Università degli studi di Udine

Labour Market Developments in Europe 2013

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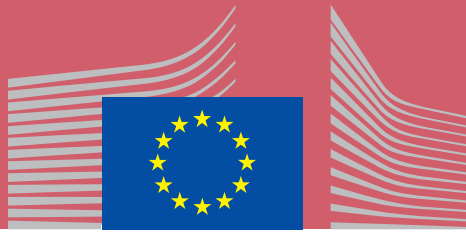
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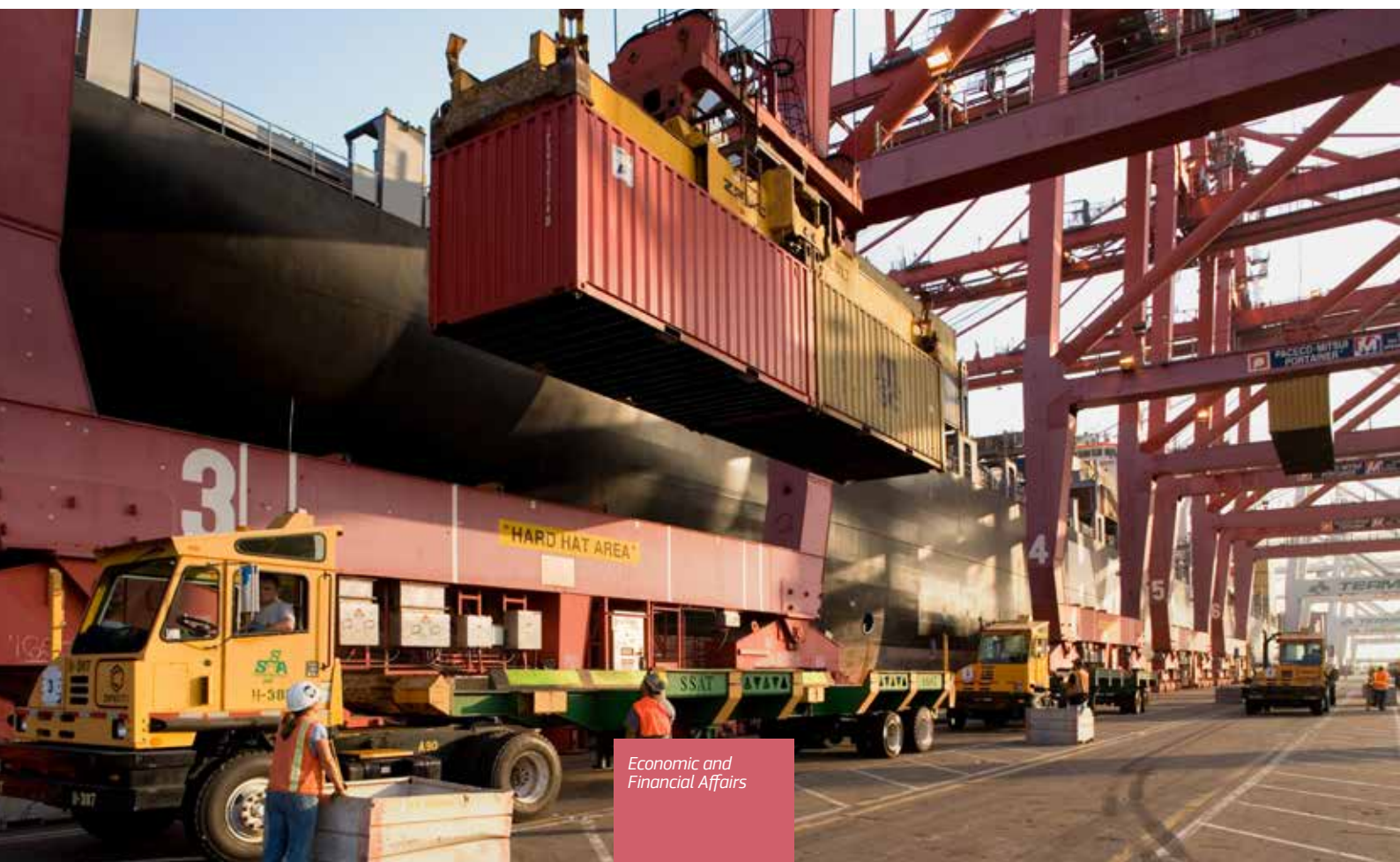
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Labour Market Developments in Europe, 2013

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SUMMARY AND MAIN FINDINGS

EU labour markets towards stabilisation

After four years of deteriorating labour market outcomes, the first signs of stabilisation in EU unemployment are becoming manifest against the background of GDP growth turning positive, improving sentiment, and recent reforms. Major labour market disparities persist across the EU and the euro area.

Unemployment in the EU kept growing in the 2012 recessionary environment, reaching record-high levels

In 2012, economic activity contracted by 0.3% in the EU and by 0.6% in the euro area, on the back of financial market fragmentation, debt overhang, and decelerating growth in emerging markets. The unemployment rate in the EU and the euro area has continued to climb further until early 2013, reaching values above 11% and 12%, respectively. Current unemployment rates are unprecedented for both the euro area and the EU in recent history, being well above the previous peak registered after the 1993 recession.

Wider dispersion in unemployment rates across the EU and the euro area, largely reflecting differences in the intensity of the rebalancing and deleveraging process

Labour dynamics continued to differ substantially across countries. While employment growth was robust in the Baltics, Germany, Hungary, Malta, Romania, employment losses were recorded especially in Bulgaria, Croatia, Cyprus, Greece, the Netherlands, Spain, and Portugal. Differences in unemployment dynamics reflected to a large extent GDP growth differences, but a relevant role was played by different responses of employment to economic activity. In particular, in the countries deeply affected by debt crises and deleveraging, the worsening of the labour market was stronger than it was expected on the basis of GDP growth, which suggests that employers' expectation on economic prospects could have played a role. Overall, the patterns of labour market dynamics across the EU further contributed to increasing the already high degree of dispersion of unemployment rates, with the relevant exception of the Baltic countries, where the high unemployment levels are falling at a rapid pace.

Unemployment stopped growing at mid 2013, although a substantial trend reversion does not look near

While the first quarter of 2013 was characterised by a severe GDP contraction and a widespread rise in unemployment rates, quarter-on-quarter growth turned positive in the second quarter, technically putting an end to the recession. Labour market stabilisation followed swiftly: a halt to unemployment growth was recorded since March 2013 both for the EU and the euro area aggregate. These aggregate figures are mostly the result of unemployment dropping in a number of non-euro-area countries (Hungary, the Baltics) but also moderate unemployment reductions in a number of euro-area countries that were characterised by major labour market deteriorations until 2012, including Ireland, Portugal, Spain.

Recent labour market developments could be interpreted as a swift reaction to a recovering economic activity, linked to improved expectations or the materialisation of the effects of structural reforms. However, the dynamics of activity rates and discouragement effects need also to be considered, as well as one-off factors. All in all, it is too early to judge if these recent developments prelude to an inversion of the upward trend in unemployment rates. However, on the basis of the current outlook for economic activity, a substantial trend reversion seems unlikely in the near term, as the 'Okun relation' between unemployment changes and GDP growth suggests that a weak recovery is hardly sufficient for a sustained and substantial reduction in unemployment.

Job finding rates reached a minimum since the start of the crisis, while the rate of which existing jobs are destroyed is still well above the level prevailing before the crisis…

The increase in the euro-area unemployment in 2012 was linked both to job separation rates remaining high and job finding rates staying at the lowest level since the start of the crisis. The share of long-term unemployed has also increased at an accelerated rate, which does not bode well for job finding rates looking forward. Job finding rates fell especially in Cyprus, Greece, Portugal, Spain, Italy, the Netherlands, Slovenia, with some signs of stabilisation becoming visible at the end of 2012 in some countries, notably Spain. The remarkable increase in the job separation rate in the euro area recorded in 2011 was followed by a relatively minor reduction in 2012. In 2012, increases in the job separation rate were recorded especially in Cyprus, France, Spain, Sweden, while a considerable reduction in job separation rates was observed in the Baltics, Ireland, Greece.

…which suggests a persistent worsening of labour matching in some countries

The euro-area Beveridge curve, describing the negative relation between vacancies and unemployment, has been affected by major demand shocks in 2009 and in 2011, leading to less vacancies and more unemployment. In 2012, growing unemployment is matched by a rise in vacancies, which may indicate the start of a typical adjustment process where the recovery of vacancies leads that of employment. Since the start of the crisis, the euro area Beveridge curve has shifted outward, meaning growing mismatch: a given number of vacancies coexisting with a higher level of unemployment. However, it is difficult to tell at the current stage to what extent such a shift is permanent or mostly temporary, linked to an incomplete adjustment to recent demand shocks. Moreover, while in some countries there is evidence of a likely long-lasting outward shift in the Beveridge curve, for a few countries the evidence rather points towards an inward shift.

Without a downward adjustment of average hours worked employment losses could have been even more severe

Average hours worked, after the fall in 2009 which helped containing job shedding, stabilised at a lower level in 2010 and 2011. During the course of 2012, a new fall in hours worked was observed, which however paralleled this time a considerable fall in headcount employment. In absence of such an adjustment of hours worked, job shedding could have been even deeper, with implications for unemployment developments. Looking forward, the considerable downward adjustment in hours may imply a relatively subdued recovery of employment once GDP growth gains momentum.

Activity rates kept rising, but the share of discouraged workers who stopped searching for a job is on the rise

Activity rates kept being resilient, reflecting rising participation of the elderly and an 'added worker effect' which characterised the response of participation since the start of the crisis. The need to contribute to the household with additional income in the presence of increased uncertainty compensated falling participation by the youth and the negative 'discouraged worker effect', which is however becoming stronger over time, in particular in the countries characterised by the highest shares of long-term unemployment.

Unemployment has reached worrying levels especially for the youth in a number of countries…

The employment prospects of the young were especially affected in the crisis in light of the strong sensitivity of youth unemployment to economic activity. By 2012, youth unemployment was above 25% in 13 EU countries, with peaks above 50% in Spain and Greece. Such trends are worrying in light of the impact of protracted unemployment spells for the youth on labour market participation, long-term 'scarring effects', and their implications in terms of human capital losses and social cohesion.

...and is at the root of growing poverty	Poverty indicators appear on the rise in a growing number of countries since 2009, reversing previous trends. In 2011, severe material deprivation rates above 15% were recorded in Bulgaria, Romania, Hungary and Greece, while at-risk-of-poverty rates above 20% are observed in Bulgaria, Romania, Greece, and Spain. These developments are the outcome of a complex set of factors, notably linked to growth, income distribution, access to labour income and public transfers and services. Among those factors, however, long unemployment spells, and the associated loss of labour income and exhaustion of existing wealth and access to benefits, appear to play a major role, as shown in analysis contained in the report. This underscores the necessity of tackling unemployment also as a priority objective to address poverty.
Wages and labour costs kept following a path consistent with the adjustment of unemployment divergences...	Despite rising unit labour costs linked to falling labour productivity in the recession, wage growth remained subdued. The growth rate of nominal compensation per employee at euro-area level equalled 1.9% in 2012, lower than in 2011, but along a Phillips curve which appears to be flattening, in light of the proportionally much stronger increase in unemployment. Compensation per employee declined in Greece, Portugal, Slovenia and Spain and increased at the fastest rate in Belgium, Austria, Estonia, Finland, Germany. In 2012, as in 2011, real unit labour costs are on average declining faster in countries with higher unemployment rates, which appears supportive to the reduction of unemployment divergences. In reading these figures, it is to be taken into account that government wages had a significant contribution to wage moderation in a number of countries.
...and external imbalances	It is also confirmed for 2012 that unit labour costs had a tendency to fall stronger in countries having to rebalance their economies after periods of large current account deficits before the crisis. Greece, Portugal and Spain recorded marked declines in nominal unit labour costs in 2012, while strong increases took place in Estonia, Belgium, Finland, Austria, Luxembourg and Germany. The decline in unit labour costs in the euro area countries facing stronger rebalancing needs led to a continued depreciation of their unit-labour-cost-deflated Real Effective Exchange Rates (REERs), although the adjustment in REERs based on the GDP deflator and the export deflator remained more limited, which calls for more action on the front of structural reforms to ease the adjustment of markups. The sectoral pattern of wage growth also appears broadly supportive of rebalancing. In Greece, Portugal and to some extent Spain, compensation per employee grew faster in the tradable sector.
Policy priorities are not the same across the EU, and largely depend on the extent to which unemployment is mostly cyclical or structural	The high and persistent unemployment rate in most EU countries has prompted concerns that the underlying structural unemployment has shifted upwards and that the increase in unemployment could persist once the recovery is on a solid footing. The question is of key relevance, as assessing whether unemployment is mostly cyclical or structural has implications for the policy response needed to address the unemployment problem.
	With a view to dig deeper into the analysis of *cyclical versus structural unemployment* in the EU, the *analytical chapter* of the report takes a number of steps forward. First, it analyses the main features of the Beveridge curves of EU countries and of frictional unemployment, with a view to isolate temporary changes in the vacancy-unemployment relationship from structural

shifts. Second, it explores microeconomic aspects of labour market matching, to shed light on whether mismatches became more serious across skills, economic sectors, or geographical locations. Third, it digs deeper into the notion of the Non-Accelerating Wage Rate of Unemployment (NAWRU), with the objective of isolating permanent from transitory changes.

Although unemployment is still to a relevant extent cyclical, there are clear indications of worsening labour market matching…

The evidence presented in the report conveys a number of messages with relevant policy implications. It emerges first of all that not only the level, but also the *structure of unemployment* and the extent to which it is structural *differs widely across countries*. It follows that policy responses across the board for the EU or the euro area would work only to a certain extent, since the magnitude and typology of challenges are largely country-specific.

It also appears that looking at the NAWRU may not be sufficient to gauge the permanent structural unemployment rate rooted in institutions and economic structures since the NAWRU is itself subject to oscillations of cyclical, temporary nature. The fact that *cyclical unemployment may be above what suggested by the NAWRU* has positive implications for the effectiveness of macro and micro policies stimulating labour demand and favouring wage adjustment.

…and growing structural unemployment in some countries…

There is nonetheless evidence of worsening labour market matching and *growing structural unemployment* of persistent nature *in a number of countries*, notably those mostly affected by current account reversals and debt crises. Upward changes in structural unemployment rates appear to be mostly driven by persistently lower job finding rates ensuing from *worsened labour market matching across skills and sectors, and an increased duration of unemployment spells*. The reduced regional dispersion of unemployment rates registered after the crisis in most countries played instead a minor role.

…but also signs of improvement, especially on the front of sectoral reallocation

Looking forward, while *mismatch linked to job shedding from specific sectors*, notably construction and manufacturing *has become less severe since 2011*, labour-market matching problems seem to persist for unskilled workers and workers expelled from some market services (notably retail) and the public sector. *Growing matching problems* are also *linked to the lengthening of unemployment spells*.

The national and EU response to address unemployment has been recently stepped up…

The *policy response* put in place by EU Member States and EU institutions in recent years was *broadly adequate and commensurate with the challenges*. The resistance to reforms long overdue was overcome in a number of countries. Substantial reforms tackling employment protection, unemployment support, and wage setting frameworks were carried out in Spain, Greece, Italy, Portugal, and more recently in France. Other countries reformed particular aspects of their labour market institutions and policies. Active Labour Market Policies were strengthened and stepped up in a majority of countries.

The EU has provided guidance within existing processes of economic surveillance, with the objective of urging action where necessary and ensuring a mutually consistent response at the euro-area and EU level. In 2013, new EU initiatives have focused on the emergency of youth unemployment, with the aim of providing additional funds and strengthening policy frameworks targeted to the youth. Moreover, the existing framework

for policy surveillance at the euro-area level will be adapted in such a way as to better take into account the Social Dimension of the EMU.

...but needs to maintain sufficient ambition looking forward...

Nonetheless, policy action to tackle unemployment should continue aiming sufficiently high. This is key to ensure a proper response of labour markets to the major shocks ensuing from the crisis, to tackle the social implications of the crisis, and to prevent a persistent fall in the labour contribution to growth looking forward. A number of challenges loom ahead.

...ensuring time consistency in reform strategies, an effective use of fiscal instruments to tackle unemployment and the social consequences of the crisis, and the strengthening of ALMPs, including in terms of administrative and institutional capacity

First, a sufficient degree of *ambition in structural reforms needs to be maintained*, especially in countries most deeply affected by deleveraging and bond market tensions. In these countries, domestic demand will likely remain subdued, and the margins for reducing unemployment via major increases in aggregate demand are narrow. It is therefore key that real wages play a role in favour of the re-absorption of unemployment, that incentives to take up jobs remain high, that taxation and labour regulations do not hamper the incentives to create jobs.

Second, for countries that already carried out relevant reforms, it is important that past policy action is properly implemented, monitored in its effects, and complemented by additional measures where necessary, while ensuring *consistent policy trajectories* over time and *resisting the temptation of backtracking*. In particular, the reforms that contributed to reduce the protection between regular and fixed-term contracts should not be reversed, and the mistake made in past decades of relying excessively on easy conditions for fixed-term employment to stimulate job creation should be avoided to avoid perpetuating segmented labour market structures.

Third, available *fiscal instruments should be used effectively* to support employment and tackle the social consequences of the crisis. Tax reforms should aim at better mobilising labour supply and demand. Adequate social protection should be provided to those suffering the most the consequences of the crisis compatibly with public budgets, notably thanks to improved targeting and design of measures.

Finally, *administrative and institutional capacity should be stepped up* where necessary *to ensure an effective role of ALMPs* in easing labour market mismatch and school-work transitions, improving the activation of benefit recipients, and preventing the exit from the labour force of vulnerable groups. Public Employment Services (PES) in particular need to perform effectively the role of interface between jobseekers, employers, and the public administration, a role which has become even more relevant with the increased amount of EU resources available to fight youth unemployment.

Part I

Labour market developments

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

1.1. INTRODUCTION

In 2012, economic activity contracted by 0.3% in the EU and by 0.6% in the euro area, in light of difficult access to credit, debt overhang, and decelerating growth in emerging markets. The unemployment rate in the EU and the euro area continued to climb further until mid-2013.

While the first quarter of 2013 was characterised by a severe GDP contraction and a widespread rise in unemployment rates, quarter-on-quarter growth turned positive in the second quarter, technically putting an end to the recession. A labour market improvement followed swiftly: unemployment stopped growing in 2013q2 on a quarter-on-quarter basis and the July figure confirms the stabilization in the unemployment rate from the previous month both for the EU and the euro area aggregate.

The unemployment rate in most EU countries remains nonetheless very high, and a sustained and solid growth will be necessary to bring about substantial improvements. In light of the protracted economic slack, hiring rates remain low and separation rates high. The share of long-term unemployment keeps growing, with implications for job finding rates and labour market matching.

Against this background, this chapter analyses the main features of the current labour market adjustment by looking at aggregate developments in the EU and the euro area. In doing so, it compares the EU labour market performance with that of other world macro-regions and assesses the role of cyclical and structural factors in unemployment dynamics, that of job market flows, and the role played by the relevant adjustment margins, including working hours and labour costs.

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 job market flows, long-

term unemployment and labour market 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

GDP growth turned negative in 2012 after a sluggish 2011, reflecting a decline in both private consumption and investment, only partly offset by increasing net exports. In light of disappointing economic growth amid growing fragmentation of financial markets and persisting uncertainty about the bond market outlook, the unemployment rate in the EU28 and the euro area started rising in 2011, a trend that contrasts with developments observed in other world regions. The trend persisted in 2012 and in the first quarter of 2013. (See Table I.1.1 and Graph I.1.1.)

The number of unemployed in July 2013 was 19.231 million in the euro area, 26.654 million in the EU. Job losses since the beginning of the crisis amount to about 4.8 million for the euro area and 6.6 million for the EU.

Table I.1.1: **GDP growth and unemployment in selected countries**

	GDP growth			Unemployment rate		
	2000-2007	2011	2012	2000-2007	2011	2012
EA17	2.2	1.6	-0.7	8.6	10.1	11.4
EU28	2.5	1.7	-0.4	8.7	9.7	10.5
CAN	2.9	2.4	1.8	6.9	7.5	7.2
JPN	1.5	-0.6	1.9	4.7	4.6	4.4
USA	2.6	1.8	2.2	5.0	9.0	8.1
OECD	2.5	1.7	1.2	6.4	8.0	8.0
BRIC:	8.1	8.3	5.4	:	:	:
BRA	*3.5*	*2.7*	*0.9*	*11.1*	*6.0*	*5.5*
RUS	*7.2*	*4.3*	*3.4*	*8.1*	*6.6*	*5.5*
IND	*7.2*	*7.7*	*3.8*	*:*	*:*	*:*
CHN	*10.5*	*11.5*	*7.8*	*3.9*	*4.1*	*4.1*

Source: OECD, Eurostat, World Economic Outlook.

Source: Eurostat and OECD.

Current unemployment rates are unprecedented for both the euro area and the EU in recent history. Data for a 12-country euro-area aggregate for which a time series going back to the 1980s can be constructed show that the current unemployment rate is well above the peak reached during the mid-1990s (see Box I.1.1).

Box I.1.1: **The rise and fall of unemployment dispersion across the euro area**

The crisis of 2008 was followed by a remarkable divergence of unemployment rates across countries in the euro area. To some extent, such an increased unemployment dispersion is not a new phenomenon, as shown in Graph 1 below, which reports the average unemployment level (unweighted) and its cross-country dispersion (as measured by the coefficient of variation) for 12 euro-area countries since 1980. The graph shows that average unemployment (irrespective if weighted or not by the labour force) has currently reached a historically very high level, just above the previous record reached in the early nineties. As for dispersion, a comparable dispersion of unemployment rates was observed not only in the years immediately preceding monetary unification but also further back, before EMU convergence, in the mid-eighties. In a sense, the crisis has brought back a degree of diversity in unemployment performance that was considerably reduced after EMU and the accelerated speed of convergence in the euro-area periphery.

Graph 1: Average unemployment level and dispersion in the EA-12
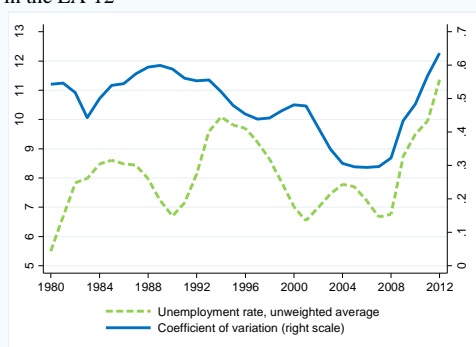
Data are for 12 euro area countries, excluding Cyprus, Estonia, Malta, Slovakia, Slovenia.

Graph 2: Actual and predicted dispersion of unemployment changes, EA-12
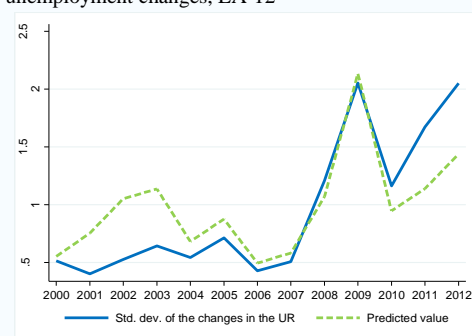
Data are for 12 euro area countries, excluding Cyprus, Estonia, Malta, Slovakia, Slovenia.

What is notable of the recent increase in unemployment dispersion is its growth, above what could have been predicted on the basis of the degree of dispersion in GDP growth rates.

The dispersion in unemployment rate changes was regressed on average GDP growth (unweighted) and the dispersion of GDP growth, obtaining the following relation for the period 1980-2012:

$$Dispersion\ (\Delta U) = 0.98^{***} - 0.19^{***}\ Average\ (GDP\ growth) + 0.19^{**}\ Dispersion\ (GDP\ growth)\qquad (R^2 = 0.69),$$

which suggests that low and heterogeneous growth rates tend to be associated with a higher dispersion of unemployment changes. Graph 2 above plots the actual dispersion of unemployment changes with that predicted on the basis of the above relation. It shows that the current surge in unemployment growth dispersion was well above what could have been predicted on the basis of GDP dispersion.

For the EU15 aggregate (the EU countries before the 2004 enlargement), the unemployment rate recorded in 2012 was 10.6%, higher for the first time than the 10.5% peak reached in 1994.

At the beginning of 2013, GDP witnessed a notable contraction. The negative growth in both the EU and the euro area is the result of a negative contribution from domestic demand (mostly a fall in gross capital formation, amid persistently tight credit conditions), while net exports had a positive impact on growth. Growth turned positive in the second quarter of 2013. The positive quarter-on-quarter growth recorded put technically an end to the recession in the euro area and the EU.

Signs of improvement in the labour market followed. While the first quarter of 2013 witnessed a fall in employment and an increase in the unemployment rate comparable to the previous quarter, some months later there were signs instead that the growth of unemployment was reaching a halt. Quarter-on-quarter, the seasonally adjusted unemployment rate stopped growing in 2013q2 both in the euro area and in the EU as a whole. In the euro area, the unemployment rate continued growing until April to then stabilize at 12.1%, a level confirmed for July 2013. In the EU, it stopped rising in March and remains at the same level of 11% in July 2013 (Table I.2.1).

Table I.1.2: **Unemployment, compensation per employee and GDP growth in the euro area and European Union (seasonally adjusted figures)**

					Quarter over quarter of previous year, %						Quarter over quarter same year, %					
		2010	2011	2012	2012Q1	2012Q2	2012Q3	2012Q4	2013Q1	2013Q2	2012Q1	2012Q2	2012Q3	2012Q4	2013Q1	2013Q2
Unemployment rate	EA	10.1	10.2	11.4	10.1	14.1	12.7	11.3	10.1	7.1	2.8	3.7	1.8	2.6	1.7	0.8
	EU28	9.7	9.7	10.5	7.4	9.5	9.3	8.0	7.8	5.8	2.0	2.0	1.9	1.9	1.9	0.0
Unemployment growth	EA	6.1	0.9	12.8	10.3	14.6	13.7	12.1	11.0	7.5	2.9	3.9	2.4	2.5	1.8	0.6
	EU28	7.9	0.6	8.9	8.1	10.6	9.5	8.4	7.8	5.3	2.0	2.6	1.6	1.9	1.5	0.6
Growth of nominal compensation per employee	EA	1.9	2.1	1.9	2.0	1.8	1.9	1.4	1.8	1.6	0.6	0.3	0.3	0.3	0.9	0.1
	EU28	3.4	2.1	3.1	2.7	3.3	4.0	2.9	1.4	1.1	1.3	0.7	1.1	-0.2	-0.1	0.4
GDP growth	EA	2.0	1.5	-0.6	-0.1	-0.5	-0.7	-0.9	-1.1	-0.7	-0.1	-0.2	-0.1	-0.6	-0.3	0.3
	EU28	2.1	1.6	-0.4	0.1	-0.3	-0.4	-0.7	-0.7	-0.2	0.0	-0.2	0.0	-0.5	-0.1	0.3
Employment growth	EA	-0.4	0.3	-0.7	-0.5	-0.8	-0.6	-0.7	-1.0	-0.9	-0.2	-0.1	-0.1	-0.3	-0.5	-0.1
	EU28	-0.6	0.2	-0.2	-0.5	-0.7	-0.4	-0.4	-0.4	-0.4	-0.2	0.0	-0.1	-0.1	-0.1	-0.1

Source: Eurostat and DG ECFIN AMECO database. Annual data for 2013 are from the European Commission Spring Economic Forecast.

Unemployment was not growing in a uniform fashion. As stressed in previous issues of this report, the crisis was followed by a major increase in the degree of dispersion of unemployment rates, across the EU and, most notably, the euro area.

As shown in Box I.1.1, the degree of dispersion in euro-area unemployment rates is very high in 2012 but not unprecedented, as a very high degree of dispersion was observed already at the onset of the monetary union and in the mid-eighties. What was particular to the 2008 crisis was the sizeable *increase* in the degree of dispersion of unemployment rates, well above what explained by the increased dispersion in GDP growth. The countries that saw unemployment surging were especially those concerned by current account reversals and bond market tensions.

Graph I.1.1: **Employment and GDP growth in the EU**
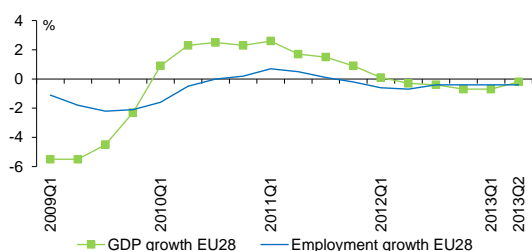
(1) Growth rates are defined as percentage change compared to corresponding period of the previous year.
Source: Eurostat and DG ECFIN AMECO database.

Headcount employment started falling after moderate growth between the second half of 2010 and the first half of 2011. This fall continued throughout the following year until 2013q1. The employment reduction was felt particularly strongly in the euro area. Not only was the recession deeper in euro area countries, but the response of employment to GDP losses was also

more intense there. The changed sensitivity of unemployment to economic activity may have been associated, among other things, with increased uncertainty about the economic outlook and about the policy response to the debt crisis in some euro-area countries, notably Italy and Spain (see, e.g., Arpaia and Turrini, 2013).

Graph I.1.2: **Unemployment expectations for the coming 12 months**
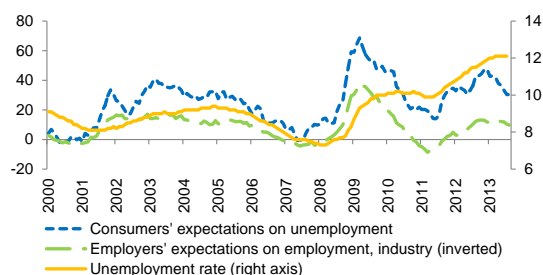
Source: European Commission, Business and Consumer Surveys.

Looking forward, the average annual unemployment rate could decrease slightly in 2014 according to the Commission Spring Forecast, which assumes growth to resume in the second half of 2013, mainly driven by net export and supported by improving economic sentiment. The latest data from the European Commission Business and Consumer Surveys support a moderately optimistic outlook for unemployment. Expectations on unemployment for the next 12 months have improved (i.e., dropped) since 2013, especially those of consumers (Graph I.1.2), albeit remaining at high levels. Despite the expected recovery, unemployment remains historically high and will need a sufficiently robust and sustained growth to start embarking on a downward trajectory. Graph I.1.3 reports GDP and employment levels, and the unemployment rate, since the start of the crisis in 2008.

Graph I.1.3:   **Employment and GDP in the EU, levels (index numbers, base 2008q1).**
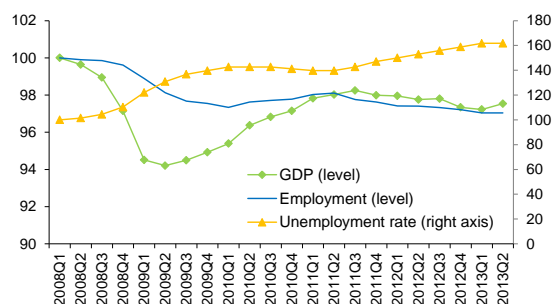
Source: Eurostat.

It appears that while GDP and employment recovered most of their losses (the latest available data show that the level of both economic activity and employment was about 2-3 per cent lower than at the beginning of 2008), the unemployment rate, over the same period, increased by about 60% and has not yet shown a significant downward adjustment. The explanation lies in the behaviour of unemployment that, mostly for demographic reasons, generally tends to rise not only during recessions, but also in the presence of weak, but still positive growth. ([1])

A period of subdued economic activity since the crisis translated into a protracted increase in the unemployment rate, despite periods of positive growth. Looking forward, a significant and sustained reduction in unemployment will require resumed GDP growth on a durable basis.

1.2.2.   Recent labour market developments in major world regions

The labour market outlook remained rather weak in 2012 and the first half of 2013 in G7 countries. At the same time the divergence continued between major world regions as unemployment continued to tick down in the US, Canada and Japan (Graph I.1.4). In the US, job creation slowed down in the first half of 2012 but picked up again during the rest of the year. Unemployment fell by

0.6% in the 12 months to June 2013, reaching 7.6%, down by about 2½ percentage points from its peak.

Graph I.1.4:   **Unemployment rates in the EU and the US**
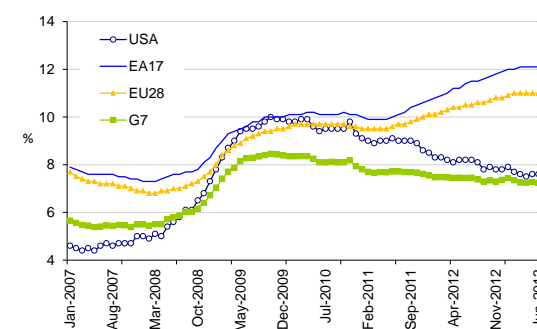
Source: OECD.

The employment developments in the US during the crisis differed from those in the EU in that labour force participation dropped substantially. While it held relatively steady around 66% in the years before the crisis, it fell afterwards to about 63%. Some of the drop reflected demographic changes that were already apparent before 2008 (Aaronson et al. 2012). Some of the drop may instead be cyclical: the share of individuals in the working age population who want a job but stopped searching is about 0.7% higher than in the decade before 2008 (Daly et al., 2012a). ([2])

In Japan growth resumed in 2012 mainly driven by exports and consumption. The unemployment rate was 4.2% in May 2013, 0.3% lower than a year earlier. In Canada, employment grew while the unemployment rate declined only marginally to 7.1% in the 12 months to May 2013. In Australia, employment growth slowed and the unemployment rate grew to 5.7% amid weaker consumption and external demand from emerging market economies.

([1])   The estimates of 'Okun's law' reported in the Box on youth unemployment in the next chapter, show that the constant in the estimated relation between the change in the unemployment rate and the growth rate of GDP is positive and significant (about 0.8 percentage points), meaning that a positive growth rate is needed to prevent the unemployment rate from rising 0.8 point per year on average.

([2])   Such a drop in the activity rate, if protracted, could slow down the reduction in the unemployment rate as the recovery gains momentum (Van Zandweghe, 2012; Bengali et al., 2013).

Table I.1.3: **Compensations, value added, employment, unit labour costs; growth rates by main branches in the euro area**

	Compensation per employee			Value added*			Employment growth			Unit Labour Costs*		
	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012
Total Economy	2.0	2.1	1.9	2.0	1.6	-0.5	-0.5	0.3	-0.6	-0.6	0.7	1.7
Industry (except construction)	3.8	3.1	2.5	9.6	3.0	-1.1	-2.9	0.1	-1.0	-7.9	0.6	2.6
Construction	1.6	3.2	3.1	-5.5	-1.7	-4.4	-3.9	-3.7	-4.7	3.0	1.0	1.7
Wholesale and retail trade, transport, accomodation and food service activities	2.2	1.8	2.1	0.8	1.7	-0.4	-0.6	0.8	-0.5	0.6	1.0	1.9
Financial and insurance activities	1.2	2.0	2.0	1.0	2.0	0.5	1.2	2.0	0.3	1.6	1.9	1.6

* The euro-area aggregate excludes Malta, and Ireland for 2012.
Source: DG ECFIN AMECO database.

Both real wages and productivity grew at a very slow pace in the developed countries in 2012 (Graph I.1.5). In the euro area, real wage growth slowed down from about 1% in 2011 to about 0.5% in 2012, while productivity slowed down even more.

Graph I.1.5: **Real wages and productivity growth in the euro area and selected advanced countries**
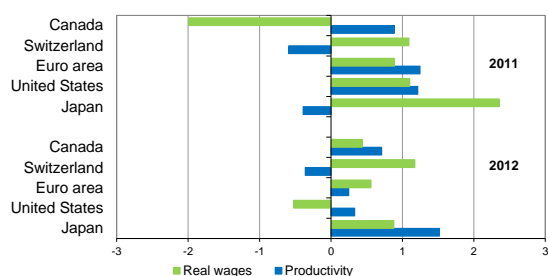
Source: DG ECFIN AMECO database.

In the US, a barely positive productivity growth was coupled with a 0.5% fall in real wages. In Japan, as the economy rebounded in 2012, productivity growth returned and the increase in real wages remained below productivity growth.

1.3. EMPLOYMENT AND UNEMPLOYMENT

After a small increase in 2011, employment dropped by 0.2 per cent for the EU28 and 0.6 per cent for the euro area. The fall in employment concerned most economic activities, but it was considerable especially in the construction sector, a development that appears to reflect a structural transformation occurring in a number of euro-area countries (Table I.1.3).

At the same time, the labour force in 2012 expanded by about 0.8 million individuals. About 80% of the expansion of the labour force can be

accounted for by the increased participation of women (Graph I.1.6). The increasing participation of women was coupled with a stable female employment rate at around 58.5%, while the male employment rate decreased somewhat to 69.6%. The unemployment rate increased for both sexes at a similar rate.

Graph I.1.6: **Employment, unemployment and activity rates in the EU-28**
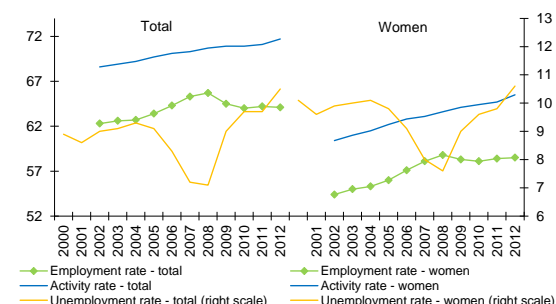
Source: Eurostat Labour Force Survey.

The expansion of participation has a marked age pattern as well: the active young and prime-age population has actually diminished, while participation among the 50-64 age group increased by almost 2 million individuals. The increase of participation of older workers and the decrease of younger ones were about equally shared between the sexes. The decrease in prime-age participation was, however, concentrated among men.

Overall, the dynamics of activity rates seem to continue reflecting the 'added worker effect' which characterised the response of participation since the start of the crisis (European Commission, 2011). The need to contribute to the household with additional income in the presence of missing, or more uncertain, labour income in single-earner households had a positive effect that compensated the negative 'discouraged worker' effect which

dominated in previous recessions and that is currently dominating in other world regions.

However, a growing trend is observed regarding the relevance of discouragement effects leading to jobseekers dropping from the labour force. While the share of discouraged workers among the inactive population was below 5.5% in early 2008, at the end of 2012 it was above 6.5% in both the euro area and the EU (Graph I.1.7). In the countries characterised by the highest unemployment rates and high shares of long-term unemployment, there was a considerable increase in the share of discouraged workers starting from 2011 (see Chapter I.2).

Graph I.1.7: **Discouragement effects (workers available to work but not seeking, percentage of inactive population)**
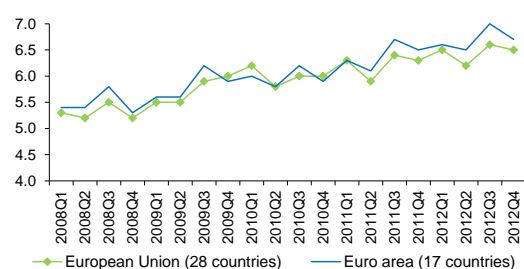
Source: Eurostat Labour Force Survey.

An additional element to take into account is the outcome of past and recent reforms in pension and tax and benefit systems that contributed to the rise in the effective retirement age. These policy developments may help explain the increased participation of elderly workers.

Graphs I.1.8 and I.1.9 show the development of the number of employees and average hours worked in the US and the euro area since 2008. Since the low point of the recession, the US economy has added over 6 million jobs, thus making up about ¾ of the ground lost before 2010 (Graph I.1.8), while hours per worker virtually returned to their pre-crisis level by 2012. In the euro area, the initial decline of employment was substantially smaller than in the US, even though the fall in output was similar in magnitude (Graph I.1.9).

The milder contraction in headcount employment at the onset of the crisis was partly the result of a stronger downward adjustment along the 'intensive

margin', i.e., a more marked reduction in the average number of hours worked per capita. Adjustment along the intensive rather than the extensive margin was made easier in a number of EU countries by the implementation of government-sponsored short-term working schemes.

Graph I.1.8: **Cumulative change in GDP, number of employees and average hours worked per employee, United States**
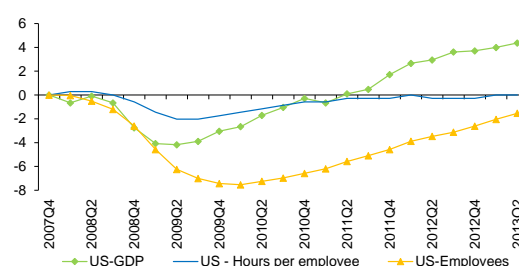
Source: U.S. Department of Labour.

Such schemes were advocated by the European Commission and were part of the measures recommended in the European Economic Recovery Package, and allowed avoiding excessive labour shedding during the most acute phase of the recession.

Graph I.1.9: **Cumulative change in GDP, number of employees and average hours worked per employee, Euro area**
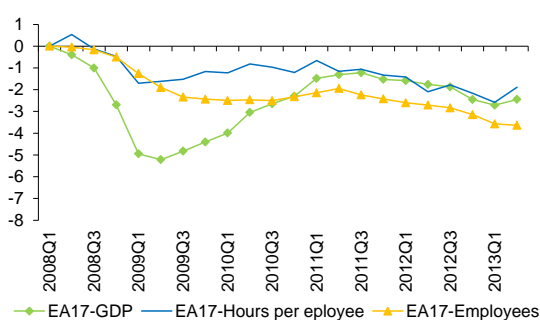
Source: Eurostat, National Accounts.

For the same reason, the rebound of employment during the 2010 short-lived recovery was slower in the euro area than in the US. The cumulative employment loss after the stalling of the European recovery is about 4%, which is about half of the employment loss the US endured at the low point of the crisis, but the tendency is still negative at the beginning of 2013.

Average hours worked, after having fallen in 2009 stabilised at a lower level in 2010 and 2011. During the course of 2012, a renewed fall in hours is observed, which parallels this time with a fall in headcount employment. The adjustment of hours worked was again, in a number of countries, facilitated by the operation of short-term schemes, that were reapproved and reactivated as a response to the aggravation of the job crisis in the second half of 2011 (see Chapter I.4 of this report). In the absence of such an adjustment in hours worked, job shedding would have been even deeper, with implications for unemployment developments. Looking forward, the considerable downward adjustment in average hours worked may imply a relatively subdued recovery of employment in case of GDP recovery gaining momentum.

1.4. WAGES AND LABOUR COSTS

Following a significant slowing during the recession, growth in various measures of labour compensation has somewhat stabilised during the past two years.

Graphs I.1.10 and I.1.11 depict euro-area Phillips curves, relating the unemployment rate to the growth of negotiated wages, and to compensation per employee, respectively. In both graphs, the fitted pre-crisis relationship between unemployment and wage growth can be compared to post-crisis observations.

Graph I.1.10: **Phillips curve for the euro area 2000-2012: growth rate of negotiated wages**
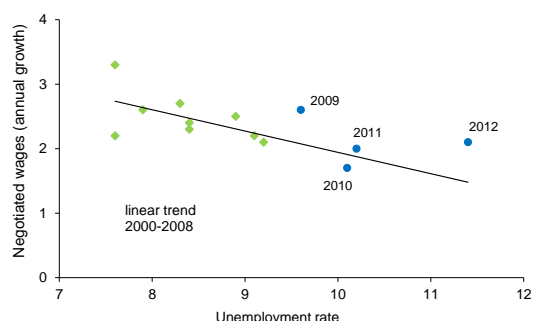
Source: Commission Services.

Overall, these simple scatterplots capturing Phillips curve dynamics at the euro-area level indicate that the expected negative relation between wage growth and the unemployment rate weakened after 2009, with higher unemployment figures not matched by reductions in wage growth of the same order as those observed before the crisis.

Graph I.1.11: **Phillips curve of the euro area 2000-2012: growth rate of compensation per employee**
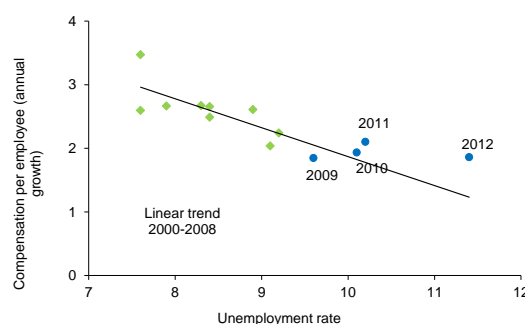
Source: Commission Services.

Overall, this evidence suggests that the Phillips curve of the euro area is somewhat flattening. As unemployment grows, wage growth falls, but at a decreasing rate. This could reflect the fact that unemployment is becoming increasingly 'structural', so that higher joblessness rates do not correspond to a more intense competition for vacancies among suitable workers and to more moderate wage claims.

However, as discussed in Chapter II.1 of this Report, a large fraction of unemployment in the euro area is still likely to be of a cyclical nature at the current juncture, despite a growing share of structural unemployment. Alternative explanations for a flattening of the Phillips curve are therefore as follows (see, e.g., IMF, 2013a, Chapter 3): (i) inflation expectations are strongly anchored and hard to modify downward once inflation rates close to 2 per cent are prevalent, (ii) downward nominal rigidities start playing a role at low rates of wage growth.

The latter explanation seems corroborated by the fact that the flattening of the Phillips curve is mostly evident for negotiated wages: nominal cuts are easier to observe in terms of wage drift, while downward revisions of collective wage contracts are more seldom observed.

Graph I.1.12: **Compensation per employee and unit labour costs in the euro area, growth rate on same quarter on previous year**
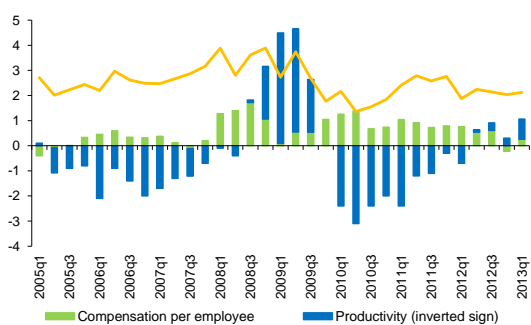
Source: Commission Services.

Concerning unit labour costs, despite the sustained moderation in nominal compensation per employee observed in 2012, a rebound in costs per unit of labour is recorded the euro area as a result of worsening labour productivity dynamics linked to negative output growth (Graph I.1.12). The increase in unit labour costs as compared to 2011 was strong especially in industry, on account of a more marked reduction in productivity (Table I.1.3).

1.5. LABOUR MARKET MATCHING AND LONG-TERM UNEMPLOYMENT

The analysis of flows into and out of unemployment helps shedding light on the drivers of unemployment dynamics.

The evolution of the job finding rate (a measure of the probability that an unemployed person finds a job within the next month) and of the job separation rate (a measure of the probability that an employed person becomes unemployed in the next month) are reported in Graph I.1.13. ([3]) The graph shows that, while the job separation rate spiked up at the start of 2009, and remained roughly stable at an elevated high level subsequently, the job finding rate has been falling almost continuously, reaching its lowest level at the end of the sample (2012q4).

In 2011 a new wave of job destruction is observed together with a major drop in job finding rates. In

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([3]) See Arpaia and Curci (2010) for a detailed description of the methodology.

2012 the job separation rate initially dropped but increased again in the last quarter. In turn, the job finding rate fell slightly at the beginning of 2012 and remained constant afterwards.

Graph I.1.13: **Job finding and job separation rates in the euro area**
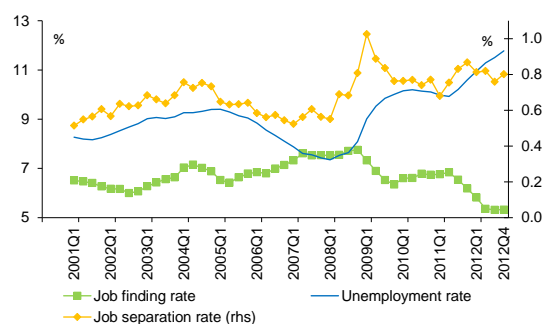
Source: Commission Services based on Eurostat data.

Job finding rates are distinguished according to the duration of unemployment in Graph I.1.14. As expected, the long-term unemployed are less likely to find a job than those workers that just entered the unemployment pool. Such a difference is particularly visible in good times, while during periods of weak labour market the job finding rate of short-term unemployed tends to get closer to that of the long-term unemployed.

Graph I.1.14: **Job finding rate by duration of unemployment, euro area**
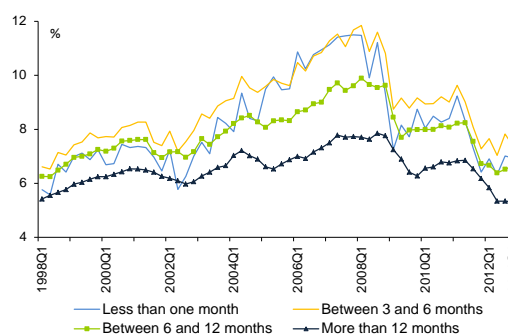
Source: Commission Services based on Eurostat data.

In particular, the 2009 recession brought about a sudden drop in the probability of finding a job irrespective of the length of the unemployment spell, but the drop was larger for the short-term unemployed. This phenomenon is related to the wave of job dismissals that took place in 2009: a fast increase in the population of short-term

unemployed implies a drop in the average job-finding probability even without a decrease in the number of job opportunities. An analogous pattern is observed at the end of 2011, which was characterised by a second wave of job dismissals.

Job finding rates appear to have been improving somewhat for the short-term unemployed in 2012, while they were virtually constant for the long-term unemployed in the last three quarters of 2012.

Graph I.1.15: **Jobless rate for 1 year or more in the EU, the euro area and the US (% of total labour force)**
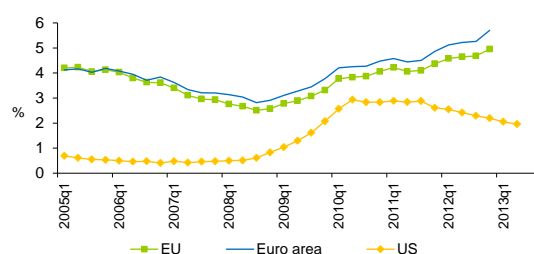
Source: Eurostat and BLS.

Since the long-term unemployed face a lower job-finding probability, the composition of unemployment by duration matters for the dynamics of the overall job finding rates. The data show that long-term unemployment as a proportion of the total labour force has continued to increase from about 3% in 2008 to about 5% in the EU and the Euro area (Graph I.1.15). This trend contributed to the downward path of job finding rates in the euro area and it seems to be accelerating since late 2012. Looking forward, there is the risk that a growing share of long-term unemployed will further depress job finding rates.

Graph I.1.16 depicts the Beveridge curve for the euro area, the relationship linking job vacancies to the unemployment rate. During the normal course of the business cycle vacancies and unemployment move in opposite directions, thus the Beveridge curve has a negative slope. An outward shift of the Beveridge curve may be caused by deteriorating matching efficiency, implying that more vacancies are needed to keep unemployment at a given level, while the opposite happens if the matching efficiency improves. It is an empirical regularity that during the course of a full business cycle the Beveridge curve performs a counter-clockwise cycling movement (as vacancies adjust faster than

unemployment), rather than just moving along a downward-sloping interval.

Graph I.1.16: **Beveridge curve for the euro area, 1995q1-2013q2**
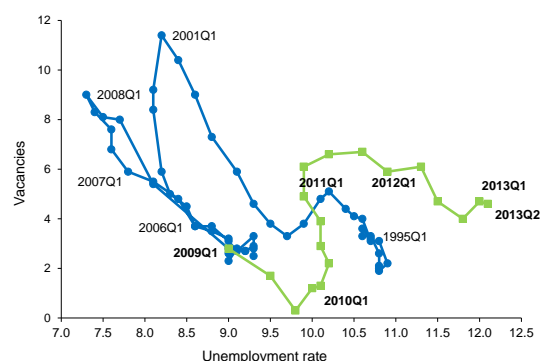
(1) Job vacancies are approximated with the survey based indicator of labour shortages.
Source: Commission Services.

Graph I.1.16 shows that vacancies fell and unemployment grew considerably at the start of the recession of 2008-2009, in line with the prediction that labour demand shocks will induce a movement along the Phillips curve down and to the right. The short-lived recovery of 2010 brought about a substantial growth in vacancies, followed by a reduction in unemployment with some lag. The vacancy-unemployment relation starting from 2010q1 therefore followed the typical counter-clockwise adjustment to a labour demand shock.

This adjustment trajectory is perturbed in 2011. Vacancies grow at a slower rate at first and then start to fall. Meanwhile, unemployment starts growing at an increasingly fast rate. The period 2011q1-2012q4 is characterised by an important drop in vacancies accompanied by a major increase in unemployment: a typical pattern observed in periods characterised by negative labour demand shocks and increased job shedding. This phase was interrupted at the end of 2012, where vacancies recovered somewhat and the unemployment growth decelerated.

Since the start of the crisis, the Beveridge curve of the euro area appears to have shifted outward. To what extent such a shift is only temporary, and mostly linked to incomplete adjustment to the two subsequent labour demand shocks of 2009 and 2011, or permanent, being associated by persistently reduced job finding rates and increased

job destruction rates, is difficult to tell at this stage. Chapter II.1 of this report aims at addressing this question, and results indicate that an answer requires country-level analysis. In some countries, there is clear evidence of a probably long-lasting outward shift in the Beveridge curve amid worsened labour market matching; in other countries the evidence is less clear cut; for a few countries, the evidence indicates instead an inward shift in the Beveridge curve, and an improvement in the extent to which vacancies and jobseekers are matched in the job market.

Such evidence has relevance from a policy point of view. Labour markets in the euro area were hit by repeated labour demand shocks that created slack and were not followed by the typical adjustment process in vacancies and unemployment. In some countries, the sheer magnitude of job destruction, coupled with growing mismatch along the skill and industry dimensions, led to persistently lower job finding rates, a lengthening of the unemployment duration, and worsened labour mismatch on a sustained basis. In these countries, structural policy action aimed at easing labour market adjustment and improving labour market matching is warranted.

1.6. CONCLUSIONS

In 2012, the recession in economic activity in the euro area and the EU was paralleled by falling employment and a rise in unemployment rates. The unemployment rate for the euro area has reached a peak of 12.1% in the euro area in March 2013 and 11% in the EU. The dispersion of unemployment rates across countries further increased.

In the second quarter of 2013 unemployment growth was decelerating. The unemployment rate of the EU28 stopped growing relative to the previous quarter and in July 2013, it confirms again stable from the previous month. The response of the labour market to the rebound of economic activity in 2013q2 was therefore unusually fast. It is however early to judge if these recent developments are the inversion of a trend or just a temporary pause in an otherwise upward tendency for unemployment.

The activity rate kept rising mainly because of the presence of increased female participation linked

to 'added worker effects', and higher participation by older workers. It appears however that 'discouragement effects', whereby unemployed people stop searching for a job, are on the rise.

Headcount employment fell despite considerable downward adjustment in average hours worked. As opposed to the first post-crisis wave of reductions in average hours worked occurring in 2009, downward adjustment in labour input on the intensive margin in 2012 has been taking place together with a marked reduction in headcount employment.

Despite an increase in unit labour costs linked to falling labour productivity in the recession, wage growth remained subdued, with a further fall in the growth rate for nominal compensation per employee at euro-area level. However, the extent of wage moderation needs to be assessed against the background of a very significant increase in unemployment. In this respect, it appears that the euro-area Phillips curve is somewhat flattening, as the elasticity of wages with respect to unemployment is falling. Explanations are most likely linked to well-anchored inflation expectations and nominal rigidities playing an increased role at low levels of (wage) inflation.

