	75.9	77.4	1.5 pps
	Older (55-64)	33.2	34.6	36.3	37.8	40.3	2.6 pps
	Low-skilled (15-64)	47.9	48.0	48.9	50.4	52.0	1.6 pps
	Medium-skilled (15-64)	64.0	66.5	68.3	69.8	69.6	-0.2 pps
	High-skilled (15-64)	86.2	85.4	86.6	86.5	88.6	2.1 pps
	Nationals (15-64)	57.9	59.0	60.9	62.5	63.9	1.4 pps
	Non-nationals (15-64)	57.5	61.4	58.5	61.2	63.4	2.3 pps
	Male	73.9	73.8	74.1	74.9	76.2	1.3 pps
	Young (15-24)	48.1	46.6	47.5	45.7	46.0	0.3 pps
	Prime age (25-54)	90.0	89.7	89.6	90.6	91.2	0.7 pps
	Older (55-64)	51.7	53.2	54.1	56.0	58.8	2.9 pps
	Female	41.5	44.0	47.1	49.4	51.0	1.5 pps
	Young (15-24)	41.9	40.7	44.4	46.7	45.3	-1.4 pps
	Prime age (25-54)	50.8	55.0	57.9	60.6	62.8	2.2 pps
	Older (55-64)	15.2	16.2	18.6	20.0	21.8	1.8 pps
6	- **Employed persons** (15-64, 1000 pers.)	164.4	167.8	173.0	177.9	182.2	2.4 %
7	- **Employment growth** (%, National accounts)	2.9	2.5	3.7	5.1	3.4	-1.7 pps
	Employment growth (%, 15-64, LFS)	2.4	2.1	3.1	2.8	2.4	-0.4 pps
	Male	1.1	0.0	0.9	1.4	2.0	0.6 pps
	Female	4.9	6.0	6.8	4.9	3.0	-1.8 pps
8	- **Self employed** (15-64, % of total employment)	13.1	13.1	13.3	13.2	13.3	0.2 pps
	Male	16.9	17.1	17.7	17.3	17.6	0.3 pps
	Female	5.8	6.0	6.1	6.7	6.7	0.1 pps
9	- **Temporary employment** (15-64, % of total employment)	6.5	6.8	7.5	7.7	7.4	-0.3 pps
	Male	5.6	6.1	6.8	6.6	6.5	-0.1 pps
	Female	8.1	8.0	8.4	9.3	8.7	-0.6 pps
10	- **Part-time** (15-64, % of total employment)	12.6	13.2	14.2	15.5	14.5	-1.0 pps
	Male	5.4	5.7	6.7	7.0	6.3	-0.7 pps
	Female	25.8	26.2	26.5	28.8	27.3	-1.5 pps
11	- **Unemployment rate** (harmonised:15-74)	6.4	6.3	6.4	5.8	5.4	-0.4 pps
	Young (15-24)	13.3	14.1	13.0	11.7	11.8	0.1 pps
	Prime age (25-49)	5.4	5.1	5.2	4.6	4.4	-0.2 pps
	Older (55-64)	2.9	3.8	5.7	6.3	4.8	-1.5 pps
	Low-skilled (15-64)	9.1	9.6	10.0	9.2	8.8	-0.4 pps
	Medium-skilled (15-64)	5.2	4.1	4.2	3.7	3.6	-0.1 pps
	High-skilled (15-64)	1.8	2.6	2.6	2.6	1.8	-0.8 pps
	Nationals (15-64)	6.4	6.3	6.3	5.7	5.4	-0.3 pps
	Non-nationals (15-64)	8.4	8.7	10.9	10.1	6.9	-3.2 pps
	Male	6.0	5.7	6.5	6.1	5.5	-0.6 pps
	Female	7.1	7.3	6.3	5.3	5.2	-0.1 pps
12	- **Long-term unemployment** (% of total unemployment)	47.4	48.4	45.6	46.9	43.4	-3.5 pps
13	- **Worked hours** (full-time, average actual weekly hours)	40.3	40.4	40.3	40.1	40.0	-0.2 %
	Male	41.3	41.4	41.3	41.1	41.1	0.0 %
	Female	38.0	38.1	38.1	38.0	37.7	-0.8 %
14	- **Sectoral employment growth** (% change)						
	Agriculture	-2.5	-2.8	-3.0	-3.7	0.5	4.2 pps
	Building and construction	2.8	0.6	-2.2	2.0	2.8	0.8 pps
	Services	2.1	4.2	4.6	6.1	5.6	-0.5 pps
	Manufacturing industry	1.5	-2.8	1.3	2.2	-0.4	-2.6 pps
15	- **Indicator board on wage developments** (% change)						
	Compensation per employee	3.3	3.5	1.9	1.1	2.7	1.6 pps
	Real compensation per employee based on GDP	1.0	1.6	0.0	-0.9	:	: pps
	Labour cost index (compens. of employees plus taxes minus subs.)	6.7	4.3	4.9	3.3	2.1	-1.2 pps
	Labour cost index (wages and salaries, total)	6.9	4.3	5.0	3.2	2.1	-1.1 pps
	Labour productivity (GDP/person employed)	-1.1	0.3	0.7	-1.6	2.7	4.3 pps

Netherlands	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	16693	16752	16800	16863	16932	0.4 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	10994	10992	11014	10980	10950	-0.3 %
(% of total population)	65.9	65.6	65.6	65.1	64.7	-0.4 pps
3 - **Labour force** (15-64, 1000 pers.)	8582	8684	8743	8677	8719	0.5 %
Male	4590	4632	4663	4638	4641	0.1 %
Female	3993	4053	4079	4040	4078	1.0 %
4 - **Activity rate** (% of population 15-64)	78.1	79.0	79.4	79.0	79.6	0.6 pps
Young (15-24)	68.1	69.2	69.2	67.4	68.5	1.1 pps
Prime age (25-54)	87.4	87.6	87.4	87.1	87.1	0.0 pps
Older (55-64)	57.9	60.8	63.5	64.9	67.1	2.2 pps
Nationals (15-64)	78.6	79.5	80.0	79.6	80.2	0.6 pps
Non-nationals (15-64)	67.3	69.8	68.9	69.1	69.0	-0.2 pps
Male	83.2	83.9	84.3	84.2	84.6	0.4 pps
Young (15-24)	67.0	67.7	68.4	67.0	67.6	0.5 pps
Prime age (25-54)	93.0	93.0	92.3	92.2	92.1	-0.1 pps
Older (55-64)	67.5	70.6	74.2	75.5	77.6	2.2 pps
Female	72.9	74.0	74.4	73.8	74.7	0.8 pps
Young (15-24)	69.2	70.8	70.0	67.7	69.4	1.7 pps
Prime age (25-54)	81.8	82.3	82.6	81.9	82.1	0.2 pps
Older (55-64)	48.2	51.0	52.8	54.3	56.7	2.4 pps
5 - **Employment rate** (% of population 15-64)	74.2	74.4	73.6	73.1	74.1	1.0 pps
Young (15-24)	61.3	61.1	60.1	58.8	60.8	2.0 pps
Prime age (25-54)	84.0	83.6	82.2	81.7	82.2	0.5 pps
Older (55-64)	55.2	57.6	59.2	59.9	61.7	1.9 pps
Low-skilled (15-64)	58.9	58.8	57.2	55.6	57.0	1.4 pps
Medium-skilled (15-64)	77.7	77.6	76.2	76.0	76.5	0.6 pps
High-skilled (15-64)	86.2	86.6	86.9	86.8	87.4	0.6 pps
Nationals (15-64)	74.8	75.0	74.4	73.9	74.9	1.1 pps
Non-nationals (15-64)	60.4	62.1	59.3	60.5	59.8	-0.7 pps
Male	79.3	79.3	78.2	78.1	79.0	0.9 pps
Young (15-24)	60.0	59.7	59.2	58.7	59.9	1.2 pps
Prime age (25-54)	89.8	89.1	86.8	86.9	87.5	0.6 pps
Older (55-64)	64.5	66.9	68.9	69.4	71.1	1.7 pps
Female	68.9	69.4	69.0	68.1	69.2	1.1 pps
Young (15-24)	62.6	62.5	61.0	58.8	61.7	2.8 pps
Prime age (25-54)	78.1	78.1	77.5	76.5	77.0	0.5 pps
Older (55-64)	45.9	48.3	49.5	50.4	52.4	2.0 pps
6 - **Employed persons** (15-64, 1000 pers.)	8152.2	8174.5	8103.6	8028.5	8115.5	1.1 %
7 - **Employment growth** (%, National accounts)	0.9	-0.2	-1.2	-0.2	0.9	1.1 pps
Employment growth (%, 15-64, LFS)	-0.9	0.3	-0.9	-0.9	1.1	2.0 pps
Male	-1.1	0.0	-1.2	-0.5	0.7	1.2 pps
Female	-0.7	0.6	-0.5	-1.5	1.5	3.0 pps
8 - **Self employed** (15-64, % of total employment)	13.9	14.0	14.8	15.1	15.3	0.2 pps
Male	17.1	17.2	18.1	18.4	18.3	-0.1 pps
Female	10.2	10.4	11.0	11.4	12.0	0.6 pps
9 - **Temporary employment** (15-64, % of total employment)	18.1	19.2	20.2	21.1	20.0	-1.1 pps
Male	16.9	18.1	19.2	20.2	18.8	-1.4 pps
Female	19.5	20.4	21.3	22.0	21.2	-0.8 pps
10 - **Part-time** (15-64, % of total employment)	48.3	49.0	49.8	49.6	50.0	0.4 pps
Male	23.9	24.6	26.0	26.1	26.5	0.4 pps
Female	76.6	77.0	77.1	76.7	76.9	0.2 pps
11 - **Unemployment rate** (harmonised:15-74)	5.0	5.8	7.3	7.4	6.9	-0.5 pps
Young (15-24)	10.0	11.7	13.2	12.7	11.3	-1.4 pps
Prime age (25-49)	3.9	4.6	6.0	6.2	5.6	-0.6 pps
Older (55-64)	4.7	5.3	6.8	7.7	8.1	0.4 pps
Low-skilled (15-64)	7.8	9.4	11.5	12.3	11.3	-1.0 pps
Medium-skilled (15-64)	4.6	5.6	7.3	7.5	7.0	-0.5 pps
High-skilled (15-64)	3.2	3.4	4.1	4.0	3.8	-0.2 pps
Nationals (15-64)	4.7	5.6	7.0	7.2	6.6	-0.6 pps
Non-nationals (15-64)	10.4	11.0	13.9	12.4	13.3	0.9 pps
Male	4.6	5.5	7.2	7.2	6.5	-0.7 pps
Female	5.4	6.2	7.3	7.8	7.3	-0.5 pps
12 - **Long-term unemployment** (% of total unemployment)	33.1	33.5	35.3	39.4	43.2	3.8 pps
13 - **Worked hours** (full-time, average actual weekly hours)	41.4	41.3	41.3	41.7	41.5	-0.5 %
Male	42.0	41.8	41.9	42.2	42.1	-0.2 %
Female	39.2	39.4	39.3	39.8	39.6	-0.5 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-1.0	-1.0	-1.5	-1.5	-0.5	1.0 pps