The increase in the euro-area unemployment in 2012 was linked both to job separation rates remaining persistently high after the wave of job dismissals in 2011 and job finding rates remaining persistently at a level that is the lowest since the start of the crisis. The share of long-term unemployed has been increasing at an accelerated rate, which does not bode well for job finding rates looking forward. The Beveridge curve appears to have shifted outward in light of the two major labour demand shocks that took place in 2009 and 2011 and a possible structural trend towards worsened labour matching.

2. RECENT EMPLOYMENT DEVELOPMENTS

2.1. INTRODUCTION

In 2012, labour market dynamics in the EU were generally weak, reflecting the recessionary environment, but continued to differ substantially from one country to another. While employment growth since 2011 was robust in the Baltics, Hungary, Malta, Romania, considerable employment losses were recorded in Croatia, Cyprus, Greece, Spain, and Portugal. Differences in employment and unemployment dynamics reflected to a large extent GDP growth differences, but a non-minor role was played by different responses of national labour markets to economic activity.

The most recent developments recorded at mid-2013 suggest that unemployment growth has stopped growing for the EU aggregate. It appears that such trend is influenced mostly by the substantial drop in unemployment rates recorded in a number of non-euro area countries (Hungary, the Baltics) but also by more contained unemployment reductions in a number of euro-area countries that were until 2012 characterised by major deteriorations in labour market in recent years, including Ireland, Portugal, and Spain, where unemployment in fact stopped growing. Conversely, the second quarter of 2013 revealed negative surprises for Cyprus, the Netherlands, and Slovenia.

This chapter provides a detailed analysis of labour market trends at the EU country level. It looks at employment, unemployment, participation, and job market flows. Special attention is devoted to data disaggregated by age, gender, national origin, and type of job contract (temporary versus permanent, part-time versus full-time).

The remainder of this chapter is structured as follows. Section 2.2 describes the recent evolution of unemployment and the extent to which this is driven by economic cycles. Section 2.3 looks at employment and participation by country and by sector. Section 2.4 describes job market flows. Section 2.5 provides a disaggregated overview of labour market dynamics. Section 2.6 concludes.

2.2. UNEMPLOYMENT RATES

Unemployment in 2012 remained above pre-crisis levels in all EU countries except Germany, where it is much lower, and in Austria and Malta, where it is now at the same level as it was before the outbreak of the crisis. The increase was above average in Bulgaria, Croatia, Cyprus, Greece, Italy, Spain, and in Portugal. A considerable increase in the unemployment rate was recorded also in the Netherlands. Unemployment fell only in the Baltics, Germany and, partly, in Romania, whilst it remained roughly stable from 2011 in Denmark, Finland, Ireland, Malta and the UK (Table I.2.1).

Quarterly unemployment figures up to 2013q2 confirm that, on aggregate, the labour market situation remains tense, but with signs of deceleration in unemployment growth and some timid improvement in a number of cases. The strongest quarter-on-quarter fall in unemployment is in the Baltics, a development that confirms the strength of the labour market recovery that started already in the second quarter of 2011. Some timid signs of improvement in the first months of 2013 are visible in Bulgaria, Croatia, the Czech Republic, Denmark, Finland, Hungary, Malta, Poland, Portugal, and Sweden. Moreover, unemployment has stopped growing in Spain on a quarter-on-quarter basis. Conversely, the second quarter of 2013 reveals negative surprises for Cyprus, Greece, the Netherlands, and Slovenia.

Labour market improvements are manifest mainly after May 2013. In Spain and Italy the unemployment rate has fallen from the previous months, albeit very marginally, but the decline was somehow more substantial in Portugal. Here, the unemployment rate fell by 0.6 percentage points in the second quarter of 2013 compared with the previous quarter. Moreover, in July 2013, the seasonally adjusted unemployment rate fell by a further 0.2 percentage points from the previous month (Table I.2.1).

The enhanced labour market resilience recorded at mid-2013 is most likely linked to the signs of improved dynamism in economic activity. GDP growth quarter-on-quarter turned positive in 2013q2 for the EU and the euro-area aggregates, and for a majority of countries. What is unusual is

Table I.2.1:   **Recent unemployment rates, 2012q1-2013q2 and 2013m5-2013m7**

	2012Q1	2012Q2	2012Q3	2012Q4	2013Q1	2013Q2	2013M5	2013M6	2013M7
EU28	10.2	10.4	10.5	10.7	10.9	10.9	11.0	11.0	11.0
EA	10.9	11.3	11.5	11.8	12.0	12.1	12.1	12.1	12.1
BE	7.2	7.6	7.6	8.0	8.4	8.7	8.7	8.7	8.9
BG	12.0	12.3	12.3	12.5	12.9	12.8	12.7	12.7	12.7
CZ	6.8	6.9	7.0	7.2	7.2	7.0	7.1	6.8	6.8
DK	7.5	7.9	7.4	7.3	7.1	6.8	6.8	6.7	6.7
DE	5.5	5.5	5.4	5.4	5.4	5.4	5.4	5.4	5.3
EE	10.6	10.1	10.0	9.8	9.3	8.0	8.0	7.9	n.a.
IE	15.0	14.9	14.7	14.2	13.7	13.9	13.9	13.9	13.8
EL	21.9	23.9	25.4	26.1	26.6	n.a.	27.6	n.a.	n.a.
ES	23.8	24.8	25.6	26.1	26.4	26.4	26.4	26.3	26.3
FR	10.0	10.2	10.3	10.6	10.8	10.9	10.9	11.0	11.0
HR	14.9	15.1	16.0	17.5	16.7	16.5	16.4	16.5	16.7
IT	10.0	10.6	10.8	11.4	11.9	12.1	12.2	12.1	12.0
CY	10.3	11.4	12.4	13.4	14.6	16.4	16.3	17.0	17.3
LV	15.5	15.7	14.5	13.9	12.6	11.5	11.5	11.5	n.a.
LT	13.6	13.3	13.0	13.2	12.5	12.0	11.9	11.9	12.1
LU	5.0	5.1	5.1	5.2	5.4	5.6	5.6	5.7	5.7
HU	11.1	11.0	10.7	10.9	11.1	10.4	10.4	10.4	n.a.
MT	6.3	6.6	6.3	6.4	6.3	6.1	6.1	6.1	6.0
NL	5.0	5.2	5.3	5.6	6.2	6.7	6.6	6.8	7.0
AT	4.1	4.3	4.5	4.6	4.9	n.a.	4.6	4.7	4.8
PL	9.9	10.0	10.2	10.4	10.6	10.5	10.6	10.5	10.4
PT	14.8	15.6	16.2	17.0	17.6	17.0	17.0	16.7	16.5
RO	7.3	7.1	7.0	6.7	7.1	7.4	7.3	7.5	7.5
SI	8.1	8.5	9.4	9.5	10.6	11.2	11.2	11.2	11.2
SK	13.7	13.9	14.0	14.3	14.2	14.2	14.2	14.4	14.3
FI	7.6	7.7	7.8	7.9	8.1	8.0	8.0	8.0	7.9
SE	7.7	7.9	8.1	8.1	8.1	8.0	7.9	7.9	7.8
UK	8.2	7.9	7.8	7.7	7.8	n.a.	7.7	n.a.	n.a.

(1)Seasonally adjusted data.
Source: Eurostat, LFS.

the prompt response of unemployment to improved economic activity, which generally lags by about two quarters.

One possible negative explanation is that the change in unemployment in some countries was the result of falling participation associated to "discouragement effects" rather than signalling a quick labour market response. ([4]) Although participation remained resilient in most EU countries after the crisis and kept increasing at an accelerated pace in 2012 on aggregate (see Chapter I.1.), in selected countries there is a more recent reduction in activity, which indeed started in 2012 or early 2013 and is linked to an increased number of young or long-term jobless people abandoning the search of job (see below). An alternative

explanation is that the swift labour market reaction is linked to the effect of recent reforms or improved expectations on economic activity and the labour market outlook (broadly confirmed in the most recent Consumer and Business Surveys). Finally, temporary one-off factors are to be taken into account (e.g., linked to a positive touristic season in Southern EU countries, including due to geo-political tensions in North Africa and Middle East).

All in all, it is early to judge whether the stop in unemployment growth at mid-2013 is the start of an inversion of the trend observed so far or just a temporary pause, the answer depending crucially on the extent to which the recovery of economic activity will be sustained, substantial, and broad-based.

In 2012, divergence remained the dominant feature of European labour markets. At the end of 2012, the dispersion in EU unemployment rates marked a

([4]) Early Eurostat releases on activity rate figures for the second quarter of 2013 show a minor drop in the activity rate for Spain (from 74% in q1 to 73.9% in q2) and a stronger one for Italy (from 63.8% to 63.4%). The activity rate rose instead in Ireland (from 68.9% to 70.2%) and in Portugal (from 73.3% to 73.5%).

further increase from 2011, having been constantly on the rise since the inception of the crisis in 2007. The 2012 outcome is driven by the performance of Spain and Greece, on the one hand, and of Germany, on the other hand (Graph I.2.1). At the same time, it should be noted that divergence in unemployment has been indeed significant in the years of the crisis but not unprecedented, as similar levels were manifest in the early 1990s, when the EU candidates of the monetary union were about to start the process of macroeconomic adjustment in preparation for accession (see Chapter 1).

Graph I.2.1: **Evolution of distribution of the unemployment rate in the EU in recent years**
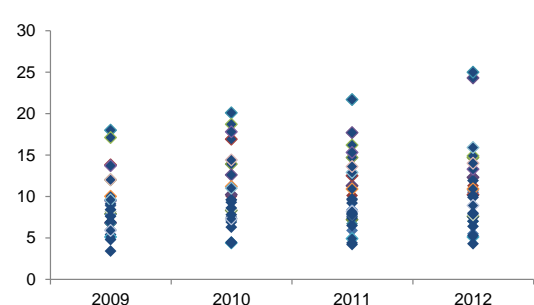
Source: Calculations based on Eurostat, LFS.

Some countries contribute more than others to the total number of unemployed in the EU. In light of country-size effects, the largest shares of total EU unemployment are concentrated in large EU countries, namely France, Germany, Italy, Poland, Spain and the UK. In some cases, the contribution to EU unemployment is not strictly related to each country's shares in total EU GDP. This is the case for Spain, where the share in 2012 EU unemployment is much higher than the country's share in total EU GDP.

In incremental terms, the increase in EU-wide unemployment over 2009-2012 was mostly driven by Spain, accounting for almost 40% of the overall increase in EU unemployment. All the other countries including large ones contributed much less to total unemployment. The second largest contribution with values close to 10% came from France, Italy, and Greece. Germany instead provided a significantly negative contribution to the rise in EU unemployment, as in 2011 (Graph I.2.2).

Graph I.2.2: **Unemployment in the EU: contribution to the increase in unemployment between 2009 and 2012 (in % of total EU change)**
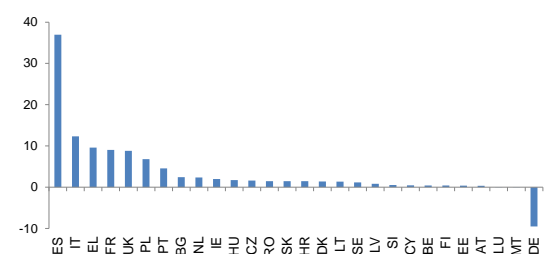
Source: Calculations based on Eurostat, LFS.

There are two main explanations as to why unemployment varies so significantly from one country to the other. First, divergent output developments; second, different responses of employment to output. It is possible to assess the relative importance of business cycle conditions by looking at actual unemployment changes compared with those predicted on the basis of the Okun's law. Deviations from Okun's law estimates should be interpreted as stemming from the effects of institutions, policies and/or country-specific temporary factors.

Graph I.2.3 shows the actual change in the rate of unemployment over the 2011-2012 period and the predicted one based on the Okun's law. The data suggest that output fluctuations play a role in explaining labour market dynamics, but there are also relevant deviations from predicted values. (^{5}) In particular, in the Baltics, the 2012 performance of the labour market was better-than-predicted. Conversely, a worse-than-expected performance is found for Croatia, Cyprus, Spain, Portugal, Italy.

Structural and institutional factors may account for deviations of unemployment changes from Okun-law predictions (for instance linked to employment regulations, intensity of temporary employment, presence of short-term working scheme). However, deviations from 2012, as in the case of 2011 (see European Commission, 2012a), seem mostly related to the role of employers'

(^{5}) Estimated values are meant to be mainly suggestive, as they are built against the assumption that the relation between unemployment and output is symmetric over the cycle and the Okun's coefficient is the same across countries. For a systematic analysis of the robustness of the Okun's Law over time, see Ball et al (2013). For the effect of institutional and structural features on Okun's coefficient see IMF (2010).

Graph I.2.3: **Change in the unemployment rate from 2011 to 2012: actual and predicted values based on Okun's law**
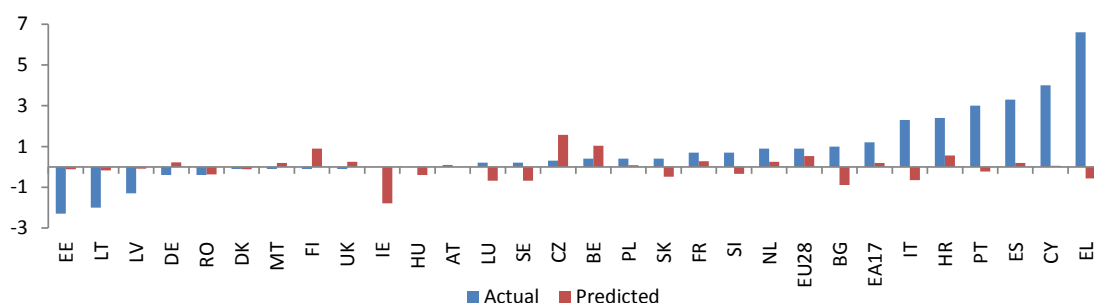
(1)Predicted values are out-of-sample forecast based on Okun's law and estimated on a panel of 27 countries for the period 1997q1-2007q1. Country and period fixed effects are included. The Okun's coefficient is 0.28, equal to standard estimates.
Source: Calculations based on Eurostat.

expectations. While in countries in the course of competing a rebalancing process (the Baltics) the labour market is reacting exceptionally well, in the countries mostly concerned by deleveraging and credit tightening the labour market worsened more than what explained on the basis of current GDP growth: expectations about protracted economic slack are likely to play a role.

2.3. EMPLOYMENT, ACTIVITY RATES, HOURS WORKED

2.3.1. Employment and activity rates

In 2012, activity rates increased across the board in the EU, at an accelerated pace compared with 2011. The only visible exception is Denmark where the activity rate fell by 0.7 per cent over the previous year, and to a smaller extent in Croatia, Germany and Portugal with drops between 0.1 and 0.3 per cent (Table I.2.2) ([6]). By contrast, in 2011, drops in activity were generally more significant and widespread. Year 2012 thus differs from the previous one in that it reinforces a medium-term trend of resilience in labour market participation that has been there since the inception of the crisis. Resilience is unlikely to result from demographics. In fact, in 2012, the activity rate of labour market participants between 15 and 24 years has dropped by 0.2 per cent since 2011, whilst rising by 1.8 per cent for those between 55 and 64 years. Moreover, while female participation rose, that of males dropped (see below). All in all, persistently rising activity rates, notably driven by females, seem the

result of an "added-worker" effect induced by the crisis and of falling effective retirement ages, which compensate for the reduced activity rate of the young and the exit from the labour force of long-term, discouraged job seekers. This may also be partly related to national policies that have supported female participation through, for example, child-care facilities (see Part II).

As hinted at earlier, there is also strong evidence of discouraged- worker effects, with workers that entered the labour market for the first time but have not formally looked for a job or registered as unemployed. The phenomenon of discouraged workers is relevant especially in Bulgaria, Estonia, Italy and Latvia, where on average over 10 per cent of the inactive population consists of people that are available to work but have stopped seeking. Over time from 2010 to 2012, the percentage of discouraged workers in total inactive population has been growing almost across the board with the exception of Austria, France, Latvia, Lithuania, Netherlands, Slovenia, Slovakia and the UK, countries where the situation is either stable or where timid improvement is registered.

Most worryingly, the share of discouraged workers over the total inactive population has been rising steeply in 2012 from the previous year in some crisis countries, namely Greece, Portugal, and Spain and, to a minor extent, in Italy; in this latter case, the increase comes on top of very high starting levels (Table I.2.3). A growing share of discouraged workers is observed in 2012 compared with the previous year also in Croatia, Netherlands, and Finland.

([6]) Figures into 2013 suggest an inversion in the upwards trend in Spain and, more visibly, in Italy.

Table I.2.2: **Activity rates, employment rates, and unemployment rates in EU Member States: 2010-2012 and 2013q1**

	Activity rates				Employment rates				Unemployment rates			
	2010	2011	2012	2013Q1	2010	2011	2012	2013Q1	2010	2011	2012	2013Q1
BE	67.7	66.7	66.9	67.0	62.0	61.9	61.8	61.3	8.4	7.2	7.6	8.5
BG	66.5	65.9	67.1	67.0	59.7	58.4	58.8	57.7	10.3	11.4	12.4	13.8
CZ	70.2	70.5	71.6	72.3	65.0	65.7	66.5	66.8	7.4	6.8	7.0	7.5
DK	79.4	79.3	78.6	78.2	73.3	73.1	72.6	72.0	7.6	7.7	7.7	7.9
DE	76.6	77.2	77.1	77.2	71.1	72.5	72.8	72.6	7.2	6.0	5.6	5.9
EE	73.8	74.7	74.9	74.9	61.0	65.1	67.1	67.0	17.3	12.8	10.4	10.5
IE	69.4	69.2	69.2	68.9	59.6	58.9	58.8	59.3	14.1	14.9	15.0	13.9
EL	68.2	67.7	67.9	67.8	59.6	55.6	51.3	49.1	12.7	17.9	24.5	27.6
ES	73.4	73.7	74.1	74.0	58.6	57.7	55.4	53.8	20.2	21.8	25.2	27.3
FR	70.5	70.4	71.0	70.9	63.9	63.9	63.9	63.5	9.4	9.3	9.9	10.5
HR	61.4	60.8	60.5	58.2	54.0	52.4	50.7	47.5	12.1	13.8	16.3	18.4
IT	62.2	62.2	63.7	63.8	56.9	56.9	56.8	55.5	8.5	8.5	10.8	13.0
CY	73.6	73.5	73.5	73.6	68.9	67.6	64.6	61.8	6.5	8.1	12.1	16.1
LV	73.2	72.8	74.4	74.0	59.3	60.8	63.0	64.1	19.0	16.5	15.3	13.3
LT	70.2	71.4	71.8	71.9	57.6	60.2	62.0	62.3	18.1	15.7	13.6	13.3
LU	68.2	67.9	69.4	69.1	65.2	64.6	65.8	65.3	4.4	4.9	5.2	5.5
HU	62.4	62.7	64.3	64.1	55.4	55.8	57.2	56.6	11.2	11.0	11.0	11.8
MT	60.4	61.6	63.1	63.6	56.1	57.6	59.0	59.7	7.0	6.6	6.5	6.1
NL	78.2	78.4	79.3	79.4	74.7	74.9	75.1	74.2	4.5	4.4	5.3	6.5
AT	75.1	75.3	75.9	75.2	71.7	72.1	72.5	71.1	4.5	4.2	4.4	5.4
PL	65.3	65.7	66.5	66.3	58.9	59.3	59.7	58.7	9.7	9.8	10.2	11.4
PT	74.0	74.1	73.9	73.3	65.6	64.2	61.8	59.7	11.4	13.4	16.4	18.5
RO	63.6	63.3	64.2	63.0	58.8	58.5	59.5	58.1	7.6	7.7	7.3	7.8
SI	71.5	70.3	70.4	70.3	66.2	64.4	64.1	62.4	7.4	8.3	9.0	11.2
SK	68.7	68.7	69.4	70.0	58.8	59.3	59.7	59.8	14.4	13.7	14.0	14.6
FI	74.5	74.9	75.2	74.0	68.1	69.0	69.4	67.4	8.5	7.9	7.8	8.9
SE	79.1	79.9	80.3	80.0	72.1	73.6	73.8	72.9	8.8	8.0	8.1	8.8
UK	75.5	75.7	76.3	76.3	69.5	69.5	70.1	70.2	7.9	8.2	8.0	7.9

(1) Seasonally adjusted data; age group 15-64. In Poland 2010 and 2011 data is based on National Census of Population and Housing 2002, while the rates for 2012 and 2013Q1 are based on National Census of Population and Housing 2011.
Source: Eurostat, LFS.

Table I.2.3: **Discouraged workers as % of inactive population**

	2010	2011	2012		2010	2011	2012
BE	1.1	3.3	3.0	LT	3.0	2.1	2.0
BG	11.4	11.7	11.4	LU	7.4	7.6	8.5
CZ	1.8	1.8	2.0	HU	5.8	6.4	6.5
DK	4.7	6.0	5.3	MT	1.4	2.6	3.2
DE	2.4	2.8	2.7	NL	8.5	7.7	8.4
EE	11.8	13.4	12.5	AT	7.1	6.6	6.8
IE	3.4	3.6	3.6	PL	5.5	5.6	5.6
EL	1.7	1.9	2.8	PT	2.8	6.5	8.8
ES	8.1	8.1	9.1	RO	6.6	7.1	6.8
FR	1.9	1.9	1.7	SI	3.2	3.1	3.0
HR	6.9	7.8	9.4	SK	2.8	2.7	2.7
IT	13.3	14.0	14.7	FI	7.3	7.4	8.1
CY	5.0	7.1	7.2	SE	6.4	6.0	6.5
LV	15.1	13.7	12.6	UK	5.8	5.3	5.3

(1) Persons available to work but not seeking are persons aged 15-74 neither employed or unemployed who want to work, are available for work in the next 2 weeks but do not seek work.
Source: Eurostat, LFS.

2.3.2. The adjustment of hours worked

In 2012, average hours worked fell on aggregate in the EU and the euro area. Such a reduction in hours worked was not sufficient to compensate the reduction of labour inputs on the "extensive margin", and in most countries it came together with losses in headcount employment (see Chapter 1, Graph I.1.8) This is most visible in countries like Cyprus, Denmark, France and Italy. By contrast, in some countries, substantial losses in headcount employment were accompanied by the increase in the number of hours worked per person (e.g., Spain, Portugal). Finally, in countries like Austria or Germany the reduction in average hours worked was coupled with increased employment. The reduction in average hours worked was facilitated in some cases by the re-financing of short-time working schemes (see Chapter I.4).

2.3.1. Employment developments at sectoral level

The sectoral decomposition of employment growth shows that most job losses over the period 2009-2012 have been concentrated in the construction sector followed by industry. In Greece and Spain the drop in employment in the construction sector was close to 50 per cent over just three years.

Graph I.2.4: **Change in total hours worked (cumulative changes since 2008q1)**
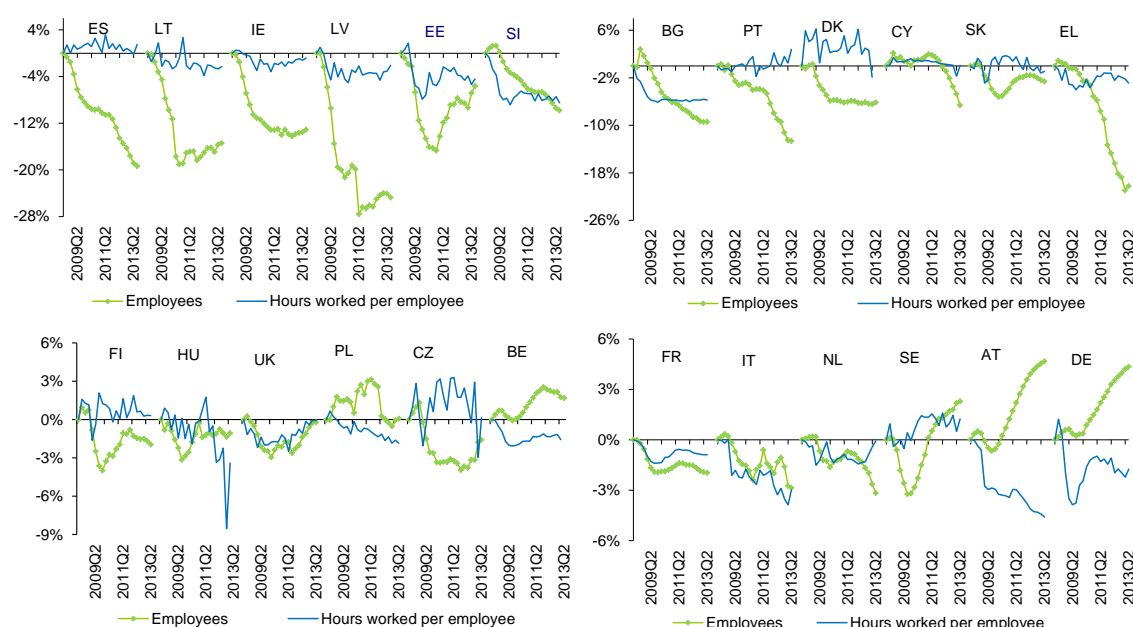
(1) Full data are not available for HR, LU, MT and RO.
Source: Eurostat, National accounts.

Table I.2.4: **Employment growth in different sectors: 2009-2012, cumulated (%)**

	Total	Agriculture	Industry	Construction	Market services
LU	7.2	15.0	0.5	3.7	8.2
MT	6.8	-6.3	3.7	-6.4	6.9
SE	4.4	5.4	-1.1	10.9	6.6
AT	4.1	18.0	1.3	3.2	4.5
EE	3.4	28.4	3.1	-10.9	-2.2
DE	3.3	6.5	1.5	4.2	2.8
BE	2.1	5.3	-4.8	1.9	0.8
SK	1.4	-12.4	0.1	-8.4	2.0
HU	1.4	1.6	2.6	-11.6	3.7
FI	1.2	4.3	-5.8	5.3	0.6
UK	0.8	-1.6	-1.1	-15.7	2.3
FR	0.0	-5.8	-5.5	-3.7	0.9
RO	-0.6	39.2	-3.3	-4.4	0.9
IT	-0.6	-0.5	-5.3	-11.5	2.8
EU27	-0.7	2.0	-3.5	-12.6	0.3
EU17	-0.8	0.1	-3.7	-13.7	-0.1
NL	-0.8	-4.0	-4.5	-9.5	1.5
PL	-1.6	1.8	-4.1	-6.7	-1.0
CZ	-1.7	-9.7	-1.6	-6.6	0.0
CY	-2.2	-4.5	-10.1	-23.6	-2.6
DK	-3.0	-2.5	-8.0	-5.9	-2.4
IE	-5.0	8.5	-8.3	-36.9	-4.1
SI	-6.0	-14.1	-7.2	-29.4	-7.0
PT	-6.4	2.6	-10.5	-25.2	-4.3
HR	-8.2				
ES	-8.4	1.4	-9.9	-42.3	-6.5
LT	-8.7	-5.1	-10.6	-25.9	-5.8
LV	-10.4	-7.6	-7.5	-23.0	-17.2
BG	-12.4	-12.2	-13.7	-39.4	-9.4

Source: Eurostat, National accounts.

It was between 20 and 30 per cent in Bulgaria, Cyprus, Ireland, Latvia, Lithuania, Portugal, and Slovenia (Table I.2.4) ([7]). Expectedly, employment fell the most in the countries that had gone through a real-estate bubble before the outbreak of the crisis.

Industry performed less bad but the drop in employment remains significant in Greece (down by 23.9 per cent over 2009-2012) followed by Cyprus, Bulgaria, Lithuania, and Portugal (down by an average of 10 per cent). Conversely, over the same period from 2009 to 2012 market services witnessed employment growth across the board, with the only exception of Greece and Latvia. The strongest rise in market-service employment over 2009-2012 was in Austria, Luxembourg, Malta, and Sweden.

Employment growth remains overall positive in non-market services, which are to a great extent

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([7]) The figures for the Baltics may appear at odds with those used in Table I.2.1. This is because these are based on the domestic concept, which includes all employed nationals irrespective of the place of residence, whilst those in Table I.2.1 are based on the resident concept. The gap between the two indicators provides a measure of net cross-border workers, which is indeed relevant especially for the Baltics.

dominated by the public sector. However, it is noteworthy that some job losses are registered also in this sector, being partially linked with fiscal consolidation episodes that relied on freezes in the turnover. This is the case for Bulgaria, Greece and Lithuania. In Greece, the fall is concentrated in the last year to coincide with the recent decision not to replace most of the retiring workers.

2.4. JOB MARKET FLOWS

Post-crisis finding rates up to 2012 are on average still below what they had been in the years preceding the outbreak of the crisis. Yet, the fall is especially relevant in the case of Spain, but also in the more flexible labour markets such as the Baltics, Ireland and the UK. Conversely, they are even higher than before the crisis in Denmark, Finland, Germany, and Romania.

Whilst average values confirm that the probability of entering the labour market is, in most vulnerable countries, still below past levels, the most recent flow data for 2012q4 show some signs of dynamism quarter-on-quarter with finding rates on the rise in Cyprus, Ireland, Lithuania, Portugal, Spain, and to a minor extent, in Greece. By contrast, access into the labour market is more difficult compared with the previous quarter in Estonia and Latvia (Graph I.2.6).

Decreasing finding rates are typically associated with a higher duration of unemployment compared with pre-crisis levels. Indeed unemployment spells over 2008-2012 lasted on average much longer than in the period before the outbreak of the crisis especially in the Baltics, Ireland, Spain, and the UK. Conversely, they fell significantly in the Czech Republic, Germany, Netherlands, Poland, Romania, and Slovakia.

Most interestingly, the latest figures for 2013q1 show a further increase in unemployment duration compared with average duration over 2008-2012 in the Baltics, Cyprus, Greece, Ireland and Spain. On the other hand, unemployment duration fell in 2013q1 in Germany and Hungary (Graph I.2.5).

Graph I.2.5: **Unemployment duration in months**
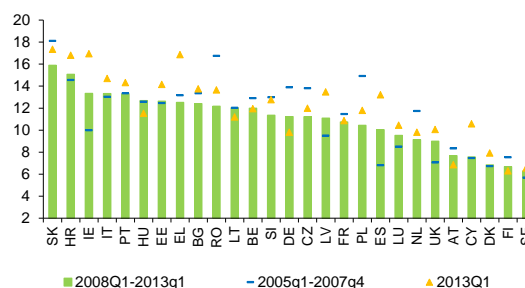
Source: Own calculation based on Eurostat.

Long-term unemployment has major implications not only for job finding rates and labour market matching, as discussed in the analytical chapter contained in this report, but also for poverty outcomes, as illustrated in Box I.2.1. In 2011, severe material deprivation rates above 15% are recorded in Bulgaria, Romania, Hungary and Greece, while at-risk-of-poverty rates above 20% are observed in Bulgaria, Romania, Greece, and Spain. While at-risk-of-poverty rates are affected mainly by income distribution changes, material deprivation depends especially on long unemployment spells, in light of loss of access to labour income, exhaustion of wealth, and loss of entitlement to benefits.

At the same time, job separation rates have increased in all countries since the inception of the crisis expect in Germany. Job destruction was significant since the crisis in the Baltics, Denmark, Greece, Ireland and Portugal. Yet, 2012 marks a change in the trend for some countries with a deceleration in the job destruction process in the Baltics, Greece, Ireland and Denmark. At the end of 2012, job separation rates remain well above the EU average in France and Spain, but also in the Baltics, Finland, and Sweden. In 2012q4, job destruction increased quarter-on-quarter especially in Cyprus, Italy, Malta, Lithuania, Portugal, Spain (thus partly off-setting stronger finding rates with in turn no significant impact on the quarterly unemployment rate), and Sweden.

Graph I.2.6: **Job finding and job separation rates 2008q1-2012q4**

Job separation rates (left axis) — Job finding rates (right axis)
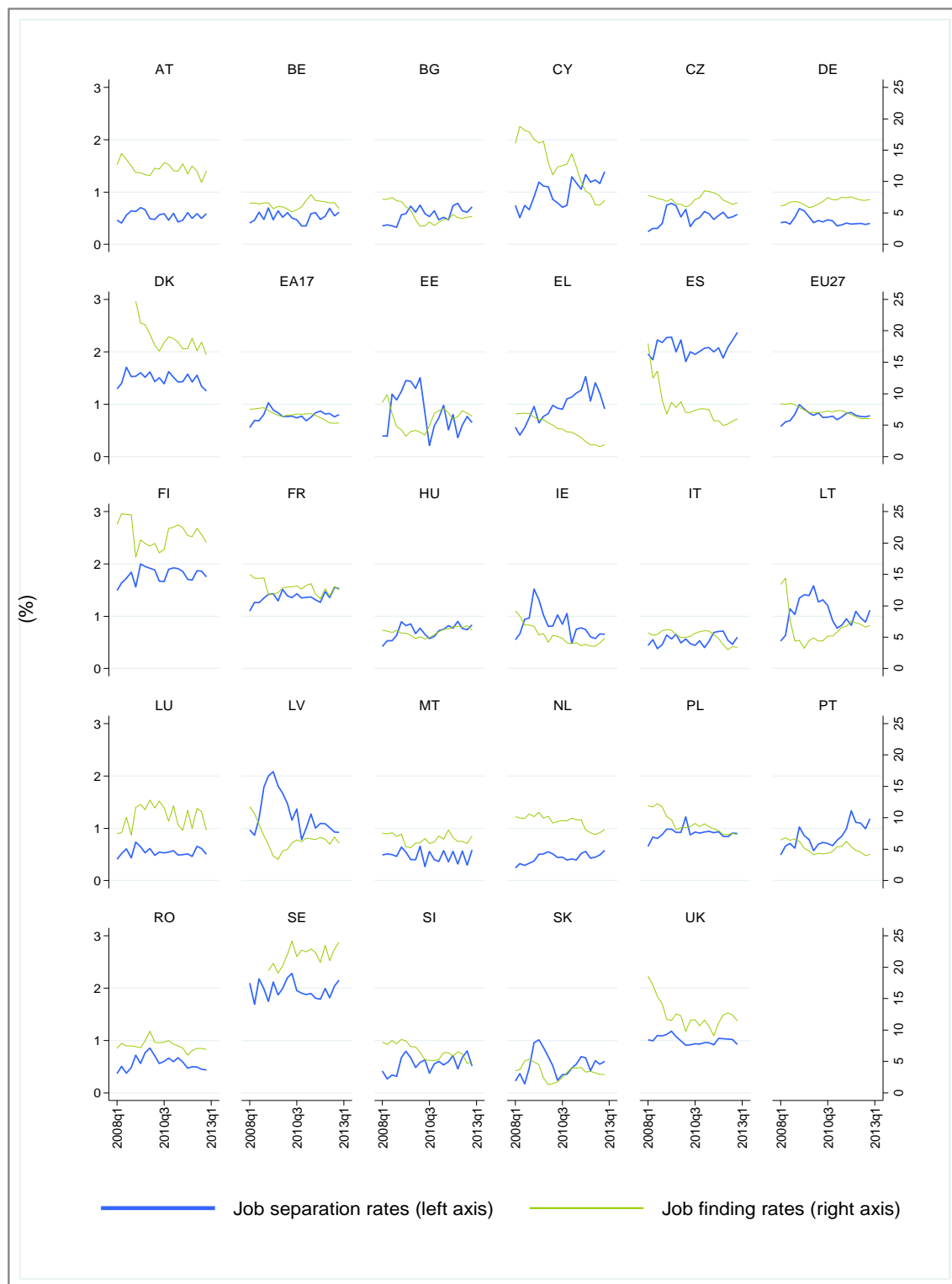
Source: Calculations based on Eurostat.

The countries that in 2012q4 went through a quarter-on-quarter fall in separation rates were Denmark, Greece, Estonia, Finland, France, Ireland, Latvia, Luxembourg, Poland, Romania, Slovenia and the UK, even if in Estonia and Latvia, this was associated with a fall in finding rates. ([8])

2.5. LABOUR MARKET STATUS OF DIFFERENT GROUPS

2.5.1. Gender

The labour market situation deteriorated for both genders, with women faring relatively better than men – as it has been the case since the beginning of the crisis. The female activity rate continued its rise, while the employment rate also increased slightly (Graph I.2.7).

Graph I.2.7: **Women: employment, activity and unemployment rates, EU28**

(1) Age 20-64.
Source: Eurostat, LFS.

As men's activity rate increased less, and their employment rate declined, the gender gaps in participation and employment rates were slightly reduced (Graph I.2.8). Still, as these gaps remain at around 13 pps, the current reduction is minor and mostly driven by the worsening conditions for males rather than by improved conditions for women.

The unemployment rate increased similarly for both genders, testifying of increased labour market pressures for all. Yet, increased labour market pressures did not result in strong withdrawal from

the labour market – as evident in the high activity rate reflecting high labour market participation.

Graph I.2.8: **Men: employment, activity and unemployment rates, EU28**
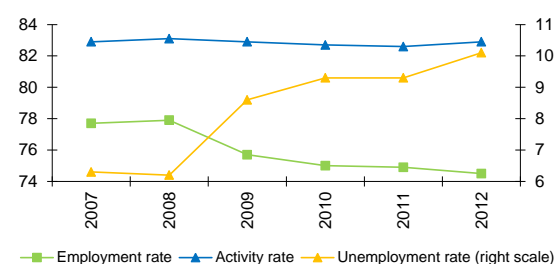
(1) Age 20-64.
Source: Eurostat, LFS.

The gender gap in employment rates narrowed in the majority of countries, but often as a result of strongly shrinking male employment rates (Spain, Portugal, Greece) while countries showing some signs of labour market recovery (Lithuania, Latvia) saw their employment gap increasing again. This reflects the higher sensitivity of male employment to the business cycle compared to female employment as well as the increase in the labour supply of married women when their husbands become unemployed.([9]) Consequently, the crisis-related reduction in the employment gap may partly prove a temporary phenomenon, while substantial employment gaps persist in Member States, with only 3 countries exhibiting an employment gap of below 5 pps, 19 countries having a gap of 5 to 15 pps, and 6 countries having a gap in excess of 15 pps.

2.5.2. Age

The young are a vulnerable group for several reasons. They have little or no work experience, are more likely to be hired with an unstable contractual relationship, and their short tenure usually implies limited access to unemployment benefits. The transition from education to work is often difficult – and those who enter the labour market very young tend to have left education very early. Moreover, the lack of job openings put an extra burden on those who have not yet managed to get a foothold on the labour market (see Box I.2.2).

([8]) It should be noted that employment data relating to the Baltics vary significantly depending on whether they are based on the national or domestic concept, due to the high number of nationals that work abroad and of non-nationals that are resident and working in these countries.

([9]) For an analysis of the added worker effect see last year's report.

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Box I.2.1: **Trends in poverty indicators**

The loss of employment status in the context of slack labour markets, with the consequent financial distress associated with a risk of prolonged detachment from the labour market as the length of the unemployment spell increases can all be considered a primary source of social distress. In this respect, it is important for the analysis of labour market developments to be complemented with an assessment of the social situation, and of poverty in particular. This box provides a brief illustration of recent developments in the *at risk of poverty rate* and the *severe material deprivation rate*, two key components of the Europe 2020 poverty headline target indicator, and explores the determinants of the latter indicator. ([1]) The Box has a narrow focus, as other important dimensions of poverty and social exclusion are not explicitly considered. As absolute and relative poverty respond very differently to the economic cycle, employment developments and changes in the income distribution, and in this respect the *severe material deprivation* indicator has been preferred for this type of concise analysis of poverty and labour market developments. ([2])

The *at risk of poverty rate* (AROP) is defined as the share of individuals whose equivalised disposable income falls below a given threshold, the standard threshold being 60% of the median income. It measures relative poverty, and in this respect it should be considered as a statistic describing the income distribution. In particular, countries with a more equal and compressed income distribution can display relatively high at risk of poverty rates in cross-country comparisons, due to a median income which is relatively high and close to the mean income. In addition, when looking at the evolution of this indicator over time, it is important to be aware of the underlying movements in the threshold level following developments in average incomes: it is common that during a recession mean and median incomes are also affected causing the at risk of poverty rate to decrease. An alternative indicator which can obviate this problem, at least for short-term comparisons, is the *anchored at risk of poverty rate*, for which the threshold is fixed at 60% of the median income in a given reference year, and it is kept constant in real terms for all other years.

The *severe material deprivation rate* can be considered as a measure of "absolute" poverty, understood in terms of the enforced inability to pay unexpected expenses or to afford certain goods or services considered to be desirable and necessary to lead an *adequate* life. The indicator is defined as the share of individuals in the population who are unable to afford at least four out of nine such items (to pay the rent, mortgage or utility bills; to keep the home adequately warm; to face unexpected expenses; to eat meat or proteins regularly; to go on holiday; to buy a television set; a washing machine; a car; a telephone).

Looking at the above two indicators, there is considerable variation across countries both in terms of levels and trends. ([3]) As shown in Graph 1 below, in some countries the two measures display a similar pattern, while in other countries they tend to go in opposite directions. Such variation can be related to different economic developments and to how the income distribution is affected. For example, the case of Latvia is emblematic: in the first period from 2004 to 2007 the severe material deprivation rate was on a declining trend, while the at risk of poverty was increasing. During the economic boom, lower incomes were growing lifting people out of severe deprivation, but inequality was increasing at the same time. With the economic crisis this trend reversed, with material deprivation increasing again, and relative poverty falling as average incomes were severely affected.

([1]) The headline indicator to monitor the EU 2020 Strategy poverty target is given by the at risk of poverty and social exclusion rate (AROPE). It is defined as the share of people in the overall population that are either at risk of poverty, or severely deprived or living in a house with very low work intensity. It is therefore composed of three distinct sub-indicators, each of them relating to a specific social condition. Both the headline indicator as well as its sub-indicators are available for sub-groups of the population, according to different individual and household characteristics, including by age, by gender, or by labour market status.

([2]) For a more thorough and in-depth analysis of social indicators, see European Commission (2012b).

([3]) It should be pointed out that, for a given survey year, EU-SILC indicators based on income data refer to incomes earned the year before. This implies that, for example, the at risk of poverty rates for 2011 as reported by Eurostat reflect in fact the situation prevailing in 2010 in terms of income distribution. On the contrary, indicators such as material deprivation are contemporaneous, reflecting the situation prevailing at the time of the survey.

(Continued on the next page)

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Graph 1: Severe material deprivation rate and at risk of poverty rate, 2005-2011

Source: Eurostat, EU-SILC

Absolute poverty is correlated with the economic cycle, while changes in relative poverty reflect changes in the income distribution. The severe material deprivation rate is significantly higher for the unemployed and changes in its levels correlate positively with unemployment and negatively with GDP growth (see Graphs 2 and 3 below). Relative poverty, instead, is less influenced by the economic cycle. Rather, changes in its level reflect changes in the underlying income distribution (see Graph 4).

Graph 2: Severe material deprivation rate, GDP growth and unemployment
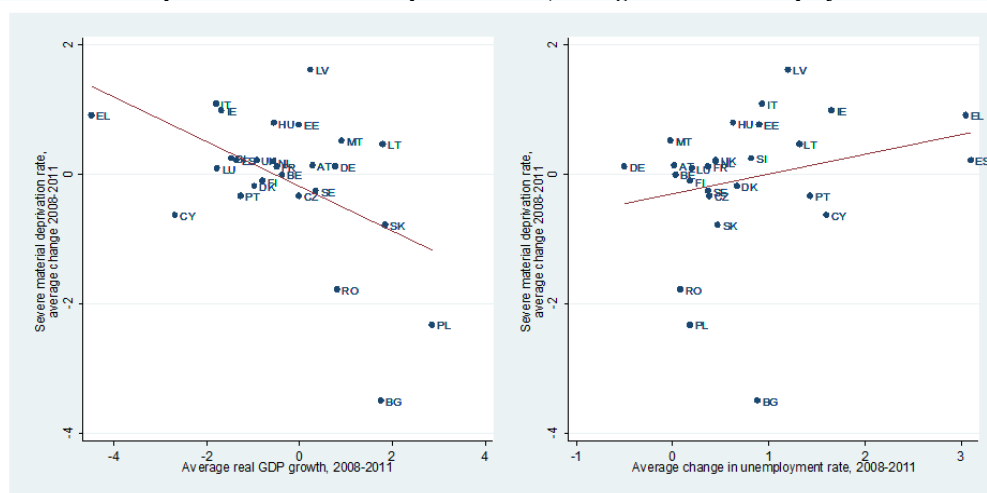
Source: DG ECFIN AMECO Database and Eurostat, EU-SILC

Graph 3: Severe material deprivation by working status - EU27
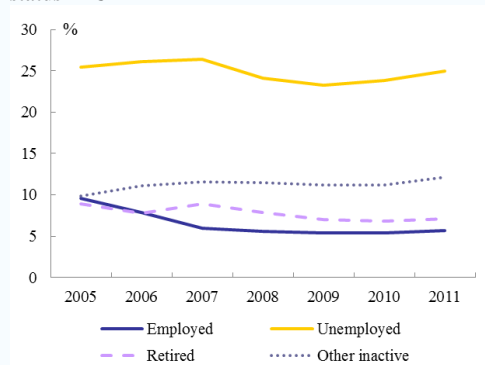
Source: Eurostat, EU-SILC

Graph 4: Changes in at risk of poverty and income distribution, 2008-2011
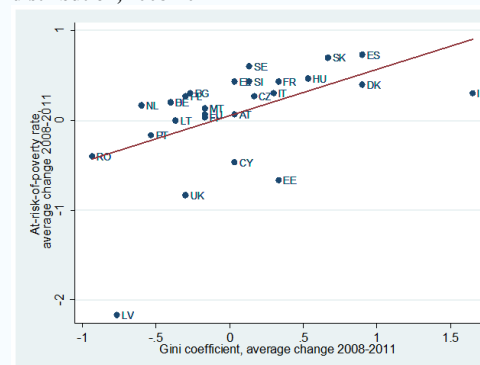
Source: Eurostat, EU-SILC

Econometric analysis exploiting time and cross-country variation can shed some light on the main determinants of severe material deprivation controlling for cyclical developments in economic growth and unemployment. Table 1 below reports the results of panel regressions which take as dependent variable the change in severe material deprivation rate. The (parsimonious) set of explanatory variables for the preferred specification include the lagged level of severe material deprivation, the lagged rate of growth of GDP per capita, the lag of the change in long-term unemployment over the active population, and a dummy for the crisis period. The sample is small, being based on the indicator of severe material deprivation from aggregate EU-SILC data for the EU27 Member States which is only available starting from 2005 at the earliest. The results of the estimations are nonetheless instructive, making it is possible to derive some useful insights.

Developments in long-term unemployment appear statistically significant in explaining the variation of severe material deprivation rates. When long-term unemployment is controlled for in column (2), the coefficient for the unemployment rate variable becomes not significant and even negative. This can be explained by the presence of temporary income protection measures embedded in the social safety net targeted to the unemployed. The variable of lagged change in long-term unemployment (expressed as a percentage of active population) does a better job in explaining changes in severe material deprivation rates. Indeed, what seems to matter for absolute poverty is not so much the increase in the number of job seekers, but rather the *persistence of unemployment* (i.e. the increase in the number of long-term unemployed) and the extent of net job creation/job destruction.

The variables of relative poverty and income distribution exhibit a weaker correlation with the absolute poverty. This result is not surprising, given the low unconditional correlation existing between these variables and severe material deprivation. In all regressions the "crisis" variable (dummy equal to 1 for the years after 2007) has a negative sign and is not significant. This does not mean that poverty has not increased particularly during the crisis, but rather that the increase in severe material deprivation after 2007 has not been a more severe one compared to the past, once developments in GDP per capita, unemployment and long-term unemployment are accounted for. This result is robust to the inclusion of year fixed-effects and other changes in the regression specification (results not shown).

In columns (6) and (7), a separate regression is estimated for a subset of Countries considered as "vulnerable" (Greece, Latvia, Ireland, Portugal, Spain, Italy, Hungary and Romania). The level of significance is generally low also due to the smaller sample, but the size and magnitude of the coefficients are comparable with those of the full sample regressions. In particular, the long-term unemployment variable maintains some explanatory power (albeit at a 10% significance level). The only difference is found in the lagged at risk of poverty rate, which for this subset of countries appears to be negatively associated with severe material deprivation, suggesting that changes in the income distribution have determined a relevant shift in the reference threshold for relative poverty, causing the two variables to move in opposite directions.

Box (continued)

Table 1: Determinants of severe material deprivation rates

Dependent variable	Change in severe material deprivation rate (y-o-y)							Change in anchored AROP
	Full sample EU 27 countries, years 2005-2011					Vulnerable countries		
Explanatory variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lagged level of dependent variable	-0.427***	-0.450***	-0.447***	-0.448***	-0.449***	-0.456***	-0.416***	-0.750***
	[-6.506]	[-7.736]	[-7.397]	[-7.813]	[-6.889]	[-7.990]	[-5.583]	[-9.560]
Lagged GDP per capita growth rate	-0.069	-0.122	-0.114***	-0.107**	-0.113***	-0.0785	-0.0505	-0.0543
	[-1.267]	[-1.644]	[-2.953]	[-2.310]	[-2.973]	[-0.966]	[-0.731]	[-1.671]
Crisis dummy (year > 2007)	-0.348	-0.46	-0.451	-0.414	-0.464	-0.00959	0.278	-0.482*
	[-0.887]	[-1.134]	[-1.165]	[-0.915]	[-1.168]	[-0.0196]	[0.994]	[-1.869]
Lagged change in unemployment rate	0.293***	-0.035						
	[3.673]	[-0.174]						
Lagged change in long-term unemp. over active pop.		0.545	0.512***	0.520**	0.506**	0.940*	0.935*	0.842***
		[1.631]	[2.848]	[2.777]	[2.691]	[2.036]	[2.300]	[3.544]
Lagged change in at risk of poverty rate				-0.0794			-0.307*	
				[-0.347]			[-1.960]	
Lagged change in Gini coefficient					0.0575			-0.0571
					[0.602]			[-1.070]
Constant	4.032***	4.473***	4.420***	4.396***	4.451***	5.666***	4.897***	8.781***
	[4.789]	[5.587]	[5.736]	[5.457]	[5.373]	[9.172]	[5.057]	[8.794]
Observations	177	177	177	177	177	52	52	120
R-squared	0.562	0.581	0.581	0.582	0.582	0.731	0.763	0.713
Number of countries	27	27	27	27	27	8	8	25

Robust t-statistics in brackets. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Notes: the group of vulnerable countries in columns (6) and (7) includes: Greece, Latvia, Ireland, Portugal, Spain, Italy, Hungary and Romania. The variables of at-risk-of-poverty, Gini index and low work intensity have been corrected to reflect the actual income year. Changes in variables are year-on-year absolute changes.

In the last column of Table 1, the change in the *anchored at risk of poverty rate* is taken as dependent variable. By keeping the threshold level constant (in real terms), the indicator reacts to absolute changes in income levels disregarding changes in the underlying income distribution. As expected, the results are comparable with those obtained for changes in material deprivation. In particular, the importance of long-term unemployment as a determinant of poverty outcomes is confirmed.

Graph I.2.9: **Employment rate change by 5-year age group, EU28**

Source: Eurostat, LFS.

Graph I.2.10: **Employment rate by 5-year age group, EU28**
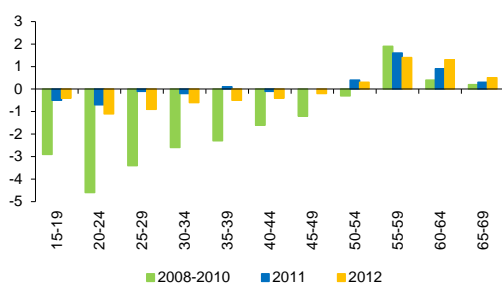
Source: Eurostat, LFS.
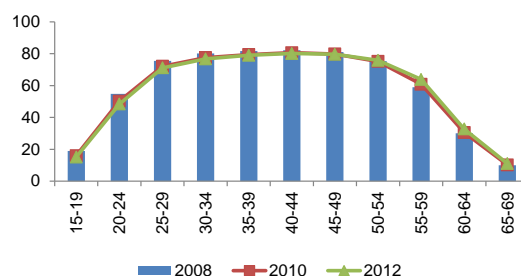
Graph I.2.9 shows the change in employment rates by age groups since the beginning of the crisis.

Older cohorts saw their employment rate increasing or maintained, while younger cohorts suffered significant employment losses. This resulted from the fact that elderly workers were

continuing to work as in some cases the legal retirement age increased and early retirement often became restricted, while young and middle age workers were strongly impacted by increased labour shedding and the scarcity of job openings. While in 2011 middle-aged workers saw their employment rate roughly unchanged, in 2012 they again suffered significant losses.

By 2012, persons below 25 years of age in 13 Member States experienced unemployment rates of about 25 per cent or higher, with peaks above 50% in Spain and Greece. The youth unemployment rate always exceeded the unemployment rate of adults (those older than 25 years) – but there were considerable differences between countries. While in countries such as Germany, Denmark and Estonia, the ratio of youth vs adult unemployment remained below 2.3.

Youth unemployment rose remarkably after the crisis in light of its strong sensitivity to economic activity (see Box I.2.2). This is confirmed by the fact that the countries that exhibited the largest increases in youth unemployment rates in 2012 were those registering also a particularly weak GDP performance (Cyprus, Spain, Greece, Italy, Portugal, and Slovenia).

2.5.3. Education

In 2012, the EU28 employment rate was lower than in 2011 for all educational groups with but the strongest decline year-on-year amongst the low-skilled. Low-skilled male workers were more affected than female workers, possibly because traditionally male-dominated sectors such as construction continued to register lay-offs in 2012.

Table I.2.5: **Employment, participation and unemployment rate by education**

Education ISCED	Low 1-2	Medium 3-4	High 5-6
EU28 Employment rate 2012	52.1	69.5	81.8
change 2011-2012	-0.8	-0.3	-0.3
change 2010-2011	-0.4	-0.1	-0.2
EU28 Participation rate 2012	63.6	76.6	87.2
change 2011-2012	0.6	0.2	0.3
change 2010-2011	0.0	0.0	-0.2
EU28 Unemployment rate 2012	18.0	9.3	6.2
change 2011-2012	0.7	0.7	0.6
change 2010-2011	-0.2	-0.2	0.1

(1) Age 20-64.
Source: Eurostat LFS.

Medium-skilled workers did also relatively worse than in 2011, whilst the mildest deterioration was amongst the highly skilled. In this latter group, female workers suffered relatively more than males.

Table I.2.6: **Unemployment rates of the low skilled by country, and recent changes**

	2012	11-12	10-11		2012	11-12	10-11
NL	6.9	1.2	-0.5	SI	15.8	1.1	2.1
CY	13.6	5.9	0.5	EU 28	18.0	2.0	0.6
LU	7.7	-0.1	2.5	EA 17	19.1	2.5	0.6
MT	8.1	-0.3	-0.1	EL	26.1	8.0	5.5
RO	7.6	-0.5	1.4	PL	20.0	1.0	0.8
AT	8.9	0.7	0	CZ	27.6	4.5	-0.9
DK	10.5	0.9	0	IE	25.1	1.5	2.4
IT	13.2	2.9	0.4	HU	24.3	-0.2	-0.2
UK	12.4	-0.1	0.5	EE	24.1	-1.8	-4.3
SE	14.2	0.9	-0.2	BG	27.9	1.5	3.7
FI	12.6	-0.4	0	LV	24.8	-3.8	-1.6
BE	13.7	0.3	-1.3	ES	33.0	4.8	1.9
PT	16.9	2.9	1.8	LT	34.3	-4.5	-1.0
DE	13.3	-0.8	-1.9	SK	43.3	2.1	-1.8
FR	15.5	1.1	-0.2	HR	18.8	1.9	4.3

(1) Age 20-64.
Source: Eurostat, LFS.

Conversely, activity rates improved across the board compared with 2011, but especially amongst the low-skilled, whose rate of unemployment increased by 2 percentage points compared with 2011. The number of low-skilled workers that remains unemployed remains high in 2012 especially in Slovakia, followed by Lithuania and Spain. Whilst it dropped in Lithuania compared with 2011, it continued to rise in Spain and Slovakia.

2.5.4. Nationality

In 2012, the number of employed EU foreigners (EU-28 citizens working in a country other than their home country) increased by 3%, while the number of non-EU foreigners and nationals (EU citizens working in their home country) slightly decreased. On the whole, intra-EU labour mobility remained strong despite the crisis. While in 2005 4.2 million EU citizens were working abroad, in 2012 this amounted to 6.5 million, with an increase of 200 thousand last year.

Over 2008-2012, net migration rates reflected the labour market situation, with positive rates in Luxembourg above all, followed by Austria, Belgium, Finland, Germany, Sweden. Negative migration rates were instead registered in high-

unemployment countries (e.g. Greece, Ireland, Portugal and Spain). In 2012, the situation continued to improve in some of the traditional recipient countries like Denmark, Germany, but also in Malta.

Graph I.2.11: **Employment growth by nationality, EU28**
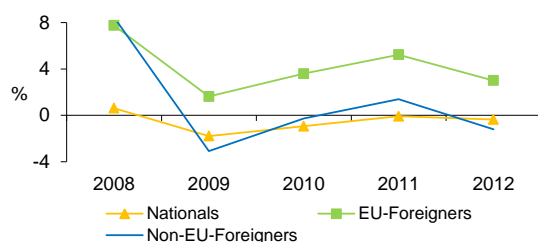
Source: Eurostat LFS, age 15-64.

Moreover, some of the countries that had in the previous years suffered from large outflows registered a reduction in emigration compared with 2011. This is notably the case for Latvia, Lithuania, and Ireland. On the other hand, the situation continued to deteriorate in Portugal and, in particular, in Spain where the net migration rate fell from -0.9 down to -5.1 in 2012 (Graph I.2.12).

Graph I.2.12: **Net migration rates (per 1000 inhabitants)**
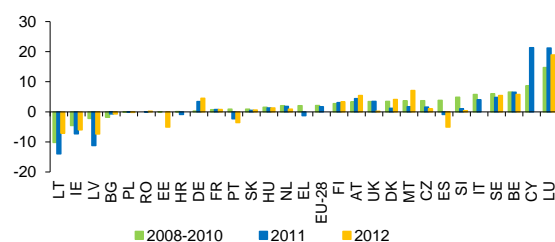
(1) No 2012 value was available for CY, IT, EL, EU-28
Source: Eurostat.

Graph I.2.13 provides figures specifically on intra-EU mobility for 2011 (latest available data). ([10]) Net intra-EU mobility rates closely reflect net migration rates. In absolute terms, net inflows are concentrated in large EU countries (i.e. Germany, France, Italy and the UK).

([10]) Mobility rates are calculated as the difference between immigration and emigration from and to other EU countries over the average population in the same year (per 1000 inhabitants). It should be noted that total in- and outflows inside the EU do not add up to zero due to gaps in the system of reporting.

Graph I.2.13: **Net mobility rates inside the EU (per 1000 inhabitants) and net mobility flows, 2011**
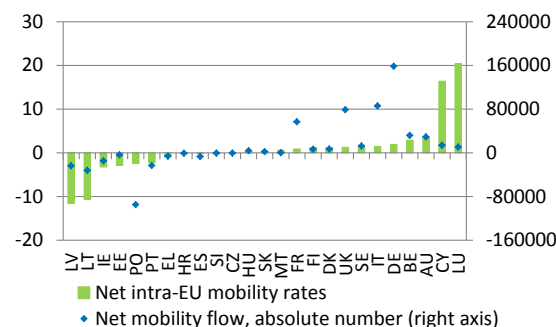
Source: Eurostat

2.5.5. Contract type

Temporary employment increased rapidly before 2008, but then took much of the brunt of the economic and financial crisis (Graph I.2.14). With the moderate economic recovery in 2010 and 2011, there was a small expansion of temporary contracts, yet as the labour market conditions deteriorated, a slump followed again in 2012. Permanent employment followed a similar pattern, but was more moderate. Self-employment, even though it has a reputation of being a last resort against unemployment, was roughly stable.

Graph I.2.14: **Employment growth by contract type, EU28**
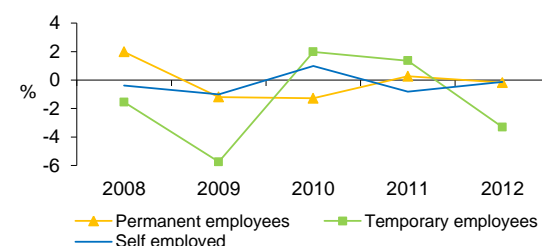
Source: Eurostat LFS, age 15-64.

Between 2008 and 2012 the EU28 lost 1.5 million temporary jobs – Spain in itself losing 1.5 million and Portugal 150 thousand, with much more moderate changes in other places. The number of permanent jobs declined by 3.7 million in Europe, with the biggest slump in Spain, by 930 thousand and in the UK, by 680 thousand – while Germany created 1.3 million permanent jobs.

Self-employment declined overall by 300 thousand, with the biggest declines in Spain by

450 thousand, Italy by 220 thousand and Portugal by 180 thousand. Yet, there were countries with considerable gains in self-employment: the UK increased self-employment by 250 thousand, France and Germany by 200-200 thousand, the Netherlands by close to 130 thousand.

The young were the most impacted by the decline in temporary employment as about 42% of the young have fixed-term contracts (Table I.2.7), while 11% of those aged between 25 and 54, and 7% for those in the 55-74 age bracket. The share of young on fixed term contracts even increased slightly during the crisis, from 40%, as less permanent contracts were offered.

Table I.2.7:	**Share of temporary employees, by age**				
Age	2008	2009	2010	2011	2012
15-24	40.1	40.3	42.1	42.5	42.2
25-54	11.3	10.9	11.3	11.6	11.3
55-74	7.5	7.5	7.6	7.5	7.3
15-74	14.1	13.6	14.0	14.1	13.7

Source: Eurostat LFS.

The ratio of part-time employment over total employment in EU28 continued to increase in 2012 to 19.2 per cent from 18.7 in 2011 (Table I.2.8). As this resulted more from the lack of full time jobs rather than a voluntary choice, the share of involuntary part-timers also increased, to close to 28%. While men and women usually are similarly represented among those with fixed term contracts, much more women than men are working part time.

Table I.2.8:	**Part-time to total employment and involuntary part-time: 2011 and 2012**	
	2011	2012
Part-time to total employment	18.7	19.2
Part-time to total employment (women)	31.5	31.9
Part-time to total employment (men)	8.1	8.4
Involuntary part-time to total part-time	26.1	27.7
Involuntary part-time to total part-time (women)	23.1	24.4
Involuntary part-time to total part-time (men)	36.4	38.8

Source: Eurostat, LFS.

Differences in the distribution of employment between permanent employment, temporary employment and self-employment persist (Table I.2.9). At EU level, the share of permanent employment increased slightly compared with 2011. Relatively strong increases took place in some countries, notably Germany, Latvia, Slovenia, Portugal, Sweden. On the opposite, a

reduction of the same magnitude was observed for the EU aggregate for what concerns the share of temporary contracts.

Table I.2.9:	**Distribution of contract types among the employed in % by country**				
	Permanent contract		Temporary contract		Self employed	
	2012	chg	2012	chg	2012	chg
EE	88.5	0.7	3.3	-0.9	8.2	0.2
LT	87.9	-0.3	2.4	-0.2	9.7	0.5
BG	85.5	0.0	4.0	0.4	10.6	-0.4
LV	85.3	1.5	4.3	-1.7	10.4	0.2
LU	85.0	-0.8	7.0	0.5	8.0	0.3
DK	83.8	0.3	7.9	-0.3	8.3	-0.1
MT	81.1	-0.2	6.0	0.3	12.9	-0.2
UK	81.1	-0.6	5.3	0.1	13.6	0.4
AT	80.6	0.6	8.3	-0.2	11.1	-0.3
HU	80.6	-0.1	8.4	0.5	11.0	-0.4
BE	79.8	0.5	7.0	-0.7	13.1	0.2
SK	79.0	0.3	5.7	0.2	15.3	-0.5
RO	78.1	-0.4	1.3	0.1	20.6	0.3
DE	77.1	0.8	12.4	-0.7	10.5	-0.1
IE	76.8	0.3	8.6	0.0	14.6	-0.2
SE	76.4	0.7	14.4	-0.6	9.2	-0.1
FR	75.8	0.2	13.5	0.0	10.8	-0.2
CZ	75.5	-0.6	6.8	0.2	17.6	0.4
FI	74.1	0.0	13.6	0.0	12.4	0.1
EU28	73.6	0.3	11.7	-0.3	14.7	0.1
CY	73.1	0.1	13.0	1.0	13.9	-1.1
SI	73.1	1.1	14.9	-0.8	12.0	-0.3
HR	72.6	1.1	10.6	0.2	16.8	-1.3
EA17	72.4	0.4	13.0	-0.5	14.6	0.0
NL	69.5	-1.1	16.5	0.8	14.1	0.3
IT	66.6	-0.3	10.7	0.4	22.7	-0.1
PT	65.9	1.1	17.2	-1.3	16.9	0.3
ES	63.6	0.6	19.7	-1.7	16.6	1.0
EL	60.4	0.3	6.7	-1.2	32.9	0.9
PL	59.3	0.1	21.7	-0.1	19.1	-0.1

(1) Countries are ranked by share of permanent contracts. Change is change in the ratio compared with previous year
Source: Own calculations based on Eurostat LFS.

The major reductions took place in Germany, Greece, Latvia, Portugal, Spain, Slovenia. Such developments seem in some cases mostly driven by relatively more intense job shedding in countries suffering major net employment losses. This appears to be the case of Greece, Portugal, Spain, Slovenia. In other cases (e.g., Latvia, Germany), the fall in the share of temporary employment could mostly reflect the creation of permanent jobs and the conversion of newly created temporary jobs into permanent ones.

2.6.   CONCLUSIONS

In 2012, labour market dynamics continued to differ substantially from one to another, further contributing to unemployment dispersion across the EU. While employment growth was robust in the Baltics, Hungary, Malta, and Romania,

considerable employment losses were recorded in Croatia, Cyprus, Greece, Spain, and Portugal.

In the countries deeply affected by the deleveraging process and tight credit conditions, the worsening of the labour market was stronger than expected on the basis of GDP growth: employers' expectation on economic prospects could have played a major role.

At mid-2013, unemployment reductions were recorded in a number of euro-area countries that were until 2012 characterised by major deteriorations in labour market in recent years, most notably Ireland, Portugal, Spain. The swift reaction of the labour market to a stabilising economic activity could partly be linked to improved expectations, but the dynamics of activity rates and discouragement effects need also to be considered, as well as one-off factors.

The extraordinary resilience in labour market participation that has been manifest since the inception of the crisis is confirmed in 2012. This is unlikely to stem from demographics, but seems rather associated with an "added-worker" effect given the significant rise in female participation. On the negative side, there is evidence of a strong rise in the number of discouraged workers since the outbreak of the crisis and further over 2010-2012.

Most worryingly, the share of discouraged workers in the total inactive population has been rising steeply in 2012 compared with the previous year in some vulnerable countries (Greece, Portugal, Spain).

In terms of hours worked, 2012 marks a difference because hours worked fell on aggregate for the first time after the 2009 recession. However, as compared with 2009, the fall in hours worked coincided with a remarkable fall in headcount employment on many countries. Spain and Portugal differ from the behaviour of hours worked compared with the majority of other EU countries, as here hours worked in fact increased, whilst but not being able prevent job losses, as it had instead happened in previous years.

Concerning flows, job finding remain historically at very low levels in most countries, while job separation rates remained high. Job finding rates fell in 2012 especially in Cyprus, Greece, Portugal, Spain, Italy, the Netherlands, Slovenia. However, some signs of stabilisation seem visible at the end of 2012, notably in Spain. As for job separation rates, noteworthy increases were recorded in Cyprus, France, Spain, Sweden. A considerable reduction in job separation rates is observed in the Baltics, Ireland, Greece, and Denmark.

Youngsters were especially affected in the crisis and continue to represent the most vulnerable group also in 2012. This is related to the fact that unemployment of young persons below 25 years is more sensitive to the cycle than unemployment of the rest of the labour force: those countries witnessing a faster rise in youth unemployment in 2012 are in general those recording also a worse GDP performance.

Besides youngsters, the crisis confirms to have had an impact especially on the low-skilled, mostly male workers, a trend that has continued into 2012 and which may be associated with the dramatic retrenchment of traditionally low-skilled male-dominated sectors such as construction, and that in fact concerned especially the countries where the crisis was preceded by a real-estate bubble. The share of temporary workers fell slightly on aggregate in the EU and more markedly in countries such as Germany, Latvia, Greece, Portugal, Spain, Slovenia. However, while for the countries characterised by worsening unemployment amid protracted job shedding, such figures are likely to mostly reflect the shedding of temporary labour rather than the conversion of temporary contracts into permanent ones.

Mobility within the EU was still shaped by East-West flows, with workers moving from low-wage new Member States towards higher wage old Member States. Still, the absolute size as well as relative importance of mobility from high-unemployment old Member States towards low-unemployment Member States increased considerably, thereby contributing to the reduction of intra-EU labour market divergences.

Box I.2.2: **Youth unemployment: some basic facts**

Youth unemployment has been growing throughout Europe since 2008 and has reached dramatic levels in a number of countries (more than 30% in Ireland, Italy and Portugal, more than 50% in Greece and Spain, see Graph 1 below). Many working age young people have also dropped out of the labour force and become inactive, with inactivity not always corresponding to longer time spent in education. With a view to tackle the issue, the European Commission has, among other things, mobilised funds to help young individuals find a job and remain attached to the labour market or involved in education and training (Youth Employment Initiative). Funds are targeted to youth below 25 years and to the regions with the highest incidence of youth unemployment. This box summarises a number of distinguishing features of youth unemployment across EU countries.

Graph 1: Youth unemployment rates (% labour force 15-24), youth activity rates (% population 15-24), NEET rate (% not active, not in education or training on population 15-24)
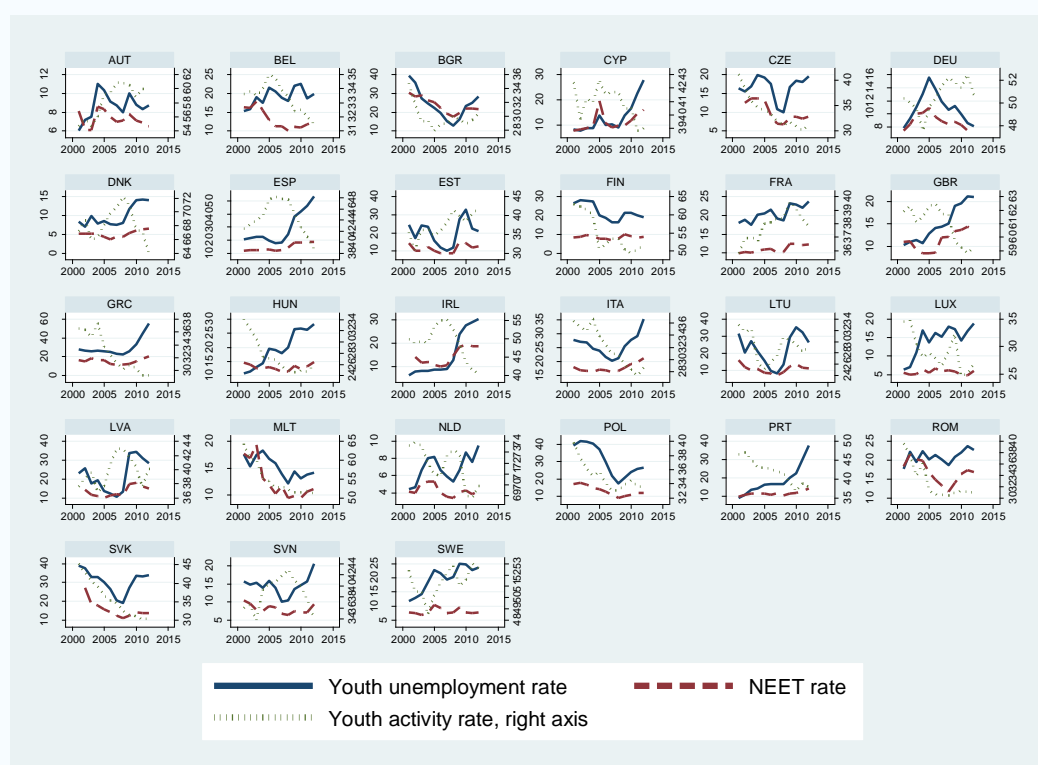
Source: Eurostat, LFS

Fact 1. Unemployment rates are normally higher for youth, and became even higher after the crisis. Graph 2 shows that unemployment rates in the EU are on average considerably higher for young individuals below 25 as compared with other age groups. It also shows that the difference in unemployment rates between youth and the rest of the labour force was higher in 2012 than in 2007. This is broadly valid for all EU countries, although in some countries (e.g., Italy) notably higher unemployment rates are recorded also for persons between 25 and 29.

Fact 2. Unemployment rates for the youth are on average about 2.5 times higher than those for the whole labour force. There are important differences across countries, however. In particular, Member States with dual training systems (e.g., Austria, Germany, the Netherlands) tend to have lower ratios of youth unemployment on overall unemployment (Graph 3). It is a notable fact that these ratios tend to be

stable *within* Countries, displaying a rather low variability over time, irrespective of the level of the unemployment rate.

Graph 2. Unemployment rates by age, EU28, 2007 vs. 2012
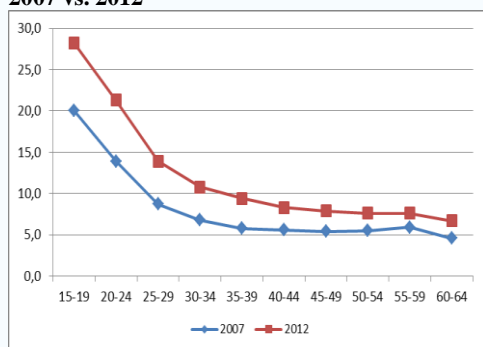
Source: Eurostat, LFS

Graph 3. Share of youth unemployment rate on overall unemployment rate, 2000-2012
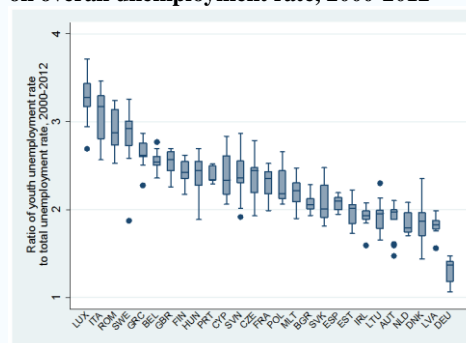
Source: Eurostat, LFS

Fact 3. Youth account for a non-negligible fraction of total unemployment. Despite being a relatively small share of the overall labour force, young persons between 15 and 24 account for between 1/5 and 1/3 of total unemployment in most EU countries (Graph 4). There are marked cross-country differences: while the share of the young unemployed in total unemployment is below 15% in Germany, it is higher than 30% in Finland, Sweden, the UK.

Graph 4: Share of youth unemployed on total unemployed persons, average 2000-2012
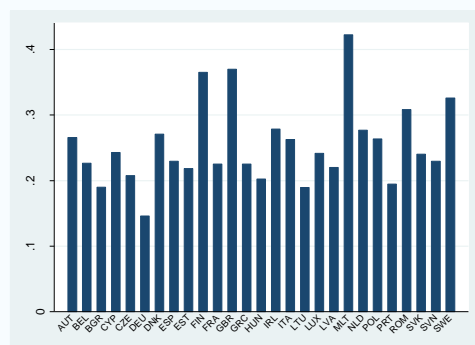
Source: Eurostat, LFS

Graph 5: Ratio of youth to total long-term unemployment rates, average 2000-2012
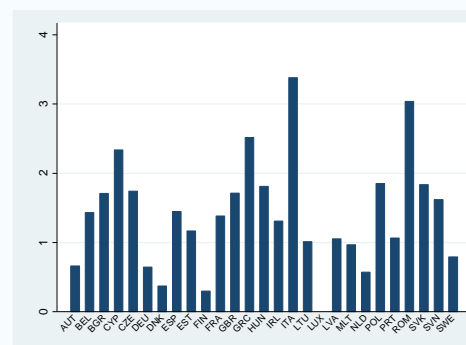
Source: Eurostat, LFS

Fact 4. Youth are not necessarily at higher risk of long-term unemployment. Whether the average length of the unemployment spell is higher or lower for the young depends to a large extent on economic, social, institutional factors that change from one country to the other. Graph 5 shows that while youth are much more likely to be long-term unemployed than the overall labour force in Italy, Romania, Greece, they are much less likely in Austria, Germany, the Netherlands, Finland. Between 2008 and 2012 the share of youth population among the long-term unemployed has remained rather stable in most countries, with the exception of the Baltic countries, where the share of youth among the long-term unemployed has decreased substantially after 2009.

Fact 5. Youth unemployment is more sensitive to the cycle. This is linked to a number of reasons: (i) new entrants in the labour market are generally young, and suffer from reduced job finding rates if the economic cycle is weak; (ii) young workers are more likely to be hired with temporary contracts, and more easily

dismissed during recessions for this reason; (iii) even in case of hiring with permanent contracts, the young are dismissed more easily, in light of 'last in, first out' practices in individual or collective dismissals. The Table below reports results from the estimation of the 'Okun relation' linking changes in the unemployment rate to economic growth. Results show that youth unemployment is about twice more responsive to growth than overall unemployment. This stronger sensitivity to the cycle explains why youth unemployment has surged more dramatically than overall unemployment. Results indicate also that changes in youth unemployment are less persistent in time, as revealed by the less significant coefficient of the lagged dependent variable. Both these findings suggests that, as the recovery in output gains momentum, youth unemployment will drop faster than overall unemployment, as it happened for instance recently in the Baltic countries (Graph 1).

Table: Youth unemployment and the cycle: evidence from the estimation of Okun relations

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)
Explanatory variables	Change in unemployment rate			Change in youth unemployment rate		
	EU27 2000-2012	EA 17 2000-2012	EU27 2000-2007	EU27 2000-2012	EA 17 2000-2012	EU27 2000-2007
Lagged dependent variable	0.272***	0.289***	0.390***	0.0958	0.144**	-0.0600
	[5.107]	[10.36]	[4.334]	[1.425]	[2.622]	[-0.515]
GDP growth	-0.294***	-0.283***	-0.199***	-0.669***	-0.696***	-0.636***
	[-10.13]	[-8.664]	[-4.769]	[-13.46]	[-11.41]	[-5.489]
Constant	0.782***	0.723***	0.561***	1.998***	1.896***	1.919***
	[11.31]	[11.43]	[3.367]	[16.02]	[16.05]	[4.057]
Observations	378	238	216	345	217	210
R-squared	0.604	0.618	0.366	0.481	0.524	0.112
Number of countries	27	17	27	27	17	27

Notes: *, **, ***, stand, respectively, for significance at 10, 5, 1 per cent level. Specifications include fixed country effects and standard errors are robust with respect to heteroschedasticity and non-independence of errors within countries.

Graph 6: Ratio of youth on overall long-term unemployment rate, average 2000-2012
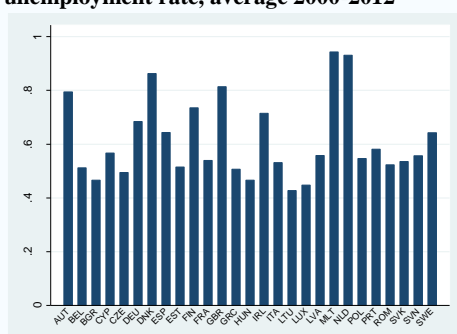
Source: Eurostat, LFS

Graph 7: Youth unemployment rates and NEET rates, 2012
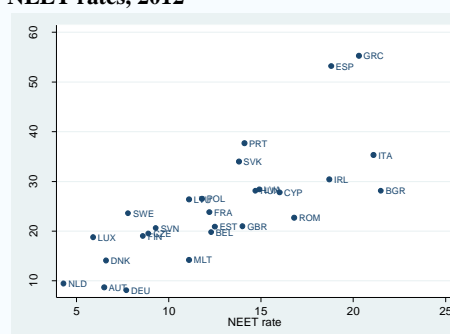
Source: Eurostat, LFS

Fact 6. Higher youth unemployment is linked to lower activity rates and a higher incidence of NEETs.
Youth are less likely to be economically active than the rest of the population (Graph 6) and activity rates for the young tend to vary considerably over the cyle. As shown in Graph 1 above, during the crisis youth activity rates dropped considerably in most EU countries. Despite such a drop, youth unemployment has grown in a majority of countries. Youth unemployment is also positively linked to the share of young who are neither employed, nor in education or training (NEET). Countries with higher youth unemployment rates

Box (continued)

also tend to exhibit higher NEET rates (Graph 7). Over time, youth unemployment rates tend to co-move with NEET rates (Graph 1).

Fact 7. Unemployment spells at young age have long-term effects. Finally, an important aspect to be considered regards the *scarring effects* of unemployment, given by the negative long-term consequences of experiencing unemployment, in particular long-term unemployment at the beginning of one's career. A body of academic literature has emerged on this topic, looking both at the effects in terms of future earnings and employment prospects, with a particular focus on young workers with little work experience and on the transition of young graduates from education into the labour market. Results from these empirical studies differ somewhat depending on the country and the group of individuals being studied, but the scarring effects of unemployment for the youth population (either in terms of employment prospects, or in terms of future earnings, or both) are substantial. In particular, the cost of prolonged unemployment appears to be related not only to skill depreciation, but also to the *foregone* accumulation of human capital on the job, as well as to negative signalling effects to potential employers.

3. RECENT WAGE AND LABOUR COST DEVELOPMENTS

3.1. INTRODUCTION

This chapter reviews wage and unit labour cost developments at the country level with a view to highlight patterns of wage adjustment. Developments in wages and unit labour costs are discussed against internal and external adjustment needs facing some countries.

Compensation per employee grew at near-record lows in 2012, owing to the continued labour market slack. Unit labour cost grew at a moderate pace, but the growth rate accelerated somewhat due to a deceleration of labour productivity. Overall, the data suggest a continuation of the process of external and internal adjustment in the euro area countries facing important rebalancing needs. Real effective exchange rates based on unit labour costs are depreciating more in deficit countries. Real unit labour costs are falling more in countries with higher unemployment rates.

The rest of this chapter describes the main trends in compensation per employee and hourly labour cost index, analyses the relation between developments in compensation per employee and productivity and the decomposition of wages at sectoral level. It then analyses the evolution of unit labour costs and its main components, the tax wedge and the evolution of external competitiveness positions, as well as adjustment within the euro area. The last section summarises the main evidence.

3.2. TREND IN WAGES AND UNIT LABOUR COSTS

Compensation per employee in the euro area grew at a moderate rate in 2012, close to the record low of 1.8% recorded in 2009. At the member state level, differences in wage dynamics reflected mostly market forces and, to some extent, the effects of recent reforms in the wage setting system (see Box I.3.1).

The review of developments below only refers to aggregate wage figures. However, composition effects linked to growing skill intensity of employment have been playing a role in recent years in such a way that aggregate figures could tend to underestimate the extent of wage moderation taking place at individual level (ECB, 2012).

Compensation per employee in the euro area fell by 4.2% in Greece and 2.7% in Portugal (Graph I.3.1). Compensation per employee also declined slightly in Spain and Slovenia. By contrast, Belgium, Finland, Austria and Germany recorded increases in compensation per employee above 2.5%. Estonia recorded the highest growth rate in compensation per employee.

Graph I.3.1:   **Nominal compensation per employee, y-o-y % change**
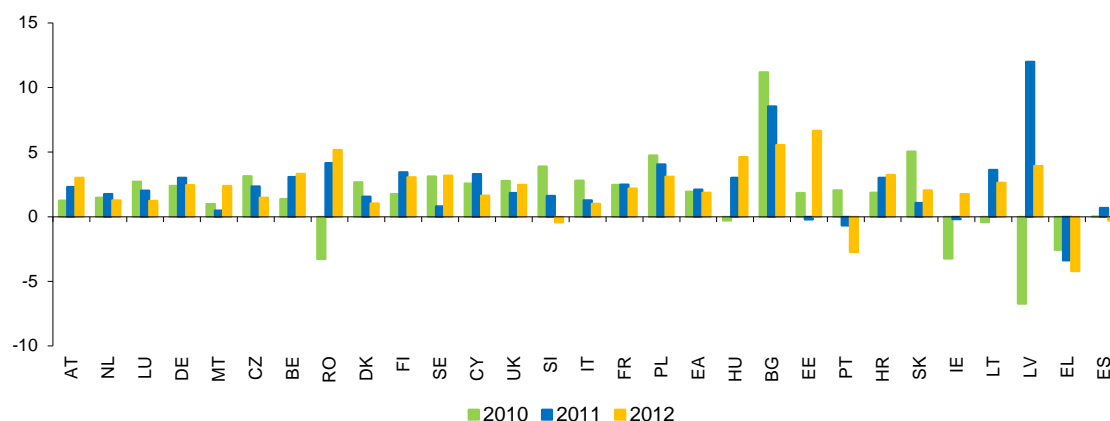
(1) Countries are displayed in ascending order of the unemployment rate in 2011. Variation in compensation per employee in Latvia in 2011 is off-scale - the effective value was 17.2%.
Source: DG ECFIN AMECO database.

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Box I.3.1: **Wage setting reforms in selected Member States**

In Greece, reforms towards decentralisation of collective bargaining took place in two phases. In 2010, framework conditions were introduced to allow, under certain conditions, firm-level derogations from sector and professional agreements. In 2011, the use of firm-level agreements on wage and non-wage matters was further facilitated with the suspension of extensions of sector and occupation collective agreements to non-signatory parts, the suspension of the favourability clause (requiring lower-level agreements to be bound by higher-level agreements), and easing of requirements for bargaining at firm-level. Other reforms to the collective bargaining system in 2012 included the reduction of the minimum wage and the reduction of the maximum duration of collective agreements.

In Spain, the 2012 labour market reform aimed at promoting bargaining decentralisation by giving priority to firm-level collective agreements on a number of issues and by easing the conditions for opting-out from higher-level collective agreements. Moreover, the reform reduced the survival of collective agreements expired but not renewed.

In Portugal, reforms concerned the possibility for collective contracts to set conditions for derogations at firm level on a number of issues and new rules governing extensions of collective agreements to non-signatory parts (the extension of a collective agreement was subjected to a minimum representativeness condition).

In Italy, the social partners signed in 2012 an agreement acknowledges the need to link wages set in national contracts not only to expected inflation, but also to the economic and competitive conditions of the country and sector concerned and promotes further decentralisation of collective bargaining by strengthening the second tier of bargaining. The government is supporting the agreement with tax rebates on productivity-related pay set in second-tier contracts.

In France, an inter-confederal agreement has broadened the scope of firm-level collective negotiations, allowing hours worked and wages to derogate from those agreed in sectoral contracts.

Number of collective agreements in Greece

Source: Ministry of Labour of Greece

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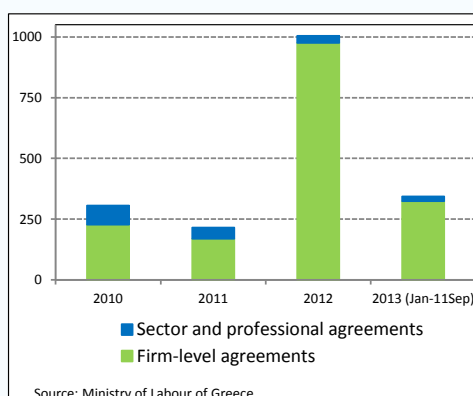
In the non-euro area countries, Bulgaria, Romania and Hungary recorded growth rates in compensation per employee above 4%. Denmark and the Czech Republic recorded the most moderate growth rates, significantly below 2%.

Over the period 2010-2012, compensation per employee in the euro area declined by an annual average of 3.4% in Greece. It also fell in Ireland and Portugal while it broadly stabilised in Spain. By contrast, Cyprus, Belgium, Germany, Slovakia, Finland and Estonia recorded the highest average increases in the compensation per employee in this period, with annual averages above 2.5%. Among the non-euro area countries, Bulgaria recorded the fastest growth rate in compensation per employee with an average annual increase of 8.4%. It was followed by Poland and Latvia with 4% and 3%

Graph I.3.2:   **Hourly Labour Cost Index, y-o-y % change, selected countries**
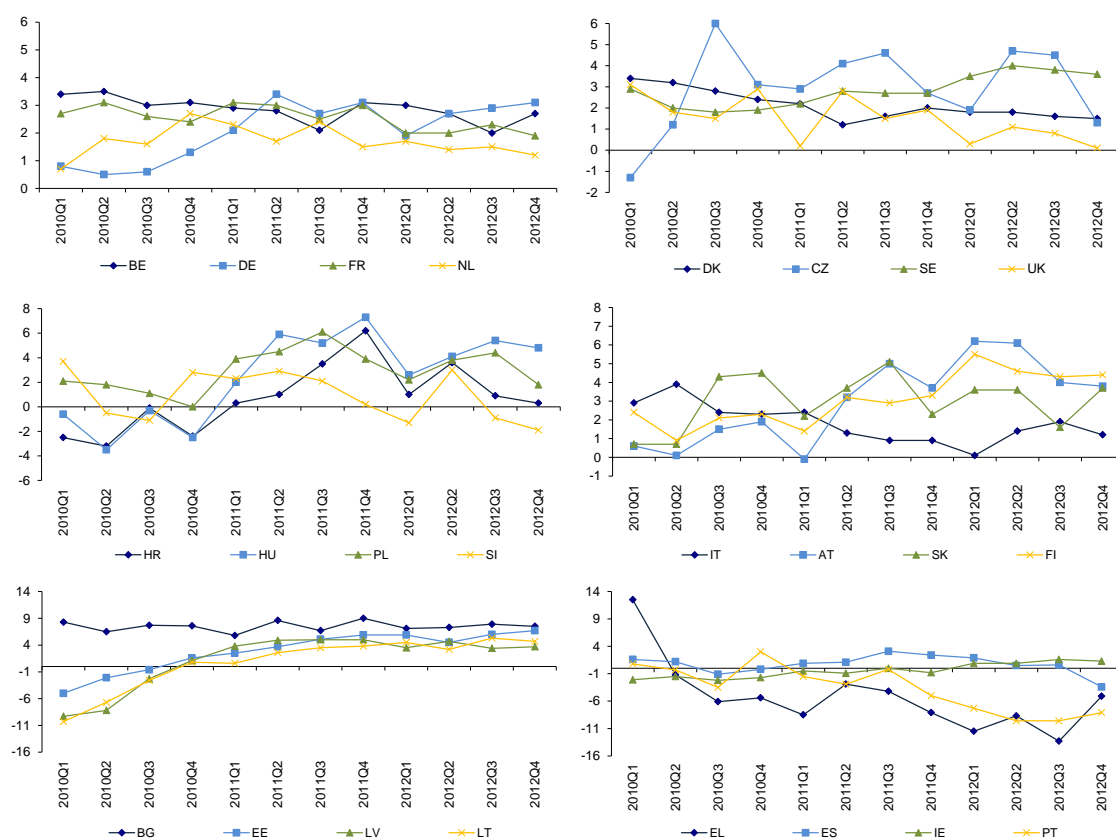
(1) Countries grouped according to the magnitude of variations in HLCI. Information for CY, LU, MT and RO not displayed.
Source: Eurostat.

average growth, respectively. By contrast, Denmark, Lithuania and Romania recorded the most moderate increases in compensation among the non-euro area countries.

Graph I.3.2 shows the quarterly developments in the Hourly Labour Cost Index (HLCI), year-on-year growth rates, over the period 2010-2012. In 2012, Estonia, Austria and Finland are among the euro area countries with the highest increases in the HLCI. Greece and Portugal recorded the sharpest declines. In the non-euro area countries, Bulgaria recorded the highest growth rate in the HLCI, while the UK, Croatia and Denmark recorded the most moderate increases.

Over the period 2010-2012, the most noticeable developments in the HLCI are (i) the sharp on-going adjustment in Greece and Portugal; (ii) an acceleration in the growth rate in Finland, Austria and to some extent in Germany and (iii) the

increase in the Baltic countries after the strong downward adjustment in the first years of the crisis.

Over the last three years, the HLCI declined by 15% in Greece and 11% in Portugal. The rate of decline accelerated in 2011 and 2012.

In other euro area countries facing strong adjustment and rebalancing needs, the HLCI, in 2012, declined moderately in Slovenia and Spain; grew at a slightly faster rate in Italy; and grew in Ireland after the negative growth rates recorded in 2010 and 2011.

In Austria and Finland the growth rate in the HLCI accelerated significantly in 2012. In Germany the growth rate reached 2.7% in 2012, broadly the same rate as that of the previous year.

Graph I.3.3:   **Real product and consumption wages, HICP and GDP deflator, y-o-y % change, 2012**
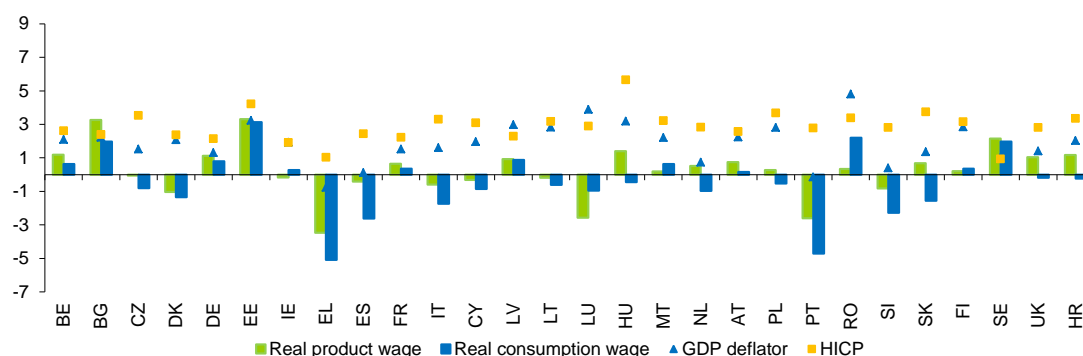
Source: DG ECFIN AMECO database.

In the Baltic countries, following the negative growth rates in 2009 and 2010, the HLCI grew at a relatively fast rate, especially in Estonia.

In the period 2010-2012, sizeable differences between compensation per employee and HLCI are recorded for Portugal and Greece, where the fall in the HLCI was much higher than the fall in the compensation per employee, and Croatia, Latvia and Lithuania, where HLCI grew at a more moderate pace than the compensation per employee. In 2012, HLCI grew substantially faster than the compensation per employee in the UK, Finland, Austria, and Lithuania, and fell much sharper in Portugal and Greece than the compensation per employee.

Differences between the HLCI and compensation per employee may be related to the number of hours worked per employee, not matched with equivalent changes in pay. There may be, however, other methodological factors concurring to explain differences between the two indicators. In the UK, in 2012, the number of hours worked per employee increased by 2%. That could help explain the moderate increase in the HLCI as compared to that registered in compensation per employee. Also in Portugal, the number of hours worked per employee increased by 1%, which may help explain the sizeable difference between the two indicators, assuming that the increase in working hours has not been matched with a proportional increase in pay. (^{11})

(^{11}) However, the reverse reasoning would need to be applied, for example, to Greece, where the number of hours worked per employee have actually declined in 2012.

3.2.1. Real consumption and production wages

The GDP deflator grew at negative rates in Greece and Portugal, and at a rate below 1% in Spain, Slovenia and the Netherlands (Graph I.3.3). By contrast, the GDP deflator grew at above 3% in Hungary, Estonia, Luxembourg and Romania. The HICP deflator grew at the slowest rates in Sweden, Greece and Ireland and at the fastest in Estonia and Hungary. Developments in the GDP deflator and the HICP deflator influence the growth rate of real product wages and real consumption wages, which determine the cost of labour for firms and workers' purchasing power.

Production wages, which are the relevant wage variable for firms and are measured as the price of labour relative to the value added deflator, decreased in eleven EU countries. Greece, Portugal and Luxembourg recorded the sharpest falls. In Greece and Portugal the falls were due to the decline in nominal compensation per employee, while in Luxembourg it was due to the high GDP deflator. Bulgaria and Estonia recorded the highest increases in real production wages, above 3%.

Consumption wages, which are the variable of interest for consumers and are measured as their take home pay relative to the price of goods they purchase, decreased in sixteen EU countries. The sharpest falls were recorded in Greece and Portugal, followed by Spain, Slovenia and Italy. In the case of Italy this was determined by one of the highest HICP growth in the euro area in 2012. On the contrary, workers in Estonia, Romania,

Sweden and Bulgarian recorded the highest increases in purchasing power.

3.2.2. Real compensation per employee, productivity and unemployment

Real wage growth in line with productivity is a condition for wage growth consistent with labour demand. Graph I.3.4 shows the average growth in real compensation per employee and the average growth rate in productivity over the period 2010-2012. During this period there is a positive relation between the growth rate in compensation per employee and productivity. The order of magnitude of variations between the two variables is, however, different: productivity grew on average significantly faster than real compensation per employee.

Graph I.3.4:   **Real compensation per employee and productivity, average growth rates 2010-2012**
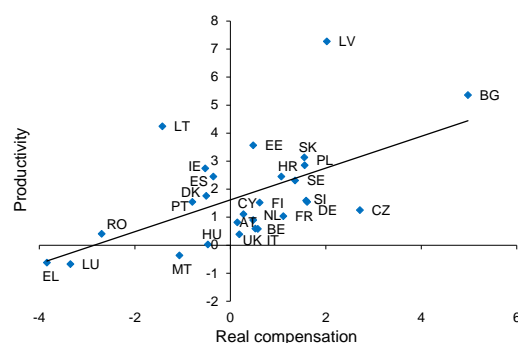
Source: DG ECFIN AMECO database.

Between 2010 and 2012 the largest differences between real compensation and productivity were recorded in Lithuania, Latvia, Ireland and Greece. The Czech Republic was the only country where real compensation grew significantly faster than productivity in this period.

Graph I.3.5 plots the growth rate in real unit labour costs (RULCs) in 2012 against the pre-existing level of unemployment (the unemployment rate recorded in 2011). There is a negative correlation between the unemployment rate in 2011 and the growth rate in real unit labour costs in 2012. Countries facing higher unemployment rates saw their real unit labour costs declining more or growing at a slower pace than countries facing lower unemployment rates.

Graph I.3.5:   **RULC, y-o-y % change 2012 and unemployment rate in 2011**
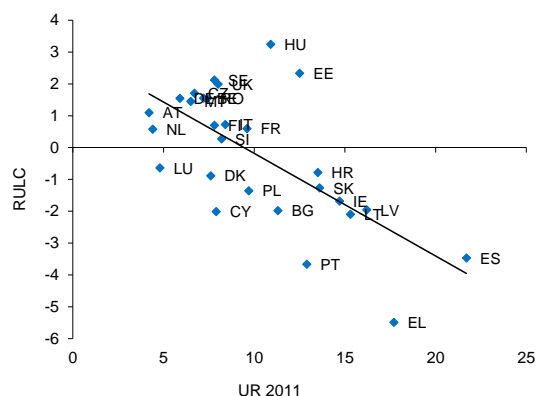
Source: DG ECFIN AMECO database.

In countries with very high unemployment like Greece, Portugal and Spain, Ireland, Latvia and Lithuania, real compensation per employee grew significantly below productivity (leading to a falling RULC), while real wage growth above productivity was recorded in countries with relatively low unemployment. All in all, these developments appear supportive to the reduction of unemployment dispersion across the EU.

3.2.3. Compensation per employee at sectoral level

The sectoral breakdown shows that the growth rate in compensation per employee was on average stronger in industry (Graph I.3.6). The construction sector recorded the second highest average growth in the compensation per employee followed by the trade, transport and communication sector and the finance and business services sector.

The largest variations across countries were recorded in the construction sector. This is particularly the case of Bulgaria and Estonia, which recorded the sharpest increases, and Greece, which recorded the sharpest contraction. In Estonia, the high increase in compensation per employee follows a relatively sharp decline in 2011. In Greece, the construction sector has been undergoing a major adjustment – over the last three years compensation per employee declined by about 40%. In Spain, compensation per employee in the construction sector grew by 2.2%, despite the large employment losses registered in

Graph I.3.6:   **Compensation per employee by sector, y-o-y % change, 2012**
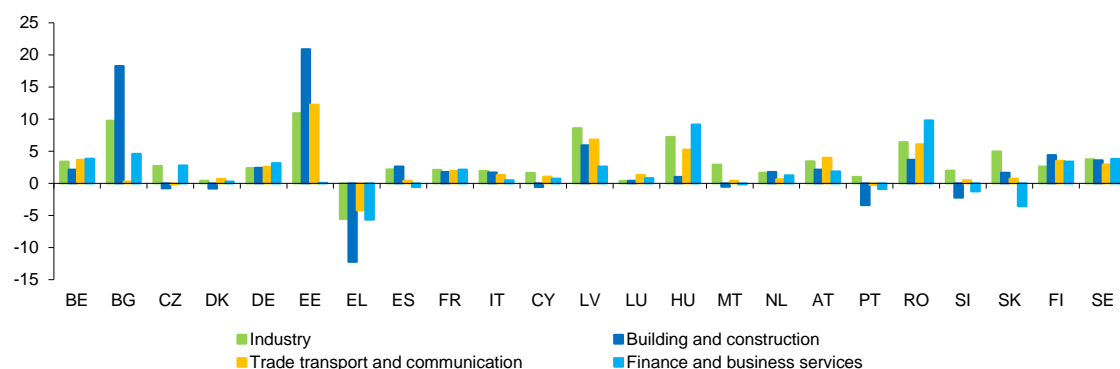
(1) Remaining EU countries not included because of missing data.
Source: DG ECFIN AMECO database.

this sector since 2008 (composition effects may be at play as unit wage costs recorded sharp falls over the last two years).

Overall, a recovery in compensation per employee in the tradable sectors would contribute to the re-balancing process in countries undergoing economic adjustment. In Greece, the decline in compensation was broad-based, though more intense in the construction sector. In Portugal, compensation per employee exhibited positive growth only in industry. In both countries, wages declined more in the sectors more affected by employment losses. This process may facilitate the rebalancing of those economies toward the tradable sectors. In Slovenia, compensations per employee declined in the two non-tradable sectors while it increased in the tradable sectors. In Spain,

stronger dynamics are visible in the tradable sector, with the notable exception of the construction sector. In Latvia and Romania, which underwent successful rebalancing process, compensation per employee in both industry and trade retail and communication are growing at a relatively robust pace.

Over the period 2010-2012 wages grew on average faster in the private sector than in the public sector in almost all EU countries (Graph I.3.7). A large part of nominal wage reductions took place in the government sector, reflecting fiscal consolidation priorities. The stronger wage moderation in the government sector contributed to the necessary sectoral reallocation in countries having to rebalance their economies from high current account deficit positions.

Graph I.3.7:   **Compensation per employee, total and public sector, average annual change, 2010-2012**
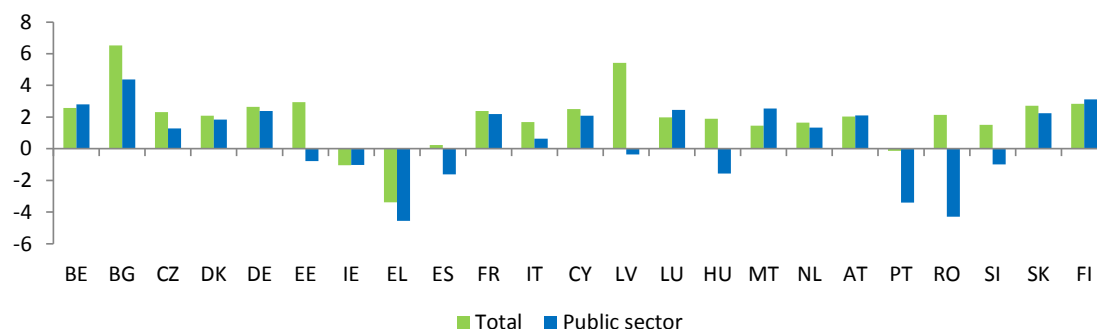
(1) Public sector proxied by public administration and defence, education, health and social work, personal service acticities.
Source: DG ECFIN AMECO database.

3.2.4. Decomposition of unit labour costs

Unit labour costs increased at a rate below 2% both in the euro area and the EU. Following negative growth rates in 2010 and growth rates below 1% in 2011, in 2012 the unit labour cost accelerated somewhat. The acceleration in the growth rate in unit labour costs was mostly due to a deceleration in productivity growth.

Greece, Portugal and Spain recorded accentuated falls in nominal unit labour costs (Table I.3.1). In Cyprus, Slovakia and Ireland, nominal unit labour costs broadly stabilised, and in Slovenia they registered an increase below 1%. Estonia, Belgium, Finland, Austria, Luxembourg and Germany are the euro area countries that registered the fastest increases in nominal unit labour costs in 2012.

Table I.3.1: **Decomposition of unit labour costs, y-o-y % change, 2012**

	NULC	Compensation per employee	Labour productivity	GDP deflator	RULC
BE	3.7	3.3	-0.4	2.1	1.6
BG	0.2	5.6	5.4	2.2	-2.0
CZ	3.3	1.5	-1.7	1.5	1.7
DK	1.2	1.0	-0.1	2.1	-0.9
DE	2.9	2.4	-0.4	1.3	1.5
EE	5.6	6.7	1.0	3.2	2.3
IE	0.2	1.8	1.5	1.9	-1.7
EL	-6.2	-4.2	2.1	-0.8	-5.5
ES	-3.4	-0.3	3.2	0.1	-3.5
FR	2.1	2.2	0.1	1.5	0.6
HR	1.2	3.2	2.0	2.0	-0.8
IT	2.3	1.0	-1.3	1.6	0.7
CY	-0.1	1.6	1.7	2.0	-2.0
LV	1.0	3.9	2.9	3.0	-2.0
LT	0.7	2.6	2.0	2.8	-2.1
LU	3.2	1.2	-1.9	3.9	-0.6
HU	6.5	4.6	-1.8	3.2	3.2
MT	3.7	2.4	-1.2	2.2	1.4
NL	1.3	1.3	-0.1	0.7	0.6
AT	3.4	3.0	-0.3	2.2	1.1
PL	1.4	3.1	1.7	2.8	-1.4
PT	-3.8	-2.7	1.1	-0.1	-3.7
RO	6.4	5.2	-1.2	4.8	1.5
SI	0.7	-0.4	-1.1	0.4	0.3
SK	0.1	2.0	2.0	1.4	-1.3
FI	3.6	3.0	-0.5	2.8	0.7
SE	3.2	3.2	0.0	1.0	2.1
UK	3.4	2.5	-0.9	1.4	2.0

Source: DG ECFIN AMECO database.

In Greece and Portugal, the decline in nominal unit labour costs was a consequence of a decline in compensation per employee and labour productivity growth, which in the case of Greece was above 2% – the fourth highest in the EU. In Spain, the decline in nominal unit labour costs was related to a broadly stabilisation in compensation per employee and a strong rebound in the labour

productivity, the second highest growth rate after Bulgaria.

In the non-euro area countries, Hungary and Romania registered the highest increases in nominal unit labour costs with rates above 6%. Bulgaria, Lithuania and Latvia registered the lowest increases. These last three countries benefited from strong productivity growth. In Romania and Hungary the high increase in nominal unit labour costs is explained by a fast increase in compensation per employee and negative growth rates in productivity.

Real unit labour costs and nominal unit labour costs vary significantly in some countries. This is related to relatively high variations in the GDP deflator. This is the case of Romania and Luxembourg, which due to the high increases in the GDP deflator saw the real unit labour cost growing at a much lower rate that the nominal unit labour costs. The evolution of real unit labour costs determines the evolution of the wage share. After the decline in the wage share in 2010 and 2011, the wage share grew slightly in 2012.

Graph I.3.8: **Unit labour costs in deficit and surplus countries, euro-area groups weighted averages, y-o-y % change**
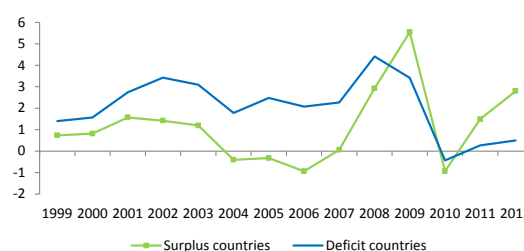
(1) Surplus countries are BE, DE, LU, NL, AT and FI.
Source: DG ECFIN AMECO database.

Overall, the evolution of the nominal unit labour costs appears consistent with the rebalancing of external positions in euro area countries. After almost a decade where unit labour costs grew on average faster in the deficit countries, in three of the last four years, unit labour costs grew significantly faster in surplus countries. The adjustment further accelerated in 2012 (Graph I.3.8). The deceleration in the growth rate in compensation per employee both in the tradable and the non-tradable sectors are contributing to the adjustment in unit labour costs in deficit countries.

Box I.3.2: **Was there a trade-off between productivity and employment in deficit countries?**

Greece, Spain, Ireland and Portugal have made significant progress towards reducing their current account deficits and in terms of downward adjustment in unit labour costs since the crisis started. Depending on the country, the fall in unit labour costs was to different degrees associated with labour productivity growth. To the extent that the past labour productivity performance was linked to the fall in employment, the question arises: will labour productivity growth be compatible with employment gains looking forward?

In this regard it can be helpful to decompose labour productivity into its two main components: capital deepening and total factor productivity. A significant increase in capital deepening could indicate that productivity developments are mainly driven by labour shedding, as the proportion of capital per person had increased. By contrast, an increase in total factor productivity could indicate productivity improvements linked to the composition of the workforce towards high skilled segments was accompanied by restructuring (e.g. Caballero and Hammour, 1994; Foster et al., 2013).

The charts below show the decomposition of labour productivity into total factor productivity and capital deepening for Ireland, Greece, Spain and Portugal. With a view to gaining insights into developments of a structural rather than transitory nature, the decomposition uses filtered data for hours worked and TFP (as with the computation of potential output). Hence, the charts do not show the large variations in productivity in 2009 and 2010 which are visible with non-filtered data. In Ireland, capital deepening contributed the most for productivity before the recession, but fell afterwards. In Greece, there was a sharp fall in both total factor productivity and capital deepening. In Spain, capital deepening and total factor productivity grew at constant pace since 2009. In Portugal, total factor productivity gained relative more importance in relation to capital deepening since the crisis started, and capital deepening has been growing at a decelerating pace since 2010.

All in all, there is no strong evidence that a major reduction in labour intensity was the main driver of labour productivity growth in deficit countries. Capital deepening rather fell in some cases, as investment dropped. Total factor productivity contributed non-negligibly in other cases. Looking forward, a recovery in employment over the medium term may not mechanically imply a reduction in labour productivity.