Building and construction	-0.2	-2.5	-6.1	-3.3	-1.1	2.2 pps
Services	1.5	0.1	-0.8	0.7	2.4	1.7 pps
Manufacturing industry	-0.9	-1.1	-1.8	-0.5	0.3	0.8 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	1.8	2.1	2.1	1.6	0.2	-1.4 pps
Real compensation per employee based on GDP	2.2	1.1	0.8	1.5	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	2.1	3.0	1.7	1.2	0.6	-0.6 pps
Labour cost index (wages and salaries, total)	1.6	2.0	1.1	-0.3	2.5	2.8 pps
Labour productivity (GDP/person employed)	0.8	-0.9	1.0	1.7	1.0	-0.7 pps

Austria	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	8389	8426	8477	8544	8630	1.0 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	5601	5621	5643	5676	5721	0.8 %
(% of total population)	66.8	66.7	66.6	66.4	66.3	-0.1 pps
3 - **Labour force** (15-64, 1000 pers.)	4176	4222	4261	4279	4319	0.9 %
Male	2223	2241	2257	2260	2287	1.2 %
Female	1953	1981	2004	2018	2032	0.7 %
4 - **Activity rate** (% of population 15-64)	74.6	75.1	75.5	75.4	75.5	0.1 pps
Young (15-24)	59.2	59.2	58.8	58.0	57.4	-0.6 pps
Prime age (25-54)	87.6	88.1	88.3	88.0	88.0	0.0 pps
Older (55-64)	41.4	43.1	45.5	46.9	48.6	1.7 pps
Nationals (15-64)	75.2	75.8	76.3	76.0	76.2	0.2 pps
Non-nationals (15-64)	69.9	70.4	70.4	71.6	71.5	-0.1 pps
Male	79.9	80.2	80.4	80.0	80.1	0.1 pps
Young (15-24)	63.6	63.1	62.3	60.7	60.7	0.0 pps
Prime age (25-54)	92.0	92.3	92.1	91.5	91.6	0.2 pps
Older (55-64)	50.3	52.3	55.1	56.8	57.4	0.6 pps
Female	69.3	70.1	70.7	70.8	70.9	0.1 pps
Young (15-24)	54.8	55.4	55.3	55.4	54.1	-1.2 pps
Prime age (25-54)	83.2	84.0	84.5	84.5	84.4	-0.1 pps
Older (55-64)	33.0	34.5	36.4	37.5	40.2	2.7 pps
5 - **Employment rate** (% of population 15-64)	71.1	71.4	71.4	71.1	71.1	0.0 pps
Young (15-24)	53.9	53.7	53.1	52.1	51.4	-0.7 pps
Prime age (25-54)	84.1	84.3	84.0	83.4	83.5	0.0 pps
Older (55-64)	39.9	41.6	43.8	45.1	46.3	1.2 pps
Low-skilled (15-64)	49.0	48.3	47.3	47.5	47.2	-0.3 pps
Medium-skilled (15-64)	75.7	75.8	76.2	73.8	73.5	-0.3 pps
High-skilled (15-64)	85.3	86.2	85.3	83.3	83.3	-0.1 pps
Nationals (15-64)	72.2	72.5	72.7	72.3	72.5	0.2 pps
Non-nationals (15-64)	63.5	63.7	63.3	63.6	63.3	-0.2 pps
Male	76.2	76.2	76.0	75.3	75.1	-0.1 pps
Young (15-24)	58.1	57.1	56.4	54.3	54.0	-0.3 pps
Prime age (25-54)	88.4	88.3	87.5	86.6	86.6	0.1 pps
Older (55-64)	48.2	50.2	52.8	54.3	54.1	-0.2 pps
Female	66.1	66.7	66.9	66.9	67.1	0.1 pps
Young (15-24)	49.8	50.3	49.7	49.9	48.7	-1.2 pps
Prime age (25-54)	79.8	80.4	80.5	80.3	80.3	0.0 pps
Older (55-64)	32.2	33.5	35.2	36.4	38.8	2.4 pps
6 - **Employed persons** (15-64, 1000 pers.)	3982.3	4013.4	4030.0	4034.2	4067.6	0.8 %
7 - **Employment growth** (%, National accounts)	1.6	1.0	0.3	0.9	0.6	-0.3 pps
Employment growth (%, 15-64, LFS)	1.0	0.8	0.4	0.1	0.8	0.7 pps
Male	0.8	0.4	0.2	-0.3	0.9	1.2 pps
Female	1.2	1.2	0.6	0.6	0.8	0.2 pps
8 - **Self employed** (15-64, % of total employment)	10.9	10.8	11.0	10.9	11.0	0.1 pps
Male	13.4	13.2	13.3	13.3	13.3	0.0 pps
Female	8.2	8.2	8.4	8.3	8.4	0.1 pps
9 - **Temporary employment** (15-64, % of total employment)	9.6	9.3	9.2	9.2	9.1	-0.1 pps
Male	9.7	9.3	9.4	9.2	9.1	-0.1 pps
Female	9.4	9.3	9.0	9.2	9.1	-0.1 pps
10 - **Part-time** (15-64, % of total employment)	24.5	25.2	26.0	26.9	27.3	0.4 pps
Male	7.8	8.0	9.0	9.6	9.8	0.2 pps
Female	43.5	44.6	45.1	46.3	46.8	0.5 pps
11 - **Unemployment rate** (harmonised:15-74)	4.6	4.9	5.4	5.6	5.7	0.1 pps
Young (15-24)	8.9	9.4	9.7	10.3	10.6	0.3 pps
Prime age (25-49)	4.0	4.3	4.9	5.2	5.2	0.0 pps
Older (55-64)	3.6	3.4	3.8	3.8	4.7	0.9 pps
Low-skilled (15-64)	9.3	10.1	10.6	11.8	11.5	-0.3 pps
Medium-skilled (15-64)	4.0	4.5	4.8	5.1	5.5	0.4 pps
High-skilled (15-64)	2.6	2.4	3.5	4.0	3.9	-0.1 pps
Nationals (15-64)	4.0	4.3	4.7	4.8	4.9	0.1 pps
Non-nationals (15-64)	9.2	9.5	10.1	11.3	11.4	0.1 pps
Male	4.6	5.0	5.4	5.9	6.1	0.2 pps
Female	4.6	4.8	5.3	5.4	5.3	-0.1 pps
12 - **Long-term unemployment** (% of total unemployment)	26.2	24.9	24.6	27.2	29.2	2.0 pps
13 - **Worked hours** (full-time, average actual weekly hours)	42.0	41.6	41.4	41.3	40.9	-1.0 %
Male	42.8	42.4	42.2	42.0	41.5	-1.2 %
Female	40.5	40.2	39.9	39.9	39.5	-1.0 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-1.6	-5.5	-1.4	3.2	-6.4	-9.6 pps
Building and construction	2.0	0.9	-0.7	0.5	0.1	-0.4 pps
Services	2.4	1.7	0.5	1.0	1.2	0.2 pps
Manufacturing industry	1.7	1.3	-0.7	0.1	0.6	0.5 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	2.0	2.7	2.1	1.9	1.9	0.0 pps
Real compensation per employee based on GDP	0.2	0.7	0.5	0.1	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	2.5	4.2	2.6	2.7	3.3	0.6 pps
Labour cost index (wages and salaries, total)	2.6	4.0	2.6	2.9	3.4	0.5 pps
Labour productivity (GDP/person employed)	1.2	-0.3	-0.2	-0.3	0.3	0.6 pps

Poland	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	38526	38534	38502	38484	38455	-0.1 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	25814	25697	25525	25278	25128	-0.6 %
(% of total population)	67.0	66.7	66.3	65.7	65.3	-0.3 pps
3 - **Labour force** (15-64, 1000 pers.)	16968	17086	17101	17153	17112	-0.2 %
Male	9350	9394	9409	9419	9389	-0.3 %
Female	7618	7691	7692	7734	7723	-0.2 %
4 - **Activity rate** (% of population 15-64)	65.7	66.5	67.0	67.9	68.1	0.2 pps
Young (15-24)	33.5	33.6	33.3	33.9	32.8	-1.0 pps
Prime age (25-54)	84.2	84.6	84.6	85.1	85.1	0.0 pps
Older (55-64)	39.6	41.8	44.0	45.6	46.9	1.3 pps
Nationals (15-64)	65.7	66.5	67.0	67.8	68.1	0.3 pps
Non-nationals (15-64)	70.5	71.7	71.3	73.7	67.8	-5.9 pps
Male	72.6	73.3	73.9	74.6	74.8	0.2 pps
Young (15-24)	38.7	38.5	38.4	38.8	38.4	-0.4 pps
Prime age (25-54)	89.7	90.0	90.0	90.5	90.6	0.1 pps
Older (55-64)	51.6	53.5	55.9	57.2	57.5	0.4 pps
Female	58.9	59.7	60.1	61.1	61.4	0.3 pps
Young (15-24)	28.1	28.4	27.9	28.7	26.9	-1.7 pps
Prime age (25-54)	78.6	79.1	79.1	79.6	79.6	0.0 pps
Older (55-64)	29.0	31.3	33.3	35.2	37.3	2.2 pps
5 - **Employment rate** (% of population 15-64)	59.3	59.7	60.0	61.7	62.9	1.2 pps
Young (15-24)	24.9	24.7	24.2	25.8	26.0	0.2 pps
Prime age (25-54)	77.3	77.2	77.0	78.4	79.5	1.1 pps
Older (55-64)	36.9	38.7	40.6	42.5	44.3	1.9 pps
Low-skilled (15-64)	23.4	23.4	22.4	22.7	23.3	0.6 pps
Medium-skilled (15-64)	62.0	61.7	61.6	62.9	64.0	1.0 pps
High-skilled (15-64)	82.2	82.1	82.3	83.9	85.0	1.1 pps
Nationals (15-64)	59.3	59.7	60.0	61.7	62.9	1.3 pps
Non-nationals (15-64)	62.4	66.1	60.8	66.0	62.4	-3.6 pps
Male	66.0	66.3	66.6	68.2	69.2	1.0 pps
Young (15-24)	29.6	29.3	28.6	30.0	30.5	0.5 pps
Prime age (25-54)	83.0	82.9	82.7	83.9	84.9	1.0 pps
Older (55-64)	47.8	49.3	51.3	53.1	54.2	1.0 pps
Female	52.7	53.1	53.4	55.2	56.6	1.4 pps
Young (15-24)	20.0	19.9	19.5	21.4	21.3	-0.1 pps
Prime age (25-54)	71.5	71.5	71.2	72.7	73.9	1.2 pps
Older (55-64)	27.2	29.2	31.0	32.9	35.5	2.6 pps
6 - **Employed persons** (15-64, 1000 pers.)	15312.8	15340.3	15313.3	15591.0	15811.6	1.4 %
7 - **Employment growth** (%, National accounts)	0.6	0.1	-0.1	1.7	1.4	-0.3 pps
Employment growth (%, 15-64, LFS)	0.5	0.2	-0.2	1.8	1.4	-0.4 pps
Male	0.9	0.0	-0.1	1.4	1.0	-0.5 pps
Female	0.0	0.4	-0.2	2.3	2.0	-0.3 pps
8 - **Self employed** (15-64, % of total employment)	18.7	18.4	18.1	17.9	17.9	0.0 pps
Male	22.3	22.2	21.9	21.9	21.8	0.0 pps
Female	14.2	13.8	13.4	13.0	13.1	0.1 pps
9 - **Temporary employment** (15-64, % of total employment)	26.8	26.8	26.8	28.3	28.0	-0.3 pps
Male	27.5	27.3	27.2	28.5	28.0	-0.5 pps
Female	26.1	26.2	26.3	28.0	27.9	-0.1 pps
10 - **Part-time** (15-64, % of total employment)	7.3	7.2	7.1	7.1	6.8	-0.3 pps
Male	4.7	4.5	4.5	4.4	4.2	-0.2 pps
Female	10.5	10.6	10.4	10.3	9.9	-0.4 pps
11 - **Unemployment rate** (harmonised:15-74)	9.7	10.1	10.3	9.0	7.5	-1.5 pps
Young (15-24)	25.8	26.5	27.3	23.9	20.8	-3.1 pps
Prime age (25-49)	8.2	8.8	9.0	7.9	6.6	-1.3 pps
Older (55-64)	6.9	7.4	7.7	6.8	5.4	-1.4 pps
Low-skilled (15-64)	19.1	20.3	21.3	19.7	17.3	-2.4 pps
Medium-skilled (15-64)	10.5	11.0	11.5	10.2	8.4	-1.8 pps
High-skilled (15-64)	5.3	5.7	5.7	4.7	4.0	-0.7 pps
Nationals (15-64)	9.8	10.2	10.4	9.1	7.6	-1.5 pps
Non-nationals (15-64)	0.0	0.0	14.6	0.0	0.0	0.0 pps
Male	9.0	9.4	9.7	8.5	7.3	-1.2 pps
Female	10.4	10.9	11.1	9.6	7.7	-1.9 pps
12 - **Long-term unemployment** (% of total unemployment)	37.2	40.3	42.5	42.7	39.3	-3.4 pps
13 - **Worked hours** (full-time, average actual weekly hours)	41.1	41.0	40.8	41.1	41.1	0.0 %
Male	42.5	42.4	42.2	42.3	42.3	0.0 %
Female	39.2	39.2	39.0	39.4	39.4	0.0 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-0.5	-2.4	-4.8	-2.6	1.7	4.3 pps
Building and construction	2.1	-2.8	-5.5	-0.9	1.6	2.5 pps
Services	1.2	1.2	-0.5	3.6	1.4	-2.2 pps
Manufacturing industry	1.3	-0.5	2.2	2.2	2.5	0.3 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	5.3	3.6	1.7	2.2	-0.1	-2.3 pps
Real compensation per employee based on GDP	2.0	1.2	1.3	1.7	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	4.3	3.1	3.4	3.5	4.0	0.5 pps
Labour cost index (wages and salaries, total)	4.3	3.1	3.4	3.5	3.9	0.4 pps
Labour productivity (GDP/person employed)	4.4	1.4	1.3	1.5	2.2	0.7 pps

Portugal	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	10558	10515	10457	10401	10358	-0.4 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	6979	6930	6859	6794	6743	-0.8 %
(% of total population)	66.1	65.9	65.6	65.3	65.1	-0.2 pps
3 - **Labour force** (15-64, 1000 pers.)	5138	5087	5010	4976	4949	-0.5 %
Male	2655	2609	2550	2523	2501	-0.8 %
Female	2484	2478	2460	2454	2448	-0.2 %
4 - **Activity rate** (% of population 15-64)	73.6	73.4	73.0	73.2	73.4	0.2 pps
Young (15-24)	38.2	37.1	35.0	34.3	33.5	-0.8 pps
Prime age (25-54)	88.4	88.5	88.3	88.6	88.8	0.2 pps
Older (55-64)	53.6	53.3	54.4	55.3	57.0	1.8 pps
Nationals (15-64)	73.3	73.2	72.9	73.2	73.3	0.2 pps
Non-nationals (15-64)	81.9	80.0	77.5	76.3	76.7	0.5 pps
Male	78.0	77.3	76.5	76.7	76.7	0.0 pps
Young (15-24)	40.4	39.2	36.2	34.8	34.2	-0.6 pps
Prime age (25-54)	92.4	92.1	91.1	91.6	91.7	0.1 pps
Older (55-64)	61.6	60.4	62.7	64.0	65.0	1.0 pps
Female	69.5	69.7	69.8	70.0	70.3	0.3 pps
Young (15-24)	35.9	34.9	33.8	33.8	32.8	-1.0 pps
Prime age (25-54)	84.5	85.0	85.5	85.8	86.0	0.2 pps
Older (55-64)	46.4	47.0	46.9	47.5	49.9	2.4 pps
5 - **Employment rate** (% of population 15-64)	63.8	61.4	60.6	62.6	63.9	1.3 pps
Young (15-24)	26.6	23.0	21.7	22.4	22.8	0.4 pps
Prime age (25-54)	77.8	75.5	74.6	77.4	78.8	1.5 pps
Older (55-64)	47.8	46.5	46.9	47.8	49.9	2.1 pps
Low-skilled (15-64)	59.1	56.2	54.7	55.4	56.3	0.9 pps
Medium-skilled (15-64)	65.5	62.9	63.5	65.9	66.9	1.0 pps
High-skilled (15-64)	81.0	78.7	76.9	79.4	80.4	0.9 pps
Nationals (15-64)	63.8	61.5	60.8	62.7	64.0	1.3 pps
Non-nationals (15-64)	63.6	58.7	54.9	59.4	61.4	2.0 pps
Male	67.7	64.5	63.5	65.8	66.9	1.1 pps
Young (15-24)	28.7	24.8	22.9	22.9	24.1	1.2 pps
Prime age (25-54)	81.7	78.6	77.1	80.6	81.8	1.2 pps
Older (55-64)	54.2	51.6	53.5	54.3	56.0	1.7 pps
Female	60.1	58.5	57.9	59.6	61.1	1.5 pps
Young (15-24)	24.5	21.2	20.4	21.9	21.5	-0.4 pps
Prime age (25-54)	74.1	72.5	72.2	74.3	76.1	1.8 pps
Older (55-64)	42.0	42.0	41.0	42.0	44.5	2.5 pps
6 - **Employed persons** (15-64, 1000 pers.)	4453.2	4255.9	4158.0	4254.5	4309.0	1.3 %
7 - **Employment growth** (%, National accounts)	-1.9	-4.1	-2.9	1.4	1.4	0.0 pps
Employment growth (%, 15-64, LFS)	-2.7	-4.4	-2.3	2.3	1.3	-1.0 pps
Male	-3.5	-5.6	-2.8	2.2	0.8	-1.4 pps
Female	-1.8	-3.2	-1.8	2.4	1.7	-0.7 pps
8 - **Self employed** (15-64, % of total employment)	16.8	17.0	17.1	15.5	14.5	-1.0 pps
Male	20.1	20.4	20.4	19.3	17.8	-1.4 pps
Female	13.2	13.4	13.6	11.7	11.1	-0.6 pps
9 - **Temporary employment** (15-64, % of total employment)	22.0	20.5	21.4	21.4	22.0	0.6 pps
Male	21.7	20.7	21.2	21.6	22.4	0.8 pps
Female	22.2	20.4	21.6	21.1	21.5	0.4 pps
10 - **Part-time** (15-64, % of total employment)	10.3	11.2	11.1	10.1	9.8	-0.3 pps
Male	7.1	8.4	8.2	7.6	7.1	-0.5 pps
Female	13.8	14.2	14.0	12.6	12.5	-0.1 pps
11 - **Unemployment rate** (harmonised:15-74)	12.9	15.8	16.4	14.1	12.6	-1.5 pps
Young (15-24)	30.3	37.9	38.1	34.8	32.0	-2.8 pps
Prime age (25-49)	11.9	14.7	15.5	12.7	11.2	-1.5 pps
Older (55-64)	10.8	12.7	13.7	13.5	12.5	-1.0 pps
Low-skilled (15-64)	14.6	17.4	18.4	16.2	14.2	-2.0 pps
Medium-skilled (15-64)	13.5	17.7	17.5	15.3	14.0	-1.3 pps
High-skilled (15-64)	9.1	11.8	12.8	10.1	9.3	-0.8 pps
Nationals (15-64)	13.0	16.0	16.6	14.3	12.7	-1.6 pps
Non-nationals (15-64)	22.3	26.6	29.2	22.1	20.0	-2.1 pps
Male	12.6	15.9	16.3	13.8	12.4	-1.4 pps
Female	13.2	15.6	16.6	14.5	12.9	-1.6 pps
12 - **Long-term unemployment** (% of total unemployment)	48.3	48.7	56.3	59.5	57.2	-2.3 pps
13 - **Worked hours** (full-time, average actual weekly hours)	41.3	41.5	41.5	41.5	41.4	-0.2 %
Male	42.3	42.6	42.6	42.4	42.4	0.0 %
Female	40.1	40.2	40.3	40.4	40.3	-0.2 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-2.8	1.9	-5.4	-4.6	-7.0	-2.4 pps
Building and construction	-9.3	-20.3	-10.2	-4.7	1.5	6.2 pps
Services	-0.6	-4.4	-2.2	4.8	3.2	-1.7 pps
Manufacturing industry	-1.9	-3.8	-1.8	2.3	3.7	1.4 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	-1.8	-3.1	3.6	-1.8	-0.3	1.5 pps
Real compensation per employee based on GDP	-1.6	-2.7	1.3	-2.5	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	1.4	-5.7	-0.7	-1.0	2.8	3.8 pps
Labour cost index (wages and salaries, total)	0.2	-4.4	-1.3	-1.2	3.1	4.3 pps
Labour productivity (GDP/person employed)	0.1	0.1	1.8	-0.5	0.2	0.7 pps

Romania	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	20148	20060	19986	19913	19871	-0.2 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	13726	13658	13606	13527	13404	-0.9 %
(% of total population)	68.1	68.1	68.1	67.9	67.5	-0.5 pps