Disaggregation of hourly labour productivity growth, y-o-y % changes
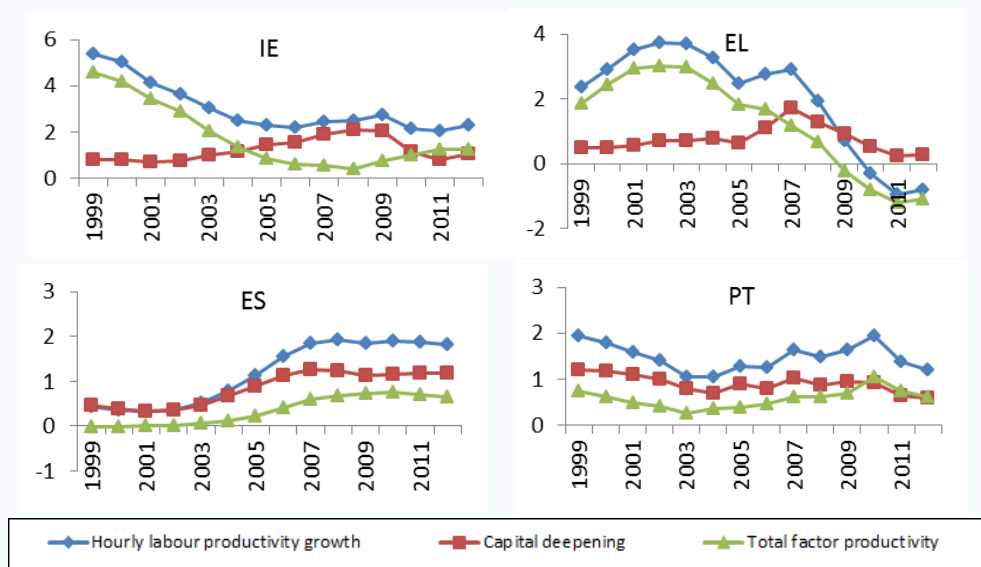
Source: DG ECFIN computations based on AMECO database.

In the last three years the deceleration of the growth rate in compensation per employee in non-tradable sectors has been more pronounced than that of tradable sectors (Graph I.3.10). Over time, this process would help rebalancing the economy through labour reallocation from non-tradable to tradable sectors, a key condition for rebalancing in deficit countries.

Graph I.3.9:   **REERs based on ULC deflator, y-o-y % change**
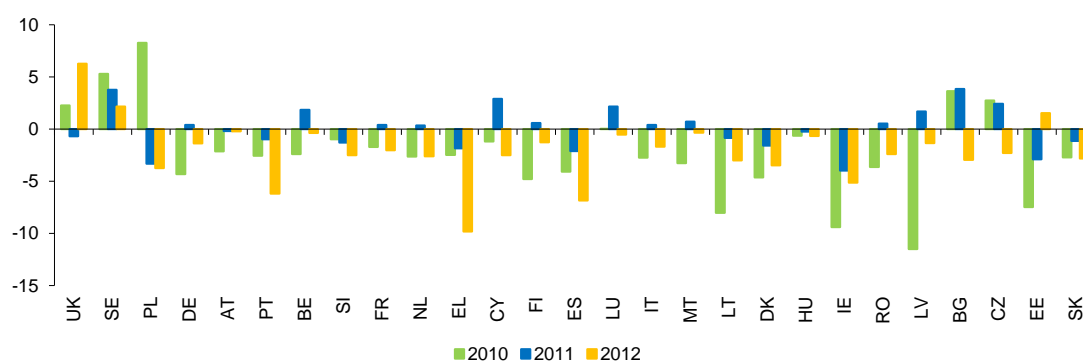
(1) Countries displayed according to the REER index in 2009 (base year = 1999), from lowest to highest.
Source: DG ECFIN AMECO database.

Graph I.3.10:   **Compensation per employee, tradable and non-tradable sectors, in deficit and surplus countries**
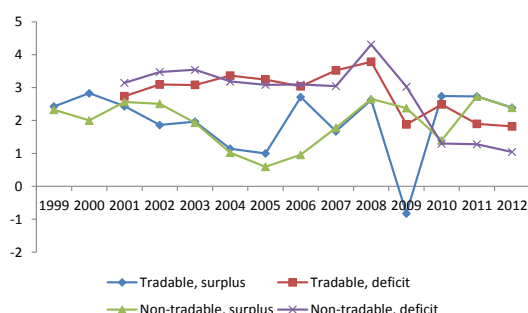
(1) Surplus countries are BE, DE, LU, NL, AT and FI.
Source: DG ECFIN AMECO database.

Looking forward, unit labour cost developments supportive of rebalancing will depend on the maintenance of adequate wage dynamics in deficit and surplus countries but also on productivity developments. In particular, it is often mentioned the risk that an employment recovery in deficit countries could coincide with falling labour productivity and then the vanishing of recent ULC gains. As discussed in Box I.3.2, this argument may not apply equally to all countries and depends upon what will happen to investment and TFP.

3.2.5. Contributions to the final demand deflator

The final demand deflator recorded the lowest increase in Portugal, Greece and Sweden; and the highest in Romania and Latvia. The decomposition of the different factors affecting the final deflator shows that the contribution of unit labour costs to the overall inflationary pressures was in 2012 relatively low. This contribution was negative in

Greece, Portugal and Spain. Romania was the only EU country where the contribution of unit labour costs to the final demand deflator was above 2% (Table I.3.2).

Table I.3.2:   **Contributions to the final demand deflator, y-o-y % change, 2012**

	Import prices	NULC	Indirect taxes	G. oper. surplus	F. demand deflator
BE	0.9	1.2	0.4	-0.5	2.0
BG	2.0	0.1	0.8	0.5	3.4
CZ	1.5	1.0	0.3	-0.4	2.3
DK	1.0	0.5	0.1	0.8	2.4
DE	0.5	1.1	0.2	-0.4	1.4
EE	1.2	1.5	0.3	-0.1	2.4
IE	1.8	0.1	-1.1	2.1	2.5
EL	1.0	-2.5	-0.2	2.2	0.4
ES	1.0	-1.4	0.3	1.2	1.1
FR	0.4	1.0	0.3	-0.1	1.6
HR	0.9	0.5	0.9	0.1	2.4
IT	0.7	1.1	0.9	-0.7	1.9
CY	0.7	0.0	-0.2	1.5	2.1
LV	2.7	0.3	0.0	1.6	4.5
LT	1.9	0.2	-0.1	1.5	3.5
LU	2.1	0.7	0.3	0.6	3.7
HU	1.9	1.8	0.9	-0.9	3.6
MT	-0.1	1.0	0.0	0.2	1.0
NL	1.1	0.4	0.0	-0.1	1.6
AT	0.5	1.2	0.2	0.0	2.1
PL	1.7	0.4	-0.3	1.8	3.4
PT	0.5	-1.6	-0.1	1.5	0.3
RO	1.9	2.4	0.4	0.5	5.2
SI	0.9	0.2	0.2	-0.3	1.1
SK	1.1	0.0	-0.7	1.4	1.9
FI	1.0	1.5	0.4	0.2	3.1
SE	-0.3	1.2	0.0	-0.5	0.4
UK	-0.3	1.6	0.1	-0.6	0.8

Source: DG ECFIN AMECO database.

Overall, the final demand deflator grew at the slowest pace since 2009, both in the euro area and the EU. Unit labour costs, but also the remaining components, contributed to the deceleration of the growth rate in the final demand deflator.

3.2.6. Unit labour costs and the tax wedge

The average proportion of taxes on labour increased slightly in 2012 (Table I.3.3). Greece

Table I.3.3:   **Decomposition of the tax wedge**

	Total Tax Wedge 2012	Of which			Difference 2011 - 2012				Difference 2001 - 2012			
		Personal Income Tax	Social Security Contributions Employee	Social Security Contribution Employer	Total Tax Wedge	Personal Income Tax	Social Security Contribution Employee	Social Security Contribution Employer	Total Tax Wedge	Personal Income Tax	Social Security Contribution Employee	Social Security Contribution Employer
AT	48.9	12.3	14.0	22.6	0.5	0.5	0.0	0.0	2.0	2.0	0.0	-0.1
BE	56.0	22.1	10.8	23.2	0.5	0.4	0.0	0.1	-0.6	0.1	0.1	-0.8
BG	33.6	7.4	10.9	15.3	0.0	0.0	0.0	0.0	-6.8	-1.2	4.7	-10.2
CY*	13.9	2.1	5.9	5.9	-0.2	-0.2	0.0	0.0	-6.9	-2.3	0.3	-5.0
CZ	42.4	8.8	8.2	25.4	-0.1	-0.1	0.0	0.0	-0.2	1.4	-1.1	-0.6
DE	49.7	16.0	17.3	16.4	-0.1	0.1	-0.1	-0.1	-2.2	-1.8	0.3	-0.7
DK	38.6	36.2	2.7	0.0	0.2	8.1	-8.0	0.0	-4.8	3.6	-8.1	0.0
EE	40.4	12.7	2.1	25.6	0.3	0.3	0.0	0.0	-0.6	-3.4	2.1	0.8
EL	41.9	6.9	12.8	22.2	3.9	3.9	0.0	0.0	7.2	6.4	0.4	0.4
ES	41.4	13.5	4.9	23.0	1.5	1.5	0.0	0.0	2.5	2.9	0.0	-0.4
FI	42.5	17.7	6.2	18.6	-0.2	-0.8	0.4	0.2	-3.8	-3.4	1.0	-1.4
FR	50.2	10.2	9.5	30.6	0.8	0.1	-0.1	0.8	0.4	-0.9	0.0	1.3
HU	49.4	12.8	14.4	22.2	0.0	-0.7	0.8	0.0	-6.4	-5.7	5.4	-6.1
IE	25.9	13.4	2.9	9.7	-0.8	-0.1	-0.7	0.0	0.1	2.6	-1.5	-1.0
IT	47.6	16.1	7.2	24.3	0.0	0.0	0.0	0.0	1.0	1.7	0.3	-1.0
LT	40.9	10.3	6.9	23.7	0.2	0.2	0.0	0.0	-4.8	-9.4	4.6	-0.1
LU	35.8	13.8	11.0	11.0	-0.2	0.5	-0.7	0.0	0.1	0.1	0.7	-0.8
LV	44.5	16.2	8.9	19.4	0.1	0.1	0.0	0.0	1.2	0.8	1.7	-1.3
MT	24.5	11.3	6.6	6.6	1.2	0.8	0.2	0.2	1.1	2.0	-0.5	-0.5
NL	38.6	14.9	13.9	9.7	0.8	0.4	-0.1	0.5	1.2	5.2	-4.0	0.0
PL	35.5	5.8	15.3	14.4	1.1	-0.1	-0.3	1.5	-2.6	0.4	-3.0	0.0
PT	36.7	8.7	8.9	19.2	-2.3	-2.3	0.0	0.0	0.3	0.3	0.0	0.0
RO	44.5	9.7	12.9	21.9	-0.3	0.1	0.1	-0.5	-3.5	1.5	3.9	-8.9
SE	42.8	13.6	5.3	23.9	0.0	0.0	0.0	0.0	-6.3	-5.5	0.0	-0.8
SI	42.3	9.4	19.0	13.9	-0.1	-0.1	0.0	0.0	-3.8	-1.7	0.6	-2.7
SK	39.6	7.4	10.5	21.8	0.8	-0.1	-0.1	1.0	-2.9	1.6	1.2	-5.7
UK	32.3	14.0	8.5	9.8	-0.2	-0.1	0.0	0.0	0.1	-1.8	1.0	0.9

(1) Single person without children, 100% of average wage.
Source: OECD, Taxing wages report. *2007 data.

recorded the largest increase. Bulgaria and Poland recorded increases above 1 percentage point. Portugal, by contrast, recorded the sharpest decline. In both Greece and Portugal, changes in the total tax wedge were caused by the component personal income tax. The decline in Portugal may be due to the withholding of two public sector wages. Belgium has the highest tax wedge in 2012, followed by France, Germany and Hungary. In the period 2001-2012, Greece recorded the highest increase in the tax wedge among the EU countries.

3.3.   PRICE COMPETITIVENESS DEVELOPMENTS

Between 2010 and 2012, a number of EU countries recorded cost competitiveness gains.

Over the period 2010-2012, the largest improvements in cost competitiveness in the EU were recorded in Ireland, Greece, Spain, Lithuania, Latvia and Portugal (Graph I.3.9). Conversely, Sweden and the UK recorded the strongest appreciations, partly due to movements in nominal exchange rates. In 2012, the highest improvements

in cost competitiveness were recorded by Greece, Ireland, Spain and Portugal.

Different measures of REERs generally evolved in the same direction, though the order of magnitude of variations was in some cases significantly different (Graph I.3.11). In particular, since the start of the crisis, Greece, Spain, Portugal and Ireland recorded stronger depreciations in ULC-deflated REERs rather than in REERs based on the GDP deflator and in REERs based on the export deflator.

Labour cost developments in the euro area are broadly adjusting in line with the business cyclical positions of the different countries. Graph I.3.12 shows the year-on-year changes in REERs based on ULC and the relative output gap, calculated as the difference between the output gap of each individual country with that of the euro area. Countries facing higher negative output gaps recorded a greater downward adjustment in unit labour costs. This is what is expected in monetary unions in order to facilitate the rebalancing of

Graph I.3.11: **REERs based on ULC deflator, GDP deflator and export prices deflator, y-o-y % change, 2012 and over the period 2008-2012.**
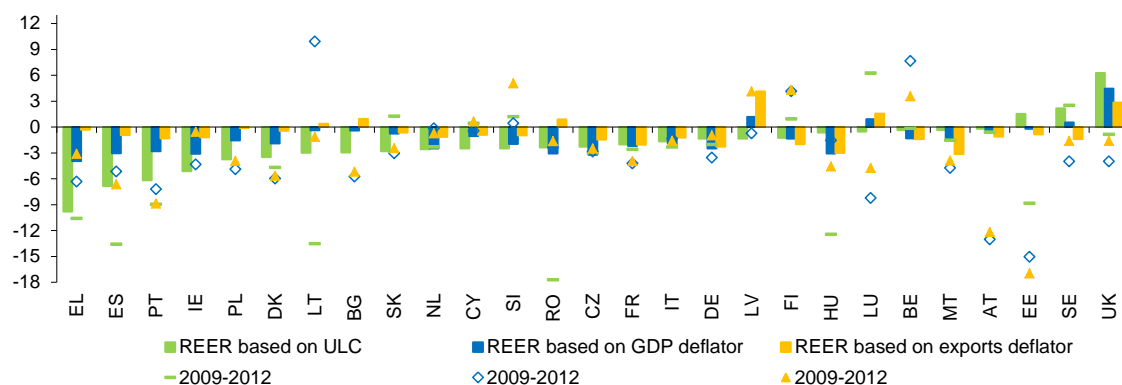
Source: DG ECFIN AMECO database.

cyclical competitiveness positions via changes in net exports.

Graph I.3.12: **REERs based on ULC, y-o-y % change, 2012, and relative output gap in 2011.**
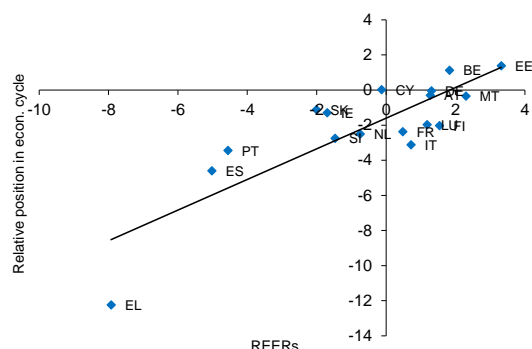
Source: Commission services, based on DG ECFIN AMECO database.

The adjustment of unit labour costs was also generally higher in countries facing higher needs of external rebalancing. Graph I.3.13 plots the current account balance in proportion of GDP in 2011 against changes in REERs based on ULC in 2012. The correlation is positive, suggesting that REERs tend to appreciate more in surplus countries and depreciate more in deficit countries.

All in all, competitiveness developments within the euro area since 2010 are broadly supportive of external rebalancing.

Although a slower adjustment in GDP and export deflated REERs may signal a lacking contribution of price-cost margins to terms of trade changes,

and calls in this respect for reforms making such adjustment possible, developments in unit labour costs alone could play a relevant role in boosting the export sector as long as the fall in margins is stronger in the non-tradable sector. ([12]) There is evidence this is occurring in Ireland, Greece, Spain and Portugal. In these countries, the difference between the GDP deflator and unit labour costs in the period 2009-2012 has been larger in tradable sectors than in non-tradable sectors.

Graph I.3.13: **REER based on ULC, y-o-y % change, 2012, and current account balance 2011**
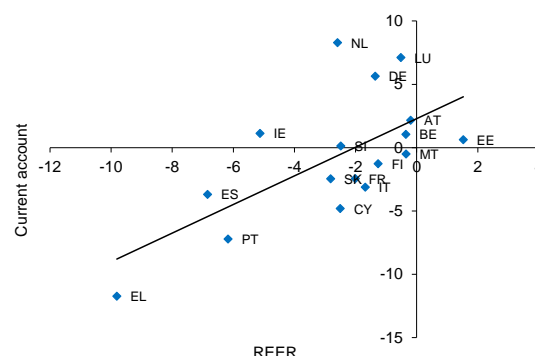
Source: DG ECFIN AMECO database.

It should also be added that a faster decline in REERs based on ULC than REERs based on the GDP deflator can be expected for some countries in light of the major rise in labour market slack. Moreover, changes in export-deflator-based REERs are generally more contained than those in REERs based on different deflators, as export

_____
([12]) See European Commission (2013).

prices are to a certain extent determined on international markets and insensitive to domestic developments and policies.

3.4. CONCLUSIONS

In 2012, compensation per employee grew at a moderate pace, as a result of the continued labour market slack. In the euro area, compensation per employee grew by 1.9%, close to the record low of 2009. Compensation per employee declined in Greece, Portugal, Slovenia and Spain and increased at the fastest rate in Estonia. The same pattern is observed in the Hourly Labour Cost Index (HLCI), though for Greece and Portugal the HLCI fell more sharply than compensation per employee.

Looking at the sectoral breakdown, compensation per employee was on average by 2.6% in the industry sector (excluding construction), closely followed by the construction sector, which registered the highest heterogeneity across countries. The trade transport and communication sector and the finance and business services sector recorded a growth rate in compensation per employee close to 2%. In Greece, Portugal and to some extent Spain, compensation per employee grew faster (or fell at slower pace) in the tradable sector. This process, if sustained, may help the restructuring of these economies towards tradable sectors.

The average real wage growth and productivity growth show a positive correlation between 2010 and 2012. During this period productivity grew on average faster than the growth rate in real compensation per employee. This led to a decline in real unit labour costs in various member states. In 2012, as in 2011, real unit labour costs are on average declining faster in countries with higher unemployment rates, which appears supportive to the reduction of unemployment divergences.

Unit labour costs grew at a moderate pace in 2012. The growth rate accelerated in both the euro area and the EU owing to weaker developments in productivity that broadly stabilised in both the euro area and EU. Greece, Portugal and Spain recorded accentuated declines in nominal unit labour costs. Conversely, Estonia, Belgium, Finland, Austria, Luxembourg and Germany are the euro area countries that registered the fastest increases in nominal unit labour costs in 2012.

The decline in unit labour costs in the euro area countries facing stronger rebalancing needs led to a depreciation of REERs based on ULC. The adjustment in REERs based on GDP deflator and export deflator has however been more limited.

4. POLICY DEVELOPMENTS

4.1. INTRODUCTION

Against the background of a deep and prolonged financial and economic crisis, Member States are increasingly engaging in wide-ranging reforms to improve the resilience and flexibility of their labour markets.

Largely due to growing disparities in economic performance and fiscal constraints, and to different institutional settings, reform patterns have indeed been diverse across the EU, with reform intensity being particularly noticeable in programme countries and vulnerable Member States.

This chapter provides an overview of trends in macro-relevant labour market policy areas, a description of main policies carried out in recent years, and a review of policy challenges and priorities identified within the context of EU surveillance.

The remainder of the chapter is structured as follows. In the next section, broad policy trends since the start of the crisis across countries and policy areas are discussed. Section 3 reviews measures passed since 2012. Section 4 looks into policy priorities and plans looking forward. Section 5 concludes.

4.2. POLICY TRENDS

Policy action in response to the crisis of 2008-2009 focused on containing the short-term labour market impact of the crisis. EU countries put in place fiscal stimulus measures to sustain aggregated demand and contain excessive job shedding, in line with what recommended in the European Economic Recovery Plan of November 2008. Temporary measures included employment subsidies and targeted labour cost reductions, the reinforcement of automatic stabilizers, the implementation of short-time working schemes.

Since 2010, the measures put in place to counter the crisis were partly phased-out in light of fiscal constraints becoming more evident in most EU countries. It became more evident, instead, the need to enhance the adjustment capacity of labour markets, against the backdrop of rising awareness

on the persistency of subdued domestic demand dynamics linked to deleveraging, and the necessity to favour a smooth rebalancing process in those countries concerned by current account reversals. Reform action became increasingly focused on macro-structural aspects of employment protection, automatic stabilisers and the wage setting framework.

In 2011 and 2012, a number of major, wide-ranging reforms took place not only in countries participating in financial adjustment programmes with structural reform conditionalities (notably Greece, Portugal), but also in countries which had accelerated the pace of reform as a result of rising bond market tensions and capital flights (e.g., Spain, Italy, Slovenia) and with a view to create the conditions for a competitiveness recovery (e.g. the 2013 reform in France).

Graph I.4.1 shows the number of new measures introduced in the years following the crisis in a number of policy domains in EU countries. The increase in reform activity witnessed in the early phases of the crisis has been broadly confirmed in the following years. In 2008 and 2009, it is noticeable an increase in the frequency of measures in the ALMPs domain, in labour taxation, in "other welfare benefits", which became numerous notably in light of the introduction of Short-Time Working Schemes in a number of EU countries. The slight reduction in the overall number of measures adopted in 2010 and 2011 is matched by an increase in the number of reforms touching at the inner functioning of labour markets in more recent years. In particular, the slower pace of reform activity recorded since 2010 in policy areas such as ALMPs or welfare benefits – where action became more intense between 2008 and 2009 in response to the recession – was accompanied by increased reform frequency in areas such as employment protection legislation (EPL), working time and wage-setting.

In spite of the considerable increase in reform activity in the *ALMP domain*, the expenditure per job seeker declined after the crisis in the countries that were hit by the largest increases in unemployment levels in light of the surge in the take-up of active labour market policies not matched by commensurate budgetary resources (European Commission, 2012a).

Graph I.4.1:   **Average number of labour market measures by policy domain across EU-27 countries**
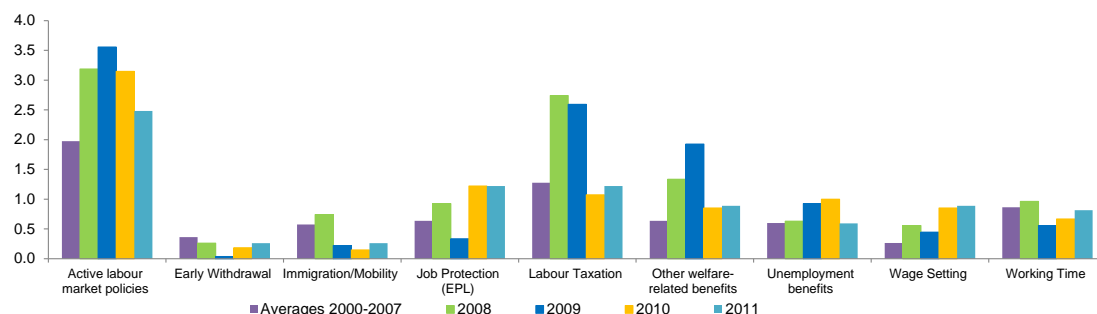
(1) The LABREF database has information on reforms in Malta only from 2002, while reforms in Romania and Bulgaria are included from 2003. The average number of reforms for the period 2000—2007 was calculated by taking this into account.
Source: DG ECFIN LABREF database.

The latest available data indicate that ALMP expenditure per jobseeker further dropped from the post-crisis average in some countries, in particular France, Ireland, the Netherlands, Portugal, while it increased in Belgium, Denmark, Finland, Sweden (Graph I.4.2). The lag in data availability, however, does not allow gauge developments after 2011.

Graph I.4.2:   **Active Labour Market Policy measures**
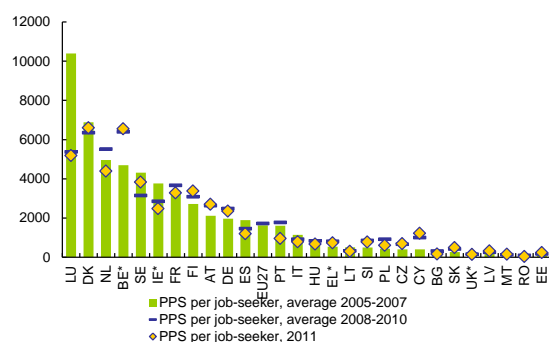
Source: Eurostat LMP databse, LMP category 2-7. Note: for BE, IE, EL, UK latest data available is 2010

As for the breakdown of ALMPs across various fields, the majority of measures taken in the post-crisis period aimed at supporting employability, improving matching and enhancing skills. Wage subsidies were strengthened in a number of countries, while only a few focused on direct job creation schemes.

Graph I.4.3 shows that the average expenditure on ALMPs as a percentage of GDP has increased since 2008 across the EU in most fields. The increase is most evident for what concerns training and employment subsidies. A more limited increase is registered in the expenditure on labour market services, which includes the financing of Public Employment Services.

Graph I.4.3:   **Evolutions of average expenditure on different ALMP categories across EU27 (% GDP)**
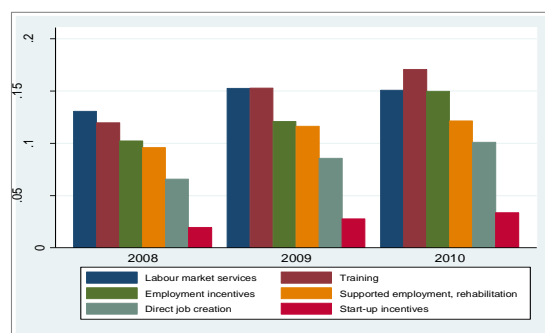
Source: Eurostat LMP database

As opposed to ALMPs, the average annual expenditure per jobseeker on *"passive policies"* (out-of-work income maintenance and support) increased after the crisis in a majority of EU countries, although notable reductions also took place (e.g. Luxemburg, Denmark, Sweden). This was mostly the result of longer average unemployment spells that compensated for an increased number and, in some cases, also of increased benefit generosity. The latest available data indicate that, compared with the immediate post-crisis period, reductions were recorded in a few countries, including Estonia, Latvia, Spain, the Netherlands, Portugal, while increases were recorded in Austria, Ireland, Italy (Graph I.4.4).

These dynamics reflect a mix of factors, most notably the interplay between the working of the benefit system and the changing composition of

the population of the unemployment in terms of entitlements and length of unemployment spells.

Graph I.4.4: **Out-of-work income maintenance and support**

PPS per job-seeker, average 2005-2007
PPS per job-seeker, average 2008-2010
PPS per job-seeker, 2011
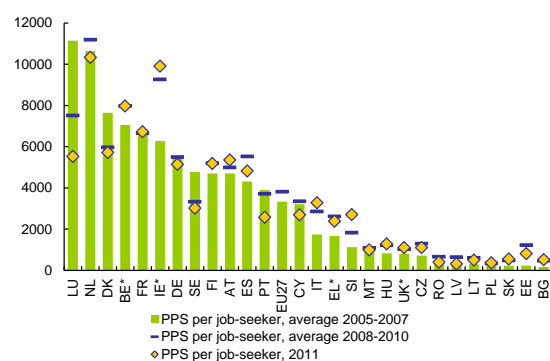
Source: Eurostat LMP database, LMP category 8. Note: for BE, IE, EL, UK latest data available is 2010

Concerning the revisions of benefit generosity, Graph (I.4.5) provides a synthesis of how unemployment insurance replacement rates evolved as the crisis unfolded (however, it is important to keep in mind that conditions for entitlements and duration of benefits are additional key aspects to assess the generosity of the benefit system). A majority of countries adapted the benefit system after the crisis in such a way to provide a slightly more generous income support. However, some more substantial reductions (e.g. Lithuania, Portugal, Sweden) or increases (e.g. Czech Republic, Estonia, Greece, Slovenia) also took place.

Graph I.4.5: **Unemployment insurance benefit replacement rates, % of average wage**

Average 2005-2007   Average 2008-2010   2011
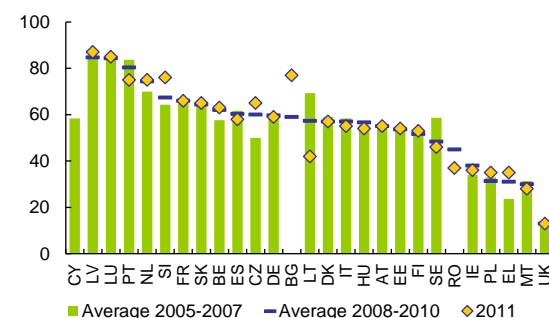
(1) The data refer to the unemployment benefit received after 1 month of unemployment by a worker that was earning the average wage.
Source: European Commission and OECD Tax and Benefit database.

The margins for substantial *tax wedge* reductions to support employment against the major drop in aggregate demand were narrow in most EU countries after the crisis. As shown in Graph I.4.7, in countries dealing with dire fiscal conditions and having a record of comparatively light labour taxation, the tax wedge was increased the most (Ireland), and increases were recorded in other countries concerned by the debt crisis (Greece, Italy, Portugal, Spain). [13]

Conversely, reductions in the tax wedge were recorded in countries with more fiscal space,

[13] The Graph reports the tax wedge for a single worker with no children at the average wage. The data reported generally reflect the evolution in the tax wedge for most of the population but differences may exist for different groups, depending on income level and family status.

Graph I.4.6: **LMP expenditure by function as % of GDP, 2007-2011**

Labour market services   Training   Employment and start-up incentives
Supported employment and rehabilitation   Direct job creation
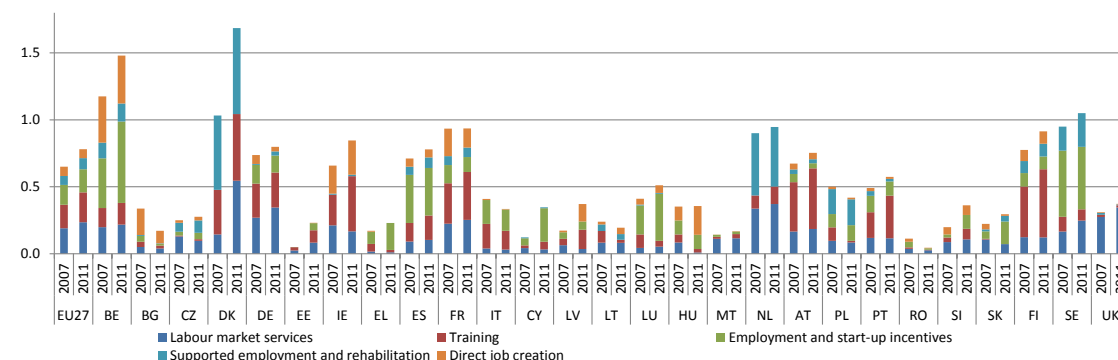
(1) EU27, UK 2009; BE, EL, IE 2010.
Source: Eurostat LMP database.

notably Bulgaria, Denmark, Germany, Finland, Poland, Sweden, the Netherlands, but also Hungary, Slovenia, and the UK.

Reforms concerned not only the level of the tax wedge, but also its structure and composition between personal income tax and social contributions on employers or employees, with patterns that are fundamentally country-specific (see Chapter I.3 on the changes in the composition in the tax wedge in 2012).

Graph I.4.7:   **Tax wedge (% of total labour cost).**
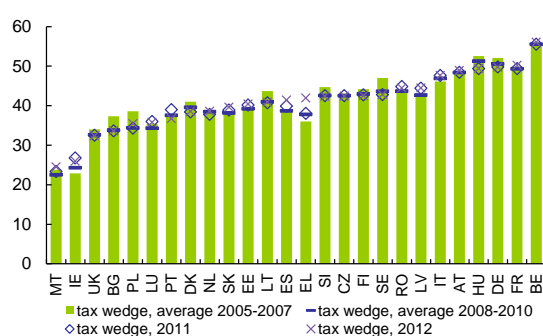
The action taken on the front of employment protection focused in a majority of EU countries on individual dismissal rules for permanent contracts. The objective of most reforms was that of reducing the discrepancy between the degree of protection of permanent versus temporary jobs, with a view to tackle the growing duality between workers with stable occupations and workers staying low in precarious jobs, with no easy access to permanent employment. In some cases, the easing of dismissal conditions for open ended contracts was matched by a tightening of the conditions justifying the use of fixed-term contracts or the protection available to the workers employed with such contracts. Some countries also eased the conditions and requirements for collective dismissals.

Graph I.4.8 reports the OECD EPL indicators for individual dismissals for permanent contracts. It compares values for 2008 with the recently released values for 2013 and shows that only in very few countries (Denmark and Ireland) an increase in the degree of protection took place. In the majority of the other countries, EPL either

remained constant or fell in light of reforms carried out in the post-crisis period. The reduction in the EPL indicator appears to be particularly strong for Portugal, starting from a high degree of protection, but reductions are visible also for Estonia, Greece, Spain, Hungary, Italy, the Netherlands, Slovakia, Slovenia, the UK.

Graph I.4.8:   **EPL indicators, individual dismissals, permanent contracts**
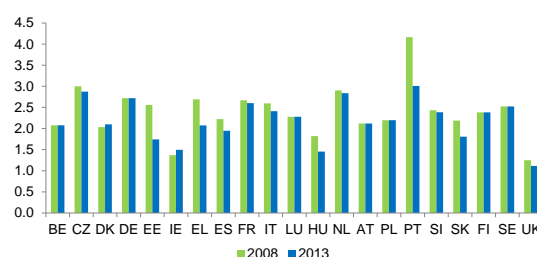
Wage setting reforms also continued to be at the centre of the reform agenda in a number of countries. Action on this front was taken, depending on the countries, either on the front of wage setting of the government sector, on private wage setting, or both. While reforms in government wage setting were often of a temporary nature and mostly aimed at ensuring a growth in the government wage bill in line with deficit targets, reforms carried out in the wage setting framework for the private sector were most often aimed at decentralising and rationalising the system of collective bargaining, easing the renewal of collective contracts, addressing risk of real wage rigidities linked to wage indexation. Social partners played a key role in this processes in most countries, both in the preparation of new legislation and by concluding bipartite or tripartite agreements and social pacts detailing the application of existing legal frameworks.

Overall, the reform carried out since the crisis broadly reflected the challenges and the need to modernise policy and regulatory settings. As shown in Table I.4.1, reforms led to a certain degree in policy settings, with e.g. stronger tax wedge reductions in countries where labour taxation was higher, and increased in ALMPs expenditure where the initial expenditure level lower. There is also evidence however of constraints ensuing from public budgets, reflected

for instance by the fact that tax wedge reductions were more prominent in countries less unemployment, the same countries with more budgetary room to accommodate labour tax reductions.

Table I.4.1: **Policy change, policy levels, unemployment rates. Correlations across EU-27 countries**

	EPL (change 2008-2013)	Expenditure per jobseeker on unemployment benefits (change 2008-2011)	Expenditure per jobseeker on ALMPs (change 2008-2011)	Tax wedge (change 2008-2011)
Unemployment rate 2008	-0.389	-0.088	0.139	0.276
Policy variable level in 2008	-0.575	-0.425	-0.689	-0.518

Source: Computations on data from OECD EPL indicators, Commission-OECD tax and benefits project, and Eurostat LFS and LMP data.

4.3. POLICY ACTION SINCE 2012

Action in 2012-2013 confirms the overall policy trends observed since the start of the economic and financial crisis, whereby besides fostering labour demand and activating the unemployed, increased attention has been paid to supporting labour market adjustment, and thus to addressing the structural weaknesses and large imbalances cumulated over the past decade across the EU.

Active labour market policies

Skills developments, youth employment and, more generally, job creation are the three policy areas in which countries have concentrated their efforts over the last two years. Starting from 2012, combating youth unemployment has become the policy mantra of most European countries. In some Member States, measures mainly consisted in a number of ad-hoc fixes with a rather short-term horizon. In others, specific support measures were accompanied by reforms of a more structural nature, likely to address the underlying weakness linked to high youth unemployment in these same countries. Several Member States launched initiatives to create the conditions for the setting-up of a sort of *Youth Guarantee* scheme, or revised the modalities of existing schemes (e.g. Austria, Czech Republic, Finland, Spain and Italy).

Closely related to the need to improve the labour market prospects of the young generations and to address growing skills mismatches in a number of

countries, the design of *life-long learning and educational systems* also came to the forefront of policy making (e.g. in Austria, Belgium, Portugal, Slovakia). Action was steered by the double objective of improving both the accessibility and quality of training and education systems, notably as concerns their capacity to respond to fast changing labour market needs.

Apart from the strong attention being paid to youth unemployment and to improving the school-to-work transition, active labour market policies remained overall largely focused on *employment subsidies* as a privileged policy tool to support labour demand and job creation, notably in those countries which traditionally used to invest in this type of policy instrument (e.g. Italy, Lithuania, Portugal, Spain). Financial support for young entrepreneurs and the self-employed was also stepped-up in a number of countries, including Austria, Lithuania and Spain. Conversely, *direct job creation schemes* were generally set aside, with a few exceptions (e.g. Greece, Hungary and Slovenia).

The *reorganisation and reinforcing of the PES* continued in a few Member States, notably in Finland, Ireland, Portugal, Slovakia and Spain, but reform activity in this field was toned down as compared to previous years, when the sudden pick-up in unemployment had led to resolute interventions to improve the efficiency and effectiveness of the institutions then in place. The targeting of active labour market programmes towards the *long-term unemployed* was also stepped-up in various countries (e.g. Denmark, Ireland and Sweden).

Benefits

The overall strengthening of the generosity of automatic stabilizers, which had been decided in several countries, often on a temporary basis, between 2008 and 2009, was followed, already since 2010 but more decisively starting from 2012, by a clear shift in policy priorities towards addressing low incentives to take-up work (e.g. United Kingdom), while at the same time widening coverage and reinforcing the means-tested component of social protection (e.g. Cyprus, Slovakia), including in terms of generosity (e.g. Latvia, Lithuania), and simplifying existing income support schemes (e.g. Italy). In a number

of cases, this was part of wider fiscal consolidation efforts. Major reforms of the *unemployment benefit* system were notably passed in France, Italy, Portugal, Spain and the United Kingdom.

Public support to the implementation of short-time working schemes was continued or stepped up in a number of countries, including Austria, France, Germany, Italy and Slovakia, with a view to further help to preserve viable jobs in a situation of weak economic activity. In Sweden, a new short-time working model was introduced in 2012, allowing employers to pay employees a pro-rata based on hours worked and topped-up with proportional public support, for a maximum of 12 months.

Participation-friendly schemes

A number of countries increased the supply of affordable childcare (e.g. Czech Republic, Hungary, Germany), or made childcare allowances compatible with income from work, such as part-time employment, with a view to enhance female labour market participation. New measures were also introduced aimed at increasing the employment rate of older workers and of people with disabilities (e.g. Belgium, Finland, Hungary, Latvia, Spain), including in some cases in the form of wage subsidies or direct job creation schemes. Rehabilitation policies were stepped up in Austria and Denmark to limit the misuse of disability pensions.

Labour taxation

Limiting labour taxation in order to raise incentives to work and reduce the relatively high cost of labour – in particular for low-skilled workers – in a situation of pressing fiscal consolidation needs, has become a challenging priority for many Member States.

This is reflected to various degrees in recent policy action, including, among others, the introduction of a solidarity tax on high income earners Austria, an increase in the ordinary VAT rate to off-set a 1 per cent reduction in the tax wage in Italy, and broadening the tax base in Slovakia. Many countries introduced or adjusted already existing reductions of social security contributions, either across the board or for specific target groups (e.g. Belgium, France, Germany, Hungary).

Wage setting

Efforts were stepped-up in 2012 to review the wage-setting mechanisms in a number of Member States, notably as part of the reform packages agreed in the framework of financial assistance programmes or in countries undergoing strong market pressure. This includes a drastic overhaul of the wage setting system in Greece, Portugal and Spain (see Box I.3.1), but also a move towards greater decentralisation of collective bargaining in Italy, as well as the reform of sectorial agreements in Ireland. The automatic extension of collective agreements after they expire was also eliminated in Estonia. Limited progress was however made in countries with less urgent need for reforms, but where the functioning of certain wage setting and wage indexation systems has nevertheless been identified as a possible threat to competitiveness.

Employment protection legislation

Reform activity in the field of employment protection legislation has continued to be intense in 2012 and 2013, especially in those countries which exhibited both large cumulated imbalances and stringent legislation before the crisis. This is notably the case of Spain, with the reform of February 2012, Italy, with the measures passed in in June 2012, and France, with the reform of the Labour Code approved in May 2013. In Lithuania, the individual labour dispute resolution procedure was reformed and the possibility to conclude fixed-term enlarged in June 2012. A new Employment Relations Act going in the direction of reducing labour market segmentation was approved in Slovenia in March 2013. In Slovakia, the reform of the Labour Code of September 2011 was partially reversed in 2012. Finally, in Croatia, the first phase of the amendments to the Labour Act, passed in June 2013, includes changes on fixed-term employment, temporary agency work, working hours, trial periods and collective dismissals. In some of these countries, internal adjustment margins were also enhanced by means of a more flexible working time organisation.

4.4. POLICY PRIORITIES AND PLANS LOOKING FORWARD

Given the protracted situation of uncertain recovery and sluggish employment prospects

despite positive trends at play, priorities have remained overall stable across the EU, with increasing attention being paid to growth-enhancing policies and to social aspects and inequality looking forward.

EU policy recommendations

Improving the resilience of the labour market and investing in human capital remain cornerstones of the EU strategy for a job-rich recovery. Building on signs that reforms already initiated are starting to pay but that adjustment and economic change will take time to materialise, the Annual Growth Survey for 2013 recalls that at this stage implementation is a major challenge and broadly confirms the priorities set for the year before. In particular, it calls upon Member States to:

− Prioritise, and strengthen wherever possible, investment in education, research and innovation, and pay particular attention to maintaining or reinforcing the coverage and effectiveness of employment services and active labour market policies, such as training for the unemployed and youth guarantee schemes;

− Raise the performance of education and training systems and overall skill levels, and link the worlds of work and education more closely together, among others by developing quality traineeships, apprenticeships and dual learning models, and by improving access to life-long learning;

− Pursue the modernisation of social protection systems to ensure their effectiveness, adequacy and sustainability, including by restricting access to early retirement and enabling longer working lives, and by monitoring the impact of unemployment benefits to ensure appropriate eligibility and effective job-seeking requirements;

− Substantially reduce the tax burden on labour, notably for the low-paid and in those countries where it is comparatively high and hampers job creation;

− Continue to modernise labour markets by simplifying employment legislation, notably to

reduce labour market segmentation, and develop flexible working arrangements;

− Monitor the effects of wage-setting systems, in particular indexation mechanisms, and if necessary amend them.

The Country-Specific Recommendations (CSRs) agreed for 2013-2014 within the framework of the EU Semester and of the Macro-economic Imbalance Procedure are fully in line with the above policy priorities, with a stronger accent being also put on the need for ensuring proper implementation and monitoring of already passed structural changes.

A simple comparison of labour market and social policy-related CSRs over the three-year horizon since the start of the European Semester in 2011 shows that:

− The main novelty of this year's CSRs is the confirmed growing relevance of recommendations addressing *poverty and social exclusion* across the EU. These especially concern those countries which had already weak social protection systems prior to the crisis and have been witnessing large economic shocks and heavy pressure on public budgets. Member States are to a large extent recommended to improve the effectiveness and efficiency of their social protection systems.

− Recommendations dealing with creating the conditions for *increasing labour market participation* of underrepresented groups, including women (e.g. Austria, Germany, Hungary, Malta, Netherlands, Poland, Slovakia), older workers (e.g. Austria, Belgium, Bulgaria, Finland, France, Luxembourg, Poland), migrant workers (e.g. Austria, Belgium, Sweden) and the low-skilled (e.g. Bulgaria, Sweden among others) are very prominent and have increased in relevance since the start of the Europe 2020 strategy, most probably in relation with the need to ensure labour market attachment of marginal groups in a situation of protracted slowdown. Several countries have been specifically asked to further reduce disincentives to work (e.g. Belgium, Bulgaria notably as concerns the disability benefit scheme, France, Netherlands)

and to step up activation policies (e.g. Belgium, Estonia, Germany, Slovakia), with a focus on long-term unemployed in many instances.

− Eleven Member States have been also recommended to shift taxes from labour to less growth distortive tax bases, notably with a view to reduce the *tax burden on labour* for low-income earners (e.g. Austria, Belgium, Czech Republic, France, Latvia, Slovakia).

− *Combating youth unemployment* has become a key policy priority, which is reflected in the important number of recommendations addressed to the Member States in the fields of education and active labour market policies and dealing with facilitating the school-to-work transition, improving the matching of skills with labour market needs and preventing early school leaving. The setting up or revision of existing Youth Guarantee schemes was recommended to several countries.

− Adequate capacity and effectiveness of employment services (PES) are mentioned in a number of CSRs as a precondition for the success of targeted policies aimed at facilitating the labour market integration of young unemployed. Enhancing the capacity of PES and increasing the effectiveness of *active labour market policies* more in general has indeed been specifically recommended to many countries (e.g. Bulgaria, Czech Republic, France, Hungary, Latvia, Lithuania, Luxembourg, Romania, Slovakia, Slovenia, Spain), with a view to setting the necessary conditions for addressing growing youth and long-term unemployment, as well as skill mismatches and work-force shortages in some cases.

− Those same countries which had been addressed a CSR on *employment protection legislation* (EPL) in 2012 and 2011 (with the exception of the Netherlands and Poland for 2011) have remained under close scrutiny also in 2013. France, Italy, Slovenia and Spain were recommended to conduct appropriate follow-up of recently adopted EPL reforms with a view to ensure proper implementation and to monitor their effects on the labour market. A clear call for policy action was addressed to the Netherlands and Poland, while Lithuania was suggested to review the appropriateness of its labour legislation.

− A few countries, including Belgium, Luxembourg, Finland, France and Slovenia, have been recommended also in 2013 to renew their efforts to ensure that their *wage setting systems* - including where appropriate *wage indexation* or *minimum wage* - allow for wages to better respond to productivity developments and labour market conditions, so as to support competitiveness and job creation. From their part, Spain and Italy have been asked to ensure the effective implementation of recent wage setting reforms, while Germany has been recommended to sustain conditions that enable wage growth to support domestic demand.

Next to the recommendations issued in the framework of the European Semester, the Commission has also launched Europe-wide initiatives to support, guide and assist Member States in their reform process. As such, the *Social Investment Package* of February 2013 provides guidance to Member States on ways to increase the efficiency, effectiveness and adequacy of their social protection systems with a focus on their social investment component. The Package is grounded on the idea that social policies should empower people from an early age, strengthen their capabilities to cope with risks across the life course and enhance their opportunities to participate in society and the labour market. The EU is set to follow Member States' progress in implementing the priorities set out in the Package in the framework of the European Semester and with the support of the EU funds.

− From its part, the *Youth Employment Package* of December 2012 puts forward a series of concrete proposals to combat high and rising unemployment among the young in several Member States, including a Council Recommendation to introduce Youth Guarantee schemes, a Quality Framework for Traineeships and a European Alliance for Apprenticeships to facilitate school-to-work-transition by improving the quality and supply of apprenticeship and traineeships across the EU.

Table I.4.2: Country-Specific Recommendations 2011-2013 by country and labour market field

	Wage setting			Tax on labour			Welfare-related benefits			Active Labour Market Policies			Labour market participation			Early retirement and pension systems			Education			EPL			Poverty and social exclusion		
	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013	2011	2012	2013
BE	X	X	X	X	X	X	X	X		X	X	X			X			X		X	X						X
BG	X				X	X			X	X	X	X	X			X	X	X	X	X	X				X	X	X
CZ					X	X				X	X	X	X	X	X	X	X	X	X	X	X						X
DK										X				X	X	X	X	X	X	X	X						
DE		X	X	X	X	X				X	X	X	X	X	X				X	X	X						
EE				X	X			X	X	X	X	X		X					X	X	X				X		X
ES	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X
FR	X	X	X	X	X	X			X	X	X	X	X	X	X		X	X				X	X	X			
IT	X	X	X		X	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X			
CY	X	X	NA			NA			NA	X	X	NA			NA	X	X	NA	X	X	NA			NA		X	NA
LV					X			X	X		X	X								X	X					X	X
LT							X	X	X			X	X	X	X	X	X	X				X	X	X		X	X
LU	X	X	X							X	X	X			X	X	X	X		X	X						
HU	X	X		X	X	X				X	X	X	X	X	X					X	X					X	X
MT	X	X										X		X	X	X	X	X	X	X	X						
NL					X	X			X				X	X	X	X	X	X		X	X		X	X			X
AT				X	X	X							X	X	X	X	X	X	X	X	X						
PL				X		X			X	X	X	X	X	X	X	X	X	X	X		X		X	X			X
RO	NA	NA		NA	NA		NA	NA	X	NA	NA	X	NA	NA	X	NA	NA	X	NA	NA	X	NA	NA		NA	NA	X
SI		X	X							X	X	X			X	X	X	X	X	X	X	X	X	X			
SK				X	X	X		X	X	X	X	X		X	X		X	X	X	X	X						X
FI		X	X							X			X	X	X	X	X	X		X							
SE													X	X	X												
UK									X	X	X	X	X	X	X					X	X					X	X
TOTAL	8	10	8	9	13	11	3	6	12	16	18	20	13	17	21	14	16	16	10	18	18	5	7	7	2	7	13

Source: Council Recommendations for the periods 2011-2012, 2012-2013 and 2013-2014.

− Finally, in the framework of the on-going deepening process of the Economic and Monetary Union (EMU), the Commission has come up with a Communication on 2 October 2013, setting the scene for strengthening the *social dimension of the EMU*. This will consist of making more effective use of employment and social surveillance instruments already in place, by including a number of auxiliary employment and social indicators to analyse better the employment and social consequences of macroeconomic imbalances under the Macroeconomic Imbalance Procedure, and by developing, based on existing monitoring tools, a scoreboard of key employment and social indicators to be used in the framework of the European Semester. This enhanced monitoring system would improve policy coordination, with a view to better integrating employment and social concerns in the overall policy landscape and ensure that the conditions are in place for a smooth macroeconomic adjustment with limited social costs. Progress is also warranted on strengthening the role of social dialogue in developing euro-area-wide and national strategies, through appropriate involvement of the social partners.

National plans

Enhancing *skills levels* and facilitating the *school-to-work transition* remains a key concern in most countries looking forward. The Czech Republic, in particular, is discussing a reform of the higher education system, while an education reform is also in the pipeline in Belgium and France, and Hungary is preparing a strategy to address early-school leaving. A number of countries are planning to reform their training and apprenticeship systems (e.g. Spain, Portugal, Poland and UK).

Increasing the *effectiveness of ALMPs* also remains a priority in a majority of countries, with discussions on enhancing the effectiveness of activation policies going on notably in Belgium, and a broad reform of active labour market policies being planned in Denmark. From its part, Poland intends to improve the quality and effectiveness of its employment services.

Major changes to *job protection legislation* are planned in the Netherlands and Croatia. In the Netherlands, this is part of a broad agreement, concluded by the government and the social partners in April 2013, on a package of measures touching at job protection and the unemployment and disability schemes. In Croatia, the foreseen second phase of Labour Act amendment involves changes in the regulation of fixed-term contracts, temporary agency work, as well as collective redundancies. The amendments will enable faster restructuring for employers enabling more flexibility, including on termination of contracts and working hours.

Plans for strengthening the activation component of *benefit schemes* have been mainly put forward by Denmark and the Netherlands. The Danish sickness benefit reform will ensure better coverage and at the same time better follow-up of individuals on sick leave. In the Netherlands, reform plans, as put forward in the April 2013 agreement, include a new consolidated Participation Act, planned for 2015 and expected to enhance the labour market participation of people with disability, and a reform of child-related schemes, which is set to simplify the system and improve incentives to work for single parents on social assistance. The maximum duration of unemployment benefits should also be brought to 24 months. Lastly, to increase the chances of reemployment for redundant workers, employers will have to pay a transitional allowance to employees employed for minimum two years. In Croatia, the planned Social Welfare Act shall improve targeting of existing social support schemes, while also introducing a guaranteed minimum allowance.

4.5. CONCLUSIONS

European countries have shown an increased commitment to tackle the structural weaknesses built-up over the last decade. Substantial reforms, aiming at improving the resilience of the labour market, introducing more internal and external flexibility and facilitating the transition between jobs, have been introduced in several Member States, and more are planned in the years to come.

The pace of reforms varies across the EU, with progress being particularly noticeable in countries under programmes and in vulnerable Member States. In some countries, instead, policy action is piecemeal and incremental, despite persisting challenges. The recommendations issued in the framework of the European Semester since its inception in 2011 provide stable policy guidance to this respect.

With persistently high and rising unemployment, and lengthening unemployment spells, it is key that sufficient policy ambition on the labour markets front is kept looking forward. While a return to strong economic growth, normalised credit conditions are not in sight in the very near future for many EU countries, efforts should be maintained to create conditions favouring smooth adjustment, promoting job creation and tackling duality, and keeping participation high while preventing "hysteresis effects". Moreover, efforts should be stepped up to tackle the social consequences of the crisis.

The reforms implemented since the crisis to enhance labour market adjustment are slowly taking effects, but it will take time for their impact to unfold fully, all the more in the current situation of uncertain recovery and weak demand. The scale of the challenges at play, as well as the time needed for the positive effects of reforms to show results, makes it essential to ensure time consistency in the reform efforts which are being pursued in a number of countries and to let reform strategies favouring adjustment mature over time. Ensuring effective implementation of reforms and monitoring of their effects, while avoiding backtracking, is essential to ensure that the substantial reform efforts put in place in recent years will ultimately deliver the desired fruits.

Fiscal instruments should be used effectively to support employment and tackle the social consequences of the crisis. Tax reforms should aim at better mobilising labour supply and demand. Adequate social protection needs to be provided to those suffering most the consequences of the crisis while ensuring compatibility with public budgets and an efficient use of instruments. Improved targeting and design of tax and benefits would help in this respect.

Finally, adequate means should be ensured to Active Labour Market Policies, to ease mismatch, improve activation of benefit recipients, and prevent the exit from the labour force of vulnerable categories. Exceptionally high levels of youth unemployment in several countries have been prompting specific and urgent action across the EU. Efforts to counteract these trends included both measures to enhance the employability of young workers and facilitate school to work transitions, and measures to support labour demand and job creation, including through targeted financial support via the EU funds. Ensuring adequate administrative and institutional capacity and efficient functioning of Public Employment Services is a key condition for these policy initiatives and reforms to be effective and bear their fruits.