3 - **Labour force** (15-64, 1000 pers.)	8799	8849	8832	8883	8858	-0.3 %
Male	4952	5003	5021	5061	5099	0.8 %
Female	3847	3846	3811	3822	3759	-1.6 %
4 - **Activity rate** (% of population 15-64)	64.1	64.8	64.9	65.7	66.1	0.4 pps
Young (15-24)	30.7	30.5	30.1	29.6	31.3	1.7 pps
Prime age (25-54)	80.9	81.5	81.5	82.1	82.5	0.4 pps
Older (55-64)	41.4	43.0	43.4	44.6	42.7	-1.9 pps
Nationals (15-64)	64.1	64.8	64.9	65.7	66.1	0.4 pps
Non-nationals (15-64)	:	0.0	0.0	0.0	0.0	0.0 pps
Male	72.1	73.2	73.4	74.3	75.3	1.0 pps
Young (15-24)	35.3	35.3	35.1	34.8	37.0	2.2 pps
Prime age (25-54)	89.0	89.9	90.0	90.5	91.6	1.1 pps
Older (55-64)	51.3	53.6	53.9	55.4	53.8	-1.6 pps
Female	56.1	56.4	56.3	56.9	56.7	-0.3 pps
Young (15-24)	25.8	25.5	24.7	23.9	25.2	1.2 pps
Prime age (25-54)	72.6	72.9	72.7	73.3	72.9	-0.4 pps
Older (55-64)	32.7	33.7	34.1	35.0	32.8	-2.2 pps
5 - **Employment rate** (% of population 15-64)	59.3	60.2	60.1	61.0	61.4	0.4 pps
Young (15-24)	23.4	23.7	22.9	22.5	24.5	2.0 pps
Prime age (25-54)	75.8	76.6	76.3	77.1	77.4	0.3 pps
Older (55-64)	39.9	41.6	41.8	43.1	41.1	-2.0 pps
Low-skilled (15-64)	40.9	42.0	42.2	44.4	42.6	-1.8 pps
Medium-skilled (15-64)	63.6	64.2	63.7	65.0	64.9	0.0 pps
High-skilled (15-64)	83.1	82.5	82.6	82.5	85.3	2.8 pps
Nationals (15-64)	59.3	60.2	60.1	61.0	61.4	0.4 pps
Non-nationals (15-64)	:	0.0	0.0	0.0	0.0	0.0 pps
Male	66.3	67.6	67.6	68.7	69.5	0.8 pps
Young (15-24)	26.8	27.5	27.0	26.6	29.4	2.8 pps
Prime age (25-54)	83.1	84.1	83.7	84.6	85.2	0.7 pps
Older (55-64)	48.6	51.2	51.4	53.2	51.2	-1.9 pps
Female	52.3	52.8	52.6	53.3	53.2	-0.1 pps
Young (15-24)	19.7	19.6	18.6	18.0	19.3	1.3 pps
Prime age (25-54)	68.3	68.9	68.6	69.3	69.2	-0.1 pps
Older (55-64)	32.2	33.1	33.2	34.2	32.1	-2.1 pps
6 - **Employed persons** (15-64, 1000 pers.)	8139.4	8221.6	8178.9	8254.4	8234.8	-0.2 %
7 - **Employment growth** (%, National accounts)	-0.8	-4.8	-0.9	0.8	-0.9	-1.7 pps
Employment growth (%, 15-64, LFS)	-2.0	1.0	-0.5	0.9	-0.2	-1.2 pps
Male	-2.8	1.5	0.0	1.2	0.6	-0.6 pps
Female	-0.9	0.4	-1.2	0.5	-1.3	-1.8 pps
8 - **Self employed** (15-64, % of total employment)	18.6	18.9	18.8	18.4	17.6	-0.8 pps
Male	24.1	24.5	24.3	23.8	22.5	-1.2 pps
Female	11.6	11.8	11.7	11.5	11.1	-0.3 pps
9 - **Temporary employment** (15-64, % of total employment)	1.4	1.5	1.4	1.5	1.4	-0.1 pps
Male	1.6	1.9	1.7	1.7	1.6	-0.1 pps
Female	1.2	1.1	1.1	1.2	1.1	-0.1 pps
10 - **Part-time** (15-64, % of total employment)	9.5	9.3	9.0	8.7	8.8	0.1 pps
Male	8.8	8.7	8.6	8.2	8.5	0.3 pps
Female	10.3	10.0	9.6	9.5	9.2	-0.3 pps
11 - **Unemployment rate** (harmonised:15-74)	7.2	6.8	7.1	6.8	6.8	0.0 pps
Young (15-24)	23.9	22.6	23.7	24.0	21.7	-2.3 pps
Prime age (25-49)	6.3	6.1	6.4	6.1	6.2	0.1 pps
Older (55-64)	3.7	3.4	3.7	3.3	3.7	0.4 pps
Low-skilled (15-64)	8.5	7.9	7.9	7.7	9.1	1.4 pps
Medium-skilled (15-64)	7.9	7.4	7.8	7.2	7.3	0.1 pps
High-skilled (15-64)	4.8	5.1	5.4	5.9	4.1	-1.8 pps
Nationals (15-64)	7.5	7.1	7.4	7.1	7.0	-0.1 pps
Non-nationals (15-64)	0.0	0.0	0.0	0.0	0.0	0.0 pps
Male	7.7	7.4	7.7	7.3	7.5	0.2 pps
Female	6.5	6.1	6.3	6.1	5.8	-0.3 pps
12 - **Long-term unemployment** (% of total unemployment)	41.0	44.2	45.2	41.1	43.9	2.8 pps
13 - **Worked hours** (full-time, average actual weekly hours)	40.6	40.5	40.4	40.4	40.1	-0.7 %
Male	41.2	41.1	40.9	40.8	40.5	-0.7 %
Female	39.9	39.7	39.7	39.8	39.5	-0.8 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-6.0	-2.7	-2.2	-2.1	-10.1	-8.0 pps
Building and construction	-3.5	-6.5	-1.1	1.6	-4.7	-6.3 pps
Services	3.3	-3.8	1.2	3.3	6.0	2.7 pps
Manufacturing industry	2.0	-7.8	0.2	3.9	-2.2	-6.1 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	-4.1	9.4	3.8	5.3	2.7	-2.6 pps
Real compensation per employee based on GDP	-8.4	4.5	0.4	3.5	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	6.6	6.5	3.9	5.4	7.6	2.2 pps
Labour cost index (wages and salaries, total)	7.1	6.4	3.4	6.8	7.6	0.8 pps
Labour productivity (GDP/person employed)	1.9	5.7	4.4	2.1	4.7	2.6 pps

Slovenia	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	2053	2057	2060	2062	2063	0.1 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	1421	1415	1404	1397	1382	-1.1 %
(% of total population)	69.2	68.8	68.2	67.8	67.0	-0.8 pps
3 - **Labour force** (15-64, 1000 pers.)	998	996	990	991	992	0.1 %
Male	540	536	536	535	536	0.1 %
Female	459	460	454	456	456	0.1 %
4 - **Activity rate** (% of population 15-64)	70.3	70.4	70.5	70.9	71.8	0.9 pps
Young (15-24)	37.4	34.4	33.9	33.6	35.3	1.8 pps
Prime age (25-54)	90.1	90.8	90.7	90.3	90.8	0.5 pps
Older (55-64)	33.3	35.1	36.0	38.4	39.7	1.3 pps
Nationals (15-64)	70.2	70.3	70.4	71.0	71.5	0.5 pps
Non-nationals (15-64)	73.2	74.4	75.4	67.8	77.6	9.8 pps
Male	73.9	73.7	74.2	74.3	75.4	1.0 pps
Young (15-24)	41.9	38.2	37.2	36.6	38.9	2.3 pps
Prime age (25-54)	91.8	92.4	92.6	92.2	92.9	0.6 pps
Older (55-64)	42.7	43.6	45.1	45.7	46.3	0.7 pps
Female	66.4	66.9	66.6	67.2	67.9	0.7 pps
Young (15-24)	32.3	30.0	30.2	30.5	31.7	1.2 pps
Prime age (25-54)	88.4	89.1	88.7	88.3	88.6	0.3 pps
Older (55-64)	23.7	26.4	27.0	31.1	32.9	1.8 pps
5 - **Employment rate** (% of population 15-64)	64.4	64.1	63.3	63.9	65.2	1.3 pps
Young (15-24)	31.5	27.3	26.5	26.8	29.6	2.8 pps
Prime age (25-54)	83.1	83.3	81.9	81.9	82.9	1.0 pps
Older (55-64)	31.2	32.9	33.5	35.4	36.6	1.2 pps
Low-skilled (15-64)	35.3	34.6	33.7	36.1	35.7	-0.4 pps
Medium-skilled (15-64)	66.4	65.8	64.6	64.9	65.9	1.0 pps
High-skilled (15-64)	85.5	84.2	82.4	82.0	83.1	1.1 pps
Nationals (15-64)	64.4	64.1	63.5	64.2	65.2	1.0 pps
Non-nationals (15-64)	64.6	62.8	56.7	55.1	66.3	11.2 pps
Male	67.7	67.4	67.1	67.5	69.2	1.7 pps
Young (15-24)	35.7	30.4	29.7	29.5	32.0	2.6 pps
Prime age (25-54)	84.8	85.4	84.3	84.6	86.1	1.5 pps
Older (55-64)	39.5	40.7	41.8	41.7	42.6	0.8 pps
Female	60.9	60.5	59.2	60.0	61.0	1.0 pps
Young (15-24)	26.9	23.8	23.0	23.9	27.0	3.1 pps
Prime age (25-54)	81.3	81.0	79.3	79.1	79.5	0.5 pps
Older (55-64)	22.8	25.1	25.3	29.0	30.5	1.5 pps
6 - **Employed persons** (15-64, 1000 pers.)	914.8	906.5	888.1	892.5	901.6	1.0 %
7 - **Employment growth** (%, National accounts)	-1.7	-0.9	-1.1	0.4	1.1	0.7 pps
Employment growth (%, 15-64, LFS)	-2.8	-0.9	-2.0	0.5	1.0	0.5 pps
Male	-2.9	-0.9	-1.2	0.3	1.2	0.9 pps
Female	-2.7	-1.0	-3.0	0.7	0.8	0.1 pps
8 - **Self employed** (15-64, % of total employment)	11.9	11.6	11.6	12.1	12.1	0.0 pps
Male	15.5	15.3	15.3	15.9	15.7	-0.1 pps
Female	7.6	7.3	7.2	7.7	7.8	0.2 pps
9 - **Temporary employment** (15-64, % of total employment)	18.0	17.0	16.3	16.5	17.8	1.3 pps
Male	16.4	15.6	15.6	16.0	17.0	1.0 pps
Female	19.7	18.5	17.1	17.1	18.7	1.6 pps
10 - **Part-time** (15-64, % of total employment)	9.5	9.0	9.3	10.0	10.1	0.1 pps
Male	7.1	6.3	6.5	6.8	7.0	0.2 pps
Female	12.2	12.2	12.6	13.7	13.7	0.0 pps
11 - **Unemployment rate** (harmonised:15-74)	8.2	8.9	10.1	9.7	9.0	-0.7 pps