Part II

Analytical chapter

1. CYCLICAL AND STRUCTURAL UNEMPLOYMENT IN THE EU

1.1. INTRODUCTION

The 2008-2009 worldwide recession and the ensuing sovereign debt crisis have had a major impact on EU labour markets. The high and persistent unemployment rate in most EU countries has prompted concerns that the underlying structural unemployment has shifted upwards and that the increase in unemployment could persist once the recovery is on a solid footing. For some countries, the depth and the nature of the crisis has led many to question whether will be more difficult to match the pool of unemployed with new jobs.

The question is of key relevance, as assessing whether unemployment is mostly cyclical or structural has implications for the policy response needed to address the unemployment problem.

The cyclical versus structural nature of unemployment has ranked high in the recent economic policy debate in the US. Despite opinions have been expressed both in favour of a structural (e.g., Kocherlakota, 2010) and of a cyclical interpretation of the increase in US unemployment (Bernanke, 2010), a consensus has shaped that most of the rise in the unemployment rate after the crisis of 2008 is due to cyclical factors (e.g., Daly et al., 2012b; Dickens and Triest, 2012, Lazear and Spletzer, 2012). A comparable debate and analysis on the nature of European unemployment has not followed yet.

With a view to dig deeper into the analysis of cyclical versus structural unemployment in the EU, this chapter takes a number of steps forward as follows.

First, it analyses the main features of Beveridge curves for EU countries and their underpinnings in job flows, with a view to isolate temporary from more structural developments in labour market mismatch in the post-crisis period. To this purpose, long-series on job vacancy and unemployment rates are constructed for multiple sources.

Second, the chapter analyses the main microeconomic dimensions along which transformation in labour market matching took place, to shed light on whether mismatch became more serious across skills, economic sectors, or geographical locations.

Third, the chapter provides a gauge of the dynamics of equilibrium frictional unemployment, namely the level of unemployment linked to imperfect labour market matching that prevails at the 'steady state', once temporary adjustment dynamics have run out.

Finally, the chapter digs deeper into the notion of the NAWRU, with the objective of exploring its determinants and isolate permanent from transitory elements.

The remainder of the chapter is structured as follows. The next section clarifies concepts and definitions and defines the plan of the analysis. Section 3 analyses the behaviour the Beveridge curve across EU countries and aims at distinguishing temporary from permanent shifts. Section 4 investigates the alternative microeconomic dimensions of labour market mismatch. Section 5 analyses the dynamics of equilibrium frictional unemployment. Section 6 disentangles temporary from permanent factors in the NAWRU. Section 7 discusses the results and implications for policy.

1.2. SOME BASIC DEFINITIONS AND PLAN OF THE ANALYSIS

1.2.1. Cyclical versus structural unemployment: Some basic definitions

Distinguishing between structural and cyclical unemployment is of utmost relevance from the perspective of macroeconomic and labour market policy. If unemployment is mostly cyclical, aggregate demand management would be the most effective instrument to bring back output close to potential and reduce the extent of joblessness. Conversely, if unemployment is mostly structural, expansionary macroeconomic policies would be less effective, while a role should be played by structural reforms and measures aimed at improving labour market matching.

There is no single meaning for structural unemployment. On principle, the concept refers to that level of unemployment that only depends on

institutional, structural, behavioural elements, with no role for the economic cycle. This is a notion of *structural unemployment or 'natural rate' of unemployment* that is borrowed from economic theory, and that provides a useful conceptual benchmark to distinguish unemployment variations which are linked to swings in aggregate economic activity and those that are instead rooted in the functioning of labour markets at microeconomic level (see, e.g., Layard et al., 2005, for a review of micro-foundations of unemployment).

However, the concepts of structural unemployment that are most commonly used in practice, namely, *frictional unemployment* and the Non-Accelerating Wage Inflation Rate of Unemployment (NAWRU), cannot be fully delinked from the cycle.

In the past two decades, major progress has been made in the analysis of frictional unemployment (see, e.g., Pissarides, 2000). While in the past frictional unemployment was perceived as rather stable, the new insights from labour market matching models and analysis of data on job flows suggest that job separation, and notably job finding rates, exhibit a good deal of variation with the economic cycle, that translate into variations in the extent to which labour market frictions account for overall unemployment over the economic cycle.

The most common concept of structural unemployment in the macroeconomic debate is the Non-Accelerating Wage Inflation Rate of Unemployment (NAWRU). The NAWRU corresponds to that particular unemployment rate that permits to keep inflation constant, and permits to assess trade-offs in macroeconomic policy making along the Phillips curve.

Also the NAWRU, in most real-world circumstances, is likely to vary with the cycle to some extent, the main reason being that real wages may adjust slowly to labour demand shocks, so that the adjustment takes partly place in terms of unemployment (Estrella and Mishkin, 2000).

In the remainder of this chapter, there will be an attempt to measure structural unemployment defined in alternative ways and to account for their main determinants.

1.2.2. Plan of the analysis

The first step in the analysis is that of tracking, for each EU country, how the relation between unemployment and vacancies (so-called Beveridge curve) has been evolving over time. Such analysis provides key information to assess whether joblessness is mostly linked to temporary demand shifts (movements along a given Beveridge curve, with more unemployment and less vacancies open) or more structural changes in the efficiency of the matching process of the labour market (shifts of the Beveridge curve). Eurostat data on job vacancies previously unexploited will be used for the first time for this purpose. There will be an attempt to disentangle the unemployment-vacancy relation according to the duration of unemployment spells. Moreover, data on sectoral vacancies will be put in relation with data on unemployment rates distinguished according to the sector where jobless people were previously employed. Such a distinction would permit to gauge whether a possible worsening labour market matching concerned mostly specific sectors or took place across the board.

Tracking the evolution of the relation between unemployment and vacancies over short time periods is not sufficient to derive conclusions on possible shifts in the Beveridge curve, pointing to worsening labour market matching. Since cyclical, demand-driven shocks also imply temporary deviations from a given Beveridge curve, a simultaneous increase in unemployment and vacancies cannot unambiguously be interpreted as an indication of a worsening labour market matching. With a view to gain insight in the analysis of Beveridge curve shifts, the next step in the analysis is that of estimating deviations in the pattern of job finding rates and job separation rates that could be linked to structural changes labour market flows impinging on matching efficiency. The analysis of job market flows will permit the construction of an indicator of the efficiency of the job matching process, summarising how efficiently jobless workers are matched to vacant jobs in a given time period.

After having analysed the pattern of changes in matching efficiency across EU countries, the subsequent step in the analysis is to relate such changes in the efficiency of matching in the labour market to likely underlying causes. The focus will

be on mismatch along three dimensions: skill, sectors, and geography. Indicators summarising mismatch along these three dimensions will be constructed and put in relation with the measure of labour market mismatch obtained from the analysis of job markets flows.

Frictional unemployment depends not only on the position of the Beveridge curve, largely determined by structural factors, but also on the incentives for firms to supply vacancies. With a view to estimate how these two sets of factors have interacted in driving the level of steady-state frictional unemployment, a basic matching model of the labour market is calibrated. The dynamics of frictional unemployment so obtained are then compared with those of headline unemployment, with a view to assess to what extent observed unemployment dynamics could be linked to growing frictions in the labour market or rather to be attributed to different causes.

The final step in the analysis is to turn to a different notion of structural unemployment, namely, the NAWRU, with the objective of analysing its determinants and disentangling short-term cyclical variations from more permanent shifts linked to policies and institutions. Predictions on the basis of the main NAWRU determinants will permit to compute 'structural NAWRU' estimates that can be compared with the headline NAWRU figures that are affected also by temporary and cyclical factors. The analysis will not focus on the methodologies followed for the computation of the NAWRU. In particular, the analysis is not linked to the work ongoing in the Output Gap Working Group of the Economic Policy Committee of the ECOFIN on the fine-tuning of the methodology for the computation of the NAWRU used in EU surveillance. Although the methodologies are analogous to those underpinning discussions in the EPC for the long-term projections of the NAWRU, the analysis in this report is carried out only under the responsibility of Commission staff with no direct implications for the work of the EPC or the application of EU surveillance.

1.3. ACCOUNTING FOR CHANGES IN UNEMPLOYMENT THROUGH THE LENS OF THE BEVERIDGE CURVE

1.3.1. The vacancy-unemployment relationship across the EU: a few stylised facts

The Beveridge curve, the negative relationship between unemployment and vacancies, is widely used to identify the nature of shocks that hit the labour market.

Movements along the curve are associated to the state of the business cycle. When labour demand is weak, employers are reluctant to hire and the number of unfilled vacancies is low while the unemployment rate is high. Conversely, in a tight labour market employers find it difficult to fill open positions, the job vacancy rate is high and the unemployment rate low. These movements along the Beveridge curve are linked to changing incentives to posting a vacancy, which are in turn related to cyclical fluctuations in labour demand.

Shifts of the curve (as opposed to movements along the curve) are instead of a structural nature, and linked to the efficiency of the workers-to-jobs matching, or the rate at which existing jobs are destroyed. Structural changes in matching efficiency and in separation rates are in turn related to the underlying processes of job reallocation in the economy, to the matching frictions arising from diversity in the composition of labour demand (in terms of skill, sector, geographical location, etc.) compared with that of labour supply, and to the technological and institutional infrastructure available to facilitate the matching between workers and vacant jobs.

Identifying Beveridge curves requires relatively long data series. Beveridge curves describe a fairly stable relation between vacancies and unemployment only over a sufficiently long time period. *A fortiori*, identifying persistent shifts in the Beveridge curve requires sufficiently long time series. It is also a well-known regularity that the adjustment to labour demand shocks implies a temporary deviation of the unemployment rate from the Beveridge curve (e.g., Blanchard and Diamond, 1989).

Box II.1.1: **Obtaining time series on job vacancy rates for EU countries**

OECD job vacancy statistics are available only for some EU Member States. Job Vacancy data from Eurostat are available for all countries, but time series span a short time period only. With a view to analyse the evolution of the relation between vacancy rates and unemployment rates across all EU countries, quarterly time series on job vacancy rates spanning about decade or more have been constructed combining OECD and Eurostat data, and extrapolating such information on the basis of the European Commission Business Survey where necessary to obtain longer series.

The vacancy series constructed concern the job vacancy rate, which is obtained as the ratio of job vacancies on the total number of posts, occupied and vacant. This is the most meaningful measure to analyse Beveridge curves as it permits to assess the extent to which employers are facing difficulties in fulfilling their labour input needs. Vacancy rates are already computed by Eurostat. The OECD instead reports only the total number of vacancies from administrative sources, usually data collected form employment services. To obtain a proxy for occupied posts, a proportionality coefficient is applied to employment series (the ratio between occupied posts from Eurostat job vacancy statistics and employment based on National Accounts is fairly constant for most countries). To account for a break in the series of occupied job due to the introduction of NACE Rev2 classification of economic activities, different proportionality coefficients have been computed for the period where only Rev1 or Rev2 data were available; the aggregate considered are for the industry and services (NACE Rev1) and Business economy (NACE Rev2); for Spain and Finland data refer to All NACE. This proxy permits to compute the vacancy rate from OECD vacancy data.

OECD data on the absolute number of vacancies for some countries do not cover earlier or recent periods. To obviate this issue, job vacancies are obtained as estimates based on predictions from a regression of job vacancies on the European Commission Business Survey indicator "*Factors limiting production: labour*" or on the Eurostat job vacancy ratio, when available. For some recently acceded Member States, vacancy rate data are available only from Eurostat and the sample period is extended based backward on survey indicators. For Spain, OECD job vacancies end in 2004 while Eurostat provide data from 2001Q1 to 2012Q4. However, there is a break in the series as data starting from 2010q1 also include job openings in the "Public administration and defence; compulsory social security" sector, which is not always included in the OECD job vacancy statistics. The break is dealt by chain linking the series before 2010q1 with that after.

The constructed job vacancy rate is fairly highly correlated with Eurostat job vacancy rate (when both available, the correlation is between 0.8 and 0.9). There is also a strong correlation with the European Commission Business Survey indicator based on the replies to the question "*Factors limiting production: labour*", which is commonly used as a proxy for vacancies in Beveridge curve analysis (see, e.g, Chapters I and II of this report). Combining these statistical sources permits to obtain time series up to end 2012 starting from 2000q1 for 19 countries, or from 2004q1 in in the case of the shortest series. The table below reports the sources on information used for the different EU countries.

Table: Job vacancy series: country-specific information on sources

	Source	Availability	Indicator used to expand sample	Length of extended sample
Belgium	OECD	2000q1-2004q1	EC Business Survey	2000q1-2012q4
Bulgaria	Eurostat	2005q1-2012q1	EC Business Survey	2000q1-2012q4
Germany	OECD	2000q1-2012q1	EC Business Survey	2000q1-2012q4
Cyprus	Eurostat	2005q1-2012q1	EC Business Survey	2001q1-2012q4
Estonia	Eurostat	2005q1-2008q4	EC Business Survey for 2000q1-2004q4, Eurostat for 2009q1-2012q4	2005q1-2012q4
Lithuania	Eurostat	2004q1-2012q4	EC Business Survey	2000q1-2012q4
Latvia	Eurostat	2005q1-2012q4	EC Business Survey	2000q1-2012q4
Romania	Eurostat	2005q1-2012q4	EC Business Survey	2000q1-2012q4
Other countries	OECD		None	From 2000q1 to 2012q4 depending on country

Graph II.1.1: **The Beveridge Curve: The relationship between the unemployment rate and the job vacancy rate**
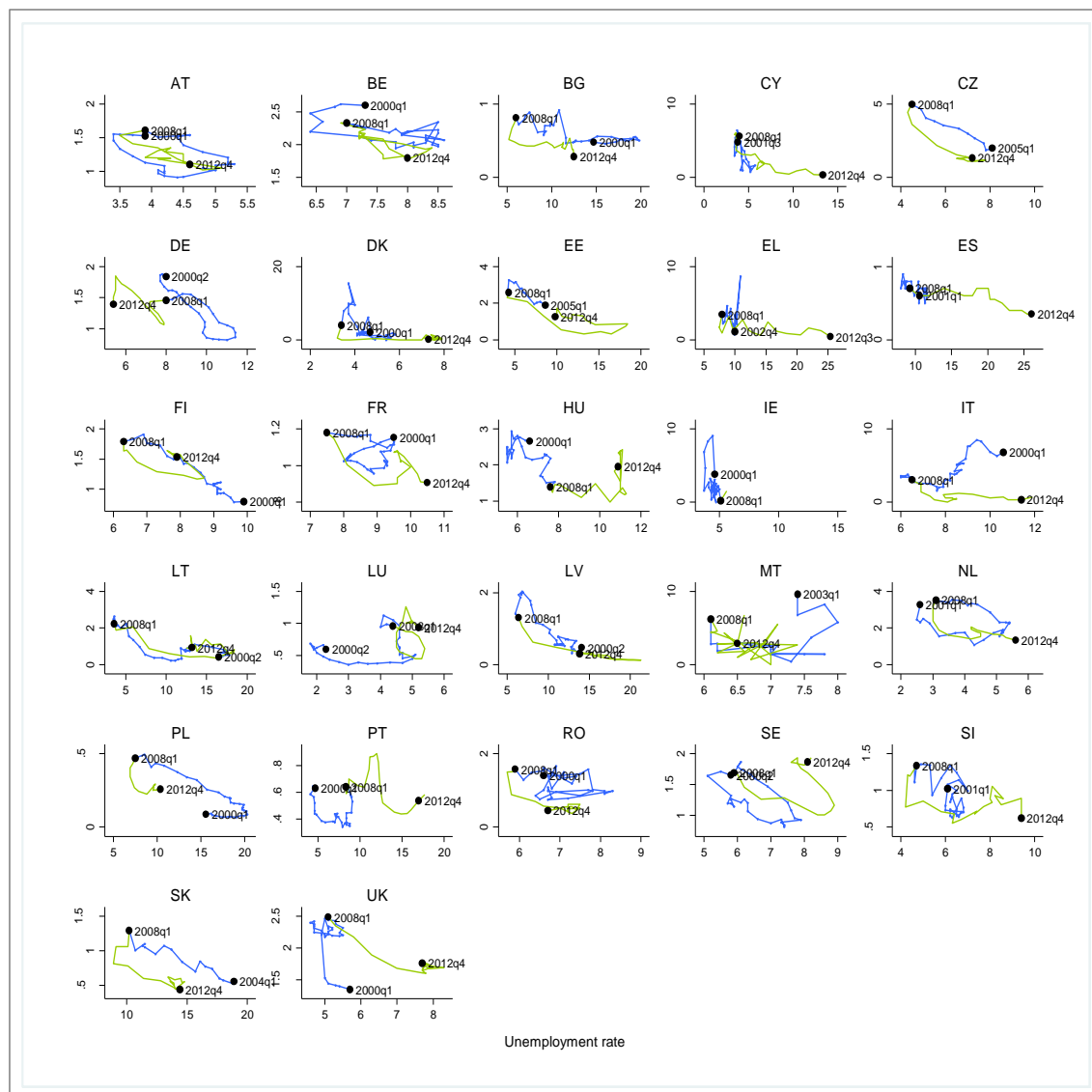
(1) The job vacancy rate is the ratio between vacant posts reported and the total number of posts (vacant and occupied).
(2) See Box II.1.1 for details on the construction of the vacancies. For Italy, Denmark and Malta, data refer to ECFIN survey indicator "Factors limiting production: labour".
(3) The vacancy series of Spain has been adjusted for a change in methodology.
Source: Own calculations based on Eurostat and OECD data.

Since vacancies react faster than unemployment, labour demand shocks are followed by counter-clockwise loops in the vacancy-unemployment space without the Beveridge curve being permanently shifted. For instance, the adjustment to a negative labour demand shock is generally followed by an increase in vacancies first while unemployment is still growing. Only subsequently does unemployment start to fall, and when unemployment has fallen sufficiently so that the

labour market is tight again, vacancies start falling as well.

With a view to match unemployment series of EU countries with sufficiently long series on vacancies, Eurostat Labour Force Survey data on vacancies have been linked to OECD vacancy series (see Box II.1.1). The data used for the analysis of Beveridge curves are vacancy rates, namely the ratio between vacant posts reported and

Graph II.1.2:   **The Beveridge curve for short and long-term unemployment rates, 2008-2012**
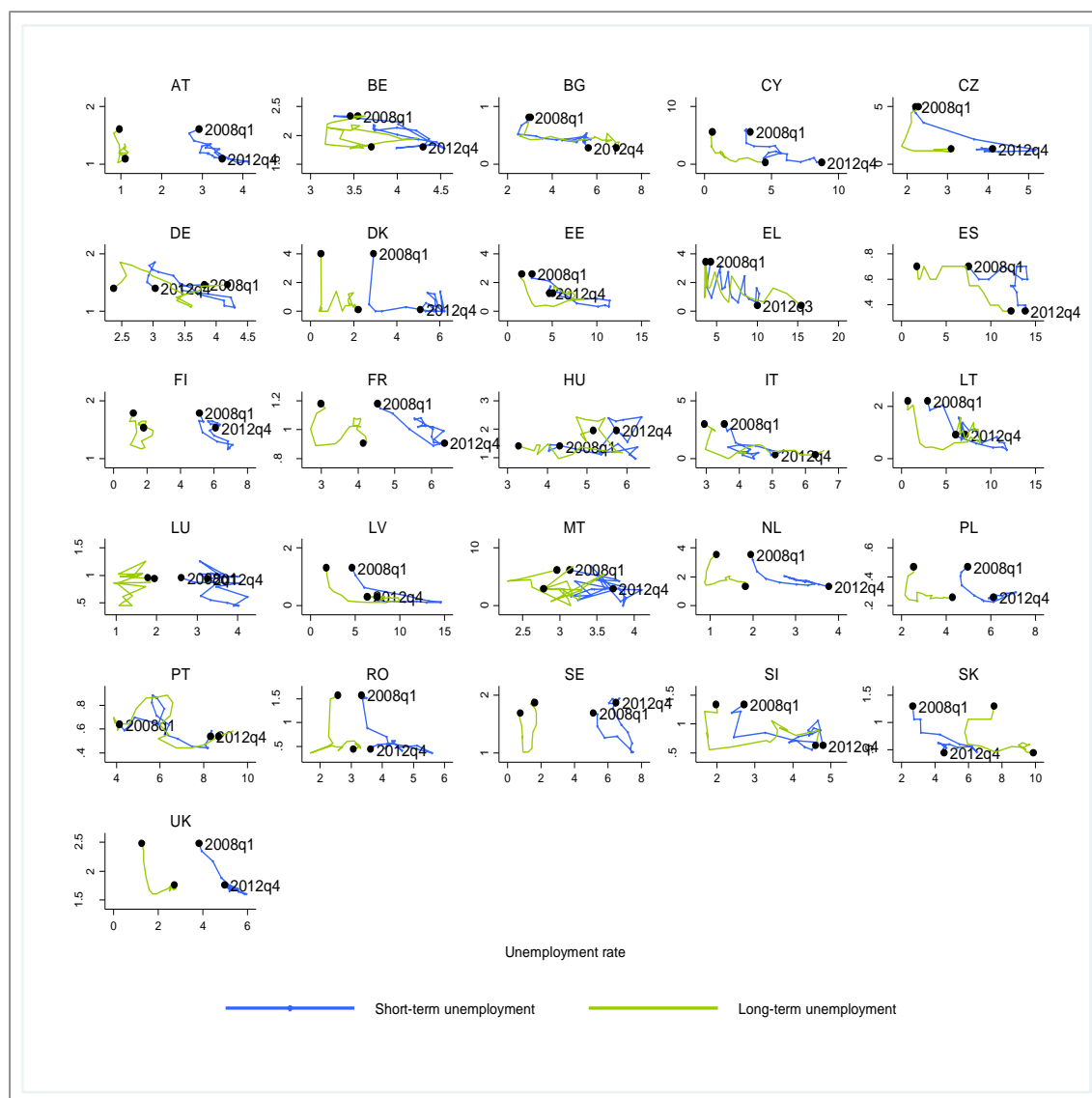
(1) The job vacancy rate is the ratio between vacant posts reported and the total number of posts (vacant and occupied).
(2) See Box II.1.1 for details on the construction of the vacancies. For Italy, Denmark and Malta, data refer to ECFIN survey indicator "Factors limiting production: labour".
(3) The vacancy series of Spain has been adjusted for a change in methodology.
Source: Own calculations based on Eurostat and OECD data.

the total number of available, occupied and unoccupied posts.

Graph II.1.1 displays plots of vacancy rates on unemployment rates for 27 EU Member States. ([14])

To visually identify possible breaks in the vacancy-unemployment relation linked with the outbreak of the financial and economic crisis, the chart highlights in different colours the movements in unemployment and vacancies after 2008Q1 from those of the 2000-2008 period, which was

([14]) In the analysis of Beveridge curves presented in the first part of this report, information on vacancies are instead proxied by replies to the European Commission Business Survey question on *Factors limiting production: labour*, which is available for all EU countries for relatively long

time series. The vacancy rate used in this chapter of the report and the vacancy proxy derived from the Business Survey are highly correlated for most countries.

characterised according to existing research by a relatively stable relationship after the inward shifts of late 1990s-early 2000s (European Commission, 2011; ECB, 2012; and Bonthuis et al., 2013).

A number of stylised facts emerge from the inspection of charts:

- First, the depth of the recession and the sluggishness of the recovery led to lacklustre job creation and a low vacancy rate in most EU countries since end-2009.

- Second, for a number of countries the vacancy-unemployment relation appear to follow the typical counter-clockwise looping movements that ensue from labour demand shocks (e.g., negative labour shocks in the early 2000s in Germany, the Netherlands, Poland; positive shocks in Ireland, Italy, the UK). These counter-clockwise movements may take several years to be completed.

- Third, for some countries the relationship seems to shift outward (i.e. a higher unemployment rate for a given vacancy rate), which suggests impaired matching efficiency. This is particularly evident in the case of Portugal and Sweden, where the increase in the job vacancy rate from 2012q1 to 2013q1 has been accompanied by an increase in the unemployment rate. Conversely, developments in Germany, and to a less extent the Czech Republic, Poland, and Slovakia, suggest a possible inward shift of the Beveridge curve.

- The slope of the curve changes over time, possibly reflecting a deterioration of the matching or an increase in the job separation rate. However, interpreting the increase in unemployment at unchanged vacancies needs to take into account the convex relationship between job vacancies and unemployment which is predicted by theoretical models and estimated empirically (Pissarides, 2000).

Graph II.1.2 plots job vacancies separately against short- and long-term unemployment for EU countries during the period 2008-2012. It appears that the Beveridge curve is generally steeper for long-term unemployment (e.g., almost perfectly vertical Beveridge curves for Austria, Finland,

Luxemburg and Sweden), which could be explained by the fact that long-term unemployment is relatively insensitive to the initial deterioration in the labour market, while short-term unemployment is affected by increased dismissals. However, in a number of countries a downward relation is visible also for the Beveridge curve for long-term unemployment, which is an indication that the labour market slack translated into a deep deterioration in job finding rates. In some cases, notably the Baltics, Greece, Spain, Portugal, Romania, the variation in long-term unemployment occurred since the crisis is larger than that for short-term unemployment. Such increase in long-term unemployment in these countries took place without major downward adjustment in vacancies. Dickens and Triest (2012) find analogous evidence for the US and interpret the outward shift in the US Beveridge curve as partly linked to reduced job finding rates especially for the long-term unemployed. Graph II.1.2 suggests that a similar phenomenon could have taken place also in some EU countries.

1.3.2. Estimating shifts in the Beveridge curve

Changes in job finding and job separation rates are to some extent structural, being driven by changes in the relative composition of labour demand and supply or by changing institutions or policies. However, job finding and separation rates also change to some extent over the cycle, contributing to the overall fluctuations of unemployment. [15] This is particularly the case for job finding rates. If the labour market is tight (there are a lot of vacancies per unemployed), it is rather easy for job-seekers to find a job. Moreover, in upturns (downturns) the share of long-term unemployed, generally characterised by a lower degree of employability, tends to fall (rise), thus leading to a higher (lower) job finding rate on average.

Conversely, separations are determined by the number of people who lose their job and the number of those that voluntary quit. Since these flows move in opposite directions over the cycle, the behaviour of the overall separation rate is *ex-ante* uncertain (see, e.g., Hall, 2005, and Elsby et al., 2010, for opposite views).

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[15] See, e. g., Fujiita and Ramey (2009), Petrongolo and Pissarides (2008), Elsby et al. (2009), Smith (2011).

Box II.1.2: **Determining equilibrium frictional unemployment**

At any point in time the change in unemployment equals the excess of inflows into unemployment over outflows out of unemployment. In symbols,

$$\Delta u_t = s_t(1 - u_t) - f_t u_t, \tag{1}$$

where s_t is the job separation rate (inflows into unemployment) and f_t is the job-finding rate (the exit rate from unemployment). The unemployment rate is in *steady state* when unemployment inflows and outflows offset each other, which holds if unemployment is equal to:

$$u_t^* = s_t/(s_t + f_t). \tag{2}$$

The relation in (2) rationalises the Beveridge curve (BC). It describes a negative and concave relation in the vacancy-unemployment space.

Job finding rates f_t depend on labour market tightness (the ratio between the number of vacancies and of the unemployed $\theta_t = v_t/u_t$) through a matching function $m(u, v)$, which describes the process of allocation of the unemployed to jobs. With the standard Cobb-Douglas specification for the matching function (e.g. Petrongolo and Pissarides, 2001) one obtains

$$f_t = m(u, v) = \mu \theta_t^{1-\alpha} \tag{3}$$

where μ is a measure of the efficiency of the matching process, and $1 > \alpha > 0$. An increase in matching efficiency μ improves the job finding rate f_t and shifts the BC leftward, while a decrease has the opposite effect. Conversely, a decrease in the job separation rate s_t shifts the curve rightward (i.e., for a given level of vacancies higher unemployment rate is needed to equate inflows to outflows). From (2) the matching efficiency is defined as:

$$\mu_t = \left(\frac{s_t}{u_t} - s_t\right)\left(\frac{1}{\theta_t}\right)^{1-\alpha} \tag{4}$$

and can be computed after estimating parameter α and setting a value for s_t (Veracierto, 2011).

The Beveridge curve is not sufficient to pin down equilibrium frictional unemployment. It is also necessary to take into account the changing incentives for firms to open vacancies, which ultimately depend on factors affecting labour demand. In this respect, the higher is unemployment, the stronger are the incentives for firms to open vacancies at given labour demand, since filling such vacancies becomes easier and less costly. This is understood by recalling that firms open vacancies until the expected value of a new vacancy (given by the probability of filling the vacancy times the discounted future profit from an additional filled job) equals the cost of keeping a vacancy open. Under the assumption that the cost of posting a vacancy is proportional to labour productivity p, and of a Cobb-Douglas matching function, the following equality describes a positively sloped and straight Job Creation curve (*JC*) in the (v, u) space:

$$\mu \theta_t^{-\alpha} \frac{p_t - w_t}{r_t + s_t} = p_t c, \tag{5}$$

where w is the wage and r is the discount rate.

Substituting the value for the labour market tightness from the JC curve in (5) in the expression of the Beveridge curve (2), one gets the unemployment rate consistent with the labour demand conditional on specific values for productivity and wages:

$$u_t = \frac{s_t}{s_t + \mu_t^{1/\alpha}\left[\frac{p_t - w_t}{(r_t + s_t)p_t c}\right]^{\frac{1-\alpha}{\alpha}}} \tag{6}$$

The Graph below describes equilibrium frictional unemployment in the vacancy-unemployment space. It is obtained at the intersection of the *BC* and the *JC* curves and denoted by u^*. Positive (negative) labour productivity shocks, raising (lowering) labour demand, tilt the *JC* upward (downward), so that steady-state unemployment is lower (higher) and vacancies higher (lower) along an unchanged Beveridge curve. The Graph presents the case of a negative shock assumed to be temporary, so that unemployment initially rises and then gradually moves back to u^*, producing a counter-clock wise movement in the (v, u) space. Increases (reductions) in the matching efficiency or reductions (increases) in the separation rate shift the *BC* curve inward

(Continued on the next page)

Box (continued)

(outward). Notice also that the *JC* is affected also by the job matching efficiency (it is tilted upward) and by the separation rate (downward tilt). The graph presents the case of an increase in matching efficiency.

The determination of frictional unemployment and reaction to shocks
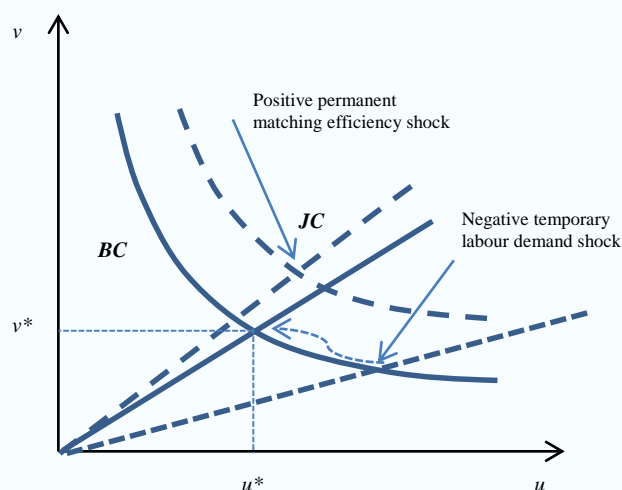
Table II.1.1: **Elasticity of job finding and separation rates to labour market tightness**

| | (1) | (2) | (3) | (4) |
| | Job finding rate elasticity | | Job separation rate elasticity | |
	Regression coefficient	R-squared	Regression coefficient	R-squared
Austria	0.27***	0.24	-0.22	0.06
Belgium	0.41***	0.33	-0.6***	0.22
Bulgaria	0.42***	0.56	-0.48***	0.59
Cyprus	0.10	0.16	-0.08*	0.18
Czech Republic	0.21***	0.56	-0.36***	0.56
Germany	0.32***	0.87	-0.35***	0.67
Estonia	0.13***	0.22	-0.82***	0.61
Spain	0.61***	0.82	0.07	0.05
Finland	0.14***	0.65	-0.21***	0.66
France	0.60***	0.79	-0.62**	0.29
Hungary	0.17***	0.18	-0.38***	0.39
Lithuania	0.20	0.78	-0.19**	0.26
Luxembourg	0.11	0.08	-0.16*	0.14
Latvia	0.27***	0.82	-0.13**	0.12
Netherlands	0.18***	0.50	-0.37***	0.55
Poland	0.24***	0.90	-0.27***	0.79
Portugal	0.36***	0.76	-0.4***	0.40
Romania	0.49***	0.23	0.00	0.00
Sweden	0.20***	0.29	-0.13	0.07
Slovenia	0.54***	0.70	-0.02	0.00
Slovakia	0.14***	0.53	-0.67***	0.45
United Kingdom	0.19***	0.42	0.12***	0.13

(1) The table shows the coefficients and R2 statistic of the regressions for the finding and the separation rates on labour market tightness (i.e. the ratio of vacancies to unemployment).
(2) *, **, *** stand for statistical significance at the 10%, 5% and 1% level.
(3) Sample period: 2000q1-2007q4 where available.
Source: Own calculations based on OECD data on vacancies and Eurostat, LFS unemployment data.

In light of the presence of cyclical changes in job finding and separation rates, in order to assess permanent shifts in the Beveridge curve it is necessary to purge observed changes in job finding and separation rates from their cyclical component. The relation between job finding rates and labour market tightness customarily builds on a 'matching function,' describing a stable relationship between the vacancy-unemployment ratio and the rate at which the unemployed find a job (see Box II.1.2).

The elasticity of the matching function measures how labour market tightness reverberates into higher job finding rates. [16] The degree of 'matching efficiency' measures instead the extent to which job finding rates can move for a given labour market tightness; the higher the rate at which the unemployed can find new jobs for a given labour market tightness, the more efficient is the matching process in the labour market. [17]

Table II.1.1 displays the estimated elasticity of the matching function separately for each EU country for which pre-crisis data are available (see Columns 1 and 2 of the Table). As expected, the job finding rate moves closely together with labour market tightness. In 13 countries, the vacancy-unemployment ratio alone accounts for at least 50% of total fluctuations in the finding rate. The

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[16] Coefficient (1-α) in equation (3) of Box II.1.3.
[17] Parameter *μ* in equation (3) of Box II.1.3.

Graph II.1.3: **Estimated matching efficiency**
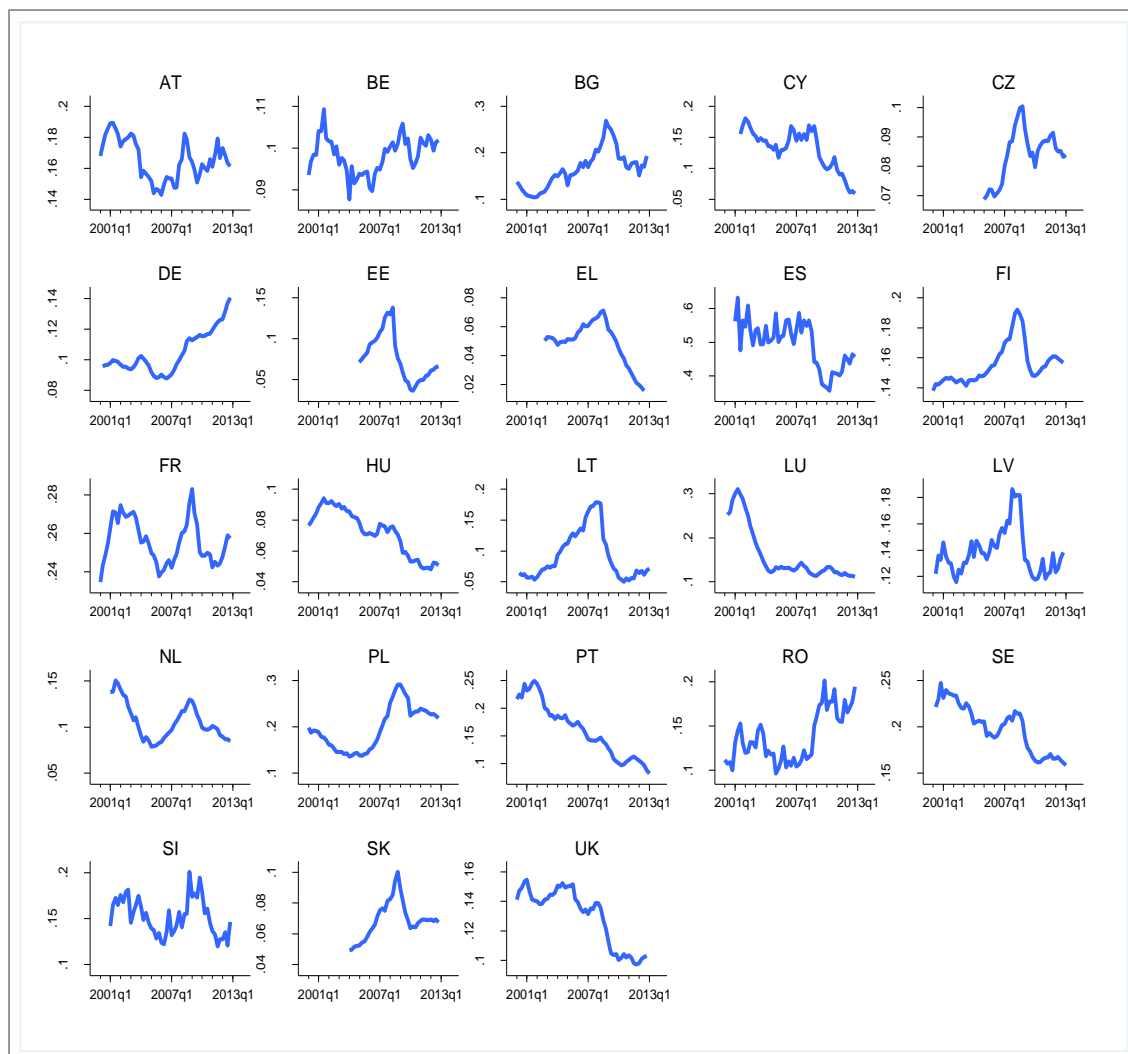
(1) The estimated matching efficiency is estimated based on the framework presented in Box II.1.2.
Source: Own calculations.

estimated elasticity with respect to vacancies is around 0.3, which is in the ballpark of values found in the literature (e.g., Petrongolo and Pissarides, 2001). ([18])

The second step in the analysis of structural shifts in job finding rates is the computation of the matching efficiency parameter. Such an estimate permits to pin down persistent movements in the

Beveridge curve and is obtained as described in equation (4) in Box II.1.2. ([19])

The evolution of the estimated matching efficiency parameter starting from year 2000 is displayed in Graph II.1.3. A number of remarks are in order.

- First, it is visible that in a number of countries the degree of matching efficiency fell considerably after the financial crisis. This is

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([18]) The coefficients are higher than those obtained by Hobjin and Sahin (2012) The different time horizon, data frequency, and definition of finding rate may explain this difference. Shimer (2005) instead gets a higher elasticity using a finding rate.

([19]) Since the Beveridge curve moves also because of movements in the job separation rate, an assumption is needed regarding such a parameter (see Box II.1.3). In the present analysis it is assumed that the separation rate is set at the pre-crisis average.

particularly evident in the Baltics, Bulgaria, Cyprus, Greece, Spain, Finland, France, the Netherlands, Slovenia, Slovakia, and the UK.

- In a few countries, a downward trend is visible already since before the crisis, notably in Hungary, Portugal, and Sweden.

- By converse, in some countries, matching efficiency did not worsen significantly after the crisis (Austria, Belgium, Romania) or considerably improved (Germany).

- Finally, it is to note that in the last part of the sample some improvement in matching efficiency is visible in a few countries, notably the Baltics, France, and Spain.

Turning to the analysis of structural shifts in separation rates, an analytical framework analogous to that for job finding rates is not available. Conceptually, the relation between job separation rates and the cycle is less obvious, although it is broadly shared the view that job separation rates remain roughly stable over relatively long time periods, being however subject to sudden jumps in correspondence with major economic shocks (Elsby et al., 2010).

In absence of better alternatives, and in line with existing practice (see, e.g., Hobijn and Sahin, 2012), an elasticity of job separation rates to labour market tightness has been estimated, notably with a view to assess whether labour market slack is generally associated with increased job separation rates. Columns 3 and 4 of Table II.1.1 show these elasticities, estimated on the pre-crisis period for the available EU countries. It appears that, as a rule, job separation rates do increase when the labour market weakens, most likely in light of a higher frequency of dismissals. However, in few countries (e.g. Austria, Spain, Romania, Sweden and Slovenia), the separation rate is acyclical, consistent with the view that changes in the job finding rates dominate unemployment fluctuations and separations rates does not always have a clear-cut cyclical pattern (e.g. Hall, 2005; Shimer, 2005). Moreover, the positive coefficient for the UK may suggest that during recessions the separation rate could rather drop than rise as the reduction of voluntary quits prevails on dismissals.

Overall, the estimates corroborate the view that an estimate of the structural change in separation rates should take into account cyclical factors, due to the fact that separation rates tend to temporarily increase during recessions and phases of major labour market slack.

A gauge of the structural change in job separation rates can be obtained as the difference between actual separation rates and those predicted from labour market tightness on the basis of the estimated elasticities. Graph II.1.4 reports the average of this difference separately for the pre-crisis and post-crisis period.

Graph II.1.4: **Gap between actual and estimated separation rates based on pre-crisis separation rate equation**
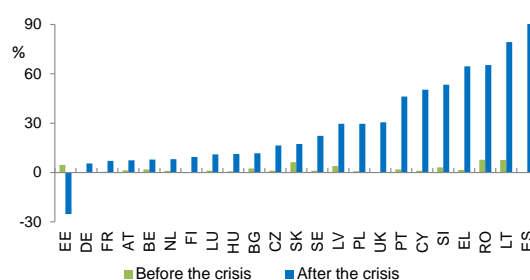
(1) The graph depicts the gap as a percentage of the predicted value.
Source: Own calculations.

- Job separation rates after the crisis are on average above those predicted on the basis of labour market tightness in all countries except Estonia, while differences for the pre-crisis period are quite negligible. This evidence corroborates the expectation that job separation rates remain relatively constant except during major recessions, where they undergo sudden jumps linked to increased dismissals.

- The increase in job separation rates above prediction is evident particularly in the countries where the recession is deeper amid current account reversals and tensions in bond markets (Spain, Lithuania, Romania, Greece, Slovenia, Cyprus).

- Conversely, relatively stable job separation rates around the level predicted on the basis of labour market tightness are observed for France, Belgium, Germany, and the Netherlands.

Overall, on the basis of the above findings, it appears that structural shifts have occurred after the crisis both concerning the efficiency of the job matching process and the job separation rate.

There is clear evidence that for a number of countries, notably those where the recession was deeper due to a current account crisis and major bond market tensions, the job matching process has become less efficient while the rate at which jobs are destroyed may have become persistently higher. For these countries it is presumable that the outward shift in the Beveridge curve is a persistent phenomenon. [20]

1.4. MEASURING LABOUR MARKET MISMATCH ACROSS SKILLS, INDUSTRIES, REGIONS

Varying degrees of labour market mismatch, and corresponding shifts in the Beveridge curve, are partly the result of persistent imbalances between labour demand and labour supply across a relevant dimension, notably skills, industries or geographical locations.

With a view to gauge the different dimensions of labour market mismatch and the factors affecting labour market efficiency, synthetic time-varying indicators of mismatch by skill, industry, and region have been computed.

Ideally, to measure mismatch one would need data on vacancies and unemployment separately for different skill levels, sectors, and regions. The higher is the discrepancy between vacancies and unemployment within a particular skill category, sector, or region, compared with that prevailing throughout the whole economy, the higher the associated degree of mismatch. Mismatch indicators built in this vein go back to Mincer (1966) and Jackman and Roper (1987), and have recently been used for the analysis of the US labour market (e.g., Dickens, 2011; Sahin et al., 2012; Lazear and Spetzler, 2012).

Information on both vacancies and unemployment is available at the sectoral level. Eurostat collects, for a number of EU countries, data on job vacancies by sector and it publishes the breakdown of unemployment by industry of last employment. The sectoral mismatch indicator is thus obtained as the sum of deviations between sectors' share in total vacancies and their share in total unemployment (see Box II.1.3 for details).

A higher level of the indicator denotes a higher overall degree of disparity between the sectors that offer many vacant jobs and sectors that dismiss many workers. [21]

The same indicator cannot be built for skill mismatch, as data on vacancies differentiated by education level are not available. Hence, following Estevao and Tsounta (2011), a mismatch indicator is constructed on the basis of the discordance between employment and working-age population shares by education groups (Eurostat breaks down labour market data in three education groups which broadly correspond to primary education or less, secondary education, and tertiary education).

As for regions, also in that case disaggregated vacancy data are not available on a comparable basis across EU countries. Hence, the indicator of regional mismatch used is the coefficient of variation of unemployment rates across regions: the higher is its value the more heterogeneity there is in the degree of labour market slack across regions. As the baseline sectoral mismatch indicator is not available for all countries, an alternative sectoral indicator is calculated to the analogy of the regional indicator.

1.4.1. Mismatch by Skills

The falling share in employment of low-skilled labour, the rising share of high-skilled labour, and the relative constancy of medium-skilled labour is common to all countries, while the average level of these shares recorded in the past decades differ considerably across countries (see Graph II.A1.1 in the Appendix).

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[20] Recently analyses available for the US conclude that matching efficiency has been deteriorating since that start of the 2008-2009 recession, but that this had only a moderate impact on the unemployment rate, i.e. of about 1-1½ percentage points (Barnichon and Figura, 2010; Veracierto, 2011).

[21] A theoretical justification for such an indicator is found in Jackman and Roper (1987), who show that an allocation of workers and jobs that equalizes the vacancy-unemployment ratio across different categories maximizes aggregate hiring.

Box II.1.3: **Measuring labour market mismatch across skills, sectors, regions**

The construction of the Beveridge curve builds on the relationship between vacancies and unemployment, and permits to identify growing mismatch whenever vacancies and unemployment increase together, on aggregate. Such an aggregate representation of the labour market does not take into account that the labour market is made of heterogenous segments, so that the same amount of vacancies could be associated with higher unemployment exactly because the distribution of vacancies that are open do not fit the distribution of the unemployed in terms of skills, industry, or geographical location.

With a view to provide synthetic, time varying measures of heterogeneity, mismatch indicators (MI) have been computed to capture the changing composition of labour demand and supply across education levels, sectors, and regions.

The sectoral mismatch indicator is defined as the sum over sectors of the absolute deviation between the share of a sector in total vacancies and its share in total unemployment (a similar indicator is built, e.g, in Lazear and Spetzler, 2012). To take into account differences in the size of sectors, the deviations are weighted by the sectors' share in employment. The sectoral mismatch indicator can thus be computed as:

$$Sectoral\ MI = \sum_{i=1}^{I} e_i\ |v_i - u_i|,$$

where i is an index for sectors (the total number of sectors is I), and e_i, v_i, and u_i are the share in employment, vacancies and unemployment of sector i. The value of the indicator is low if sectors that shed many workers also post many vacancies. If instead the composition of unemployment and that of vacancies is very different (so that sectors with a high share of unemployment have a low share of vacancies open, and vice-versa), the value of the indicator is high, indicating a high degree of mismatch. Data on sectoral employment, unemployment and vacancies was obtained from Eurostat. Sectors were consolidated into five categories: (1) Industry (except construction); (2) Construction; (3) Trade, Transportation and storage, Accommodation and food service activities; (4) Finance, Real estate activities, and other services; and (5) Public administration and community services. (Agriculture was disregarded.) The methodological change caused by the revision of sectoral definitions in NACE (occurring in Q1 of 2008 for most countries in our sample) did not appear to affect the mismatch indicators.

The same indicator cannot be constructed to capture mismatch across skills, as vacancy rates differentiated by education level are not available. Hence, in line with existing work (e.g., Estevao and Tsounta, 2011), the skill mismatch indicator is defined as the average absolute deviation between the share of education groups in employment and their share in the working age population. In contrast with Estevao and Tsounta (2011), where the indicator is a simple sum of squared deviations, the gap between the share of a given skill group in employment and in the population is weighted with the group's share in the population. The skill-mismatch indicator is thus computed as:

$$Skill\ MI = \sum_{i=1}^{3} q_i\ |q_i - n_i|,$$

where q_i and n_i are respectively the share of individuals with skill level i in the population and in employment. The indicator is low if the skill composition of the employed reflects the population's skill composition, while the indicator is high if the education groups that are highly represented in the population are not in terms of employement, and *vice versa*. Skill groups are defined based on educational attainment: low skills are defined as pre-primary, primary and lower secondary education (ISCED levels 0-2), medium skills as upper secondary and post-secondary non-tertiary education (levels 3 and 4), while high skills are defined as tertiary education (levels 5 and 6). Data were taken from Eurostat Labour Force Survey (LFS). Structural breaks caused by changes in national LFS methodology have been corrected for. Thus, the indicator captures skills' imbalances between the potential labour supply and the labour demand and, as such,

Box (continued)

differs from a measure based on the comparison between the actual labour supply (the labour force) and employment by skill levels (e.g ECB, 2012).

As for the regional mismatch, the indicator used is relatively simpler. It is defined as the coefficient of variation of unemployment across regions:

$$Regional\ MI = \frac{\sqrt{\sum_{i=1}^{R}(u_i - \bar{u})^2 / R}}{\sum_{i=1}^{R} u_i / R},$$

where i in this case denotes regions, R is the total number of regions in the economy, u_i is the unemployment rate in region i and $\bar{u}$ is the unemployment rate in the whole country. While common trends are visible in most countries for what concerns the distribution of labour supply across industries or skill categories (e.g., growing relevance of services, falling share of unskilled labour in working age population), no such trends need to be taken into account for the construction of a regional mismatch indicator, which can therefore be built without major loss on the basis of unemployment rates only. A growing dispersion of unemployment would imply, other things equal, a type of unemployment that becomes more difficult to be matched with the existing mass of vacancies because it has become more heterogeneous from a geographical viewpoint. Data on the regional dispersion of unemployment rates is made available by Eurostat.

Since the sectoral mismatch indicator described above is not available for all EU countries for lack of sectoral vacancy data, an alternative sectoral mismatch indicator was computed to the analogy of the regional indicator: the coefficient of variation of unemployment across sectors. The calculation of this indicator is made possible by Eurostat's breakdown of unemployment by sector of last employment.

Graph II.1.5 shows how the skills mismatch indicator evolves over time. It suggests a number of observations: ([22])

The pre-crisis period was characterised by a reduction in the degree of skill mismatch in most countries, linked mostly to a falling extent of mismatch between the supply and demand for unskilled labour (the excess population share over the employment share has been falling, as shown in Graph II.A1.2 in the Appendix) and that of high-skill labour (the excess employment share has been falling). Exceptions to this trend are however found in Malta, Spain, Portugal, Romania, Sweden, and the UK.

- The crisis was accompanied by rising mismatch in some countries. The trend towards better concordance between the skill composition of labour demand and supply was interrupted in Greece and Ireland, while in Denmark, Spain and Portugal the degree of mismatch continued growing at an accelerated

pace. Such increase in mismatch after the crisis in these countries was mostly related to labour demand shifting away from low-skill labour (already in excess supply) and towards high-skilled labour (in excess demand, see Graph II.A1.2 in the Appendix), with medium-skill labour playing a different role depending on the counties considered.

- By converse, in some countries the degree of mismatch fell during the crisis period. This is notably the case for Austria, the Baltics, Belgium, Bulgaria, Germany, Hungary, Poland, Romania, Slovenia, Slovakia, and the UK. Especially noteworthy is the reduced excess supply of low-skill labour coupled with a drop in excess demand for medium-skill labour characterising the Baltics, Poland, Romania (Graph II.A1.2 in the Appendix). In some countries, the skill mismatch started declining only in the most recent years, after an initial increase following the onset of the crisis (Finland, France, the Netherlands, Sweden).

([22]) Results concerning skill mismatch differ for some countries with respect to those obtained in ECB (2012), where the skill mismatch indicator refers to the labour force rather than the population.

Graph II.1.5: **Skill mismatch indicator**
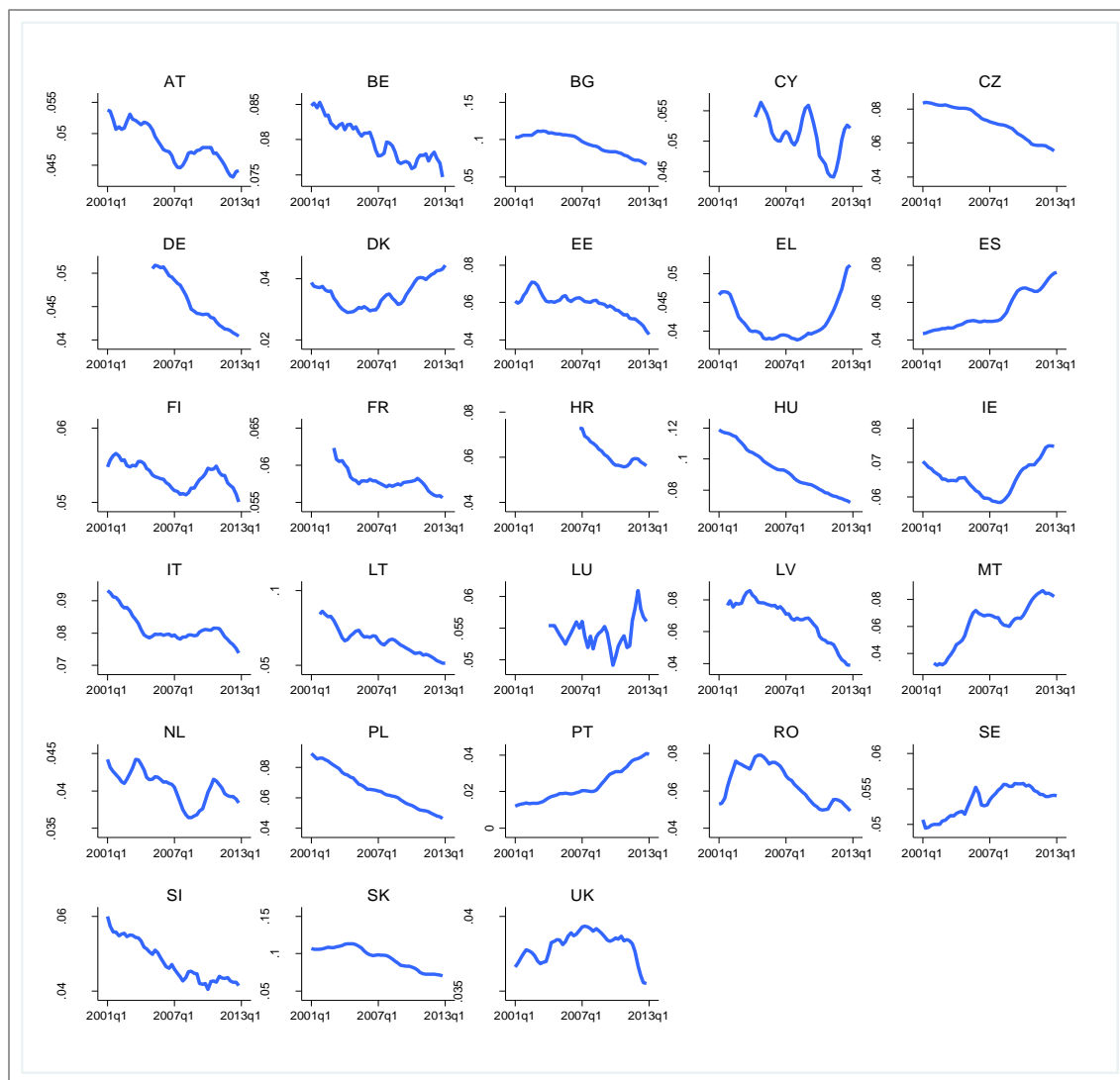
Source: Own calculations based on Eurostat data.

1.4.2. Mismatch by industries

The distribution of unemployment across sectors of previous employment (Graph II.A1.3 in Appendix) reveals a number of facts.

- First, the distribution of unemployment by sectors of previous employment is fairly stable over time and differences across countries tend to reflect their sectoral specialisation. In a majority of countries most of the unemployed were previously employed in services. In the countries with a relatively strong specialisation in manufacturing, however, a majority of

unemployed workers were previously employed in industry (e.g., Hungary, Poland, Slovenia, Slovakia).

- Second, the crisis is associated with shifts in the distribution of unemployed by sector. A surge in the share of unemployed coming from construction activities is visible in the Baltics, Ireland and Spain. In all these countries, construction became one of the major sectors of origin of unemployment after the housing bubble burst in 2007-2008. More recently, however, the share of construction in unemployment was reduced considerably in all

Graph II.1.6: **Sectoral mismatch indicator**
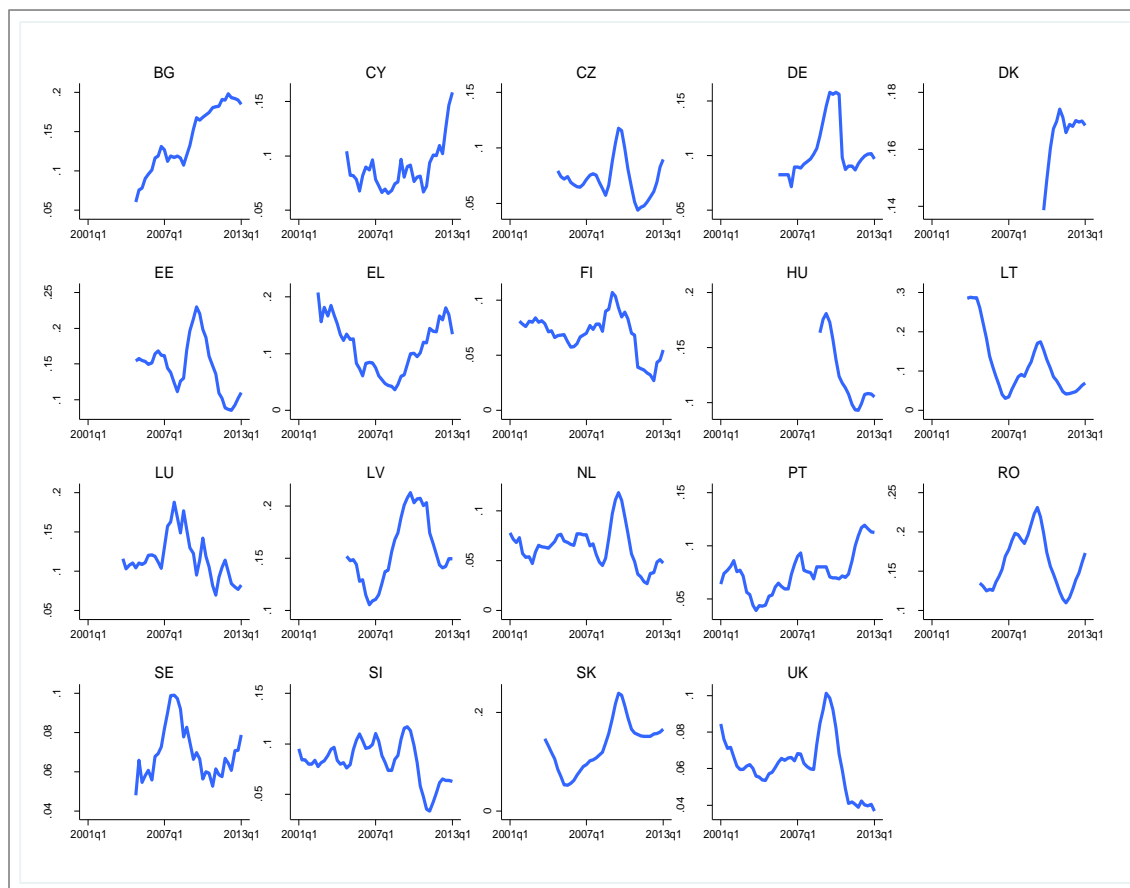
(1) For the calculation of the indices, see Box II.1.3.
Source: Own calculations based on Eurostat data.

countries, which could explain the recent recovery in matching efficiency recorded in the Baltics and Spain. This finding is consistent with recent evidence from the US, showing that the share of former construction workers contributed massively to the growth in unemployment around 2009 but explained more than 20% of the reduction in unemployment between 2010 and the first half of 2012 (Lazear and Spetzler, 2012).

- Third, industry was instead particularly hit during the crisis in countries where the recession was mostly linked to falling external demand: most visibly in the Czech Republic, Germany, Hungary, Italy, Sweden, Slovenia and Slovakia. Again, it is apparent that these

shifts were a temporary phenomenon, not visible in most recent years. ([23])

- In some countries (e.g., Spain, Hungary, Latvia, Lithuania, the UK) an increasing share of unemployment stems from the public sector and such an increased share exhibits some persistency, which may signal that workers expelled from the public sector may take longer to be re-absorbed in the labour market.

- The share of market services in unemployment increased gradually and persistently since 2008 in a number of countries (notably in Bulgaria, Germany, the Baltic States and the UK).

([23]) Anderton et al. (2013) show that the relatively low employment intensity of exports partly explains the more contained unemployment growth in countries where the crisis was felt especially in terms of a fall in external demand.

Graph II.1.7: **The regional dispersion of unemployment rates, 1999-2012**

Source: Eurostat.

The baseline sectoral mismatch indicator compares the share of sectors in unemployment with their share in vacancies to provide synthetic information about the degree of mismatch between labour supply and demand. The indicator is only available for a subset of EU countries due to lack of data on sectoral vacancies. Time series are generally shorter than those for the skill mismatch indicator. Graph II.1.6 uncovers a number of facts:

- In a majority of countries where data allow building the indicator, the sectoral measure of mismatch is clearly cyclical; it rises considerably at the initial stage of the recession to drop off subsequently. As discussed above, the onset of the crisis was associated with a sudden shift in the sectoral composition of unemployment which was relatively short-lived especially for construction and industry. This finding corroborates the view that sectoral

changes in the composition of unemployment in the aftermath of the crisis of 2008 were mostly a cyclical, rather than a structural phenomenon (Lazear and Spitzler, 2012).

- In a limited number of cases (i.e. Bulgaria, Portugal and Slovakia), cyclical fluctuations occur around an increasing trend which predates 2008. Excess labour demand in the public sector coupled with excess supply in construction and services seems at the origin of the growing mismatch in Bulgaria (see Graph II.A1.4 in the Appendix showing the breakdown of discrepancies between vacancy and unemployment shares), while for Portugal excess demand concerned services coupled with excess supply in the public sector; for Slovakia, the public sector's share in vacancies grew above its share in the unemployment rate

while the opposite tendency took place in industry.

Graph II.A1.5 reports an alternative sectoral mismatch indicator (side-by-side with the baseline indicator): the dispersion of unemployment rates by sector. For most countries the development of both indicators is very similar. Among the countries for which the baseline indicator is not available, Spain, France and Ireland exhibit historically high but gradually falling sectoral mismatch since 2008, while the increase in Italy, more modest after 2008, has not reversed itself until the end of the sample period.

1.4.3. Geographic Mismatch

Graph II.1.7 reports the evolution of the coefficient of variation of unemployment rates across regions, used as a measure of geographical mismatch.

This dispersion indicator is calculated by Eurostat and is available for the majority of EU countries for the period 1999-2012. The indicator is available both for the NUTS 2 and NUTS 3 regional level.

- It appears that in most countries the crisis has not increased the regional disparities of unemployment. On the contrary, in most countries regional disparities decreased during the recession that started in 2008. Moreover, in the countries where unemployment has increased most in recent years reaching historically high levels (Greece, Spain, Hungary, Italy, Portugal, the UK), the regional dispersion indicator is at historically low levels.

- The same negative relationship between regional dispersion and the cycle can be observed in some past boom years, too. In Germany, France, Portugal, Spain, Sweden, the UK regional disparities of unemployment reached their maximum around 2001, at the peak of the business cycle.

- Historical high levels of dispersion in 2008 for Bulgaria, Hungary, Slovakia and to a smaller extent the Czech Republic and Poland also suggest that high regional disparities of unemployment are typically times of high

labour demand when some regional labour markets are very tight.

- This evidence is consistent with a known regularity that during recessions unemployment dispersion across regions generally tend to fall, as a relatively larger mass of unemployment is generated in low-unemployment regions (e.g., Layard et al., 2005).

- The tendency towards a reduced dispersion of unemployment across regions dates before the 2008 crisis in a number of countries (e.g., Germany, Spain, Italy, Portugal, Sweden, the UK).

- In Austria, Belgium, Denmark, and Romania, regional disparities of unemployment failed to decrease in recent years. Of these countries only Denmark registered a sudden increase in unemployment. In Germany, unemployment and its regional disparity has been decreasing in parallel, which is a result of disproportional employment gains in new *Bundeslaender* that were characterized by relatively high unemployment rates in 2008.

1.4.4. Linking mismatch indicators to labour matching efficiency

How are the mismatch indicators related to the efficiency of labour market matching? Considerable attention has been given in the US to assess the dimensions along which the post-Lehman crisis may have led to a deterioration of the labour market matching and to a shift of the Beveridge curve. Barnichon and Figura (2013) find that the matching efficiency is negatively correlated with the dispersion of labour market tightness across industries and occupations, while the relation goes in the opposite direction concerning regional dispersion. Sahin et al. (2012) also show that misallocation of workers across sectors may have acted as a shifter of the US matching function, reducing the aggregate job finding rate.

The estimation of matching efficiency carried out in the previous section, and the computation of mismatch indicators across skills, industries and regions, permits to assess the dimension along which there was a change in labour market

mismatch across EU countries. Table II.1.2 reports the results from country-level regressions of matching efficiency on, respectively, the skill and the sectoral mismatch indicator.

Table II.1.2: **Effects of skills and sectoral mismatch on matching efficiency**

	Skills mismatch			Sectoral mismatch		
	Regression coefficient	S.E.	R^2	Regression coefficient	S.E.	R^2
Austria	2.85*	1.52	0.07	0.00	0.02	0.00
Belgium	-0.19	0.34	0.01	0.01	0.01	0.02
Bulgaria	-3.46***	0.58	0.42	-0.01	0.04	0.00
Cyprus	-0.20	2.62	0.00	-0.02	0.04	0.01
Czech Republic	-2.01***	0.52	0.33	0.00	0.02	0.00
Germany	-5.15***	1.04	0.41	-0.06***	0.02	0.26
Estonia	0.37	1.67	0.00	-0.01	0.03	0.01
Greece	-7.21***	1.07	0.55	-0.09***	0.01	0.54
Spain	-12.89***	1.65	0.57	-0.29***	0.04	0.53
Finland	-1.73*	0.99	0.06	-0.05**	0.02	0.13
France	0.18	1.26	0.00	0.05	0.04	0.05
Hungary	2.20***	0.18	0.74	0.01	0.03	0.00
Lithuania	-4.91***	1.29	0.24	-0.09**	0.04	0.10
Luxembourg	-7.25***	1.69	0.31	-0.02	0.02	0.02
Latvia	-2.36**	0.98	0.11	-0.02	0.02	0.02
Netherlands	-15.96***	4.03	0.25	0.02	0.05	0.01
Poland	-9.12***	1.37	0.47	-0.19***	0.04	0.31
Portugal	-31.12***	3.00	0.68	-0.31***	0.05	0.47
Romania	-2.45**	0.92	0.12	0.07***	0.02	0.18
Sweden	-5.76***	0.71	0.58	0.09	0.07	0.04
Slovenia	-2.52	1.51	0.06	0.00	0.02	0.00
Slovakia	-0.88***	0.26	0.25	0.02	0.01	0.07
United Kingdom	-18.36***	1.55	0.74	-0.08	0.05	0.04
Panel estimate (fixed effects)	-3.46***	0.25	0.91	-0.06***	0.01	0.91

(1) *, **, *** stand for statistical significance at the 10%, 5% and 1% level.
(2) Sample period: 2000q1-2013q1 where available.
(3) The sectoral mismatch indicator used in the analysis was the alternative indicator shown in Graph II.A1.5, as it is available for all countries in the sample.
Source: Own estimations.

Results regarding skill mismatch can be summarised as follows:

- In a majority of countries, skill mismatch is negatively and significantly related with matching efficiency, and, by itself, accounts between 25% and 75% of the evolution of aggregate job-search-and-matching efficiency, as revealed by the R^2 statistic.

- The role of skill mismatch appears to have driven matching efficiency downward to a relatively large extent in Spain, Greece and Portugal, while in Germany reduced skill mismatch contributed to improving matching efficiency.

- Conversely, in Hungary and to a lesser extent Austria the relation between skill mismatch and matching efficiency was a significantly positive one. In particular, the continued improvements

along the skill mismatch dimension in Hungary were matched by a considerable drop in the efficiency of the labour matching process.

- Turning to the relation between sectoral mismatch and matching efficiency, the table reports regression results based on the alternative sectoral mismatch indicator (see Graph II.A1.5) as it is available for all countries in the sample. A number of facts stand out:

- The relation of industry mismatch with matching efficiency appears weaker than that of skill mismatch. Fewer countries exhibit a significantly negative relationship and the fraction of the variation of matching efficiency explained by industry mismatch is often low.

- In Greece, Spain, and Portugal, industry mismatch appears to have played a role in the drop in the efficiency of the matching process in the labour market during the crisis. For these countries, the relation is significantly negative, and the R^2 statistic relatively high.

The relation between regional mismatch and matching efficiency is not analysed by means of regression analysis (as regional dispersion data is available only with annual frequency), but via simple correlations. The histograms summarising such a relation at country level are reported in Graph II.1.8. In a majority of countries the correlation is positive, and relatively strong (correlation coefficients above 50% in 9 countries among 17 available).

Graph II.1.8: **Correlation of the regional mismatch indicator (NUTS 2 regions) with the estimated matching efficiency**
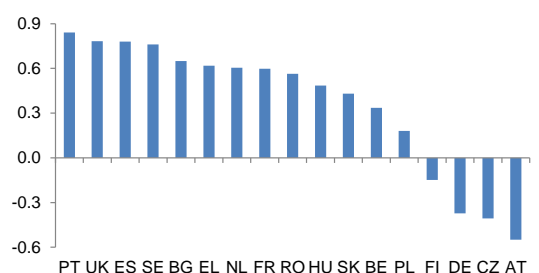
(1) Sample period: 2000-2012.
Source: Own calculations.

An explanation of positive correlations may be that regional mismatch is not a main driver of matching efficiency. (In fact, as the analysis reported in Table II.1.3 shows, regional mismatch is not significant in a multivariate regression explaining matching efficiency.) But it is also possible that such a positive relation is spurious, and linked to the fact that both regional unemployment dispersion and the degree of matching efficiency have fallen with the surge in overall unemployment after the crisis. With a view to take into account the simultaneous influence of the multiple factors that affect matching efficiency, multivariate regressions on annualised data are carried out across the whole available sample of EU countries. ([24]) Table II.1.3 shows the results. To obtain stationary time series the matching efficiency indicator is treated in time differences. The explanatory variables chosen are two lags of the dependent variable, the change in the ratio of long-term unemployment on total unemployment, changes in mismatch indicators for skill, sectors, regions, the change the expenditure on ALMPs per unemployed (divided by per-capita income).

Table II.1.3: **Determinants of matching efficiency: evidence from regression analysis**

Dependent variable: change in matching efficiency	(1) Whole sample	(2) Before 2008	(3) After 2007
Dependent variable 1 lag	0.228***	0.0404	0.0311
	[3.432]	[0.236]	[0.314]
Dependent variable 2 lags	-0.343***	-0.120	-0.620**
	[-3.439]	[-2.061]	[-2.421]
Change in long-term unemployment ratio	-0.00136***	1.89e-05	-0.00146**
	[-3.236]	[0.0247]	[-2.303]
Change in unemployment rate dispersion across sectors	-0.0551**	-0.0314*	-0.0416
	[-2.639]	[-2.061]	[-1.250]
Change in unemployment rate dispersion across regions	0.0385	-0.00255	0.0987
	[0.732]	[-0.0470]	[1.005]
Change in skill mismatch indicator	-0.0231*	-0.00270	-0.0235
	[-2.002]	[-0.269]	[-1.687]
Change in avg. expenditure on ALMPs per unemployed / GDP per capita	0.00182**	0.00142**	0.00125
	[2.599]	[2.338]	[1.335]
Constant	0.00332	-0.00544	0.000580
	[0.966]	[-1.521]	[0.125]
Observations	117	59	58
R-squared	0.575	0.578	0.662
Number of countries	17	16	17

(1) *, **, *** stand for statistical significance at the 10%, 5% and 1% level.
(2) Estimates are obtained from fixed effect panel regressions, standard errors robust with respect to heteroskedasticity and non-independence within countries. All specifications, regressions include country and year effects.
Source: Computations on AMECO, Eurostat LFS.

Across the whole sample, all variables have the expected sign and are statistically significant;

([24]) Panel regressions are needed to overcome the short time series and the limited number of degrees of freedom.

except the unemployment dispersion across regions, which is not statistically significant from zero. There is in particular a strong significance of the long-term unemployment ratio. As the fraction of the long-term jobseekers rises, the average speed at which the unemployed find a job tends to fall. The empirical equation explains almost 60 per cent of the variation in the change of matching efficiency.

Splitting the sample between years before and after the crisis, it appears that after the crisis, matching efficiency has become more sensitive to long-term unemployment and to skill mismatch, while a lower sensitivity is recorded for the other variables.

1.5. TRACKING THE DYNAMICS OF FRICTIONAL UNEMPLOYMENT

The analysis presented above has focused on the evolutions of job finding rates, job separation rates, and on the underlying factors possibly explaining their evolution. Persistent movements in job finding rates and job separation rates are at the origin of shifts in the Beveridge curve, and are at the ground of changing labour market mismatch.

A persistent outward shift of the Beveridge curve signals worsened labour market matching. Such a shift, however, is not sufficient *per se* to provide indication on the implications of worsened labour market mismatch on frictional unemployment. Frictional unemployment depends not only on the dynamics of job separation and job finding (the position of the Beveridge curve), but also on the firms' incentives to open a vacancy and hire additional workers (the *JC* curve in the analysis of Box II.1.2).

Even with a labour market characterised by frequent job separations and inefficient job matching, unemployment could be relatively low, provided labour demand on the part of firms is sufficiently strong and vacancies high.

In order to track the evolution of equilibrium frictional unemployment (i.e., the unemployment generated by matching frictions on its stable, steady-state level) one would need to capture not only shifts in the Beveridge curve, but also in the mass of vacancies that firms are willing to open for

a given amount of unemployment (the *JC* curve), which ultimately depend on structural factors driving labour demand, notably labour productivity.

As explained in Box II.1.2, on the basis of a basic labour market matching model it is possible to determine an expression for the steady-state frictional unemployment which depends on a relatively parsimonious set of parameters (see equation 6 in Box II.1.2). A simulation of the dynamics of the equilibrium frictional unemployment is therefore feasible once numerical values for the relevant parameters are plugged in that equation.

In simulating frictional unemployment, to avoid excessive fluctuations in labour productivity due to labour hoarding over the cycle, TFP is taken as proxy labour productivity. The value of matching efficiency is obtained as explained in Subsection 3.2 of this Chapter, while job separation rates after 2008 are purged of the cyclical component on the basis of the elasticity estimated in Table II.1.1. The measure of real wages used is nominal compensation per employees deflated by producer prices. Other variables, like the cost of a vacancy or discount rates are unlikely to vary substantially over time, and are therefore maintained constant. ([25])

Note that the calibrated model described in Box II.1.2 allows tracking the *dynamics* (i.e., rate of change) in equilibrium frictional unemployment, but does not allow the computation of the exact value of its *level* since some variables cannot be known with certainty (e.g., the cost of a vacancy), while other variables are available as index number only (TFP).

Graph II.1.9 reports the evolution of the actual unemployment rate and of the estimated equilibrium frictional unemployment. In order to make the scale of the two variables homogenous and highlight changes rather than levels, both

variables in the Graph are standardised in such a way to have zero mean and a unit variance.

In reading the graphs, it is important to recall the meaning of the simulated frictional unemployment. It corresponds to the steady-state level of unemployment linked to imperfect matching on the labour market (under the model assumptions and the chosen calibration).

Three aspects need to be emphasised. First, the model does not capture determinants of unemployment which are not linked to labour market frictions. Second, the model simulates steady-state unemployment, i.e., a stable level in absence of changes in the relevant determinants. Hence, short-term adjustment in job market flows (most notably, the counter-clock-wise loops produced following shocks to labour demand) do not affect the dynamics of the simulated equilibrium frictional unemployment. Third, the calibration has been chosen in such a way as to limit the shift of the Beveridge curve to changes in job finding rates and job separation rates that are likely to be persistent, namely those not linked to cyclical factors. All in all, in interpreting the graphs, it is important to recall that, contrary to actual unemployment, movements in equilibrium frictional unemployment are not affected by short-term dynamics (and by factors not taken into account in the model).

The main observations based on Graph II.1.9 can be summarised as follows:

- First, equilibrium unemployment appears to co-move closely with actual unemployment in most EU countries. This confirms that the matching model described in Box II.1.2, though highly stylised, permits to track successfully actual data.

- Second, differences between the growth rate of actual and (simulated) frictional unemployment appear to arise in a number of EU countries after the crisis (Spain, Finland, Lithuania, Latvia, Poland, Portugal, Slovenia, Slovakia). In most of these cases, equilibrium frictional unemployment exhibits a steeper upward jump around 2008, which is however followed by a more stable path afterwards. Such a pattern can be explained by the fact that the movements in

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([25]) As discount rates, it is assumed that the interest and the separation rate used by agents to discount the future are maintained constant and the average over the whole sample period. The cost of a vacancy (parameter *c* in equation 6 is set to one, without loss of generality. The outside option for the unemployed is also kept constant and normalised to zero. Such a simplification is not fully innocuous as unemployment benefits have been reformed in a non-marginal way in a number of EU countries in recent years.

Graph II.1.9:   **Equilibrium frictional unemployment (2008q4 = 100)**
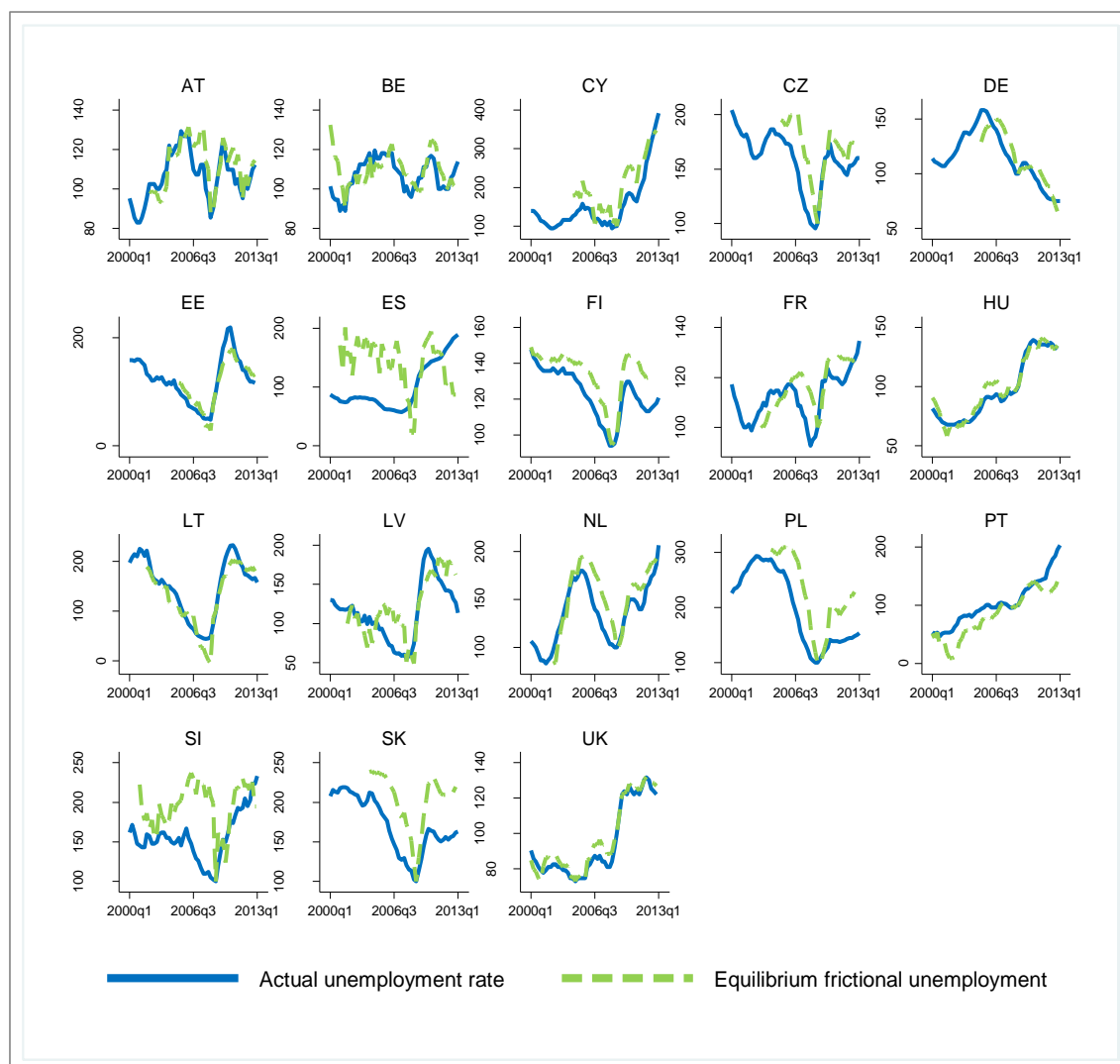
(1) The charts show the equilibrium unemployment rate conditional on the observed path for the matching efficiency until 2008; from 2008 onwards, the separation rate is set to follow the non-cyclical component.
(2) The series are normalised to take the value 100 in 2008q4. The estimated frictional unemployment is normalised to have the same standard deviation as the unemployment series.
Source: Own calculations.

equilibrium frictional unemployment are not affected by short-term variations in job-market flows. After a major labour market shock, equilibrium frictional unemployment jumps almost immediately to a new level, remaining relatively stable there.

• In countries where a major increase in unemployment was registered after 2008, the growth rate in actual unemployment overshot the simulated equilibrium unemployment. However, while in Cyprus, Spain, Portugal,

Slovenia, France, actual unemployment seems to be growing above equilibrium up to the end of the sample period, in the Baltics actual unemployment started falling, against a relatively stable equilibrium unemployment. Spain is one of the few countries where the job market was severely hit by the crisis to exhibit a neat downward trend in equilibrium unemployment, possibly linked to the recent improvement in matching efficiency (see Subsection 3.2 of this Chapter).

Graph II.1.10: **Unemployment rates and the NAWRU**
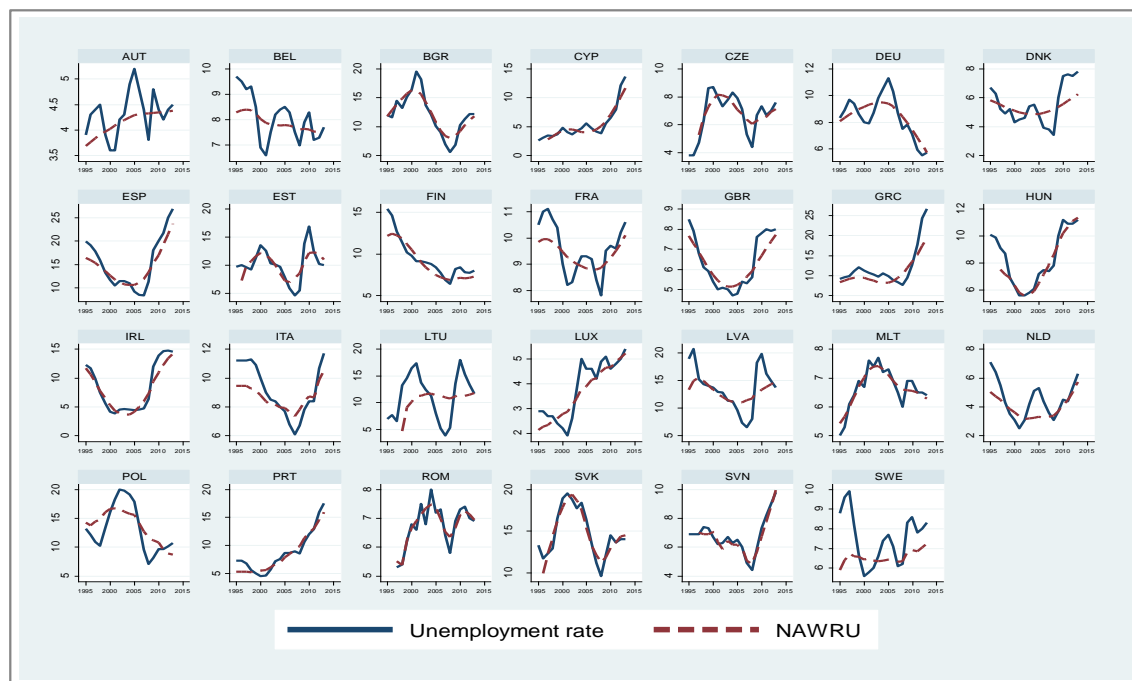
Source: Own calculations.

1.6. STRUCTURAL UNEMPLOYMENT AND THE NAWRU

The most common concept of structural unemployment in the macroeconomic debate is the Non-Accelerating Wage Inflation Rate of Unemployment (NAWRU). The NAWRU corresponds to that particular unemployment rate that which permits to keep inflation constant. This notion of structural unemployment is the most suited for assessing trade-offs in macroeconomic policy making along the Phillips curve. If unemployment is above (below) the NAWRU, the labour market slack (pressure) would gradually result into lower (higher) inflation.

The NAWRU is not directly observable, and different techniques have been developed for its estimation (see, e.g., Fabiani and Mestre, 2000). The method adopted in EU surveillance to estimate the NAWRU makes use of a Kalman filter to estimate a Phillips curve under a number of assumptions regarding the statistical properties of the cyclical and trend component of unemployment (D'Auria et al., 2010).

As discussed in the literature, despite providing a useful benchmark in macroeconomic policy making, the NAWRU can be considered as a good approximation of structural unemployment only under specific assumptions because, in most real-world circumstances, the NAWRU is likely to vary with the cycle to some extent. The reason is that, in the presence of real rigidities, real wages adjust slowly to labour demand shocks, so that the adjustment takes partly place in terms of unemployment (Estrella and Mishkin, 2000; Orlandi and Roeger, 2013). To the extent that labour demand is partly of cyclical nature, the NAWRU may diverge from the value of structural unemployment which only depends on structural factors (institutions, technology, preferences, etc.), and the unemployment rate that keeps wage inflation constant may exhibit variations over the cycle (see Box II.1.4).

As shown in Graph II.1.10, in the presence of major variations in actual unemployment rates, the NAWRU also tends to exhibit large oscillations, which are likely to be partly driven by cyclical rather than structural factors.

Box II.1.4: **The cyclicality of the NAWRU**

The reason why it should not be expected that the NAWRU remains unaffected by the cycle is easily explained by allowing inertia in the adjustment of real wages to changes in labour demand.

To fix ideas, consider a stylised labour market setting whose equilibrium is determined by *labour demand*:

$$w_t - p_t = y_t - l_t, \tag{1}$$

and a *wage-setting* equation of the following type (see Blanchard and Katz, 1999, for a similar labour market set up):

$$w_t - p_t^e - \tau_t = a_t + (1-\mu)b_t + \mu(y_t - l_t)^e - \beta u_t + \varepsilon_t. \tag{2}$$

In the above equations, variables are expressed in logarithms, w is the wage, p is the price level, y is output, l is labour inputs, and u is the unemployment rate, while τ is a tax rate on labour, b is the reservation wage, and ε is a random error with zero mean. The superscript "e" denotes expected variables.

Labour demand is derived from firms' optimizing behavior and requires equalization of the real wage to labour productivity. The wage setting equation can be rationalized on the basis of a bargaining framework where the solution lies between the solution preferred by workers (a real net wage equal to the highest value payable by a firm, i.e., labour productivity) and the outside option of workers, which depends on the reservation wage and on the risk of falling into unemployment. Note that wages are set before having observed output, productivity, prices, and the shock affecting the wage setting rule.

Further assume that the reservation wage of workers (determined primarily by available out of work benefits) is linked to labour productivity (so that a proportionality is kept between benefits and real wages):

$$b_t = b_t^0 + y_t - l_t. \tag{3}$$

Under the assumption that expectations are fulfilled, the unemployment rate is on average equal to:

$$u_t^* = [a_t + \tau_t + (1-\mu)b_t^0]/\beta. \tag{4}$$

Note that equation (4) identifies a notion of unemployment that only depends on structural and institutional factors, with no role for temporary shocks or the cycle. This measure of *structural unemployment* rises with labour taxes and out-of-work benefits, and with policies that can reduce the value of parameter *a* (for instance, ALMPs and activation policies).

When expectations are correct and there are no frictions in the adjustment of economic variables, unemployment dynamics are linked only to the presence of stochastic shocks. Less trivial dynamics emerge by assuming static expectations for inflation (so that $\pi_t^e = \pi_{t-1}$). This corresponds to a case of *nominal rigidity*, whereby nominal wages are adjusted with lags in light of the expected behavior of prices. The presence of nominal rigidities rationalizes the presence of a Phillips curve, in that it generates a link between inflation and the unemployment gap. This is easily understood by expressing the expected real wage as a function of the unemployment gap using equations (1)-(4) as follows:

$$w_t - p_t^e - \tau_t = (y_t - l_t)^e - \beta(u_t - u_t^*) + \varepsilon_t \tag{5}$$

which, under the assumption of static inflation expectations, and the assumption of constant wage-price mark ups which makes inflation equal to changes in unit labour costs, permits to express the acceleration of prices (i.e., the change in inflation) as follows:

(Continued on the next page)

Box (continued)

$$\Delta \pi_t = \Delta^2 w_t - \Delta^2 (y_t - l_t) = \Delta nulc_t = -\beta(u_t - u_t^*) + \varepsilon_t \cdot \qquad (6)$$

The above expression permits to derive the NAWRU as the unemployment rate that sets to zero price acceleration:

$$NAWRU_t = u_t^* + \frac{1}{\beta_t} \varepsilon_t \cdot \qquad (7)$$

Note that the NAWRU, under the assumption of nominal rigidities only, differs from structural unemployment up to an error term. This means that persistent changes in the NAWRU in such a case would be explained only on the basis of the structural and institutional variables underpinning the value of u_t^*.

Assume now that real wages are "sticky", so that they react to the unemployment gap only gradually. This case of *real rigidity* can be represented by rewriting equation (5) above as follows:

$$w_t - p_t^e - \tau_t = \gamma(w_{t-1} - p_{t-1}) + (1-\gamma)(y_t - l_t)^e - \beta(u_t - u_t^*) + \varepsilon_t \qquad (8)$$

The equation above shows that current real wages cannot jump to new values immediately as they are linked to their value at the previous period. It is easily shown that, under static expectations for inflation, this also implies that the acceleration of inflation depends on the change in the real wage (which, by the labour demand equation, equals labour productivity):

$$\Delta \pi_t = \Delta^2 w_t - \Delta^2 (y_t - l_t) = -\gamma \Delta(y_t - l_t) - (1-\gamma)\beta(u_t - u_t^*) + \varepsilon_t \qquad (9)$$

The NAWRU in this case depends not only on structural unemployment u^*, but also on labour productivitiy (labour demand) growth:

$$NAWRU_t = u_t^* - \gamma \Delta(y_t - l_t) + \frac{1}{\beta_t} \varepsilon_t \qquad (10)$$

Equation (10) shows that the presence of real rigidities in addition to nominal rigidities adds a possible element of cyclicality to the NAWRU linked to movements in labour demand.

For instance, while for the Baltics the NAWRU remained relatively flat over the crisis years despite large fluctuations in the unemployment rate, the NAWRU and actual unemployment appear to both undergo a major increase and co-move closely after the crisis in countries such as Ireland, Spain or Portugal. An increase in the NAWRU of about 10 percentage points in a few years like the one recorded in the post-crisis period in Ireland can hardly be entirely attributed to a sudden changes in structural factors justifying an overall unemployment rate persistently higher by such an amount.

With a view to obtain a better gauge of structural unemployment, econometric techniques permit to go some way towards isolating structural factors in the NAWRU determinants. The first step to this purpose is to estimate the determinants of the NAWRU. In a second step, a prediction could be obtained on the basis of structural and institutional variables only.

1.6.1. Estimating the determinants of the NAWRU

Table II.1.4 presents the results from the estimation of the NAWRU determinants. [26] The

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[26] A similar approach to the analysis of the determinants of the NAWRU was discussed in the framework of the EPC Output Gap Working Group (OGWG) to compute medium-term NAWRU predictions. The analysis in this section of the report presents evidence that complements the one carried out in the OGWG with no direct implications for the implementation of EU surveillance. Moreover, the

approach followed is akin to that in Bassanini and Duval (2006) and Orlandi (2012). With a view to exploit a sufficient amount of degrees of freedom to carry out robust inference, the estimation is performed on a panel of EU countries. Since unemployment across EU countries exhibit persistent differences possibly attributable to country-specific structural factors which may not be captured in available statistics and indicators, fixed effects are included. With a view to obtain a representative estimate for the fixed effects to be used in predicting 'structural NAWRU' rates, only countries with sufficiently long time series for the NAWRU are included in the sample (the 15 countries that acceded before 2004).

Table II.1.4: **Estimating the determinants of the NAWRU**

Dependent variable: NAWRU	(1)	(2)	(3)	(4)	(5)
	EU15 countries, 1985-2008			except CY, 1998-2008	22 EU countries, 2000-2008
TFP growth	-0.090	-0.083*	-0.131**	-0.153***	-0.124***
	[-1.724]	[-1.875]	[-2.277]	[-4.228]	[-4.892]
	-0.892***	-0.654**	-0.733**	-0.207**	-0.154**
Growth rate in net capital stock	[-6.285]	[-2.880]	[-2.707]	[-2.123]	[-2.519]
Tax wedge	0.223***	0.189***	0.192***	0.173**	0.092**
	[6.029]	[4.328]	[3.728]	[2.452]	[2.644]
Passive LM policies, implicit replacement rate	0.03		0.033	0.042*	0.057**
	[1.354]		[1.488]	[1.855]	[2.439]
Active LM policies, implicit replacement rate	-0.035***		-0.035***	-0.059**	-0.037
	[-3.713]		[-3.718]	[-2.295]	[-1.365]
Passive LM policies, % GDP		1.210*			
		[2.131]			
Active LM policies, % GDP		-0.558			
		[-0.566]			
Employment share in the construction sector			-0.334		
			[-0.882]		
Skill mismatch indicator				0.536	
				[1.521]	
Matching efficiency indicator					-0.180***
					[-3.209]
Constant	2.195	1.675	5.270	0.474	8.058***
	[1.647]	[0.768]	[1.436]	[0.135]	[4.628]
Observations	314	314	314	203	158
R-squared	0.632	0.652	0.644	0.371	0.416
Number of countries	15	15	15	26	22

(1) Estimation method: fixed-effects OLS with standard errors robust with respect to heteroskedasticity and non-independence of errors within countries.
(2) *, **, *** stand for statistical significance at the 10%, 5% and 1% level.
(3) The tax wedge is computed for a married person with no children earning the average wage. Source: OECD-Commission tax and benefit database.
(4) Passive and active policies are implicit replacement rates (expenditure per unemployed divided by income per capita). Source: Eurostat and OECD when the former is missing.
(5) The source of variables TFP, capital stock, and employment in the construction industry is the AMECO database of DG ECFIN.
Source: Own estimations.

Some of the explanatory factors included are aimed at capturing macroeconomic shocks, some institutional and structural determinants. ([27]) In order to produce a prediction of the level of the NAWRU, all variables are expressed in levels, with no modelling of dynamics. As most of the variables are non-stationary, meaningful estimates require the variables to be co-integrated. ([28]) The estimation method is fixed-effects OLS with standard errors robust with respect to heteroskedasticity and non-independence within clusters. ([29])

Column (1) in Table II.1.4 reports the baseline specification for the NAWRU. TFP growth and the growth rate in the net real capital stock aim at capturing shifts in labour demand not linked to short-employment variations. As expected, the sign is negative and significant for both variables: labour productivity growth linked to either TFP or investment is not immediately matched by an increase in real wages, which brings about a reduction in the rate of unemployment compatible with stable wage inflation. ([30]) Regarding the institutional variables, the tax wedge as expected has a positive and significant impact. Its size, around 0.2, is slightly below but in the ballpark of what found in previous work, and implies that a reduction in the tax wedge of 10% of total labour costs would allow a reduction in the NAWRU of about 2%.

([27]) EPL and a number of collective bargaining indicators were also tested as possible explanatory variables but exhibited a less robust relation with the NAWRU as compared with the institutional variables selected in the final specifications.
([28]) Fisher panel unit root tests indicate that the NAWRU is integrated of second order, while the explanatory shown in Table II.1.3 are either integrated of first or second order or stationary. As shown in Orlandi (2013), despite the NAWRU equations comprise a mix of integrated and stationary variables, such variables appear to be cointegrated, a case which cannot be excluded (e.g., Enders, 2004). The fourth of the tests proposed by Pedroni (1999) rejects the null hypothesis of no cointegration for the specification provided in the first column of Table II.1.3.
([29]) As shown in Orlandi (2013), OLS estimates for NAWRU determinants yield results very close to those obtained with estimation techniques conceived to deal with non-stationary panels (Fully Modified OLS).
([30]) The growth rate in real net capital appears to be have a stronger explanatory power and statistical significance that alternative variables aimed at capturing labour productivity changes linked to investment, such as the real long-term interest rate.

analysis is not linked to the work ongoing in the Output Gap Working Group of the Economic Policy Committee of the ECOFIN on the fine-tuning of the methodology for the computation of the NAWRU used in EU surveillance.

The variables capturing passive labour market policies (unemployment insurance and unemployment assistance) and active labour market policies (services provided by the PES and ALMP measures) are obtained as the expenditure by unemployed divided by nominal per capita income. This measure provides an ex-post implicit proxy for the effective replacement rate, i.e., how much would an unemployed receive on average per year from passive or active policies as compared with the average income generated in the economy. Such measures have the advantage of being available for long time periods. The replacement rates so obtained are not fully exogenous (as they also depend on the realized unemployment) but have the major advantage of taking into account a number of elements (relating notably to the level of statutory replacements for benefits, their duration, entitlement conditions, and coverage) which are not available in long times series.

Results indicate a positive sign for passive policies and a negative one for active policies, in line with existing studies. While ALMPs are clearly significant, the degree of significance for unemployment benefits does not reach significance at 10 per cent level. As shown in column (2), when measured in terms of expenditure on GDP, it is passive policies that become significant while active labour market policies become insignificant. This difference is likely to be linked to the fact that, especially for the case of ALMPs expenditure do not adjust perfectly to the size of unemployment, so that as unemployment grows, unemployment benefit per unemployed tend to fall and to exhibit a less positive correlation with the NAWRU, while ALMPs per unemployment tend to exhibit a more strongly negative correlation.

The last three columns of Table II.1.4 include variables aimed at capturing structural unemployment linked to matching on the labour market. Following Orlandi (2012), the share of employment in the construction sector aims at capturing sectoral mismatch linked to combination of sector-specificity of skills in the construction industry coupled with the high volatility of labour demand in the construction sector (column 4). [31]

The variable has a negative sign as expected, but not at significant level. [32]

The specification in column (4) includes the skill mismatch indicator developed in Subsection 4.1. The aim is assessing the extent to which the NAWRU is associated with variations in the degree of mismatch between demand supply of skills. Since the skill mismatch indicator is available only for short time series, to obtain sufficient degrees of freedom the sample is extended to all EU countries (except Cyprus, for which the available time series for the mismatch indicator is very short). The result indicates a role for skill mismatch in driving the NAWRU, albeit just below a significant level.

Finally, column (5) displays results including as an explanatory variable the matching efficiency indicator estimated in Section 3.2. Results are presented for the 22 EU countries for which reasonably long time series are available and suggest that, unsurprisingly, matching efficiency is strongly and negatively related with the NAWRU. The drop in the significance of the ALMP variable also suggests that this matching efficiency indicator is strongly correlated with the presence of ALMPs (see analysis above).

1.6.2. Assessing the structural NAWRU

Specification (1) in Table II.1.4 is used to obtain predictions of the NAWRU. Two predictions are carried out. A first prediction is obtained on the basis of the variation in all explanatory variables. Such prediction would differ from the actual NAWRU as temporary factors that can be considered as random deviations from the value of the NAWRU linked to its underlying drivers are not considered. A second prediction excludes also cyclical factors linked to changing labour productivity. To this purpose, the value of TFP and capital growth is kept constant at the sample average. Hence, the variation in the predicted

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[31] An alternative would be to use the sectoral mismatch indicator constructed in Subsection 4.2 of this Chapter.

Unfortunately, vacancy data are available for a too small number of countries.

[32] The same variable would instead be significant by replacing the growth rate in the capital stock with the real interest rate, as found in Orlandi (2012). This suggests that variations in the capital stock capture some of the housing cycle, thereby exhibiting a high explanatory power on the NAWRU.
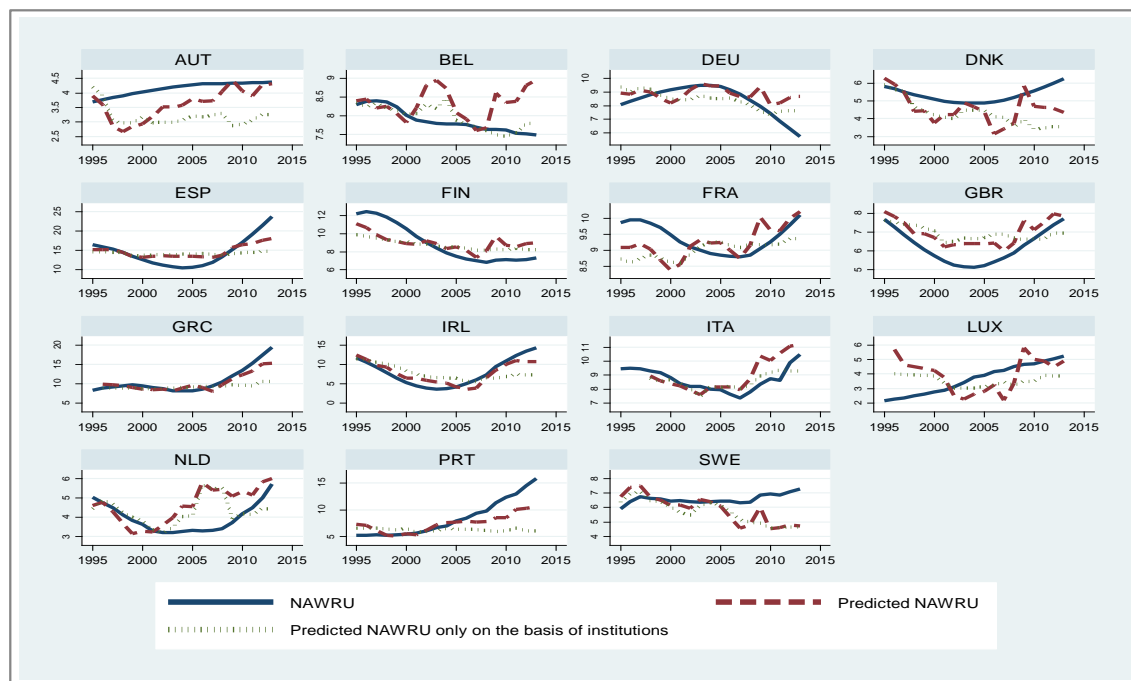
Source: Own calculations based on Eurostat data.

NAWRU in this case is driven by institutional variables only (tax wedge, active and passive labour market policies). These two predictions permit to get closer to a measure of structural unemployment that would prevail in the long term, i.e., over the cycle.

Graph II.1.11 compares the actual NAWRU with the predictions obtained from the regressions framework illustrated above. The overall NAWRU prediction provides a reasonable fit, pointing to the fact that TFP and capital growth, together institutional variables explain a good deal of the variation in the NAWRU. The fit becomes somehow less precise in number of countries after the crisis. While the predicted NAWRU is below the actual one in countries such as Spain, Greece, Ireland Portugal, the opposite is observed for Belgium, Germany, Finland, the Netherlands. It is to note that the pattern of post-crisis deviations from the NAWRU from its predicted value roughly follows the pattern of cyclical divergences in economic activity, but with relevant exceptions. For instance, in Italy the actual NAWRU has grown faster than the observed one, while the opposite has occurred in Denmark and Sweden. It is also to note that for some countries the NAWRU

does not deviate from its prediction, but rather converges to it, narrowing the extent of divergences observable in pre-crisis years (e.g., Austria, UK).

The NAWRU excluding cyclical variations in productivity is below the overall prediction in the post-crisis period in the vast majority of countries, pointing to a weaker-than-average labour productivity growth explaining an increase in the NAWRU linked to the operation of real rigidities. This NAWRU prediction varying only on the basis of institutional factors is a gauge of what the NAWRU that would prevail over the longer term assuming the full adjustment to current labour demand shocks, and indicate current differences with the actual NAWRU in the order of 10 per cent of the labour force for the countries hit by debt crisis (Spain, Greece, Ireland Portugal). ([33])

A different question that arises is the following: what value would the NAWRU take should labour

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([33]) An approach based on a prediction of the NAWRU on the basis of institutional variables has been agreed in the framework of the EPC Output Gap Working Group to project the NAWRU over the medium term.

demand growth and labour matching conditions go back at the pre-crisis period? Of course, such an exercise does not correspond to a forecast for future values of the NAWRU, but provides a benchmark for making an assessment in that direction. With a view to gauge the impact not only of labour demand growth but also labour market mismatch, the reference regression specification for such an exercise is the one displayed in column (5) in Table II.1.4. Two predictions are carried out from that equation: the overall prediction on the basis of the actual value of explanatory variables, and one obtained assuming that TFP growth, capital growth, and matching efficiency remain fixed at their pre-crisis average value.

Graph II.1.12 reports the average difference in the predicted NAWRU in the post-crisis period (after 2007) linked to the variation in TFP growth, capital growth, matching efficiency, as compared with the average pre-crisis period (before 2008). Countries in this case include also EU Member States acceded starting from 2004, whose data have been used for the estimation (see Table II.1.4). The results suggest that, not surprisingly, in most crisis-hit countries the structural NAWRU would fall by several percentage points should labour demand growth and labour market matching efficiency go back at pre-crisis levels. Gains would be substantial especially for Spain, Portugal, the Baltics, Luxemburg, Hungary, the UK, Slovenia, Sweden, and Greece.

Graph II.1.12: **Change in predicted NAWRU after the crisis: the effect of labour productivity and matching efficiency**
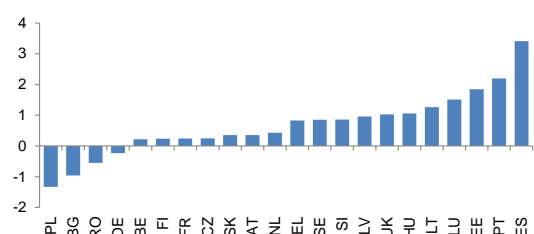
(1) The graph reports the difference in the predicted NAWRU with average post-crisis (2008) levels of TFP and capital growth and matching efficiency with the average pre-crisis levels for these same variables.
Source: Own calculations based on Eurostat data.

Overall, the evidence in this section suggests that the, in light of its responsiveness to cyclical variations in labour demand, the NAWRU in the current situation is likely to overstate the magnitude of unemployment linked to structural factors, notably in the countries most severely hit by the crisis. While the NAWRU is a helpful benchmark to assess the scope for market-driven wage dynamics associated with labour market tightness or slack and to evaluate the stance of macro-economic policy, the previous analysis shows that in some cases it could be of poor guidance for structural policy because of the possible large discrepancies between the NAWRU and the value of unemployment explained by institutions and structural factors only.

1.7. CONCLUSIONS

1.7.1. Summary of main findings

With a view to dig deeper into the analysis of cyclical versus structural unemployment in the EU, this chapter takes a number of steps forward. First, it analyses the main features of the Beveridge curves of EU countries and their underpinnings in job flows in and out of unemployment, with a view to isolate temporary changes from structural transformation in labour market mismatch in the post-crisis period. Second, it explores the main microeconomic dimensions along which transformation in labour market matching took place, to shed light on whether mismatches became more serious across skills, economic sectors, or geographical locations. Third, it reconstructs the dynamics of equilibrium frictional unemployment, which permits to assess the level of unemployment linked to imperfect matching that prevails at the 'steady state', once temporary adjustment dynamics have run their course. Finally, the chapter digs deeper into the notion of the NAWRU, with the objective of exploring its determinants and isolate permanent from transitory elements.

The analysis of Beveridge curves, frictional unemployment and labour market flows sheds light on a number of issues, which can be summarised as follows.

- A new database on vacancy and unemployment rates for EU countries has been compiled from multiple sources, which allows the analysis of

labour market matching over a sufficiently long time period to compare pre and post-crisis outcomes. The behaviour of the Beveridge curves of different countries in the EU and the euro area is highly heterogeneous. In some countries, notably Spain, Greece, Italy, Portugal, the UK, it appears that the Beveridge curve has shifted outward in the post-crisis period. Conversely, in Germany there is clear evidence of an inward shift.

- Beveridge curves shifting outward (inward) could be the result of an adjustment to major labour demand shocks mainly of temporary nature or could be the effect of more permanent, structural transformations in the labour market that result into worsened (improved) labour market matching and higher (lower) steady-state frictional unemployment. With a view to shed light on the temporary versus permanent shifts in labour market outcomes, a measure of the efficiency of the job matching process was estimated. A worsened (improved) matching efficiency implies a persistent outward (inward) shift in the Beveridge curve. Moreover, cyclical changes in job separation rates have also been distinguished from more permanent ones, which also affect in a persistent way the Beveridge curve. Overall, there is evidence of a structural worsening of labour market matching in the euro-area countries mostly hit by the debt crisis but also the Baltics, Hungary, Sweden, the UK, while improved matching efficiency is recorded in Germany. In some countries, there are signs of improvement in the efficiency of labour market matching after 2010, including the Baltics, France, Spain.

The construction of mismatch indicators along the skill, industry, and regional dimensions permits to uncover a number of findings relating the microeconomic underpinnings of the transformations in the degree of efficiency of labour matching in the post-crisis period.

- Skill mismatch worsened in a majority of the EU countries with the serious unemployment problems, especially in view of the fact that the demand for unskilled labour which was already insufficient to employ existing workers before the crisis fell further, while the labour market

for skilled labour became even tighter. The Baltics and few other New Member States appear to be an exception, as the degree of slackness for the unskilled labour market fell after the crisis of 2008-2009.