Young (15-24)	15.7	20.6	21.6	20.2	16.3	-3.9 pps
Prime age (25-49)	7.8	8.3	9.7	9.3	8.7	-0.6 pps
Older (55-64)	6.3	6.2	7.0	7.8	7.8	0.0 pps
Low-skilled (15-64)	14.4	15.7	18.8	16.4	14.6	-1.8 pps
Medium-skilled (15-64)	8.7	9.2	10.8	10.5	10.0	-0.5 pps
High-skilled (15-64)	5.0	6.1	6.2	6.3	5.8	-0.5 pps
Nationals (15-64)	8.3	8.8	9.8	9.6	8.9	-0.7 pps
Non-nationals (15-64)	11.9	15.5	25.0	18.8	14.6	-4.2 pps
Male	8.2	8.4	9.5	9.0	8.1	-0.9 pps
Female	8.2	9.4	10.9	10.6	10.1	-0.5 pps
12 - **Long-term unemployment** (% of total unemployment)	44.2	47.9	51.0	54.5	52.3	-2.2 pps
13 - **Worked hours** (full-time, average actual weekly hours)	40.7	40.6	40.9	41.0	41.0	0.0 %
Male	41.3	41.2	41.4	41.5	41.6	0.2 %
Female	40.0	39.8	40.1	40.4	40.2	-0.5 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-2.5	-1.0	0.0	-0.1	-2.4	-2.3 pps
Building and construction	-11.7	-7.6	-7.0	-1.1	0.4	1.5 pps
Services	-1.4	-0.5	-0.7	0.7	2.1	1.4 pps
Manufacturing industry	-0.4	-1.5	-2.1	0.2	1.4	1.2 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	1.5	-1.0	0.5	1.3	1.4	0.2 pps
Real compensation per employee based on GDP	0.4	-1.3	-0.4	0.5	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	2.2	0.7	-1.1	2.4	1.4	-1.0 pps
Labour cost index (wages and salaries, total)	2.4	1.3	-1.1	2.5	1.0	-1.5 pps
Labour productivity (GDP/person employed)	2.4	-1.8	0.0	2.7	1.2	-1.5 pps

Slovak Republic	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	5398	5406	5413	5419	5422	0.1 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	3882	3881	3870	3853	3834	-0.5 %
(% of total population)	71.9	71.8	71.5	71.1	70.7	-0.4 pps
3 - **Labour force** (15-64, 1000 pers.)	2668	2695	2703	2707	2719	0.4 %
Male	1488	1500	1498	1501	1493	-0.5 %
Female	1180	1195	1205	1206	1226	1.7 %
4 - **Activity rate** (% of population 15-64)	68.7	69.4	69.9	70.3	70.9	0.7 pps
Young (15-24)	30.1	30.5	30.8	31.0	31.7	0.8 pps
Prime age (25-54)	87.0	87.1	87.2	87.3	87.3	0.0 pps
Older (55-64)	46.0	48.5	49.5	50.1	51.8	1.7 pps
Nationals (15-64)	68.7	69.4	69.8	70.2	70.9	0.7 pps
Non-nationals (15-64)	72.9	78.7	87.5	81.5	81.8	0.3 pps
Male	76.6	77.1	77.2	77.6	77.5	-0.1 pps
Young (15-24)	37.2	37.1	37.5	38.0	38.3	0.2 pps
Prime age (25-54)	93.5	93.8	93.6	94.0	93.6	-0.4 pps
Older (55-64)	58.8	60.3	59.5	58.9	58.4	-0.5 pps
Female	60.8	61.7	62.5	62.9	64.3	1.4 pps
Young (15-24)	22.7	23.6	23.7	23.6	24.9	1.3 pps
Prime age (25-54)	80.4	80.4	80.5	80.4	80.8	0.4 pps
Older (55-64)	34.6	38.0	40.4	42.2	45.8	3.7 pps
5 - **Employment rate** (% of population 15-64)	59.3	59.7	59.9	61.0	62.7	1.8 pps
Young (15-24)	20.0	20.1	20.4	21.8	23.3	1.6 pps
Prime age (25-54)	76.5	76.4	76.0	76.8	78.2	1.3 pps
Older (55-64)	41.4	43.1	44.0	44.8	47.0	2.2 pps
Low-skilled (15-64)	14.8	15.0	15.8	17.7	18.4	0.7 pps
Medium-skilled (15-64)	65.4	65.8	65.6	66.9	68.6	1.7 pps
High-skilled (15-64)	76.7	74.8	74.7	75.6	76.5	1.0 pps
Nationals (15-64)	59.3	59.7	59.9	60.9	62.7	1.8 pps
Non-nationals (15-64)	67.8	68.9	78.1	77.8	77.3	-0.5 pps
Male	66.1	66.7	66.4	67.6	69.5	1.8 pps
Young (15-24)	24.8	24.1	24.4	26.9	28.4	1.5 pps
Prime age (25-54)	82.5	83.0	82.2	83.2	85.1	1.9 pps
Older (55-64)	52.5	53.7	53.2	53.2	53.6	0.4 pps
Female	52.5	52.7	53.4	54.3	55.9	1.7 pps
Young (15-24)	15.0	15.9	16.2	16.5	18.0	1.5 pps
Prime age (25-54)	70.4	69.6	69.6	70.2	71.0	0.7 pps
Older (55-64)	31.4	33.6	35.7	37.2	41.0	3.7 pps
6 - **Employed persons** (15-64, 1000 pers.)	2303.2	2317.2	2317.7	2349.2	2405.1	2.4 %
7 - **Employment growth** (%, National accounts)	1.8	0.1	-0.8	1.4	2.0	0.6 pps
Employment growth (%, 15-64, LFS)	-0.2	0.6	0.0	1.4	2.4	1.0 pps
Male	0.5	0.9	-0.6	1.5	2.3	0.7 pps
Female	-1.0	0.2	0.8	1.2	2.5	1.4 pps
8 - **Self employed** (15-64, % of total employment)	15.8	15.3	15.4	15.2	14.9	-0.4 pps
Male	20.8	19.7	20.1	19.6	18.8	-0.8 pps
Female	9.6	9.7	9.6	9.7	10.0	0.2 pps
9 - **Temporary employment** (15-64, % of total employment)	6.5	6.7	6.8	8.8	10.5	1.7 pps
Male	6.3	6.4	6.6	9.0	9.8	0.8 pps
Female	6.8	7.2	7.0	8.5	11.3	2.8 pps
10 - **Part-time** (15-64, % of total employment)	4.0	4.0	4.5	5.1	5.8	0.7 pps
Male	2.7	2.8	3.3	3.7	4.0	0.3 pps
Female	5.6	5.5	6.2	6.8	8.0	1.2 pps
11 - **Unemployment rate** (harmonised:15-74)	13.7	14.0	14.2	13.2	11.5	-1.7 pps
Young (15-24)	33.4	34.0	33.7	29.7	26.5	-3.2 pps
Prime age (25-49)	12.1	12.4	12.8	12.0	10.5	-1.5 pps
Older (55-64)	10.1	11.2	11.0	10.6	9.3	-1.3 pps
Low-skilled (15-64)	42.6	44.7	42.6	41.4	37.7	-3.7 pps
Medium-skilled (15-64)	13.4	13.5	14.0	12.6	11.0	-1.6 pps
High-skilled (15-64)	5.9	6.9	7.3	6.4	6.1	-0.3 pps
Nationals (15-64)	13.7	14.0	14.3	13.2	11.6	-1.6 pps
Non-nationals (15-64)	0.0	0.0	0.0	0.0	0.0	0.0 pps
Male	13.7	13.5	14.0	12.8	10.3	-2.5 pps
Female	13.7	14.5	14.5	13.6	12.9	-0.7 pps
12 - **Long-term unemployment** (% of total unemployment)	67.9	67.3	70.2	70.2	65.8	-4.4 pps
13 - **Worked hours** (full-time, average actual weekly hours)	40.4	40.4	40.5	40.0	40.2	0.5 %
Male	41.2	41.2	41.3	40.9	40.9	0.0 %
Female	39.2	39.3	39.4	38.9	39.2	0.8 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-0.1	-3.4	4.8	-2.1	2.6	4.7 pps
Building and construction	-3.5	-3.1	-3.0	-1.4	-1.3	0.1 pps
Services	3.1	2.0	-0.9	1.6	3.0	1.4 pps
Manufacturing industry	4.0	-0.7	-1.5	2.0	2.0	0.0 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	2.0	2.6	2.6	1.8	3.1	1.3 pps
Real compensation per employee based on GDP	0.4	1.3	2.0	2.0	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	4.5	2.4	2.7	4.9	4.0	-0.9 pps
Labour cost index (wages and salaries, total)	4.0	2.3	1.5	5.1	4.3	-0.8 pps
Labour productivity (GDP/person employed)	1.0	1.6	2.3	1.1	1.8	0.7 pps

Finland	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	5388	5414	5439	5463	5481	0.3 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	3518	3505	3489	3472	3455	-0.5 %
(% of total population)	65.3	64.7	64.1	63.6	63.0	-0.5 pps
3 - **Labour force** (15-64, 1000 pers.)	2637	2637	2622	2617	2619	0.1 %
Male	1366	1359	1350	1344	1343	-0.1 %
Female	1271	1278	1272	1274	1277	0.3 %
4 - **Activity rate** (% of population 15-64)	74.9	75.2	75.2	75.4	75.8	0.4 pps
Young (15-24)	50.5	51.6	51.8	52.1	52.2	0.1 pps
Prime age (25-54)	87.6	87.3	86.8	86.6	86.6	0.0 pps
Older (55-64)	60.9	62.3	62.9	63.8	65.2	1.4 pps
Nationals (15-64)	75.2	75.4	75.3	75.6	76.1	0.5 pps
Non-nationals (15-64)	67.6	70.2	70.2	68.8	67.9	-0.9 pps
Male	77.2	77.1	76.8	76.8	77.2	0.3 pps
Young (15-24)	50.5	51.2	50.7	51.5	51.1	-0.4 pps
Prime age (25-54)	90.9	90.4	90.1	89.5	89.6	0.0 pps
Older (55-64)	61.4	61.6	61.5	61.9	63.2	1.2 pps
Female	72.7	73.4	73.4	73.9	74.4	0.5 pps
Young (15-24)	50.5	52.0	52.9	52.6	53.3	0.7 pps
Prime age (25-54)	84.3	84.1	83.3	83.6	83.6	0.0 pps
Older (55-64)	60.4	62.9	64.3	65.5	67.2	1.6 pps
5 - **Employment rate** (% of population 15-64)	69.0	69.4	68.9	68.7	68.5	-0.2 pps