- The degree of mismatch across economic sectors rose steeply with the outburst of the crisis in a majority of EU countries for which data are available. In most countries, however, it is also observed a relatively rapid fall in the degree of industry mismatch. This corroborates the view that, like in the US (e.g., Lazear and Spetzler, 2012), also in the EU the changing composition of unemployment in terms of sectors in the aftermath of the crisis was to a large extent a cyclical, temporary phenomenon.

- The increased sectoral mismatch in the first years of the crisis was mostly linked to job shedding in construction and in industry. In the Baltics, Spain, and Ireland, construction in 2010 became the sector which contributed the most to the increase in unemployment . In some countries (e.g., Germany, Hungary, Italy, Slovakia) job shedding took place at very rapid pace also in industry. Workers expelled from the construction and industry were however quite rapidly re-absorbed or gone out of national unemployment statistics. Starting from 2011 a rapid reduction in the share of unemployed previously employed in both these sectors is observed and currently in no country these sectors account for the relative majority of jobseekers. In most EU countries the majority of the unemployed were previously employed in market services, as in the pre-crisis period. Nonetheless, in a number of countries (Spain, Hungary, Latvia, Lithuania, the UK) it is observed a quite significant and persistent increase in the share of unemployed previously working in the public sector.

- Regional mismatch fell in most EU countries. This is a regularity observed also in previous recessions in advanced economies (Layard et al., 2005): job losses are relatively more numerous in regions providing more jobs and characterised by lower unemployment rates.

Frictional unemployment depends not only on the degree of labour market mismatch but also on the

strength of labour demand by firms. The dynamics of equilibrium frictional unemployment are reconstructed on the basis of the estimated matching efficiency, structural job separation rates, and the structural determinants of labour demand (TFP). A number of findings are summarised as follows

- The computed equilibrium frictional unemployment follows trajectories that replicate remarkably well those of actual unemployment rates in most EU countries, with deviations becoming evident only in the post-crisis period. This evidence suggests that the adjustment in most European labour markets following the crisis of 2008-2009 was of a greater scale than in past recessions and that temporary adjustments to steady-state unemployment are far from complete.

- With the 2009 crisis, equilibrium frictional unemployment often jumped upward to a new level that remained relatively constant afterwards. The dynamics of actual unemployment are smoother, with an initial less steep increase but with a more protracted growth trajectory. This suggests that in a number of countries unemployment could have grown above the steady-state level for frictional unemployment, and that a downward adjustment may start, which will however be only transitory in absence of positive labour demand shocks or structural improvements in labour market matching.

The analysis of the determinants of the NAWRU allows separating permanent from transitory elements. The main findings are as follows.

- The NAWRU varies not only because of structural and institutional long-term changes, but also because of temporary shocks and because of cyclical variations in labour demand which are not immediately matched by an adjustment in real wages. Regression analysis permits to measure the impact on NAWRU values of policy settings, labour market mismatch indicators, and labour demand determinants and to obtain NAWRU predictions based on such determinants.

- Once temporary factors are taken out from the computation of the predicted NAWRU, estimated NAWRU levels fall substantially for the countries with the largest unemployment increases in recent years, notably Ireland, Spain, Portugal while it generally falls in countries that had relatively satisfactory labour market dynamics in recent times, such as Germany. Differences are even more marked once removing cyclical variations in labour demand determinants. This notion of "long term" structural NAWRU, which represent NAWRU conditions prevailing over the cycle mainly linked to institutional and structural factors, in 2012 is generally below the actual NAWRU in most EU countries, and well below for the countries having undergone major unemployment increases since the crisis.

1.7.2. Conclusions and policy implications

The above evidence conveys a number of messages with relevant policy implications.

- Not only the level, but also the structure of unemployment and the extent to which it is structural differs widely across countries.

- The NAWRU may not provide sufficient guidance to gauge permanent structural unemployment rates rooted in institutions and economic structures. Contrary to what suggested by this indicator, cyclical unemployment, of temporary nature, may still be substantial in most countries.

- There is nonetheless clear evidence of worsening labour market matching and growing unemployment of persistent nature in a number of countries, notably those mostly affected by current account reversals and debt crises. Upward changes in structural unemployment rates appear to be mostly driven by persistently lower job finding rates ensuing from worsened labour market matching across skills and sectors, and an increased duration of unemployment spells. To a certain extent, job destruction rates may have also become persistently higher. On the contrary, structural reforms and developments in labour market policy frameworks may have rather played in

the direction of reducing structural unemployment.

- Looking forward, while increased mismatch linked to job shedding from specific sectors, notably construction and manufacturing may have gone back to some extent since 2011, labour market matching problems persist of are aggravating for unskilled workers and workers expelled from some market services (notably retail) and the public sector. Growing matching problems are also linked to the lengthening of unemployment spells and the grim prospects for labour market entrants (the youth).

A number of implications for policy are as follows

- First, in light of the still relevant degree of cyclical slack in most EU labour markets, macro and micro policies stimulating labour demand are likely to keep their effectiveness on employment.

- Second, policy responses across the board for the EU or the euro area would work only to a certain extent, since the magnitude and typology of challenges are largely country-specific. While some countries are characterised by an unprecedented labour market slack, in others labour market conditions are getting remarkably tight. Tailor-made responses are needed, with policies that may differ, also considerably, from one country to another.

- Third, policy action to tackle unemployment should aim sufficiently high in terms of targeted reductions, as the fraction of those currently unemployed that can no longer be considered employable is still relatively minor. Conversely, to prevent a persistent fall in the labour contribution to growth looking forward, efforts should be stepped up to avoid that the long-term unemployed or vulnerable categories (notably youth) exit from the labour force, and to facilitate re-skilling.

- Fourth, a sufficient degree of ambition in structural reforms to facilitate the adjustment of labour markets should be maintained, and further steps need to be taken where necessary. In particular, in a number of EU countries

deeply affected the rebalancing and deleveraging process, domestic demand is expected to remain subdued for long. In these countries, it is important that the dynamics in real wages play in favour of the re-absorption of unemployment, that incentives to take up jobs remain high, that taxation and labour regulations do not hamper incentives to create jobs.

- Fifth, adequate means should be ensured to Active Labour Market Policies, which should be used effectively with a view to ease mismatch along the skill dimension, to ensure the activation of benefit recipients, and to prevent the exit from the labour force of the long-term unemployed and vulnerable categories. Public Employment Services should perform effectively the role of interface between jobseekers, employers, and the public administration and strengthened where necessary. Job counselling, targeted and properly-designed hiring subsidies, apprenticeship contracts providing training and work experience, should be stepped up to ease the school-work transition for the youth.

APPENDIX 1

Additional graphs

(1) Methodological breaks in the time series of individual countries have been adjusted for.
(2) Seasonally not adjusted data.
Source: Eurostat, Labour Force Survey, own calculations.

Graph II.A1.2: **Deviation of skill groups' share in employment from their share in population**
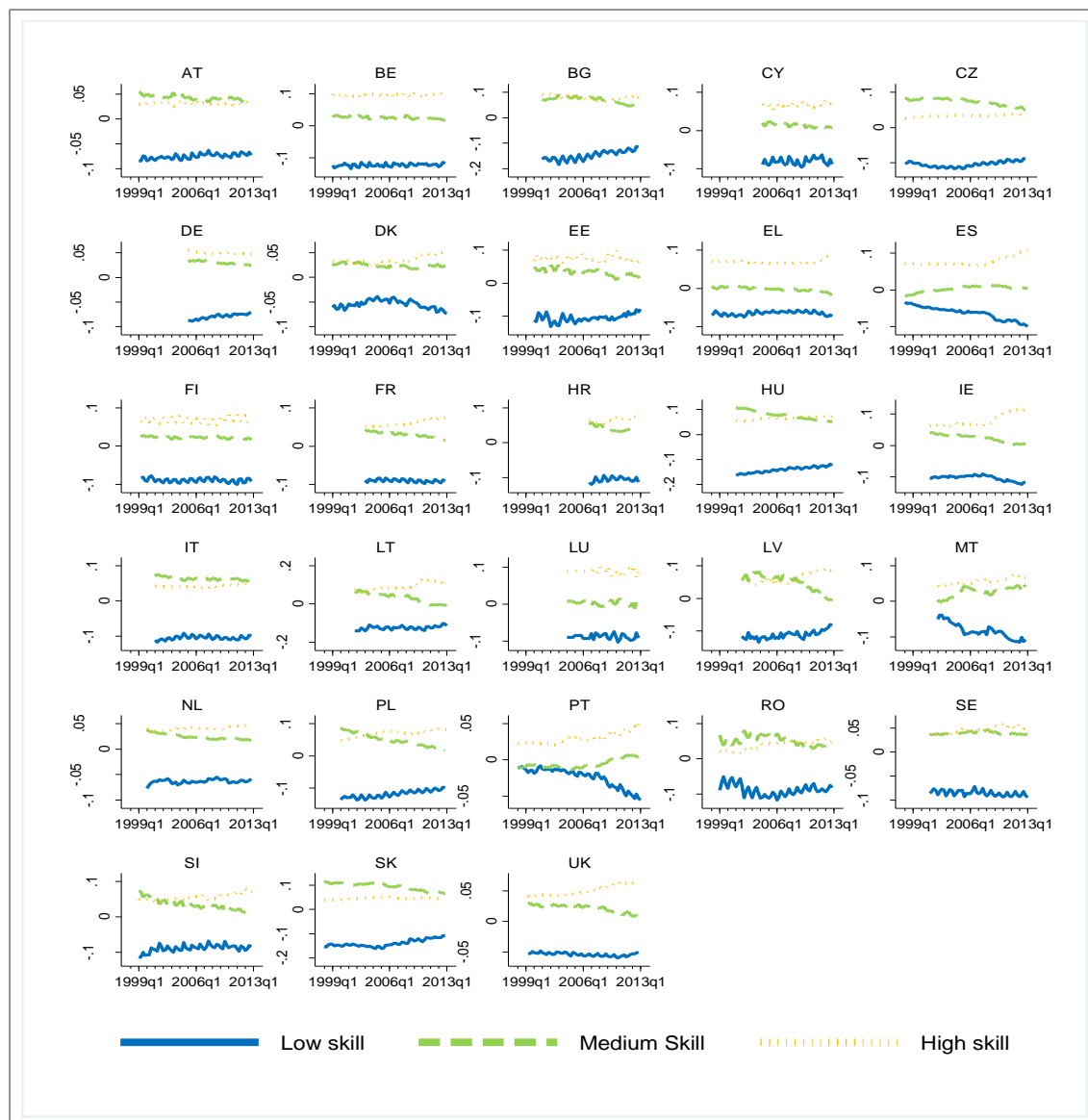
Low skill — — — Medium Skill ·········· High skill

(1) Methodological breaks in the time series of individual countries have been adjusted for.
(2) Seasonally not adjusted data.
Source: Eurostat, Labour Force Survey, own calculations.

Graph II.A1.3: **The share of sectors in unemployment**

(1) The series were smoothed by moving-average procedure to remove seasonality.
(2) Two industry groups were merged into 'Market services' for this graph.
Source: Eurostat and own calculations.

Graph II.A1.4: **Deviation of sectors' share in vacancies from their share in unemployment, 2001-2013 (smoothed)**

(1) Positive values are an indication of excess demand for labour in a particular sector and vice versa.
(2) The series were smoothed by moving-average procedure to remove seasonality.
Source: Eurostat, OECD and own calculations.

Graph II.A1.5: **Alternative sectoral mismatch indicator**

Baseline sectoral mismatch indicator (using vacancy data)

Dispersion of sectoral shares in unemployment (right axis)
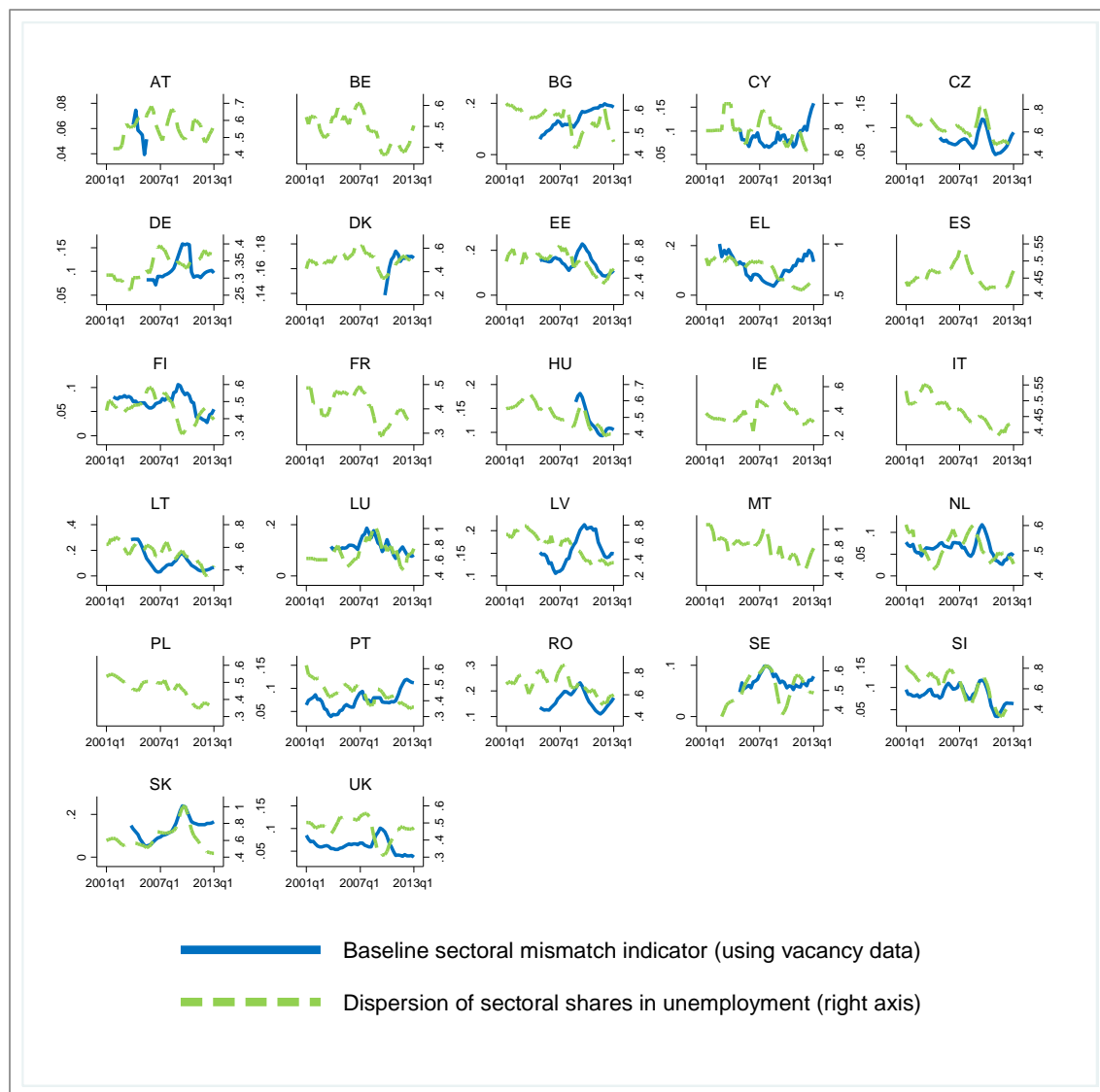
(1) The series were smoothed by moving-average procedure to remove seasonality.
Source: Own calculations based on Eurostat data.

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Statistical annex

Labour market data

Belgium	2008	2009	2010	2011	2012	2011-2012
1 - Population (LFS, total, 1000 pers.)	10708	10796	10892	10989	11063	0.7 %
2 - Population (LFS, working age:15-64, 1000 pers.)	7073	7126	7177	7220	7242	0.3 %
(% of total population)	66.1	66.0	65.9	65.7	65.5	-0.2 pps
3 - Labour force (15-64, 1000 pers.)	4747	4769	4856	4817	4847	0.6 %
Male	2609	2609	2649	2623	2637	0.5 %
Female	2138	2159	2207	2194	2210	0.7 %
4 - Activity rate (% of population 15-64)	67.1	66.9	67.7	66.7	66.9	0.2 pps
Young (15-24)	33.4	32.4	32.5	32.0	31.5	-0.5 pps
Prime age (25-54)	85.7	85.6	86.3	84.7	85.0	0.2 pps
Older (55-64)	36.1	37.2	39.2	40.3	41.4	1.0 pps
Nationals (15-64)	67.4	67.3	67.9	67.2	67.4	0.2 pps
Non-nationals (15-64)	64.3	63.1	65.1	62.9	63.3	0.3 pps
Male	73.3	72.8	73.4	72.3	72.5	0.2 pps
Young (15-24)	36.0	34.9	35.2	34.1	35.0	0.8 pps
Prime age (25-54)	92.3	91.8	92.2	90.7	90.7	0.1 pps
Older (55-64)	44.5	45.2	47.6	47.8	47.9	0.1 pps
Female	60.8	60.9	61.8	61.1	61.3	0.3 pps
Young (15-24)	30.8	29.9	29.8	29.8	27.9	-1.9 pps
Prime age (25-54)	79.0	79.2	80.4	78.7	79.1	0.4 pps
Older (55-64)	27.9	29.3	30.9	33.0	34.9	1.9 pps
5 - Employment rate (% of population 15-64)	62.4	61.6	62.0	61.9	61.8	-0.1 pps
Young (15-24)	27.4	25.3	25.2	26.0	25.3	-0.7 pps
Prime age (25-54)	80.5	79.8	80.0	79.3	79.3	-0.1 pps
Older (55-64)	34.5	35.2	37.3	38.7	39.5	0.8 pps
Low-skilled (15-64)	39.7	38.6	39.1	38.4	38.1	-0.3 pps
Medium-skilled (15-64)	67.0	65.4	65.7	65.6	65.2	-0.4 pps
High-skilled (15-64)	83.0	81.9	81.9	82.0	81.7	-0.3 pps
Nationals (15-64)	63.1	62.5	62.8	63.0	63.0	0.0 pps
Non-nationals (15-64)	55.2	52.9	54.5	53.1	52.4	-0.7 pps
Male	68.6	67.2	67.4	67.1	66.9	-0.2 pps
Young (15-24)	29.7	27.4	27.3	27.7	27.8	0.1 pps
Prime age (25-54)	87.0	85.7	85.5	84.9	84.5	-0.3 pps
Older (55-64)	42.8	42.9	45.6	46.0	46.0	0.0 pps
Female	56.2	56.0	56.5	56.7	56.8	0.1 pps
Young (15-24)	25.0	23.2	23.1	24.2	22.6	-1.6 pps
Prime age (25-54)	73.8	73.8	74.4	73.8	73.9	0.2 pps
Older (55-64)	26.3	27.7	29.2	31.6	33.1	1.5 pps
6 - Employed persons (15-64, 1000 pers.)	4413.7	4389.4	4450.6	4470.5	4479.0	0.2 %
7 - Employment growth (%, National accounts)	1.8	-0.2	0.7	1.4	0.0	-1.4 pps
Employment growth (%, 15-64, LFS)	1.5	-0.6	1.4	0.4	0.2	-0.3 pps
Male	0.7	-1.4	1.1	0.1	0.0	-0.1 pps
Female	2.5	0.5	1.7	0.9	0.5	-0.4 pps
8 - Self employed (15-64, % of total employment)	12.7	13.2	13.0	12.8	13.0	0.2 pps
Male	16.2	16.7	16.6	16.5	16.5	0.0 pps
Female	8.4	8.9	8.8	8.4	8.9	0.5 pps
9 - Temporary employment (15-64, % of total employment)	8.3	8.2	8.1	8.9	8.1	-0.8 pps
Male	6.6	6.5	6.7	7.7	7.0	-0.7 pps
Female	10.2	10.2	9.6	10.3	9.3	-1.0 pps
10 - Part-time (15-64, % of total employment)	22.4	23.2	23.7	24.7	24.7	0.0 pps
Male	7.5	8.2	8.4	9.2	9.0	-0.2 pps
Female	40.8	41.4	42.1	43.3	43.5	0.2 pps
11 - Unemployment rate (harmonised:15-74)	7.0	7.9	8.3	7.2	7.6	0.4 pps
Young (15-24)	18.0	21.9	22.4	18.7	19.8	1.1 pps
Prime age (25-49)	6.1	6.8	7.3	6.4	6.7	0.3 pps
Older (55-64)	4.4	5.1	4.6	4.0	4.5	0.5 pps
Low-skilled (15-64)	12.5	13.7	15.4	14.1	14.2	0.1 pps
Medium-skilled (15-64)	7.0	8.1	8.2	6.8	7.8	1.0 pps
High-skilled (15-64)	3.6	4.5	4.5	3.8	4.0	0.2 pps
Nationals (15-64)	6.3	7.1	7.5	6.3	6.5	0.2 pps
Non-nationals (15-64)	14.2	16.2	16.4	15.6	17.2	1.6 pps
Male	6.5	7.8	8.1	7.1	7.7	0.6 pps
Female	7.6	8.1	8.5	7.2	7.4	0.2 pps
12 - Long-term unemployment (% of total unemployment)	47.5	44.2	48.8	48.4	44.7	-3.7 pps
13 - Worked hours (full-time, average actual weekly hours)	40.8	40.8	41.2	41.4	41.1	-0.7 %
Male	41.7	41.7	42.1	42.4	42.1	-0.7 %
Female	39.0	39.2	39.5	39.4	39.1	-0.8 %
14 - Sectoral employment growth (% change)						
Agriculture	:	-2.9	-4.8	-4.2	-2.8	1.4 pps
Building and construction	2.7	0.7	1.0	2.4	0.5	-1.9 pps
Services	2.0	-0.3	1.3	:	:	: pps
Manufacturing industry	:	-4.8	-3.5	-0.3	-1.1	-0.8 pps
15 - Indicator board on wage developments (% change)						
Compensation per employee	3.6	1.2	1.4	3.1	3.4	0.3 pps
Real compensation per employee based on GDP	1.4	0.0	-0.6	1.0	1.2	0.1 pps
Labour cost index (compens. of employees plus taxes minus subs.)	3.5	3.9	3.3	2.8	2.9	0.1 pps
Labour cost index (wages and salaries, total)	3.4	3.7	3.4	2.8	2.9	0.1 pps
Labour productivity (GDP/person employed)	-0.8	-2.6	1.6	0.4	-0.3	-0.7 pps

Bulgaria		2008	2009	2010	2011	2012	2011-2012
1 -	**Population** (LFS, total, 1000 pers.)	7640	7607	7564	7333	7278	-0.8 %
2 -	**Population** (LFS, working age:15-64, 1000 pers.)	5169	5122	5046	5010	4924	-1.7 %
	(% of total population)	67.7	67.3	66.7	68.3	67.7	-0.7 pps
3 -	**Labour force** (15-64, 1000 pers.)	3505	3442	3356	3302	3304	0.0 %
	Male	1859	1828	1775	1760	1758	-0.1 %
	Female	1646	1614	1582	1543	1546	0.2 %
4 -	**Activity rate** (% of population 15-64)	67.8	67.2	66.5	65.9	67.1	1.2 pps
	Young (15-24)	30.1	29.5	28.9	29.4	30.4	1.0 pps
	Prime age (25-54)	85.5	84.3	83.4	81.9	82.3	0.4 pps
	Older (55-64)	48.7	49.2	47.9	48.9	51.1	2.1 pps
	Nationals (15-64)	67.8	67.2	66.5	65.9	67.1	1.2 pps
	Non-nationals (15-64)	53.8	51.0	51.7	50.0	72.3	22.3 pps
	Male	72.5	72.0	70.8	69.9	71.0	1.1 pps
	Young (15-24)	34.0	34.0	33.4	33.9	35.3	1.4 pps
	Prime age (25-54)	88.8	88.0	86.3	84.5	84.8	0.4 pps
	Older (55-64)	58.7	57.4	55.7	55.8	57.3	1.5 pps
	Female	63.1	62.5	62.3	61.9	63.2	1.3 pps
	Young (15-24)	26.1	24.8	24.2	24.8	25.3	0.5 pps
	Prime age (25-54)	82.1	80.6	80.5	79.3	79.8	0.5 pps
	Older (55-64)	40.2	42.1	41.3	42.8	45.5	2.7 pps
5 -	**Employment rate** (% of population 15-64)	64.0	62.6	59.7	58.4	58.8	0.4 pps
	Young (15-24)	26.3	24.8	22.2	22.1	21.9	-0.2 pps
	Prime age (25-54)	81.3	79.2	75.7	73.3	73.1	-0.3 pps
	Older (55-64)	46.0	46.1	43.5	44.6	45.7	1.1 pps
	Low-skilled (15-64)	32.9	32.3	28.5	27.5	27.4	0.0 pps
	Medium-skilled (15-64)	72.7	70.0	66.0	63.5	63.4	-0.2 pps
	High-skilled (15-64)	86.1	85.5	83.3	81.2	81.1	-0.1 pps
	Nationals (15-64)	64.0	62.6	59.7	58.5	58.8	0.3 pps
	Non-nationals (15-64)	48.8	42.9	44.8	44.9	60.0	15.1 pps
	Male	68.5	66.9	63.0	61.2	61.3	0.1 pps
	Young (15-24)	29.3	28.0	25.4	25.1	24.9	-0.2 pps
	Prime age (25-54)	84.7	82.7	77.9	74.7	74.3	-0.4 pps
	Older (55-64)	55.8	54.1	50.3	50.5	50.8	0.2 pps
	Female	59.5	58.3	56.4	55.6	56.3	0.7 pps
	Young (15-24)	23.1	21.4	18.9	19.0	18.7	-0.2 pps
	Prime age (25-54)	77.9	75.8	73.6	71.9	71.8	-0.1 pps
	Older (55-64)	37.7	39.2	37.7	39.4	41.3	1.9 pps
6 -	**Employed persons** (15-64, 1000 pers.)	3306.2	3204.8	3010.4	2927.5	2894.9	-1.1 %
7 -	**Employment growth** (%, National accounts)	2.6	-2.6	-4.7	-4.2	-1.9	2.3 pps
	Employment growth (%, 15-64, LFS)	3.0	-3.1	-6.1	-2.8	-1.1	1.6 pps
	Male	3.2	-3.2	-7.0	-2.4	-1.6	0.9 pps
	Female	2.8	-2.9	-5.0	-3.1	-0.6	2.5 pps
8 -	**Self employed** (15-64, % of total employment)	10.9	11.2	11.5	10.8	10.5	-0.3 pps
	Male	13.5	13.9	14.1	13.4	13.2	-0.2 pps
	Female	8.0	8.0	8.7	8.0	7.5	-0.5 pps
9 -	**Temporary employment** (15-64, % of total employment)	4.9	4.6	4.4	4.0	4.4	0.4 pps
	Male	5.5	5.1	5.0	4.4	4.9	0.5 pps
	Female	4.3	4.1	3.9	3.7	4.0	0.3 pps
10 -	**Part-time** (15-64, % of total employment)	2.0	2.1	2.2	2.2	2.2	0.0 pps
	Male	1.6	1.8	2.0	2.0	2.0	0.0 pps
	Female	2.4	2.5	2.4	2.4	2.5	0.1 pps
11 -	**Unemployment rate** (harmonised:15-74)	5.6	6.8	10.3	11.3	12.3	1.0 pps
	Young (15-24)	12.7	16.2	23.2	25.0	28.1	3.1 pps
	Prime age (25-49)	4.9	6.0	9.2	10.5	11.3	0.8 pps
	Older (55-64)	5.5	6.3	9.3	8.8	10.4	1.6 pps
	Low-skilled (15-64)	14.9	15.8	23.1	26.9	28.5	1.6 pps
	Medium-skilled (15-64)	4.5	6.2	9.7	10.5	11.7	1.2 pps
	High-skilled (15-64)	2.3	2.9	4.5	5.1	5.9	0.8 pps
	Nationals (15-64)	5.7	6.9	10.3	11.4	12.4	1.0 pps
	Non-nationals (15-64)	0.0	0.0	0.0	0.0	0.0	0.0 pps
	Male	5.5	6.9	10.8	12.3	13.5	1.2 pps
	Female	5.8	6.7	9.6	10.1	10.8	0.7 pps
12 -	**Long-term unemployment** (% of total unemployment)	51.6	43.1	46.4	55.7	55.2	-0.5 pps
13 -	**Worked hours** (full-time, average actual weekly hours)	41.4	40.7	40.9	40.6	40.5	-0.2 %
	Male	41.8	41.0	41.1	40.8	40.8	0.0 %
	Female	40.9	40.3	40.6	40.4	40.3	-0.2 %
14 -	**Sectoral employment growth** (% change)						
	Agriculture	:	0.0	-3.6	-2.9	-5.9	-3.0 pps
	Building and construction	18.6	-6.9	-18.9	-11.8	-6.3	5.5 pps
	Services	2.2	3.3	0.3	:	:	: pps
	Manufacturing industry	:	:	:	:	:	: pps
15 -	**Indicator board on wage developments** (% change)						
	Compensation per employee	16.3	9.4	11.2	7.3	2.9	-4.4 pps
	Real compensation per employee based on GDP	7.3	4.9	8.2	3.5	3.3	-0.2 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	26.6	10.8	6.9	9.1	8.6	-0.5 pps
	Labour cost index (wages and salaries, total)	29.2	12.5	8.0	9.0	9.5	0.5 pps
	Labour productivity (GDP/person employed)	3.7	-3.8	4.4	4.1	3.4	-0.7 pps

Czech Republic		**2008**	**2009**	**2010**	**2011**	**2012**	**2011-2012**
1 - **Population** (LFS, total, 1000 pers.)		10422	10499	10522	10497	10515	0.2 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)		7410	7431	7400	7296	7229	-0.9 %
(% of total population)		71.1	70.8	70.3	69.5	68.8	-0.8 pps
3 - **Labour force** (15-64, 1000 pers.)		5163	5209	5192	5146	5175	0.6 %
	Male	2922	2952	2943	2903	2909	0.2 %
	Female	2241	2257	2249	2242	2266	1.1 %
4 - **Activity rate** (% of population 15-64)		69.7	70.1	70.2	70.5	71.6	1.1 pps
	Young (15-24)	31.1	31.8	30.9	29.9	31.3	1.4 pps
	Prime age (25-54)	87.3	87.7	87.8	88.0	88.4	0.3 pps
	Older (55-64)	49.5	49.6	49.7	50.6	52.4	1.8 pps
	Nationals (15-64)	69.6	70.0	70.1	70.4	71.5	1.0 pps
	Non-nationals (15-64)	77.0	77.4	78.1	77.1	77.9	0.8 pps
	Male	78.1	78.5	78.6	78.7	79.5	0.8 pps
	Young (15-24)	35.9	37.3	36.2	35.5	36.4	1.0 pps
	Prime age (25-54)	94.8	95.1	95.5	95.3	95.5	0.1 pps
	Older (55-64)	64.2	63.1	62.4	62.6	64.0	1.4 pps
	Female	61.0	61.5	61.5	62.2	63.5	1.3 pps
	Young (15-24)	26.1	26.1	25.3	24.1	25.9	1.8 pps
	Prime age (25-54)	79.6	79.9	79.8	80.4	80.9	0.5 pps
	Older (55-64)	36.1	37.2	38.0	39.4	41.5	2.1 pps
5 - **Employment rate** (% of population 15-64)		66.6	65.4	65.0	65.7	66.5	0.8 pps
	Young (15-24)	28.1	26.5	25.2	24.5	25.2	0.7 pps
	Prime age (25-54)	83.8	82.5	82.2	82.8	82.9	0.1 pps
	Older (55-64)	47.6	46.8	46.5	47.7	49.3	1.7 pps
	Low-skilled (15-64)	24.1	22.8	22.0	21.4	21.1	-0.2 pps
	Medium-skilled (15-64)	73.1	71.3	70.4	71.0	71.7	0.7 pps
	High-skilled (15-64)	83.2	82.0	81.0	81.1	81.2	0.1 pps
	Nationals (15-64)	66.5	65.3	64.9	65.6	66.4	0.8 pps
	Non-nationals (15-64)	74.2	73.0	74.6	72.7	73.4	0.8 pps
	Male	75.4	73.8	73.5	74.0	74.6	0.6 pps
	Young (15-24)	32.4	31.1	29.6	29.0	29.2	0.2 pps
	Prime age (25-54)	92.1	90.5	90.5	90.9	90.9	0.0 pps
	Older (55-64)	61.9	59.6	58.4	58.9	60.3	1.4 pps
	Female	57.6	56.7	56.3	57.2	58.2	1.0 pps
	Young (15-24)	23.5	21.7	20.6	19.8	21.0	1.2 pps
	Prime age (25-54)	75.2	74.1	73.4	74.3	74.6	0.2 pps
	Older (55-64)	34.4	35.0	35.5	37.1	39.0	1.9 pps
6 - **Employed persons** (15-64, 1000 pers.)		4933.5	4857.2	4809.6	4796.4	4810.4	0.3 %
7 - **Employment growth** (%, National accounts)		2.3	-1.2	-1.7	0.3	-0.1	-0.4 pps
Employment growth (%, 15-64, LFS)		1.6	-1.5	-1.0	-0.3	0.3	0.6 pps
	Male	2.0	-1.5	-0.9	-0.7	0.0	0.7 pps
	Female	1.1	-1.6	-1.1	0.3	0.7	0.4 pps
8 - **Self employed** (15-64, % of total employment)		15.2	15.9	16.8	17.2	17.5	0.3 pps
	Male	19.6	20.2	21.2	21.4	21.6	0.2 pps
	Female	9.4	10.1	10.9	11.7	12.2	0.5 pps
9 - **Temporary employment** (15-64, % of total employment)		7.2	7.5	8.2	8.0	8.3	0.3 pps
	Male	5.7	6.1	6.8	6.7	6.9	0.2 pps
	Female	9.1	9.3	9.8	9.5	9.9	0.4 pps
10 - **Part-time** (15-64, % of total employment)		4.3	4.8	5.1	4.7	5.0	0.3 pps
	Male	1.6	2.0	2.2	1.8	2.2	0.4 pps
	Female	7.8	8.5	9.1	8.5	8.6	0.1 pps
11 - **Unemployment rate** (harmonised:15-74)		4.4	6.7	7.3	6.7	7.0	0.3 pps
	Young (15-24)	9.9	16.6	18.3	18.1	19.5	1.4 pps
	Prime age (25-49)	4.0	5.9	6.4	5.9	6.1	0.2 pps
	Older (55-64)	3.9	5.7	6.5	5.8	5.8	0.0 pps
	Low-skilled (15-64)	19.4	24.4	25.3	24.6	28.8	4.2 pps
	Medium-skilled (15-64)	3.7	6.2	7.0	6.5	6.5	0.0 pps
	High-skilled (15-64)	1.7	2.5	2.8	2.9	2.9	0.0 pps
	Nationals (15-64)	4.4	6.8	7.4	6.8	7.1	0.3 pps
	Non-nationals (15-64)	3.7	5.8	4.6	5.7	5.7	0.0 pps
	Male	3.5	5.9	6.4	5.8	6.0	0.2 pps
	Female	5.6	7.7	8.5	7.9	8.2	0.3 pps
12 - **Long-term unemployment** (% of total unemployment)		49.3	30.1	41.0	40.6	43.4	2.8 pps
13 - **Worked hours** (full-time, average actual weekly hours)		42.3	41.6	41.6	41.4	41.1	-0.7 %
	Male	43.6	42.9	42.8	42.6	42.2	-0.9 %
	Female	40.3	39.8	39.9	39.6	39.4	-0.5 %
14 - **Sectoral employment growth** (% change)							
	Agriculture	:	-3.4	-5.2	4.1	-1.3	-5.4 pps
	Building and construction	2.7	3.4	-1.0	-2.3	-0.9	1.4 pps
	Services	1.0	1.3	0.2	:	:	: pps
	Manufacturing industry	:	-8.7	-3.1	2.6	0.9	-1.7 pps
15 - **Indicator board on wage developments** (% change)							
	Compensation per employee		4.2	-1.2	4.5	2.5	2.2	-0.3 pps
	Real compensation per employee based on GDP		2.2	-2.9	4.8	3.4	0.0	-3.4 pps
	Labour cost index (compens. of employees plus taxes minus subs.)		6.4	5.4	2.6	4.1	3.1	-1.0 pps
	Labour cost index (wages and salaries, total)		7.6	5.1	2.5	3.9	3.3	-0.6 pps
	Labour productivity (GDP/person employed)		0.8	-2.8	3.5	1.9	-1.4	-3.3 pps

Denmark		**2008**	**2009**	**2010**	**2011**	**2012**	**2011-2012**
1 -	**Population** (LFS, total, 1000 pers.)	5485	5517	5542	5566	5586	0.4 %
2 -	**Population** (LFS, working age:15-64, 1000 pers.)	3605	3616	3619	3613	3611	-0.1 %
	(% of total population)	65.7	65.5	65.3	64.9	64.6	-0.3 pps
3 -	**Labour force** (15-64, 1000 pers.)	2908	2901	2872	2864	2840	-0.8 %
	Male	1533	1524	1507	1498	1482	-1.1 %
	Female	1374	1377	1365	1366	1358	-0.6 %
4 -	**Activity rate** (% of population 15-64)	80.7	80.2	79.4	79.3	78.6	-0.6 pps
	Young (15-24)	72.2	70.9	67.5	67.1	64.1	-3.0 pps
	Prime age (25-54)	89.9	89.4	88.7	88.2	87.8	-0.4 pps
	Older (55-64)	59.9	60.7	61.8	63.2	64.4	1.2 pps
	Nationals (15-64)	81.3	80.6	79.8	79.8	79.3	-0.5 pps
	Non-nationals (15-64)	70.3	74.6	72.8	72.5	71.5	-1.0 pps
	Male	84.3	83.6	82.6	82.3	81.4	-0.9 pps
	Young (15-24)	72.8	71.7	67.5	67.1	64.1	-3.0 pps
	Prime age (25-54)	93.3	92.2	92.0	91.5	90.6	-0.9 pps
	Older (55-64)	66.8	68.1	67.8	68.3	69.9	1.5 pps
	Female	77.0	76.8	76.0	76.1	75.8	-0.4 pps
	Young (15-24)	71.5	70.0	67.4	67.1	64.0	-3.1 pps
	Prime age (25-54)	86.4	86.5	85.3	84.7	84.9	0.1 pps
	Older (55-64)	53.0	53.5	55.9	58.0	58.9	0.9 pps
5 -	**Employment rate** (% of population 15-64)	77.9	75.3	73.3	73.1	72.6	-0.6 pps
	Young (15-24)	66.4	62.5	58.1	57.5	55.0	-2.5 pps
	Prime age (25-54)	87.5	84.7	82.8	82.3	81.9	-0.4 pps
	Older (55-64)	58.4	58.2	58.4	59.6	60.8	1.3 pps
	Low-skilled (15-64)	65.8	62.3	58.6	57.7	55.5	-2.3 pps
	Medium-skilled (15-64)	81.7	78.7	77.6	77.4	76.7	-0.7 pps
	High-skilled (15-64)	88.4	86.7	85.4	85.5	86.0	0.5 pps
	Nationals (15-64)	78.7	76.0	74.1	74.1	73.7	-0.4 pps
	Non-nationals (15-64)	64.2	65.8	61.8	60.6	60.1	-0.5 pps
	Male	81.6	78.0	75.6	75.9	75.2	-0.7 pps
	Young (15-24)	67.4	62.2	56.7	56.6	54.6	-2.0 pps
	Prime age (25-54)	91.0	86.9	85.3	85.7	84.6	-1.1 pps
	Older (55-64)	65.2	64.8	63.3	63.8	65.9	2.1 pps
	Female	74.1	72.7	71.1	70.4	70.0	-0.4 pps
	Young (15-24)	65.3	62.8	59.5	58.5	55.4	-3.1 pps
	Prime age (25-54)	84.0	82.5	80.3	78.9	79.1	0.2 pps
	Older (55-64)	51.5	51.7	53.7	55.3	55.8	0.5 pps
6 -	**Employed persons** (15-64, 1000 pers.)	2806.7	2724.1	2654.0	2643.1	2621.3	-0.8 %
7 -	**Employment growth** (%, National accounts)	1.7	-2.4	-2.3	-0.4	0.1	0.5 pps
	Employment growth (%, 15-64, LFS)	1.7	-2.9	-2.6	-0.4	-0.8	-0.4 pps
	Male	1.6	-4.2	-3.0	0.2	-1.0	-1.1 pps
	Female	1.8	-1.5	-2.1	-1.1	-0.7	0.4 pps
8 -	**Self employed** (15-64, % of total employment)	8.0	8.6	8.4	8.4	8.3	-0.1 pps
	Male	11.4	12.1	11.6	11.6	11.4	-0.2 pps
	Female	4.3	4.8	4.9	4.8	4.9	0.0 pps
9 -	**Temporary employment** (15-64, % of total employment)	8.5	8.7	8.5	8.9	8.6	-0.3 pps
	Male	7.6	7.8	8.1	8.3	7.9	-0.4 pps
	Female	9.4	9.6	8.8	9.4	9.3	-0.1 pps
10 -	**Part-time** (15-64, % of total employment)	23.8	25.2	25.6	25.1	24.8	-0.3 pps
	Male	13.3	14.3	14.0	14.2	14.8	0.6 pps
	Female	35.6	37.2	38.1	37.0	35.8	-1.2 pps
11 -	**Unemployment rate** (harmonised:15-74)	3.4	6.0	7.5	7.6	7.5	-0.1 pps
	Young (15-24)	8.0	11.8	14.0	14.2	14.1	-0.1 pps
	Prime age (25-49)	2.6	5.2	6.6	6.6	6.7	0.1 pps
	Older (55-64)	2.6	4.1	5.5	5.7	5.5	-0.2 pps
	Low-skilled (15-64)	5.5	9.3	11.3	11.6	12.1	0.5 pps
	Medium-skilled (15-64)	2.8	5.6	6.9	6.8	6.9	0.1 pps
	High-skilled (15-64)	2.3	3.7	4.8	5.3	4.9	-0.4 pps
	Nationals (15-64)	3.2	5.8	7.1	7.1	7.0	-0.1 pps
	Non-nationals (15-64)	8.7	11.8	15.0	16.5	16.0	-0.5 pps
	Male	3.2	6.6	8.4	7.7	7.5	-0.2 pps
	Female	3.7	5.3	6.5	7.5	7.5	0.0 pps
12 -	**Long-term unemployment** (% of total unemployment)	13.5	9.5	20.2	24.4	28.0	3.6 pps
13 -	**Worked hours** (full-time, average actual weekly hours)	39.1	39.1	39.5	39.8	39.6	-0.5 %
	Male	40.4	40.3	40.8	41.1	40.8	-0.7 %
	Female	37.1	37.3	37.6	37.8	37.8	0.0 %
14 -	**Sectoral employment growth** (% change)						
	Agriculture	:	-4.1	-5.6	-1.5	1.5	3.0 pps
	Building and construction	1.0	-10.8	-8.6	0.0	1.3	1.3 pps
	Services	2.1	-4.4	-2.6	:	:	: pps
	Manufacturing industry	:	-12.1	-8.4	-0.7	-1.0	-0.3 pps
15 -	**Indicator board on wage developments** (% change)						
	Compensation per employee	3.5	2.3	2.7	1.6	0.6	-1.0 pps
	Real compensation per employee based on GDP	-0.7	2.6	-0.7	0.7	-0.7	-1.4 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	3.7	2.8	3.0	2.5	1.5	-1.0 pps
	Labour cost index (wages and salaries, total)	3.3	1.7	3.8	2.8	1.5	-1.3 pps
	Labour productivity (GDP/person employed)	-2.4	-2.4	4.1	1.4	-0.1	-1.5 pps

Germany		2008	2009	2010	2011	2012	2011-2012
1 - **Population** (LFS, total, 1000 pers.)		81265	80967	80760	80805	81027	0.3 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)		54066	53763	53546	53729	53894	0.3 %
(% of total population)		66.5	66.4	66.3	66.5	66.5	0.0 pps
3 - **Labour force** (15-64, 1000 pers.)		41032	41030	41015	41473	41565	0.2 %
	Male	22313	22232	22175	22329	22396	0.3 %
	Female	18719	18798	18839	19144	19169	0.1 %
4 - **Activity rate** (% of population 15-64)		75.9	76.3	76.6	77.2	77.1	-0.1 pps
	Young (15-24)	52.2	51.8	51.3	52.5	50.7	-1.7 pps
	Prime age (25-54)	87.0	87.1	87.3	87.7	87.7	0.0 pps
	Older (55-64)	58.7	61.0	62.5	64.0	65.4	1.3 pps
	Nationals (15-64)	77.0	77.4	77.7	78.3	78.1	-0.1 pps
	Non-nationals (15-64)	66.8	67.5	67.5	68.4	69.0	0.6 pps
	Male	82.0	82.2	82.3	82.5	82.4	-0.1 pps
	Young (15-24)	54.7	54.3	53.7	54.8	53.2	-1.5 pps
	Prime age (25-54)	93.5	93.2	93.1	93.1	93.0	-0.1 pps
	Older (55-64)	67.2	69.3	70.8	71.7	73.0	1.3 pps
	Female	69.7	70.4	70.8	71.8	71.7	0.0 pps
	Young (15-24)	49.5	49.2	48.9	50.0	48.1	-1.9 pps
	Prime age (25-54)	80.5	81.0	81.3	82.1	82.2	0.1 pps
	Older (55-64)	50.5	52.9	54.5	56.7	58.0	1.3 pps
5 - **Employment rate** (% of population 15-64)		70.1	70.3	71.1	72.5	72.8	0.3 pps
	Young (15-24)	46.6	46.0	46.2	47.9	46.6	-1.3 pps
	Prime age (25-54)	80.9	80.8	81.5	82.8	83.2	0.4 pps
	Older (55-64)	53.7	56.1	57.7	59.9	61.5	1.6 pps
	Low-skilled (15-64)	45.6	45.3	45.4	52.7	52.7	0.0 pps
	Medium-skilled (15-64)	74.0	73.9	74.7	76.0	76.4	0.4 pps
	High-skilled (15-64)	85.7	86.3	86.7	87.6	87.6	0.0 pps
	Nationals (15-64)	71.7	71.9	72.7	74.0	74.2	0.2 pps
	Non-nationals (15-64)	57.3	57.4	58.1	60.7	61.7	1.1 pps
	Male	75.8	75.4	76.0	77.3	77.6	0.3 pps
	Young (15-24)	48.7	47.5	47.9	49.7	48.6	-1.1 pps
	Prime age (25-54)	87.1	86.1	86.5	87.7	88.1	0.4 pps
	Older (55-64)	61.7	63.8	65.0	67.0	68.5	1.5 pps
	Female	64.3	65.2	66.1	67.7	68.0	0.3 pps
	Young (15-24)	44.5	44.4	44.6	46.1	44.6	-1.6 pps
	Prime age (25-54)	74.7	75.4	76.3	77.8	78.2	0.4 pps
	Older (55-64)	46.0	48.6	50.5	53.0	54.8	1.8 pps
6 - **Employed persons** (15-64, 1000 pers.)		37902.3	37807.8	38072.7	38978.3	39255.9	0.7 %
7 - **Employment growth** (%, National accounts)		1.2	0.1	0.6	1.4	1.0	-0.4 pps
Employment growth (%, 15-64, LFS)		1.4	-0.2	0.7	2.4	0.7	-1.7 pps
	Male	1.2	-1.1	0.4	2.2	0.8	-1.3 pps
	Female	1.5	0.8	1.1	2.6	0.6	-2.0 pps
8 - **Self employed** (15-64, % of total employment)		10.3	10.5	10.5	10.5	10.5	-0.1 pps
	Male	12.9	13.2	13.2	13.3	13.2	-0.1 pps
	Female	7.1	7.2	7.3	7.3	7.2	-0.1 pps
9 - **Temporary employment** (15-64, % of total employment)		14.8	14.6	14.7	14.8	13.9	-0.9 pps
	Male	14.7	14.4	14.5	14.6	13.9	-0.7 pps
	Female	14.8	14.8	15.0	14.9	14.0	-0.9 pps
10 - **Part-time** (15-64, % of total employment)		25.1	25.3	25.5	25.7	25.7	0.0 pps
	Male	8.3	8.6	8.7	9.0	9.1	0.1 pps
	Female	45.2	44.9	45.0	45.1	45.0	-0.1 pps
11 - **Unemployment rate** (harmonised:15-74)		7.5	7.8	7.1	5.9	5.5	-0.4 pps
	Young (15-24)	10.6	11.2	9.9	8.6	8.1	-0.5 pps
	Prime age (25-49)	7.0	7.3	6.6	5.5	5.1	-0.4 pps
	Older (55-64)	8.5	8.0	7.7	6.5	5.9	-0.6 pps
	Low-skilled (15-64)	15.6	15.9	15.1	13.3	12.6	-0.7 pps
	Medium-skilled (15-64)	7.3	7.7	7.0	5.8	5.4	-0.4 pps
	High-skilled (15-64)	3.4	3.4	3.2	2.5	2.4	-0.1 pps
	Nationals (15-64)	6.9	7.1	6.5	5.5	5.0	-0.5 pps
	Non-nationals (15-64)	14.2	14.9	13.8	11.3	10.5	-0.8 pps
	Male	7.4	8.1	7.5	6.2	5.7	-0.5 pps
	Female	7.7	7.3	6.6	5.6	5.2	-0.4 pps
12 - **Long-term unemployment** (% of total unemployment)		52.5	45.5	47.4	48.0	45.4	-2.6 pps
13 - **Worked hours** (full-time, average actual weekly hours)		42.1	41.4	41.7	41.8	41.6	-0.5 %
	Male	43.0	42.2	42.5	42.7	42.5	-0.5 %
	Female	40.4	39.8	40.0	40.1	40.0	-0.2 %
14 - **Sectoral employment growth** (% change)							
	Agriculture	:	0.0	-1.8	2.9	-0.9	-3.8 pps
	Building and construction	-0.7	0.4	0.7	2.2	1.5	-0.7 pps
	Services	1.5	-0.2	1.2	:	:	: pps
	Manufacturing industry	:	-2.7	-1.9	1.9	1.6	-0.3 pps
15 - **Indicator board on wage developments** (% change)							
	Compensation per employee	2.1	0.2	2.4	3.0	2.6	-0.4 pps
	Real compensation per employee based on GDP	1.3	-1.0	1.4	2.2	1.1	-1.1 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	2.4	2.0	1.0	3.0	2.8	-0.2 pps
	Labour cost index (wages and salaries, total)	3.0	2.0	0.6	3.2	3.2	0.0 pps
	Labour productivity (GDP/person employed)	-0.1	-5.2	3.5	1.9	-0.4	-2.3 pps

Estonia		2008	2009	2010	2011	2012	2011-2012
1 -	**Population** (LFS, total, 1000 pers.)	1336	1336	1335	1337	1335	-0.1 %
2 -	**Population** (LFS, working age:15-64, 1000 pers.)	907	906	904	903	897	-0.7 %
	(% of total population)	67.9	67.8	67.7	67.6	67.2	-0.4 pps
3 -	**Labour force** (15-64, 1000 pers.)	671	670	667	674	671	-0.4 %
	Male	340	337	333	339	339	-0.1 %
	Female	331	333	334	335	333	-0.7 %
4 -	**Activity rate** (% of population 15-64)	74.0	74.0	73.8	74.7	74.9	0.2 pps
	Young (15-24)	41.4	39.9	38.3	40.6	41.7	1.1 pps
	Prime age (25-54)	88.1	87.8	88.2	88.3	87.6	-0.7 pps
	Older (55-64)	65.1	66.7	64.2	64.7	65.2	0.5 pps
	Nationals (15-64)	73.0	72.8	72.6	73.8	74.4	0.6 pps
	Non-nationals (15-64)	79.0	79.2	79.6	79.6	77.3	-2.3 pps
	Male	78.3	77.6	76.8	78.1	78.5	0.4 pps
	Young (15-24)	45.3	45.0	42.3	44.0	45.2	1.2 pps
	Prime age (25-54)	92.9	91.9	91.8	92.1	92.1	0.0 pps
	Older (55-64)	68.8	67.4	64.5	67.1	65.8	-1.3 pps
	Female	70.1	70.6	71.0	71.5	71.5	0.0 pps
	Young (15-24)	37.4	34.7	34.2	37.1	38.2	1.0 pps
	Prime age (25-54)	83.6	83.9	84.9	84.7	83.4	-1.3 pps
	Older (55-64)	62.3	66.1	63.9	62.9	64.7	1.8 pps
5 -	**Employment rate** (% of population 15-64)	69.8	63.5	61.0	65.1	67.1	2.0 pps
	Young (15-24)	36.4	28.9	25.7	31.5	33.0	1.4 pps
	Prime age (25-54)	83.9	76.4	74.8	78.1	79.2	1.1 pps
	Older (55-64)	62.4	60.5	53.8	57.2	60.6	3.4 pps
	Low-skilled (15-64)	34.9	27.7	26.2	30.9	32.0	1.1 pps
	Medium-skilled (15-64)	75.4	66.3	63.3	68.6	69.9	1.3 pps
	High-skilled (15-64)	85.2	82.1	78.5	79.1	81.3	2.2 pps
	Nationals (15-64)	69.6	64.0	62.1	65.7	67.9	2.2 pps
	Non-nationals (15-64)	71.0	61.3	56.0	62.2	62.9	0.7 pps
	Male	73.6	64.1	61.5	67.7	69.7	2.0 pps
	Young (15-24)	39.5	30.7	27.4	33.6	34.6	1.0 pps
	Prime age (25-54)	88.5	77.4	75.7	81.5	83.1	1.5 pps
	Older (55-64)	65.2	59.4	52.3	57.3	59.8	2.5 pps
	Female	66.3	63.0	60.5	62.8	64.7	1.9 pps
	Young (15-24)	33.2	27.0	24.0	29.4	31.3	1.9 pps
	Prime age (25-54)	79.5	75.5	73.9	74.8	75.6	0.7 pps
	Older (55-64)	60.3	61.2	54.9	57.1	61.2	4.1 pps
6 -	**Employed persons** (15-64, 1000 pers.)	633.5	575.8	551.8	588.2	601.7	2.3 %
7 -	**Employment growth** (%, National accounts)	0.2	-10.0	-4.8	7.0	0.6	-6.4 pps
	Employment growth (%, 15-64, LFS)	0.4	-9.1	-4.2	6.6	2.3	-4.3 pps
	Male	0.3	-13.0	-4.2	10.0	2.3	-7.7 pps
	Female	0.5	-5.1	-4.2	3.4	2.3	-1.1 pps
8 -	**Self employed** (15-64, % of total employment)	7.5	8.0	7.9	8.0	8.2	0.2 pps
	Male	10.3	11.2	11.2	11.4	11.8	0.4 pps
	Female	4.7	4.9	4.9	4.7	4.6	-0.1 pps
9 -	**Temporary employment** (15-64, % of total employment)	2.4	2.5	3.7	4.5	3.5	-1.0 pps
	Male	3.5	3.1	4.9	5.5	4.6	-0.9 pps
	Female	1.5	2.0	2.7	3.5	2.5	-1.0 pps
10 -	**Part-time** (15-64, % of total employment)	6.4	9.4	9.8	9.3	9.2	-0.1 pps
	Male	3.5	6.1	6.2	5.0	5.1	0.1 pps
	Female	9.3	12.5	13.1	13.5	13.2	-0.3 pps
11 -	**Unemployment rate** (harmonised:15-74)	5.5	13.8	16.9	12.5	10.2	-2.3 pps
	Young (15-24)	12.0	27.5	32.9	22.3	20.9	-1.4 pps
	Prime age (25-49)	4.9	12.9	15.2	11.6	9.6	-2.0 pps
	Older (55-64)	4.1	9.4	16.2	11.6	7.0	-4.6 pps
	Low-skilled (15-64)	12.2	29.9	32.4	27.4	24.7	-2.7 pps
	Medium-skilled (15-64)	5.9	16.1	19.6	13.0	10.7	-2.3 pps
	High-skilled (15-64)	3.0	6.4	9.5	8.2	6.2	-2.0 pps
	Nationals (15-64)	4.6	12.1	14.5	11.0	8.8	-2.2 pps
	Non-nationals (15-64)	10.2	22.6	29.7	21.9	18.6	-3.3 pps
	Male	5.7	16.9	19.5	13.1	11.0	-2.1 pps
	Female	5.3	10.6	14.3	11.8	9.3	-2.5 pps
12 -	**Long-term unemployment** (% of total unemployment)	30.1	27.4	45.3	56.8	54.2	-2.6 pps
13 -	**Worked hours** (full-time, average actual weekly hours)	40.6	39.5	40.5	40.6	40.3	-0.7 %
	Male	41.1	39.9	41.2	41.1	40.9	-0.5 %
	Female	40.0	39.0	39.8	40.1	39.6	-1.2 %
14 -	**Sectoral employment growth** (% change)						
	Agriculture	:	-9.7	2.2	13.5	7.7	-5.8 pps
	Building and construction	-3.8	-31.0	-26.1	23.8	2.4	-21.4 pps
	Services	1.4	-7.5	-4.2	:	:	: pps
	Manufacturing industry	:	-15.8	-5.7	12.7	-3.9	-16.6 pps
15 -	**Indicator board on wage developments** (% change)						
	Compensation per employee	9.7	-3.2	1.8	-0.2	8.0	8.2 pps
	Real compensation per employee based on GDP	4.0	-1.8	1.1	-3.0	3.3	6.3 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	13.6	-1.9	-1.6	4.9	6.4	1.5 pps
	Labour cost index (wages and salaries, total)	13.3	-3.1	-1.1	5.0	6.4	1.4 pps
	Labour productivity (GDP/person employed)	-4.3	-4.5	7.7	2.4	1.7	-0.7 pps