Young (15-24)	40.4	41.8	41.5	41.4	40.5	-0.9 pps
Prime age (25-54)	82.3	82.0	81.0	80.5	80.0	-0.5 pps
Older (55-64)	57.0	58.2	58.5	59.1	60.0	0.9 pps
Low-skilled (15-64)	41.2	41.0	39.7	39.3	37.9	-1.4 pps
Medium-skilled (15-64)	72.2	72.2	71.2	70.6	70.2	-0.4 pps
High-skilled (15-64)	84.3	84.2	83.8	83.3	82.9	-0.4 pps
Nationals (15-64)	69.4	69.7	69.2	69.2	69.0	-0.1 pps
Non-nationals (15-64)	56.1	58.9	58.7	56.7	55.9	-0.8 pps
Male	70.6	70.5	69.9	69.5	69.3	-0.2 pps
Young (15-24)	39.5	41.0	39.1	39.8	38.2	-1.6 pps
Prime age (25-54)	84.8	84.4	83.9	82.7	82.5	-0.2 pps
Older (55-64)	56.8	56.6	56.5	56.8	57.4	0.6 pps
Female	67.4	68.2	67.8	68.0	67.7	-0.2 pps
Young (15-24)	41.2	42.7	43.9	43.0	42.8	-0.1 pps
Prime age (25-54)	79.6	79.4	78.1	78.1	77.3	-0.8 pps
Older (55-64)	57.2	59.7	60.5	61.4	62.5	1.1 pps
6 - **Employed persons** (15-64, 1000 pers.)	2428.5	2431.0	2403.2	2385.9	2367.9	-0.8 %
7 - **Employment growth** (%, National accounts)	1.3	0.9	-0.7	-0.5	-0.4	0.1 pps
Employment growth (%, 15-64, LFS)	0.8	0.1	-1.1	-0.7	-0.8	0.0 pps
Male	1.2	-0.4	-1.3	-1.1	-0.7	0.3 pps
Female	0.3	0.6	-1.0	-0.4	-0.8	-0.4 pps
8 - **Self employed** (15-64, % of total employment)	12.2	12.3	12.2	12.6	12.7	0.1 pps
Male	16.2	16.4	16.3	16.5	16.7	0.1 pps
Female	8.0	8.0	7.9	8.4	8.5	0.1 pps
9 - **Temporary employment** (15-64, % of total employment)	15.5	15.5	15.3	15.4	15.1	-0.3 pps
Male	12.6	12.6	12.2	12.3	12.3	0.0 pps
Female	18.4	18.2	18.3	18.2	17.8	-0.4 pps
10 - **Part-time** (15-64, % of total employment)	14.1	14.1	14.0	14.1	14.1	0.0 pps
Male	9.4	9.1	8.8	9.2	9.7	0.5 pps
Female	19.0	19.4	19.4	19.3	18.7	-0.6 pps
11 - **Unemployment rate** (harmonised:15-74)	7.8	7.7	8.2	8.7	9.4	0.7 pps
Young (15-24)	20.1	19.0	19.9	20.5	22.4	1.9 pps
Prime age (25-49)	6.1	6.1	6.6	7.1	7.7	0.6 pps
Older (55-64)	6.4	6.6	7.0	7.3	8.0	0.7 pps
Low-skilled (15-64)	16.7	16.6	17.8	18.0	18.7	0.7 pps
Medium-skilled (15-64)	8.3	8.3	8.9	9.5	10.4	0.9 pps
High-skilled (15-64)	4.0	3.9	4.5	5.1	6.1	1.0 pps
Nationals (15-64)	7.7	7.6	8.1	8.5	9.3	0.8 pps
Non-nationals (15-64)	16.8	16.3	16.5	17.6	17.6	0.0 pps
Male	8.4	8.3	8.8	9.3	9.9	0.6 pps
Female	7.1	7.1	7.5	8.0	8.8	0.8 pps
12 - **Long-term unemployment** (% of total unemployment)	22.2	21.3	20.8	22.4	24.6	2.2 pps
13 - **Worked hours** (full-time, average actual weekly hours)	39.0	38.7	38.5	38.4	38.5	0.3 %
Male	40.5	40.2	40.0	39.8	40.0	0.5 %
Female	37.1	36.9	36.7	36.7	36.7	0.0 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-3.6	-0.5	-2.1	-0.9	-3.0	-2.1 pps
Building and construction	2.7	-0.3	-1.3	-1.3	1.0	2.3 pps
Services	1.6	1.6	-0.3	0.4	0.0	-0.4 pps
Manufacturing industry	1.1	-0.3	-3.8	-2.8	-1.3	1.5 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	3.6	2.8	1.3	1.0	1.6	0.6 pps
Real compensation per employee based on GDP	1.0	-0.2	-1.2	-0.7	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	2.5	4.2	1.8	1.7	1.4	-0.3 pps
Labour cost index (wages and salaries, total)	2.3	4.2	2.0	1.5	1.2	-0.3 pps
Labour productivity (GDP/person employed)	1.3	-2.3	0.0	-0.2	0.6	0.8 pps

Sweden	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	9449	9519	9600	9696	9799	1.1 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	6115	6114	6120	6141	6170	0.5 %
(% of total population)	64.7	64.2	63.8	63.3	63.0	-0.4 pps
3 - **Labour force** (15-64, 1000 pers.)	4887	4909	4963	5005	5044	0.8 %
Male	2561	2567	2592	2612	2624	0.5 %
Female	2326	2342	2371	2393	2420	1.1 %
4 - **Activity rate** (% of population 15-64)	79.9	80.3	81.1	81.5	81.7	0.3 pps
Young (15-24)	53.0	52.6	54.5	55.4	55.1	-0.3 pps
Prime age (25-54)	90.3	90.6	90.9	90.8	90.9	0.1 pps
Older (55-64)	76.0	77.0	77.5	78.2	78.7	0.5 pps
Nationals (15-64)	80.6	81.0	81.8	82.2	82.5	0.3 pps
Non-nationals (15-64)	70.6	70.3	72.5	73.5	73.1	-0.4 pps
Male	82.4	82.6	83.3	83.6	83.5	-0.1 pps
Young (15-24)	53.2	51.8	53.9	54.9	53.8	-1.0 pps
Prime age (25-54)	93.2	93.5	93.6	93.5	93.3	-0.2 pps
Older (55-64)	79.9	80.9	81.6	81.5	81.8	0.3 pps
Female	77.3	77.9	78.8	79.3	79.9	0.6 pps
Young (15-24)	52.8	53.4	55.2	56.1	56.5	0.5 pps
Prime age (25-54)	87.3	87.6	88.1	88.0	88.4	0.4 pps
Older (55-64)	72.1	73.0	73.4	74.9	75.5	0.6 pps
5 - **Employment rate** (% of population 15-64)	73.6	73.8	74.4	74.9	75.5	0.7 pps
Young (15-24)	40.9	40.2	41.7	42.8	43.9	1.1 pps
Prime age (25-54)	85.1	85.2	85.4	85.4	85.6	0.3 pps
Older (55-64)	72.0	73.0	73.6	74.0	74.5	0.5 pps
Low-skilled (15-64)	46.9	46.3	45.5	45.9	46.0	0.1 pps
Medium-skilled (15-64)	79.6	79.7	80.3	80.2	80.9	0.7 pps
High-skilled (15-64)	86.9	87.0	87.3	87.3	87.7	0.3 pps
Nationals (15-64)	74.8	75.1	75.8	76.2	77.0	0.8 pps
Non-nationals (15-64)	56.0	55.6	57.3	58.4	57.7	-0.7 pps
Male	75.8	75.6	76.3	76.5	77.0	0.5 pps
Young (15-24)	40.8	38.8	40.5	41.6	42.4	0.8 pps
Prime age (25-54)	87.9	87.8	88.0	87.9	87.9	0.1 pps
Older (55-64)	75.2	76.3	76.9	76.5	76.8	0.4 pps
Female	71.3	71.8	72.5	73.1	74.0	0.9 pps
Young (15-24)	41.0	41.6	42.9	44.0	45.5	1.4 pps
Prime age (25-54)	82.2	82.5	82.7	82.8	83.3	0.5 pps
Older (55-64)	68.9	69.6	70.3	71.5	72.1	0.6 pps
6 - **Employed persons** (15-64, 1000 pers.)	4498.1	4509.6	4554.3	4597.5	4659.9	1.4 %
7 - **Employment growth** (%, National accounts)	2.1	0.7	1.0	1.4	1.5	0.1 pps
Employment growth (%, 15-64, LFS)	2.2	0.3	1.0	0.9	1.4	0.4 pps
Male	1.9	-0.2	1.0	0.7	1.2	0.5 pps
Female	2.5	0.8	1.0	1.2	1.5	0.3 pps
8 - **Self employed** (15-64, % of total employment)	9.3	9.2	9.4	9.1	8.9	-0.2 pps
Male	12.9	12.8	12.9	12.4	12.1	-0.3 pps
Female	5.4	5.3	5.5	5.4	5.4	0.0 pps
9 - **Temporary employment** (15-64, % of total employment)	16.5	15.9	16.3	16.8	16.6	-0.2 pps
Male	14.5	13.8	14.0	14.7	14.9	0.2 pps
Female	18.5	18.0	18.6	18.8	18.3	-0.5 pps
10 - **Part-time** (15-64, % of total employment)	25.2	25.0	24.7	24.6	24.3	-0.3 pps
Male	12.3	12.5	12.8	12.8	13.2	0.4 pps
Female	39.3	38.6	37.7	37.3	36.3	-1.0 pps
11 - **Unemployment rate** (harmonised:15-74)	7.8	8.0	8.0	7.9	7.4	-0.5 pps
Young (15-24)	22.8	23.6	23.5	22.9	20.4	-2.5 pps
Prime age (25-49)	5.7	5.9	6.1	6.0	5.8	-0.2 pps
Older (55-64)	5.2	5.2	5.1	5.4	5.3	-0.1 pps
Low-skilled (15-64)	17.1	18.2	19.5	20.0	19.7	-0.3 pps
Medium-skilled (15-64)	7.2	7.2	7.3	7.1	6.4	-0.7 pps
High-skilled (15-64)	4.3	4.4	4.4	4.4	4.3	-0.1 pps
Nationals (15-64)	7.2	7.3	7.4	7.2	6.6	-0.6 pps
Non-nationals (15-64)	20.7	21.0	21.0	20.6	21.1	0.5 pps
Male	7.8	8.2	8.2	8.2	7.5	-0.7 pps
Female	7.7	7.7	7.9	7.7	7.3	-0.4 pps
12 - **Long-term unemployment** (% of total unemployment)	19.6	19.0	18.6	19.0	20.8	1.8 pps
13 - **Worked hours** (full-time, average actual weekly hours)	39.7	39.6	39.4	39.2	39.1	-0.3 %
Male	40.5	40.3	40.2	39.9	39.8	-0.3 %
Female	38.4	38.4	38.2	38.1	37.9	-0.5 %
14 - **Sectoral employment growth** (% change)						
Agriculture	9.3	1.7	0.5	-0.1	3.6	3.7 pps
Building and construction	4.9	1.8	0.9	2.5	2.4	-0.1 pps
Services	2.5	1.2	1.2	1.5	1.7	0.2 pps
Manufacturing industry	1.3	-1.9	-2.2	-1.1	-0.5	0.6 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	3.2	3.1	1.9	2.2	3.5	1.2 pps
Real compensation per employee based on GDP	2.0	2.0	0.9	0.4	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	2.7	4.0	1.8	2.7	2.8	0.1 pps
Labour cost index (wages and salaries, total)	2.4	3.4	2.2	2.5	2.5	0.0 pps
Labour productivity (GDP/person employed)	0.5	-1.0	0.3	1.2	2.6	1.4 pps

United Kingdom	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	63285	63705	64106	64597	65110	0.8 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	40980	40970	40991	41118	41291	0.4 %
(% of total population)	64.8	64.3	63.9	63.7	63.4	-0.2 pps
3 - **Labour force** (15-64, 1000 pers.)	30943	31161	31334	31534	31754	0.7 %
Male	16553	16650	16685	16755	16849	0.6 %
Female	14390	14511	14649	14779	14905	0.9 %
4 - **Activity rate** (% of population 15-64)	75.5	76.1	76.4	76.7	76.9	0.2 pps
Young (15-24)	58.2	58.6	58.3	57.8	58.6	0.8 pps
Prime age (25-54)	85.3	85.5	85.7	86.0	85.8	-0.2 pps
Older (55-64)	59.7	61.1	62.8	63.5	64.4	0.9 pps
Nationals (15-64)	75.7	76.3	76.6	76.9	77.0	0.1 pps
Non-nationals (15-64)	74.1	73.8	74.5	74.9	75.9	1.1 pps
Male	81.5	82.0	82.1	82.2	82.2	0.0 pps
Young (15-24)	60.7	60.9	60.2	59.5	60.1	0.6 pps
Prime age (25-54)	91.7	92.0	92.0	92.2	91.9	-0.3 pps
Older (55-64)	68.4	69.5	70.6	70.9	71.4	0.4 pps
Female	69.6	70.2	70.9	71.3	71.7	0.4 pps
Young (15-24)	55.7	56.3	56.4	56.1	57.1	1.0 pps
Prime age (25-54)	79.0	79.2	79.5	79.9	79.9	-0.1 pps
Older (55-64)	51.3	53.0	55.3	56.4	57.7	1.3 pps
5 - **Employment rate** (% of population 15-64)	69.3	69.9	70.5	71.9	72.7	0.8 pps
Young (15-24)	45.8	46.2	46.3	48.0	50.1	2.0 pps
Prime age (25-54)	80.1	80.5	80.8	82.1	82.4	0.3 pps
Older (55-64)	56.7	58.1	59.8	61.0	62.2	1.2 pps
Low-skilled (15-64)	52.4	53.0	53.2	55.0	55.9	0.9 pps
Medium-skilled (15-64)	71.5	71.3	71.4	72.7	73.3	0.7 pps
High-skilled (15-64)	82.6	83.1	83.8	84.3	84.7	0.4 pps
Nationals (15-64)	69.6	70.2	70.9	72.2	72.9	0.8 pps
Non-nationals (15-64)	67.1	66.9	67.6	69.4	71.0	1.5 pps
Male	74.3	75.0	75.4	76.8	77.6	0.8 pps
Young (15-24)	46.3	46.4	46.4	48.2	50.4	2.1 pps
Prime age (25-54)	85.9	86.6	86.7	88.0	88.3	0.3 pps
Older (55-64)	64.1	65.4	66.8	67.8	68.7	0.9 pps
Female	64.4	64.9	65.8	67.1	67.9	0.9 pps
Young (15-24)	45.3	46.0	46.2	47.8	49.7	1.9 pps
Prime age (25-54)	74.4	74.5	75.1	76.2	76.6	0.3 pps
Older (55-64)	49.5	51.0	53.0	54.4	56.0	1.6 pps
6 - **Employed persons** (15-64, 1000 pers.)	28404.2	28650.0	28916.7	29559.8	30027.5	1.6 %
7 - **Employment growth** (%, National accounts)	0.5	1.1	1.2	2.4	1.8	-0.6 pps
Employment growth (%, 15-64, LFS)	0.4	0.9	0.9	2.2	1.6	-0.6 pps
Male	0.4	1.0	0.6	2.2	1.5	-0.7 pps
Female	0.4	0.8	1.3	2.2	1.6	-0.6 pps
8 - **Self employed** (15-64, % of total employment)	13.1	13.5	13.4	14.0	13.6	-0.3 pps
Male	17.3	17.7	17.4	18.0	17.4	-0.5 pps
Female	8.3	8.7	8.9	9.5	9.4	-0.1 pps
9 - **Temporary employment** (15-64, % of total employment)	6.0	6.2	6.1	6.3	6.1	-0.2 pps
Male	5.6	5.7	5.6	5.8	5.6	-0.2 pps
Female	6.4	6.7	6.5	6.8	6.5	-0.3 pps
10 - **Part-time** (15-64, % of total employment)	25.6	26.0	25.6	25.4	25.2	-0.2 pps
Male	11.0	11.6	11.5	11.2	11.2	0.0 pps
Female	42.2	42.3	41.5	41.3	41.0	-0.3 pps
11 - **Unemployment rate** (harmonised:15-74)	8.1	7.9	7.6	6.1	5.3	-0.8 pps
Young (15-24)	21.3	21.2	20.7	17.0	14.6	-2.4 pps
Prime age (25-49)	6.1	6.0	5.7	4.6	4.0	-0.6 pps
Older (55-64)	5.0	4.9	4.8	4.0	3.4	-0.6 pps
Low-skilled (15-64)	14.6	14.4	14.4	11.7	10.0	-1.7 pps
Medium-skilled (15-64)	8.7	8.7	8.4	7.0	6.1	-0.9 pps
High-skilled (15-64)	4.4	4.3	4.0	3.2	3.0	-0.2 pps
Nationals (15-64)	8.1	7.9	7.6	6.2	5.3	-0.9 pps
Non-nationals (15-64)	9.5	9.3	9.2	7.2	6.5	-0.7 pps
Male	8.7	8.4	8.0	6.4	5.5	-0.9 pps
Female	7.4	7.4	7.1	5.8	5.1	-0.7 pps
12 - **Long-term unemployment** (% of total unemployment)	33.4	34.6	36.2	35.7	30.6	-5.1 pps
13 - **Worked hours** (full-time, average actual weekly hours)	41.1	41.3	41.3	41.3	41.3	0.0 %
Male	42.4	42.6	42.6	42.6	42.6	0.0 %
Female	38.6	38.9	38.9	39.1	39.0	-0.3 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-2.1	0.6	-11.2	13.1	-6.2	-19.3 pps
Building and construction	-1.4	-0.7	-0.1	3.1	4.7	1.6 pps
Services	1.2	2.1	1.7	3.0	2.4	-0.5 pps
Manufacturing industry	-0.3	0.6	-0.7	1.1	2.1	1.0 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	1.1	1.7	2.1	0.4	1.0	0.6 pps
Real compensation per employee based on GDP	-0.9	0.2	0.2	-1.2	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	2.0	1.2	1.1	1.7	3.9	2.2 pps
Labour cost index (wages and salaries, total)	1.9	0.9	1.0	1.7	3.6	1.9 pps
Labour productivity (GDP/person employed)	1.0	0.2	0.7	0.7	0.5	-0.2 pps

European Union (28 countries)	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	504784	505981	506986	508139	509657	0.3 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	330488	329878	329066	329419	328936	-0.1 %
(% of total population)	65.5	65.2	64.9	64.8	64.5	-0.3 pps
3 - **Labour force** (15-64, 1000 pers.)	234931	236367	236803	238134	238514	0.2 %
Male	127534	127931	127818	128266	128421	0.1 %
Female	107397	108436	108985	109868	110093	0.2 %
4 - **Activity rate** (% of population 15-64)	71.1	71.7	72.0	72.3	72.5	0.2 pps
Young (15-24)	42.5	42.3	42.0	41.7	41.5	-0.2 pps
Prime age (25-54)	85.0	85.4	85.4	85.5	85.4	0.0 pps
Older (55-64)	50.6	52.5	54.3	55.9	57.3	1.4 pps
Nationals (15-64)	71.0	71.6	72.0	72.3	72.6	0.3 pps
Non-nationals (15-64)	71.9	71.8	71.8	71.7	71.6	-0.1 pps
Male	77.5	77.8	77.9	78.1	78.3	0.1 pps
Young (15-24)	45.4	45.2	44.8	44.4	44.1	-0.3 pps
Prime age (25-54)	91.6	91.8	91.5	91.5	91.4	-0.1 pps
Older (55-64)	59.3	61.0	62.6	63.9	65.0	1.1 pps
Female	64.8	65.5	66.0	66.5	66.8	0.3 pps
Young (15-24)	39.4	39.3	39.2	38.8	38.7	-0.1 pps
Prime age (25-54)	78.4	79.0	79.2	79.4	79.4	0.0 pps
Older (55-64)	42.6	44.6	46.5	48.4	50.0	1.6 pps
5 - **Employment rate** (% of population 15-64)	64.2	64.1	64.1	64.8	65.6	0.8 pps
Young (15-24)	33.3	32.5	32.1	32.4	33.0	0.6 pps
Prime age (25-54)	77.7	77.3	76.9	77.4	78.0	0.6 pps
Older (55-64)	47.2	48.7	50.1	51.8	53.3	1.5 pps
Low-skilled (15-64)	45.2	44.4	43.7	43.3	43.7	0.4 pps
Medium-skilled (15-64)	68.2	68.0	67.7	68.4	69.0	0.6 pps
High-skilled (15-64)	82.0	81.8	81.7	82.0	82.7	0.6 pps
Nationals (15-64)	64.5	64.5	64.5	65.2	66.0	0.8 pps
Non-nationals (15-64)	59.8	59.0	58.8	59.8	60.7	0.9 pps
Male	70.0	69.6	69.4	70.1	70.8	0.8 pps
Young (15-24)	35.3	34.4	33.9	34.2	34.8	0.6 pps
Prime age (25-54)	83.9	83.3	82.6	83.1	83.8	0.6 pps
Older (55-64)	54.9	56.2	57.4	58.8	60.1	1.3 pps
Female	58.4	58.6	58.8	59.5	60.4	0.8 pps
Young (15-24)	31.2	30.5	30.2	30.5	31.2	0.7 pps
Prime age (25-54)	71.4	71.3	71.1	71.7	72.2	0.6 pps
Older (55-64)	40.0	41.7	43.3	45.2	46.9	1.7 pps
6 - **Employed persons** (15-64, 1000 pers.)	212033.0	211350.9	210776.9	213421.8	215726.1	1.1 %
7 - **Employment growth** (%, National accounts)	0.1	-0.4	-0.3	1.0	1.2	0.2 pps
Employment growth (%, 15-64, LFS)	0.0	-0.3	-0.3	1.3	1.1	-0.2 pps
Male	-0.3	-0.7	-0.6	1.1	1.0	-0.1 pps
Female	0.3	0.1	0.1	1.4	1.1	-0.3 pps
8 - **Self employed** (15-64, % of total employment)	14.4	14.5	14.4	14.4	14.1	-0.2 pps
Male	18.4	18.4	18.3	18.2	17.8	-0.4 pps
Female	9.8	9.9	9.9	9.9	9.9	0.0 pps
9 - **Temporary employment** (15-64, % of total employment)	14.0	13.7	13.6	13.9	14.1	0.2 pps
Male	13.5	13.2	13.2	13.5	13.8	0.3 pps
Female	14.6	14.2	14.1	14.3	14.5	0.2 pps
10 - **Part-time** (15-64, % of total employment)	18.8	19.2	19.6	19.6	19.6	0.0 pps
Male	8.0	8.4	8.7	8.8	8.9	0.1 pps
Female	31.5	31.9	32.4	32.2	32.1	-0.1 pps
11 - **Unemployment rate** (harmonised:15-74)	9.7	10.5	10.9	10.2	9.4	-0.8 pps
Young (15-24)	21.7	23.2	23.7	22.2	20.3	-1.9 pps
Prime age (25-49)	8.6	9.5	10.0	9.4	8.7	-0.7 pps
Older (55-64)	6.8	7.3	7.7	7.4	7.0	-0.4 pps
Low-skilled (15-64)	16.7	18.6	19.7	19.0	17.8	-1.2 pps
Medium-skilled (15-64)	9.0	9.7	10.1	9.5	8.8	-0.7 pps
High-skilled (15-64)	5.6	6.1	6.5	6.2	5.7	-0.5 pps
Nationals (15-64)	9.2	10.0	10.4	9.9	9.1	-0.8 pps
Non-nationals (15-64)	16.8	17.7	18.1	16.5	15.2	-1.3 pps
Male	9.6	10.4	10.8	10.1	9.3	-0.8 pps
Female	9.8	10.5	10.9	10.3	9.5	-0.8 pps
12 - **Long-term unemployment** (% of total unemployment)	42.9	44.5	47.3	49.6	48.5	-1.1 pps
13 - **Worked hours** (full-time, average actual weekly hours)	40.8	40.7	40.6	40.5	40.5	0.0 %
Male	41.9	41.7	41.6	41.5	41.5	0.0 %
Female	39.1	39.0	38.9	38.9	38.9	0.0 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-2.7	-2.1	-2.6	-0.4	-2.4	-2.0 pps
Building and construction	-2.7	-3.6	-3.2	-0.8	0.8	1.6 pps
Services	1.1	0.3	0.0	1.6	1.9	0.3 pps
Manufacturing industry	0.3	-1.1	-1.1	0.6	0.8	0.2 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	1.9	2.8	0.9	1.7	3.1	1.3 pps
Real compensation per employee based on GDP	0.7	0.5	0.3	0.1	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	2.7	2.4	1.3	1.5	2.2	0.7 pps
Labour cost index (wages and salaries, total)	2.6	2.3	1.4	1.6	2.5	0.9 pps
Labour productivity (GDP/person employed)	1.5	-0.1	0.5	0.5	1.0	0.5 pps

Euro Area	2011	2012	2013	2014	2015	2014-2015
1 - **Population** (LFS, total, 1000 pers.)	335707	336567	337252	337959	338977	0.3 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	218346	218124	217705	218438	218215	-0.1 %
(% of total population)	65.0	64.8	64.6	64.6	64.4	-0.3 pps
3 - **Labour force** (15-64, 1000 pers.)	155991	156954	157102	157934	158055	0.1 %
Male	84690	84881	84658	84874	84888	0.0 %
Female	71301	72073	72443	73060	73167	0.1 %
4 - **Activity rate** (% of population 15-64)	71.4	72.0	72.2	72.3	72.4	0.1 pps
Young (15-24)	41.7	41.3	40.8	40.1	39.6	-0.5 pps
Prime age (25-54)	85.2	85.6	85.5	85.4	85.3	-0.1 pps
Older (55-64)	50.7	52.8	54.6	56.4	58.0	1.6 pps
Nationals (15-64)	71.4	72.0	72.3	72.4	72.6	0.2 pps
Non-nationals (15-64)	71.4	71.4	71.2	70.9	70.5	-0.4 pps
Male	77.9	78.1	78.1	78.0	78.1	0.0 pps
Young (15-24)	44.4	44.0	43.3	42.6	41.9	-0.7 pps
Prime age (25-54)	92.2	92.2	91.8	91.5	91.4	-0.1 pps
Older (55-64)	58.8	60.7	62.4	63.8	65.2	1.5 pps
Female	65.0	65.8	66.3	66.6	66.8	0.2 pps
Young (15-24)	39.0	38.5	38.2	37.5	37.1	-0.4 pps
Prime age (25-54)	78.3	79.0	79.2	79.3	79.3	0.0 pps
Older (55-64)	43.0	45.3	47.3	49.5	51.1	1.7 pps
5 - **Employment rate** (% of population 15-64)	64.1	63.7	63.4	63.8	64.5	0.7 pps
Young (15-24)	32.9	31.6	30.9	30.6	30.7	0.1 pps
Prime age (25-54)	77.3	76.5	75.9	76.0	76.6	0.6 pps
Older (55-64)	47.0	48.6	50.0	51.7	53.3	1.6 pps
Low-skilled (15-64)	46.9	45.7	44.7	43.6	44.1	0.5 pps
Medium-skilled (15-64)	69.1	68.6	68.2	68.4	68.8	0.5 pps
High-skilled (15-64)	81.7	81.3	80.9	81.0	81.5	0.5 pps
Nationals (15-64)	64.7	64.3	64.1	64.4	65.1	0.7 pps
Non-nationals (15-64)	58.4	57.4	56.9	57.7	58.4	0.7 pps
Male	70.0	69.3	68.7	68.9	69.6	0.6 pps
Young (15-24)	34.9	33.5	32.7	32.3	32.3	0.0 pps
Prime age (25-54)	83.8	82.7	81.7	81.8	82.4	0.6 pps
Older (55-64)	54.3	55.6	56.7	58.0	59.5	1.5 pps
Female	58.2	58.2	58.2	58.7	59.4	0.7 pps
Young (15-24)	30.8	29.6	29.1	28.8	29.0	0.3 pps
Prime age (25-54)	70.7	70.4	70.1	70.3	70.8	0.5 pps
Older (55-64)	40.0	41.9	43.6	45.7	47.4	1.7 pps
6 - **Employed persons** (15-64, 1000 pers.)	140003.6	138982.1	138102.6	139356.5	140666.8	0.9 %
7 - **Employment growth** (%, National accounts)	0.1	-0.4	-0.7	0.6	1.1	0.5 pps
Employment growth (%, 15-64, LFS)	0.0	-0.7	-0.6	0.9	0.9	0.0 pps
Male	-0.4	-1.2	-1.0	0.7	0.9	0.2 pps
Female	0.4	-0.2	-0.2	1.2	1.0	-0.2 pps
8 - **Self employed** (15-64, % of total employment)	14.3	14.4	14.3	14.2	14.0	-0.1 pps
Male	18.2	18.2	18.2	17.9	17.6	-0.3 pps
Female	9.7	9.8	9.9	9.9	9.9	0.0 pps
9 - **Temporary employment** (15-64, % of total employment)	15.6	15.0	14.9	15.1	15.4	0.3 pps
Male	14.9	14.4	14.3	14.6	15.1	0.5 pps
Female	16.3	15.8	15.5	15.5	15.8	0.3 pps
10 - **Part-time** (15-64, % of total employment)	20.1	20.7	21.5	21.5	21.6	0.1 pps
Male	8.0	8.4	8.9	9.1	9.3	0.2 pps
Female	34.6	35.3	36.1	36.0	36.0	0.0 pps
11 - **Unemployment rate** (harmonised:15-74)	10.2	11.4	12.0	11.6	10.9	-0.7 pps
Young (15-24)	21.2	23.4	24.2	23.8	22.4	-1.4 pps
Prime age (25-49)	9.4	10.6	11.3	11.0	10.3	-0.7 pps
Older (55-64)	7.3	8.0	8.5	8.4	8.1	-0.3 pps
Low-skilled (15-64)	17.0	19.5	20.9	20.6	19.4	-1.2 pps
Medium-skilled (15-64)	8.9	9.9	10.4	10.2	9.7	-0.5 pps
High-skilled (15-64)	6.1	6.9	7.5	7.3	6.9	-0.4 pps
Nationals (15-64)	9.5	10.7	11.3	11.1	10.4	-0.7 pps
Non-nationals (15-64)	18.3	19.5	20.0	18.6	17.2	-1.4 pps
Male	10.0	11.2	11.9	11.5	10.7	-0.8 pps
Female	10.4	11.5	12.1	11.8	11.0	-0.8 pps
12 - **Long-term unemployment** (% of total unemployment)	45.3	46.4	49.6	52.6	51.5	-1.1 pps
13 - **Worked hours** (full-time, average actual weekly hours)	40.8	40.6	40.5	40.4	40.4	0.0 %
Male	41.8	41.6	41.5	41.4	41.4	0.0 %
Female	39.0	38.9	38.8	38.7	38.7	0.0 %
14 - **Sectoral employment growth** (% change)						
Agriculture	-2.1	-1.1	-1.7	0.3	-0.1	-0.4 pps
Building and construction	-3.4	-4.4	-4.0	-1.8	0.1	1.9 pps
Services	1.1	0.0	-0.5	0.9	1.6	0.7 pps
Manufacturing industry	-0.1	-0.8	-1.4	-0.2	0.4	0.6 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	2.0	1.5	1.6	1.3	1.3	0.0 pps
Real compensation per employee based on GDP	1.0	0.5	0.4	0.4	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	2.7	2.5	1.2	1.3	1.6	0.3 pps
Labour cost index (wages and salaries, total)	2.6	2.5	1.4	1.4	2.1	0.7 pps
Labour productivity (GDP/person employed)	1.4	-0.4	0.4	0.5	0.9	0.4 pps

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KE-BN-16-001-EN-N

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