Ireland		2008	2009	2010	2011	2012	2011-2012
1 - **Population** (LFS, total, 1000 pers.)		4440	4539	4560	4577	4590	0.3 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)		3041	3096	3081	3064	3042	-0.7 %
(% of total population)		68.5	68.2	67.6	66.9	66.3	-0.7 pps
3 - **Labour force** (15-64, 1000 pers.)		2189	2184	2139	2120	2105	-0.7 %
Male		1236	1218	1184	1169	1156	-1.1 %
Female		953	967	955	951	949	-0.2 %
4 - **Activity rate** (% of population 15-64)		72.0	70.6	69.4	69.2	69.2	0.0 pps
Young (15-24)		52.6	48.5	43.6	41.5	40.5	-1.0 pps
Prime age (25-54)		81.6	81.1	80.5	80.2	80.4	0.1 pps
Older (55-64)		55.5	54.9	55.0	55.4	55.1	-0.3 pps
Nationals (15-64)		71.0	69.7	68.9	68.6	68.7	0.1 pps
Non-nationals (15-64)		77.3	75.2	72.3	72.6	72.1	-0.5 pps
Male		80.7	78.5	77.0	76.6	76.5	0.0 pps
Young (15-24)		55.2	49.9	44.6	42.7	41.3	-1.4 pps
Prime age (25-54)		91.3	90.3	89.5	89.0	89.3	0.2 pps
Older (55-64)		68.6	66.6	65.2	65.0	64.6	-0.4 pps
Female		63.1	62.6	61.9	61.9	62.0	0.1 pps
Young (15-24)		49.9	47.2	42.5	40.4	39.7	-0.6 pps
Prime age (25-54)		71.8	71.8	71.6	71.5	71.7	0.1 pps
Older (55-64)		42.2	42.9	44.6	45.7	45.6	-0.1 pps
5 - **Employment rate** (% of population 15-64)		67.6	61.9	59.6	58.9	58.8	0.0 pps
Young (15-24)		45.9	36.9	31.6	29.5	28.2	-1.3 pps
Prime age (25-54)		77.3	72.3	70.3	69.3	69.5	0.2 pps
Older (55-64)		53.7	51.2	50.2	50.0	49.3	-0.8 pps
Low-skilled (15-64)		46.9	40.2	36.9	35.2	33.8	-1.4 pps
Medium-skilled (15-64)		71.9	64.5	61.0	59.4	59.6	0.2 pps
High-skilled (15-64)		84.4	80.6	79.4	79.3	78.9	-0.4 pps
Nationals (15-64)		66.9	61.7	59.6	58.7	58.7	0.1 pps
Non-nationals (15-64)		71.4	63.2	59.8	60.0	59.4	-0.5 pps
Male		74.9	66.5	63.5	62.6	62.7	0.0 pps
Young (15-24)		46.7	34.6	29.6	27.8	26.3	-1.5 pps
Prime age (25-54)		85.5	77.8	75.1	74.0	74.5	0.5 pps
Older (55-64)		66.1	61.2	58.2	57.1	55.8	-1.3 pps
Female		60.2	57.4	55.8	55.1	55.1	-0.1 pps
Young (15-24)		45.1	39.1	33.5	31.2	30.2	-1.0 pps
Prime age (25-54)		69.0	66.8	65.5	64.6	64.6	0.0 pps
Older (55-64)		41.1	41.1	42.1	43.0	42.7	-0.3 pps
6 - **Employed persons** (15-64, 1000 pers.)		2054.8	1917.0	1837.5	1803.6	1790.1	-0.7 %
7 - **Employment growth** (%, National accounts)		-1.1	-8.1	-4.2	-2.1	-0.6	1.5 pps
Employment growth (%, 15-64, LFS)		-0.9	-6.7	-4.1	-1.8	-0.7	1.1 pps
Male		-2.4	-10.1	-5.2	-2.2	-1.0	1.1 pps
Female		1.2	-2.5	-2.9	-1.5	-0.4	1.1 pps
8 - **Self employed** (15-64, % of total employment)		15.7	15.7	15.1	14.7	14.5	-0.3 pps
Male		23.0	23.8	22.6	22.1	21.7	-0.3 pps
Female		6.4	6.4	6.6	6.5	6.4	-0.1 pps
9 - **Temporary employment** (15-64, % of total employment)		8.4	8.8	9.6	10.2	10.1	-0.1 pps
Male		7.1	7.7	8.9	9.8	9.9	0.1 pps
Female		9.8	9.8	10.2	10.6	10.4	-0.2 pps
10 - **Part-time** (15-64, % of total employment)		18.1	21.0	22.2	23.1	23.5	0.4 pps
Male		7.1	10.2	11.4	12.5	13.3	0.8 pps
Female		31.9	33.6	34.4	35.2	34.9	-0.3 pps
11 - **Unemployment rate** (harmonised:15-74)		6.4	12.0	13.9	14.7	14.7	0.0 pps
Young (15-24)		12.7	24.0	27.6	29.1	30.4	1.3 pps
Prime age (25-49)		5.3	10.8	12.7	13.7	13.5	-0.2 pps
Older (55-64)		3.3	6.6	8.7	9.6	10.5	0.9 pps
Low-skilled (15-64)		10.1	18.1	22.2	24.4	25.9	1.5 pps
Medium-skilled (15-64)		6.2	13.7	16.2	17.4	17.7	0.3 pps
High-skilled (15-64)		3.4	7.2	7.9	7.9	7.6	-0.3 pps
Nationals (15-64)		5.8	11.5	13.5	14.4	14.5	0.1 pps
Non-nationals (15-64)		7.7	16.0	17.3	17.5	17.6	0.1 pps
Male		7.6	15.0	17.1	17.8	17.7	-0.1 pps
Female		4.9	8.2	9.9	10.8	11.0	0.2 pps
12 - **Long-term unemployment** (% of total unemployment)		27.1	29.1	49.1	59.3	61.7	2.4 pps
13 - **Worked hours** (full-time, average actual weekly hours)		40.2	39.4	39.6	39.7	39.8	0.3 %
Male		42.0	41.3	41.5	41.6	41.7	0.2 %
Female		36.8	36.2	36.4	36.5	36.6	0.3 %
14 - **Sectoral employment growth** (% change)							
Agriculture		:	-16.5	-11.6	-2.7	3.3	6.0 pps
Building and construction		-11.1	-33.9	-23.5	-11.0	-5.7	5.3 pps
Services		1.0	-4.8	-2.5	:	:	: pps
Manufacturing industry		:	-9.6	-5.9	-1.1	-1.7	-0.6 pps
15 - **Indicator board on wage developments** (% change)							
Compensation per employee		5.7	-0.6	-3.6	0.3	0.9	0.6 pps
Real compensation per employee based on GDP		8.3	2.9	-2.3	-0.8	0.1	0.9 pps
Labour cost index (compens. of employees plus taxes minus subs.)		4.4	0.8	-1.0	-1.1	1.9	3.0 pps
Labour cost index (wages and salaries, total)		4.6	1.0	-0.8	-1.3	1.9	3.2 pps
Labour productivity (GDP/person employed)		-1.5	1.6	3.1	4.0	0.8	-3.2 pps

Greece		**2008**	**2009**	**2010**	**2011**	**2012**	**2011-2012**
1 - **Population** (LFS, total, 1000 pers.)		10780	10839	10882	10925	10963	0.3 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)		7232	7222	7231	7230	7223	-0.1 %
(% of total population)		67.1	66.6	66.5	66.2	65.9	-0.3 pps
3 - **Labour force** (15-64, 1000 pers.)		4851	4894	4934	4892	4906	0.3 %
	Male	2860	2857	2858	2819	2805	-0.5 %
	Female	1991	2036	2077	2073	2101	1.4 %
4 - **Activity rate** (% of population 15-64)		67.1	67.8	68.2	67.7	67.9	0.3 pps
	Young (15-24)	30.2	30.9	30.3	29.2	29.2	-0.1 pps
	Prime age (25-54)	82.0	82.8	83.3	83.2	83.9	0.6 pps
	Older (55-64)	44.2	44.2	45.1	43.1	42.2	-0.9 pps
	Nationals (15-64)	66.6	67.1	67.5	67.0	67.4	0.4 pps
	Non-nationals (15-64)	73.6	74.8	75.8	74.6	74.1	-0.5 pps
	Male	79.1	79.0	78.9	77.7	77.4	-0.4 pps
	Young (15-24)	34.3	34.4	33.4	31.8	31.2	-0.6 pps
	Prime age (25-54)	94.4	94.4	94.2	93.5	93.6	0.1 pps
	Older (55-64)	60.9	60.1	60.2	57.3	55.2	-2.1 pps
	Female	55.1	56.5	57.6	57.5	58.4	0.9 pps
	Young (15-24)	26.1	27.4	27.3	26.6	27.2	0.5 pps
	Prime age (25-54)	69.4	71.0	72.2	72.7	73.9	1.2 pps
	Older (55-64)	28.6	29.3	30.9	29.7	29.9	0.2 pps
5 - **Employment rate** (% of population 15-64)		61.9	61.2	59.6	55.6	51.3	-4.3 pps
	Young (15-24)	23.6	22.9	20.3	16.3	13.1	-3.2 pps
	Prime age (25-54)	76.1	75.4	73.3	69.0	64.1	-4.9 pps
	Older (55-64)	42.8	42.2	42.3	39.4	36.4	-3.0 pps
	Low-skilled (15-64)	52.4	51.9	50.0	45.7	41.0	-4.7 pps
	Medium-skilled (15-64)	61.2	60.4	58.6	54.4	49.7	-4.7 pps
	High-skilled (15-64)	82.1	81.6	78.9	74.1	70.3	-3.7 pps
	Nationals (15-64)	61.3	60.7	59.1	55.2	51.5	-3.8 pps
	Non-nationals (15-64)	68.7	66.9	64.5	59.2	49.4	-9.7 pps
	Male	75.0	73.5	70.9	65.9	60.6	-5.3 pps
	Young (15-24)	28.5	27.7	24.5	19.6	16.1	-3.5 pps
	Prime age (25-54)	90.2	88.4	85.3	80.0	74.0	-5.9 pps
	Older (55-64)	59.1	57.7	56.5	52.3	47.6	-4.7 pps
	Female	48.7	48.9	48.1	45.1	41.9	-3.2 pps
	Young (15-24)	18.5	18.1	16.2	12.9	10.0	-2.9 pps
	Prime age (25-54)	61.9	62.2	61.1	57.7	53.8	-3.9 pps
	Older (55-64)	27.5	27.7	28.9	27.3	26.0	-1.3 pps
6 - **Employed persons** (15-64, 1000 pers.)		4473.7	4423.2	4306.5	4016.6	3705.2	-7.8 %
7 - **Employment growth** (%, National accounts)		0.8	-0.2	-1.9	-6.7	-4.8	1.9 pps
Employment growth (%, 15-64, LFS)		1.1	-1.1	-2.6	-6.7	-7.8	-1.0 pps
	Male	0.5	-2.0	-3.3	-7.0	-8.0	-1.1 pps
	Female	2.1	0.3	-1.6	-6.4	-7.3	-1.0 pps
8 - **Self employed** (15-64, % of total employment)		28.8	29.2	29.6	30.4	31.4	1.0 pps
	Male	34.0	34.8	35.0	35.7	36.9	1.2 pps
	Female	20.8	20.8	21.7	22.5	23.3	0.8 pps
9 - **Temporary employment** (15-64, % of total employment)		11.5	12.1	12.4	11.6	10.0	-1.6 pps
	Male	9.9	10.6	11.0	10.5	8.8	-1.7 pps
	Female	13.7	14.1	14.4	12.9	11.5	-1.4 pps
10 - **Part-time** (15-64, % of total employment)		5.4	5.8	6.2	6.6	7.6	1.0 pps
	Male	2.5	2.9	3.4	4.2	4.7	0.5 pps
	Female	9.8	10.1	10.2	10.0	11.8	1.8 pps
11 - **Unemployment rate** (harmonised:15-74)		7.7	9.5	12.6	17.7	24.3	6.6 pps
	Young (15-24)	22.1	25.8	32.9	44.4	55.3	10.9 pps
	Prime age (25-49)	7.2	8.9	12.0	17.1	23.6	6.5 pps
	Older (55-64)	3.2	4.6	6.3	8.5	13.6	5.1 pps
	Low-skilled (15-64)	7.6	9.7	12.9	18.5	26.4	7.9 pps
	Medium-skilled (15-64)	8.8	11.0	14.5	20.1	27.5	7.4 pps
	High-skilled (15-64)	6.3	7.4	9.8	14.0	18.2	4.2 pps
	Nationals (15-64)	7.9	9.5	12.5	17.6	23.6	6.0 pps
	Non-nationals (15-64)	6.8	10.5	15.0	20.7	33.3	12.6 pps
	Male	5.1	6.9	9.9	15.0	21.4	6.4 pps
	Female	11.4	13.2	16.2	21.4	28.1	6.7 pps
12 - **Long-term unemployment** (% of total unemployment)		47.5	40.8	45.0	49.6	59.3	9.7 pps
13 - **Worked hours** (full-time, average actual weekly hours)		42.2	42.1	42.3	42.4	42.6	0.5 %
	Male	43.5	43.4	43.5	43.5	43.7	0.5 %
	Female	40.1	39.9	40.2	40.6	40.7	0.2 %
14 - **Sectoral employment growth** (% change)							
	Agriculture	:	2.6	0.4	-5.0	-3.7	1.3 pps
	Building and construction	-1.1	-4.5	-12.7	-22.5	-17.0	5.5 pps
	Services	0.4	-0.6	-2.5	:	:	: pps
	Manufacturing industry	:	-4.5	-4.9	-8.5	-13.3	-4.8 pps
15 - **Indicator board on wage developments** (% change)							
	Compensation per employee	4.4	3.3	-3.4	-1.8	-8.3	-6.5 pps
	Real compensation per employee based on GDP	-1.1	1.2	-3.7	-4.4	-3.5	0.9 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	2.6	7.6	-1.0	-5.7	-5.8	-0.1 pps
	Labour cost index (wages and salaries, total)	2.6	6.8	-0.4	-4.7	-5.9	-1.2 pps
	Labour productivity (GDP/person employed)	-1.4	-2.5	-2.4	-1.6	2.1	3.7 pps

Spain		**2008**	**2009**	**2010**	**2011**	**2012**	**2011-2012**
1 -	**Population** (LFS, total, 1000 pers.)	45329	45671	45820	45908	45884	-0.1 %
2 -	**Population** (LFS, working age:15-64, 1000 pers.)	31252	31349	31261	31127	30906	-0.7 %
	(% of total population)	68.9	68.6	68.2	67.8	67.4	-0.4 pps
3 -	**Labour force** (15-64, 1000 pers.)	22689	22881	22933	22949	22886	-0.3 %
	Male	12933	12844	12730	12596	12439	-1.2 %
	Female	9756	10037	10203	10354	10448	0.9 %
4 -	**Activity rate** (% of population 15-64)	72.6	73.0	73.4	73.7	74.1	0.3 pps
	Young (15-24)	47.7	45.1	42.7	40.9	38.8	-2.1 pps
	Prime age (25-54)	83.8	84.7	85.5	86.0	86.7	0.7 pps
	Older (55-64)	49.2	50.2	50.8	52.3	53.5	1.2 pps
	Nationals (15-64)	71.5	71.9	72.2	72.8	73.3	0.5 pps
	Non-nationals (15-64)	79.1	79.0	80.0	79.4	78.9	-0.5 pps
	Male	81.8	81.0	80.7	80.4	80.1	-0.3 pps
	Young (15-24)	51.5	48.3	45.1	42.6	40.2	-2.4 pps
	Prime age (25-54)	92.6	92.3	92.5	92.6	92.7	0.1 pps
	Older (55-64)	65.1	64.0	63.9	63.7	63.8	0.2 pps
	Female	63.2	64.8	65.9	67.0	67.9	1.0 pps
	Young (15-24)	43.7	41.7	40.1	39.1	37.4	-1.8 pps
	Prime age (25-54)	74.7	76.7	78.3	79.3	80.6	1.3 pps
	Older (55-64)	34.2	37.2	38.5	41.7	43.8	2.1 pps
5 -	**Employment rate** (% of population 15-64)	64.3	59.8	58.6	57.7	55.4	-2.3 pps
	Young (15-24)	36.0	28.0	24.9	21.9	18.2	-3.7 pps
	Prime age (25-54)	75.3	70.7	69.6	68.7	66.3	-2.4 pps
	Older (55-64)	45.6	44.1	43.6	44.5	43.9	-0.6 pps
	Low-skilled (15-64)	55.5	49.6	48.2	47.3	44.1	-3.1 pps
	Medium-skilled (15-64)	67.4	62.6	60.6	58.7	56.6	-2.1 pps
	High-skilled (15-64)	81.7	79.0	77.5	76.5	74.8	-1.7 pps
	Nationals (15-64)	64.2	60.3	59.0	58.4	56.2	-2.2 pps
	Non-nationals (15-64)	65.2	56.5	55.8	53.2	50.4	-2.8 pps
	Male	73.5	66.6	64.7	63.2	60.2	-3.1 pps
	Young (15-24)	39.3	29.5	25.6	22.1	18.4	-3.7 pps
	Prime age (25-54)	84.4	77.3	75.7	74.5	71.1	-3.3 pps
	Older (55-64)	60.9	56.7	54.7	53.9	52.4	-1.5 pps
	Female	54.9	52.8	52.3	52.0	50.6	-1.4 pps
	Young (15-24)	32.5	26.5	24.2	21.8	18.0	-3.7 pps
	Prime age (25-54)	65.9	63.8	63.2	62.7	61.3	-1.4 pps
	Older (55-64)	31.1	32.3	33.2	35.6	36.0	0.4 pps
6 -	**Employed persons** (15-64, 1000 pers.)	20102.8	18736.0	18304.1	17953.3	17123.7	-4.6 %
7 -	**Employment growth** (%, National accounts)	-0.1	-6.5	-2.5	-1.5	-3.7	-2.2 pps
	Employment growth (%, 15-64, LFS)	-0.5	-6.8	-2.3	-1.9	-4.6	-2.7 pps
	Male	-2.2	-9.2	-3.3	-2.9	-5.7	-2.8 pps
	Female	1.9	-3.5	-1.0	-0.7	-3.3	-2.6 pps
8 -	**Self employed** (15-64, % of total employment)	16.3	15.7	15.7	15.5	16.5	1.0 pps
	Male	19.7	19.1	19.3	19.1	20.4	1.4 pps
	Female	11.6	11.4	11.1	11.1	11.8	0.7 pps
9 -	**Temporary employment** (15-64, % of total employment)	29.3	25.5	25.0	25.4	23.7	-1.7 pps
	Male	27.7	23.8	23.9	24.2	22.3	-1.9 pps
	Female	31.4	27.3	26.2	26.6	25.1	-1.5 pps
10 -	**Part-time** (15-64, % of total employment)	11.8	12.6	13.1	13.7	14.6	0.9 pps
	Male	4.0	4.7	5.2	5.9	6.5	0.6 pps
	Female	22.6	22.9	23.1	23.4	24.4	1.0 pps
11 -	**Unemployment rate** (harmonised:15-74)	11.3	18.0	20.1	21.7	25.0	3.3 pps
	Young (15-24)	24.6	37.8	41.6	46.4	53.2	6.8 pps
	Prime age (25-49)	10.2	16.5	18.6	20.2	23.6	3.4 pps
	Older (55-64)	7.3	12.1	14.1	15.0	17.9	2.9 pps
	Low-skilled (15-64)	15.4	24.7	27.5	29.2	34.0	4.8 pps
	Medium-skilled (15-64)	10.6	17.1	19.3	21.5	24.5	3.0 pps
	High-skilled (15-64)	6.4	9.8	11.3	12.7	15.1	2.4 pps
	Nationals (15-64)	10.3	16.1	18.3	19.7	23.3	3.6 pps
	Non-nationals (15-64)	17.5	28.5	30.2	32.9	36.1	3.2 pps
	Male	10.1	17.7	19.7	21.2	24.7	3.5 pps
	Female	13.0	18.4	20.5	22.2	25.4	3.2 pps
12 -	**Long-term unemployment** (% of total unemployment)	17.8	23.7	36.6	41.6	44.4	2.8 pps
13 -	**Worked hours** (full-time, average actual weekly hours)	41.0	40.7	40.7	40.7	40.6	-0.2 %
	Male	41.9	41.6	41.6	41.6	41.5	-0.2 %
	Female	39.4	39.2	39.3	39.3	39.2	-0.3 %
14 -	**Sectoral employment growth** (% change)						
	Agriculture	:	-5.2	1.7	-4.1	-0.9	3.2 pps
	Building and construction	-10.2	-22.4	-12.6	-15.6	-18.5	-2.9 pps
	Services	2.1	-4.8	-1.6	:	:	: pps
	Manufacturing industry	:	-13.4	-4.7	-1.9	-5.5	-3.6 pps
15 -	**Indicator board on wage developments** (% change)						
	Compensation per employee	6.7	4.3	0.2	0.5	-1.8	-2.3 pps
	Real compensation per employee based on GDP	4.4	4.3	-0.4	-0.3	-0.4	-0.1 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	5.1	4.9	0.7	2.8	1.1	-1.7 pps
	Labour cost index (wages and salaries, total)	5.2	4.3	1.2	2.6	1.2	-1.4 pps
	Labour productivity (GDP/person employed)	1.0	2.9	2.0	2.0	2.7	0.7 pps

France		2008	2009	2010	2011	2012	2011-2012
1 -	**Population** (LFS, total, 1000 pers.)	60831	61144	61458	61773	62060	0.5 %
2 -	**Population** (LFS, working age:15-64, 1000 pers.)	39733	39856	39995	40057	40000	-0.1 %
	(% of total population)	65.3	65.2	65.1	64.8	64.5	-0.4 pps
3 -	**Labour force** (15-64, 1000 pers.)	27813	28082	28181	28192	28384	0.7 %
	Male	14599	14699	14733	14721	14826	0.7 %
	Female	13214	13382	13448	13471	13558	0.6 %
4 -	**Activity rate** (% of population 15-64)	70.0	70.5	70.5	70.4	71.0	0.6 pps
	Young (15-24)	38.4	39.6	39.1	38.3	37.8	-0.5 pps
	Prime age (25-54)	88.6	88.8	88.9	88.5	88.5	0.0 pps
	Older (55-64)	40.0	41.5	42.6	44.4	47.9	3.5 pps
	Nationals (15-64)	70.3	70.9	70.9	70.7	71.4	0.6 pps
	Non-nationals (15-64)	64.7	64.1	64.5	65.4	65.4	-0.1 pps
	Male	74.7	75.0	74.9	74.8	75.4	0.6 pps
	Young (15-24)	42.1	42.9	42.8	41.6	41.1	-0.5 pps
	Prime age (25-54)	94.4	94.4	94.2	93.8	93.6	-0.1 pps
	Older (55-64)	42.6	44.3	45.3	47.2	51.2	4.0 pps
	Female	65.4	66.0	66.1	66.2	66.7	0.5 pps
	Young (15-24)	34.8	36.3	35.5	34.9	34.5	-0.5 pps
	Prime age (25-54)	83.1	83.4	83.7	83.4	83.4	0.0 pps
	Older (55-64)	37.6	38.9	40.0	41.8	44.8	3.0 pps
5 -	**Employment rate** (% of population 15-64)	64.8	64.0	63.9	63.9	63.9	0.0 pps
	Young (15-24)	31.3	30.4	30.2	29.9	28.8	-1.0 pps
	Prime age (25-54)	83.0	82.0	81.8	81.4	80.8	-0.6 pps
	Older (55-64)	38.2	39.0	39.8	41.5	44.5	2.9 pps
	Low-skilled (15-64)	47.0	45.8	45.2	45.0	44.5	-0.5 pps
	Medium-skilled (15-64)	69.3	68.2	67.8	67.2	66.7	-0.5 pps
	High-skilled (15-64)	80.7	79.8	80.2	80.5	80.8	0.3 pps
	Nationals (15-64)	65.4	64.7	64.6	64.6	64.7	0.1 pps
	Non-nationals (15-64)	55.6	52.6	53.4	53.6	52.7	-0.8 pps
	Male	69.5	68.3	68.2	68.2	68.0	-0.2 pps
	Young (15-24)	34.3	32.6	33.3	32.8	31.3	-1.5 pps
	Prime age (25-54)	89.1	87.6	87.1	86.7	85.8	-0.9 pps
	Older (55-64)	40.6	41.5	42.2	44.1	47.4	3.3 pps
	Female	60.2	59.8	59.7	59.7	60.0	0.3 pps
	Young (15-24)	28.3	28.2	27.1	26.9	26.3	-0.5 pps
	Prime age (25-54)	77.2	76.6	76.6	76.2	76.0	-0.3 pps
	Older (55-64)	35.9	36.6	37.5	39.1	41.7	2.6 pps
6 -	**Employed persons** (15-64, 1000 pers.)	25752.9	25511.3	25545.4	25582.5	25563.0	-0.1 %
7 -	**Employment growth** (%, National accounts)	0.5	-1.3	-0.1	0.5	0.4	-0.1 pps
	Employment growth (%, 15-64, LFS)	1.3	-0.9	0.1	0.1	-0.1	-0.2 pps
	Male	1.1	-1.5	0.1	0.1	-0.4	-0.5 pps
	Female	1.6	-0.3	0.1	0.1	0.3	0.1 pps
8 -	**Self employed** (15-64, % of total employment)	9.8	10.2	10.7	10.9	10.7	-0.2 pps
	Male	13.0	13.8	14.5	14.6	14.3	-0.3 pps
	Female	6.3	6.2	6.6	6.8	6.8	0.0 pps
9 -	**Temporary employment** (15-64, % of total employment)	14.8	14.3	14.9	15.2	15.1	-0.1 pps
	Male	13.7	12.9	14.0	14.6	14.3	-0.3 pps
	Female	16.1	15.7	15.9	15.8	15.9	0.1 pps
10 -	**Part-time** (15-64, % of total employment)	16.8	17.2	17.6	17.6	17.7	0.1 pps
	Male	5.6	5.8	6.4	6.5	6.4	-0.1 pps
	Female	29.4	29.9	30.0	29.9	30.0	0.1 pps
11 -	**Unemployment rate** (harmonised:15-74)	7.8	9.5	9.7	9.6	10.2	0.6 pps
	Young (15-24)	18.6	23.2	22.8	22.0	23.8	1.8 pps
	Prime age (25-49)	6.3	7.7	8.0	8.0	8.6	0.6 pps
	Older (55-64)	4.6	6.2	6.6	6.5	7.1	0.6 pps
	Low-skilled (15-64)	11.8	14.4	15.4	15.2	16.3	1.1 pps
	Medium-skilled (15-64)	6.9	8.8	8.8	8.9	9.9	1.0 pps
	High-skilled (15-64)	4.5	5.5	5.5	5.4	5.7	0.3 pps
	Nationals (15-64)	7.0	8.7	8.9	8.7	9.3	0.6 pps
	Non-nationals (15-64)	14.1	17.8	17.2	18.2	19.3	1.1 pps
	Male	7.3	9.3	9.3	9.1	10.1	1.0 pps
	Female	8.4	9.8	10.1	10.2	10.4	0.2 pps
12 -	**Long-term unemployment** (% of total unemployment)	37.4	35.2	40.2	41.5	40.3	-1.2 pps
13 -	**Worked hours** (full-time, average actual weekly hours)	39.5	39.4	39.8	39.8	39.6	-0.5 %
	Male	40.7	40.6	41.0	41.0	40.7	-0.7 %
	Female	37.7	37.5	38.0	38.0	37.9	-0.3 %
14 -	**Sectoral employment growth** (% change)						
	Agriculture	:	-2.5	-2.5	-1.4	-1.6	-0.2 pps
	Building and construction	3.1	0.2	-1.3	-0.5	-0.3	0.2 pps
	Services	0.9	-2.0	0.9	:	:	: pps
	Manufacturing industry	:	-4.8	-3.9	-1.4	-0.7	0.7 pps
15 -	**Indicator board on wage developments** (% change)						
	Compensation per employee	2.6	1.8	2.3	2.9	1.2	-1.6 pps
	Real compensation per employee based on GDP	0.2	1.3	1.5	1.2	0.6	-0.5 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	3.5	1.0	3.1	3.4	2.0	-1.4 pps
	Labour cost index (wages and salaries, total)	2.9	1.0	2.8	2.8	2.1	-0.7 pps
	Labour productivity (GDP/person employed)	-0.6	-1.9	1.7	1.4	0.1	-1.3 pps

Croatia		2008	2009	2010	2011	2012	2011-2012
1 -	**Population** (LFS, total, 1000 pers.)	4225	4225	4225	4225	4225	0.0 %
2 -	**Population** (LFS, working age:15-64, 1000 pers.)	2742	2736	2757	2746	2754	0.3 %
	(% of total population)	64.9	64.8	65.3	65.0	65.2	0.2 pps
3 -	**Labour force** (15-64, 1000 pers.)	1733	1708	1694	1669	1667	-0.1 %
	Male	949	915	909	913	910	-0.4 %
	Female	784	793	786	756	757	0.2 %
4 -	**Activity rate** (% of population 15-64)	63.2	62.4	61.4	60.8	60.5	-0.3 pps
	Young (15-24)	34.7	34.1	34.2	31.4	29.6	-1.7 pps
	Prime age (25-54)	80.9	79.9	79.4	79.8	80.1	0.3 pps
	Older (55-64)	38.8	40.8	40.5	40.5	41.1	0.6 pps
	Nationals (15-64)	63.2	62.5	61.5	60.8	60.5	-0.3 pps
	Non-nationals (15-64)	52.4	42.1	43.5	51.2	52.9	1.8 pps
	Male	70.0	68.0	67.2	67.4	66.1	-1.3 pps
	Young (15-24)	40.7	40.3	40.2	37.1	34.1	-3.0 pps
	Prime age (25-54)	85.6	83.2	82.4	84.2	83.7	-0.5 pps
	Older (55-64)	52.3	53.2	53.4	53.3	52.5	-0.8 pps
	Female	56.6	57.0	55.9	54.4	55.0	0.6 pps
	Young (15-24)	28.3	27.1	27.6	25.0	24.3	-0.7 pps
	Prime age (25-54)	76.3	76.7	76.5	75.5	76.4	1.0 pps
	Older (55-64)	26.7	29.7	29.1	29.2	30.9	1.7 pps
5 -	**Employment rate** (% of population 15-64)	57.8	56.6	54.0	52.4	50.7	-1.7 pps
	Young (15-24)	27.1	25.6	23.0	20.1	16.9	-3.2 pps
	Prime age (25-54)	75.0	73.6	71.2	70.1	68.7	-1.4 pps
	Older (55-64)	36.7	38.5	37.6	37.1	36.7	-0.4 pps
	Low-skilled (15-64)	35.1	34.2	32.7	30.7	27.8	-2.9 pps
	Medium-skilled (15-64)	62.3	60.3	57.0	55.7	53.4	-2.2 pps
	High-skilled (15-64)	81.9	81.1	78.2	76.2	75.5	-0.6 pps
	Nationals (15-64)	57.8	56.6	54.0	52.4	50.7	-1.7 pps
	Non-nationals (15-64)	52.4	38.2	37.7	46.5	37.3	-9.3 pps
	Male	65.0	62.4	59.4	57.9	55.1	-2.8 pps
	Young (15-24)	33.2	31.0	27.7	23.9	19.7	-4.2 pps
	Prime age (25-54)	80.9	78.0	74.6	74.1	71.8	-2.2 pps
	Older (55-64)	49.0	50.1	49.3	48.4	46.7	-1.7 pps
	Female	50.7	51.0	48.8	47.0	46.2	-0.8 pps
	Young (15-24)	20.6	19.4	17.9	15.8	13.5	-2.3 pps
	Prime age (25-54)	69.2	69.4	67.9	66.2	65.5	-0.7 pps
	Older (55-64)	25.5	28.1	27.4	27.0	27.8	0.7 pps
6 -	**Employed persons** (15-64, 1000 pers.)	1584.1	1548.5	1488.8	1438.1	1395.4	-3.0 %
7 -	**Employment growth** (%, National accounts)	1.1	-1.8	-4.0	-3.2	-1.3	1.9 pps
	Employment growth (%, 15-64, LFS)	1.1	-2.2	-3.9	-3.4	-3.0	0.4 pps
	Male	0.7	-4.7	-4.5	-2.2	-3.2	-1.0 pps
	Female	1.5	0.8	-3.1	-4.8	-2.6	2.2 pps
8 -	**Self employed** (15-64, % of total employment)	17.4	17.2	18.0	17.6	16.4	-1.3 %
	Male	19.9	19.7	20.2	20.2	19.1	-1.1 pps
	Female	14.3	14.2	15.4	14.5	13.2	-1.4 pps
9 -	**Temporary employment** (15-64, % of total employment)	12.1	11.6	12.3	12.7	12.8	0.1 pps
	Male	11.9	11.4	12.1	12.7	12.9	0.2 pps
	Female	12.3	11.9	12.6	12.7	12.7	0.0 pps
10 -	**Part-time** (15-64, % of total employment)	6.9	6.9	7.5	7.6	6.3	-1.3 pps
	Male	5.3	5.2	5.4	5.9	5.2	-0.7 pps
	Female	8.8	9.0	10.1	9.6	7.5	-2.1 pps
11 -	**Unemployment rate** (harmonised:15-74)	8.4	9.1	11.8	13.5	15.9	2.4 pps
	Young (15-24)	21.9	25.1	32.6	36.1	43.0	6.9 pps
	Prime age (25-49)	7.3	7.9	10.3	12.2	14.3	2.1 pps
	Older (55-64)	5.6	5.6	7.0	8.5	10.7	2.2 pps
	Low-skilled (15-64)	10.6	10.6	13.2	17.6	19.4	1.8 pps
	Medium-skilled (15-64)	9.2	10.3	13.2	14.6	17.8	3.2 pps
	High-skilled (15-64)	4.8	5.3	8.1	8.8	9.9	1.1 pps
	Nationals (15-64)	8.6	9.3	12.1	13.9	16.3	2.4 pps
	Non-nationals (15-64)	0.0	0.0	0.0	0.0	0.0	0.0 pps
	Male	7.0	8.0	11.4	13.8	16.2	2.4 pps
	Female	10.1	10.3	12.3	13.2	15.6	2.4 pps
12 -	**Long-term unemployment** (% of total unemployment)	63.1	56.1	56.9	63.9	64.6	0.7 pps
13 -	**Worked hours** (full-time, average actual weekly hours)	41.5	41.2	41.3	41.1	40.7	-1.0 %
	Male	42.0	41.7	41.7	41.5	41.1	-1.0 %
	Female	40.7	40.6	40.7	40.6	40.2	-1.0 %
14 -	**Sectoral employment growth** (% change)						
	Agriculture	:	:	:	:	:	: pps
	Building and construction	:	:	:	:	:	: pps
	Services	:	:	:	:	:	: pps
	Manufacturing industry	:	:	:	:	:	: pps
15 -	**Indicator board on wage developments** (% change)						
	Compensation per employee	6.9	1.0	2.6	4.9	2.2	-2.6 pps
	Real compensation per employee based on GDP	1.1	-1.8	1.0	1.0	1.2	0.2 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	:	-5.8	-1.8	2.8	1.5	-1.3 pps
	Labour cost index (wages and salaries, total)	:	-5.9	-1.8	2.8	2.1	-0.7 pps
	Labour productivity (GDP/person employed)	1.0	-5.2	3.0	2.4	2.0	-0.4 pps

Italy		**2008**	**2009**	**2010**	**2011**	**2012**	**2011-2012**
1 -	**Population** (LFS, total, 1000 pers.)	59336	59752	60051	60328	60515	0.3 %
2 -	**Population** (LFS, working age:15-64, 1000 pers.)	39182	39406	39546	39659	39603	-0.1 %
	(% of total population)	66.0	65.9	65.9	65.7	65.4	-0.3 pps
3 -	**Labour force** (15-64, 1000 pers.)	24696	24591	24594	24686	25217	2.1 %
	Male	14571	14498	14457	14438	14584	1.0 %
	Female	10125	10093	10137	10248	10633	3.8 %
4 -	**Activity rate** (% of population 15-64)	63.0	62.4	62.2	62.2	63.7	1.4 pps
	Young (15-24)	30.9	29.1	28.4	27.4	28.7	1.3 pps
	Prime age (25-54)	78.1	77.2	76.9	76.9	77.9	1.0 pps
	Older (55-64)	35.5	37.0	38.0	39.5	42.6	3.2 pps
	Nationals (15-64)	62.3	61.6	61.4	61.4	62.9	1.6 pps
	Non-nationals (15-64)	73.3	72.7	71.4	70.9	70.6	-0.4 pps
	Male	74.4	73.7	73.3	73.1	73.9	0.9 pps
	Young (15-24)	35.9	34.0	33.2	31.6	33.1	1.4 pps
	Prime age (25-54)	91.0	90.0	89.4	89.2	89.4	0.1 pps
	Older (55-64)	47.0	48.5	49.6	50.7	53.6	3.0 pps
	Female	51.6	51.1	51.1	51.5	53.5	2.0 pps
	Young (15-24)	25.7	23.9	23.4	22.9	24.0	1.2 pps
	Prime age (25-54)	65.2	64.5	64.4	64.6	66.4	1.8 pps
	Older (55-64)	24.7	26.1	27.0	28.9	32.2	3.4 pps
5 -	**Employment rate** (% of population 15-64)	58.7	57.5	56.9	56.9	56.8	-0.2 pps
	Young (15-24)	24.4	21.7	20.5	19.4	18.6	-0.8 pps
	Prime age (25-54)	73.5	71.9	71.1	71.1	70.3	-0.8 pps
	Older (55-64)	34.4	35.7	36.6	37.9	40.4	2.4 pps
	Low-skilled (15-64)	46.0	44.5	43.6	43.7	43.5	-0.1 pps
	Medium-skilled (15-64)	67.9	66.5	65.7	65.2	64.2	-1.0 pps
	High-skilled (15-64)	78.5	77.0	76.4	77.0	76.6	-0.4 pps
	Nationals (15-64)	58.1	56.9	56.3	56.4	56.4	-0.1 pps
	Non-nationals (15-64)	67.1	64.5	63.1	62.3	60.6	-1.7 pps
	Male	70.3	68.6	67.7	67.5	66.5	-0.9 pps
	Young (15-24)	29.1	26.1	24.3	23.1	21.9	-1.1 pps
	Prime age (25-54)	86.7	84.7	83.5	83.4	81.6	-1.7 pps
	Older (55-64)	45.5	46.7	47.6	48.4	50.4	2.1 pps
	Female	47.2	46.4	46.1	46.5	47.1	0.6 pps
	Young (15-24)	19.4	17.0	16.5	15.5	15.0	-0.5 pps
	Prime age (25-54)	60.2	59.1	58.7	58.9	59.1	0.2 pps
	Older (55-64)	24.0	25.4	26.2	28.1	30.9	2.8 pps
6 -	**Employed persons** (15-64, 1000 pers.)	23010.5	22650.1	22496.5	22582.7	22481.1	-0.4 %
7 -	**Employment growth** (%, National accounts)	0.3	-1.6	-0.7	0.3	-0.8	-1.1 pps
	Employment growth (%, 15-64, LFS)	0.7	-1.6	-0.7	0.4	-0.4	-0.8 pps
	Male	-0.1	-1.9	-1.1	-0.1	-1.6	-1.4 pps
	Female	1.9	-1.1	0.0	1.2	1.1	0.0 pps
8 -	**Self employed** (15-64, % of total employment)	22.9	22.5	22.7	22.5	22.4	0.0 pps
	Male	27.2	27.0	27.5	27.3	27.2	-0.1 pps
	Female	16.4	15.9	15.8	15.5	15.8	0.3 pps
9 -	**Temporary employment** (15-64, % of total employment)	13.3	12.5	12.8	13.4	13.8	0.4 pps
	Male	11.5	10.8	11.4	12.3	12.9	0.6 pps
	Female	15.7	14.6	14.5	14.7	14.9	0.2 pps
10 -	**Part-time** (15-64, % of total employment)	14.1	14.1	14.8	15.2	16.8	1.6 pps
	Male	4.8	4.7	5.1	5.5	6.7	1.2 pps
	Female	27.8	27.9	29.0	29.3	31.0	1.7 pps
11 -	**Unemployment rate** (harmonised:15-74)	6.7	7.8	8.4	8.4	10.7	2.3 pps
	Young (15-24)	21.3	25.4	27.8	29.1	35.3	6.2 pps
	Prime age (25-49)	6.0	7.0	7.6	7.5	9.6	2.1 pps
	Older (55-64)	3.1	3.4	3.6	3.9	5.3	1.4 pps
	Low-skilled (15-64)	8.6	9.6	10.5	10.8	13.9	3.1 pps
	Medium-skilled (15-64)	6.2	7.3	8.0	7.9	10.1	2.2 pps
	High-skilled (15-64)	4.6	5.6	5.8	5.5	6.8	1.3 pps
	Nationals (15-64)	6.7	7.6	8.2	8.1	10.5	2.4 pps
	Non-nationals (15-64)	8.5	11.2	11.7	12.2	14.1	1.9 pps
	Male	5.5	6.8	7.6	7.6	9.9	2.3 pps
	Female	8.5	9.3	9.7	9.6	11.9	2.3 pps
12 -	**Long-term unemployment** (% of total unemployment)	45.6	44.4	48.4	51.9	53.0	1.1 pps
13 -	**Worked hours** (full-time, average actual weekly hours)	40.4	39.9	40.1	39.9	39.5	-1.0 %
	Male	41.7	41.1	41.3	41.2	40.7	-1.2 %
	Female	37.7	37.4	37.6	37.5	37.3	-0.5 %
14 -	**Sectoral employment growth** (% change)						
	Agriculture	:	-2.6	1.4	-2.1	-2.7	-0.6 pps
	Building and construction	0.3	-1.4	-1.9	-2.7	-5.2	-2.5 pps
	Services	0.7	-1.7	0.1	:	:	: pps
	Manufacturing industry	:	-4.8	-3.6	-0.5	-1.7	-1.2 pps
15 -	**Indicator board on wage developments** (% change)						
	Compensation per employee	3.0	-0.1	2.2	1.1	0.5	-0.6 pps
	Real compensation per employee based on GDP	1.2	-0.4	2.4	-0.1	-0.6	-0.5 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	4.1	4.7	2.6	2.3	2.0	-0.3 pps
	Labour cost index (wages and salaries, total)	4.0	4.6	2.7	2.2	2.1	-0.1 pps
	Labour productivity (GDP/person employed)	-1.4	-3.9	2.5	0.2	-2.2	-2.4 pps

Cyprus		2008	2009	2010	2011	2012	2011-2012
1 - Population (LFS, total, 1000 pers.)		758	775	796	819	839	2.4 %
2 - Population (LFS, working age:15-64, 1000 pers.)		524	538	555	571	585	2.5 %
(% of total population)		69.1	69.4	69.7	69.8	69.8	0.0 pps
3 - Labour force (15-64, 1000 pers.)		386	393	409	420	430	2.4 %
	Male	210	207	213	219	225	2.8 %
	Female	176	185	196	202	206	1.9 %
4 - Activity rate (% of population 15-64)		73.6	73.0	73.6	73.6	73.5	-0.1 pps
	Young (15-24)	41.8	40.4	40.5	38.8	39.0	0.2 pps
	Prime age (25-54)	86.4	86.3	86.9	87.3	87.6	0.3 pps
	Older (55-64)	56.6	58.1	59.2	57.6	56.1	-1.5 pps
	Nationals (15-64)	73.0	72.4	72.3	71.9	71.7	-0.2 pps
	Non-nationals (15-64)	76.8	75.9	78.8	79.6	80.0	0.4 pps
	Male	82.0	80.7	80.4	80.4	80.7	0.4 pps
	Young (15-24)	43.2	42.2	40.9	41.4	42.9	1.5 pps
	Prime age (25-54)	94.0	93.5	93.4	93.1	93.7	0.6 pps
	Older (55-64)	73.0	74.4	74.2	72.9	71.2	-1.7 pps
	Female	65.7	66.0	67.4	67.4	66.9	-0.5 pps
	Young (15-24)	40.5	38.8	40.1	36.5	35.6	-1.0 pps
	Prime age (25-54)	79.1	79.8	81.0	82.0	82.0	0.0 pps
	Older (55-64)	41.1	42.4	44.4	42.8	41.4	-1.4 pps
5 - Employment rate (% of population 15-64)		70.8	69.0	68.9	67.6	64.6	-3.0 pps
	Young (15-24)	38.0	34.7	33.8	30.2	28.2	-2.0 pps
	Prime age (25-54)	83.7	82.4	82.2	81.3	78.4	-2.9 pps
	Older (55-64)	54.8	55.6	56.3	54.9	50.7	-4.2 pps
	Low-skilled (15-64)	50.9	50.5	51.6	50.3	43.7	-6.6 pps
	Medium-skilled (15-64)	74.1	71.7	70.6	68.5	66.0	-2.4 pps
	High-skilled (15-64)	86.5	84.5	82.8	81.2	78.8	-2.4 pps
	Nationals (15-64)	70.5	68.8	68.1	66.5	63.3	-3.2 pps
	Non-nationals (15-64)	72.7	69.7	72.0	71.8	69.4	-2.4 pps
	Male	79.2	76.3	75.3	73.7	70.4	-3.3 pps
	Young (15-24)	39.5	36.3	34.4	31.8	30.5	-1.2 pps
	Prime age (25-54)	91.4	89.1	88.3	86.4	83.3	-3.1 pps
	Older (55-64)	70.8	71.2	70.5	69.2	63.4	-5.8 pps
	Female	62.8	62.3	63.1	62.2	59.4	-2.8 pps
	Young (15-24)	36.7	33.3	33.2	28.8	26.1	-2.7 pps
	Prime age (25-54)	76.3	76.2	76.8	76.7	74.0	-2.7 pps
	Older (55-64)	39.4	40.6	42.5	40.7	38.3	-2.4 pps
6 - Employed persons (15-64, 1000 pers.)		371.1	371.0	382.3	386.3	378.3	-2.1 %
7 - Employment growth (%, National accounts)		2.1	-0.5	0.0	0.5	-1.5	-2.0 pps
Employment growth (%, 15-64, LFS)		0.9	0.0	3.0	1.0	-2.1	-3.1 pps
	Male	0.6	-3.3	1.6	0.6	-2.2	-2.7 pps
	Female	1.2	3.9	4.7	1.6	-2.0	-3.6 pps
8 - Self employed (15-64, % of total employment)		16.9	16.4	15.2	14.7	13.7	-1.0 pps
	Male	23.0	21.8	20.3	19.9	18.8	-1.1 pps
	Female	9.6	10.3	9.8	9.1	8.2	-1.0 pps
9 - Temporary employment (15-64, % of total employment)		14.0	13.8	14.0	14.2	15.1	0.9 pps
	Male	8.2	7.6	7.1	7.1	9.0	1.9 pps
	Female	20.0	20.0	20.8	20.9	20.9	0.0 pps
10 - Part-time (15-64, % of total employment)		6.8	7.5	8.3	9.0	9.7	0.7 pps
	Male	3.4	4.0	5.1	6.1	6.4	0.3 pps
	Female	10.8	11.5	11.8	12.1	13.1	1.0 pps
11 - Unemployment rate (harmonised:15-74)		3.7	5.4	6.3	7.9	11.9	4.0 pps
	Young (15-24)	9.0	13.8	16.6	22.4	27.8	5.4 pps
	Prime age (25-49)	3.2	4.6	5.4	6.8	10.5	3.7 pps
	Older (55-64)	3.2	4.3	4.7	4.9	9.7	4.8 pps
	Low-skilled (15-64)	5.2	6.5	7.6	7.9	14.2	6.3 pps
	Medium-skilled (15-64)	3.7	5.8	6.5	8.9	12.9	4.0 pps
	High-skilled (15-64)	3.0	4.6	5.7	7.3	10.4	3.1 pps
	Nationals (15-64)	3.4	4.9	5.8	7.5	11.7	4.2 pps
	Non-nationals (15-64)	5.4	8.0	8.6	9.8	13.2	3.4 pps
	Male	3.2	5.3	6.2	8.1	12.6	4.5 pps
	Female	4.3	5.5	6.4	7.7	11.1	3.4 pps
12 - Long-term unemployment (% of total unemployment)		13.6	10.3	20.3	20.8	30.1	9.3 pps
13 - Worked hours (full-time, average actual weekly hours)		40.5	40.2	40.7	40.7	40.9	0.5 %
	Male	41.8	41.6	41.9	41.6	41.7	0.2 %
	Female	38.7	38.4	39.2	39.6	39.9	0.8 %
14 - Sectoral employment growth (% change)							
	Agriculture	:	10.6	-5.2	-1.5	-21.7	-20.2 pps
	Building and construction	3.1	-4.7	-5.8	-4.9	-14.8	-9.9 pps
	Services	3.3	-2.8	0.2	:	:	: pps
	Manufacturing industry	:	-2.1	-3.0	-4.2	-6.4	-2.2 pps
15 - Indicator board on wage developments (% change)							
	Compensation per employee	3.2	2.5	2.7	2.4	-2.4	-4.9 pps
	Real compensation per employee based on GDP	-1.3	2.4	0.6	0.5	-0.3	-0.9 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	6.2	3.8	1.9	1.7	1.2	-0.5 pps
	Labour cost index (wages and salaries, total)	6.2	3.4	1.8	1.6	1.2	-0.4 pps
	Labour productivity (GDP/person employed)	1.4	-1.5	1.5	0.0	1.7	1.7 pps

Latvia		2008	2009	2010	2011	2012	2011-2012
1 -	**Population** (LFS, total, 1000 pers.)	2271	2261	2248	2050	2016	-1.7 %
2 -	**Population** (LFS, working age:15-64, 1000 pers.)	1568	1560	1549	1382	1352	-2.2 %
	(% of total population)	69.0	69.0	68.9	67.4	67.1	-0.3 pps
3 -	**Labour force** (15-64, 1000 pers.)	1167	1153	1134	1007	1006	0.0 %
	Male	597	583	570	502	499	-0.6 %
	Female	570	570	564	505	507	0.4 %
4 -	**Activity rate** (% of population 15-64)	74.4	73.9	73.2	72.8	74.4	1.6 pps
	Young (15-24)	42.9	41.7	40.4	37.5	40.2	2.7 pps
	Prime age (25-54)	88.9	88.5	88.5	88.0	88.4	0.4 pps
	Older (55-64)	63.3	61.4	57.2	59.4	61.9	2.4 pps
	Nationals (15-64)	73.8	73.6	73.1	72.6	74.3	1.7 pps
	Non-nationals (15-64)	77.8	75.7	74.0	74.1	75.0	0.9 pps
	Male	78.6	77.0	75.8	75.8	77.1	1.2 pps
	Young (15-24)	48.8	46.8	43.0	41.2	44.0	2.9 pps
	Prime age (25-54)	92.2	91.1	91.3	90.9	91.2	0.4 pps
	Older (55-64)	68.8	63.8	58.9	62.5	63.2	0.7 pps
	Female	70.5	71.0	70.7	70.1	72.0	1.9 pps
	Young (15-24)	36.7	36.3	37.7	33.6	36.0	2.4 pps
	Prime age (25-54)	85.7	86.1	85.9	85.4	85.8	0.4 pps
	Older (55-64)	59.3	59.7	55.8	57.1	60.9	3.7 pps
5 -	**Employment rate** (% of population 15-64)	68.7	61.0	59.3	60.8	63.0	2.2 pps
	Young (15-24)	37.2	27.7	26.4	25.8	28.7	2.8 pps
	Prime age (25-54)	82.6	74.7	73.4	75.0	76.3	1.3 pps
	Older (55-64)	59.4	53.2	48.2	50.5	52.7	2.2 pps
	Low-skilled (15-64)	37.1	29.4	28.3	29.0	31.5	2.6 pps
	Medium-skilled (15-64)	74.5	64.6	61.5	62.4	62.8	0.4 pps
	High-skilled (15-64)	86.9	82.3	80.6	83.4	85.3	1.9 pps
	Nationals (15-64)	68.5	61.5	60.2	61.4	64.0	2.6 pps
	Non-nationals (15-64)	69.2	57.9	54.6	57.6	57.8	0.2 pps
	Male	72.1	61.0	59.2	61.5	64.4	2.9 pps
	Young (15-24)	42.4	29.3	27.8	28.2	31.7	3.5 pps
	Prime age (25-54)	85.4	74.5	72.9	75.1	77.6	2.6 pps
	Older (55-64)	63.1	53.2	47.6	51.7	53.2	1.5 pps
	Female	65.4	60.9	59.4	60.2	61.7	1.5 pps
	Young (15-24)	31.9	26.0	25.0	23.4	25.4	2.0 pps
	Prime age (25-54)	79.9	74.9	73.8	74.8	75.0	0.2 pps
	Older (55-64)	56.7	53.3	48.7	49.7	52.4	2.7 pps
6 -	**Employed persons** (15-64, 1000 pers.)	1076.3	950.9	918.9	840.6	851.8	1.3 %
7 -	**Employment growth** (%, National accounts)	0.9	-13.2	-4.8	-8.1	0.7	8.8 pps
	Employment growth (%, 15-64, LFS)	0.1	-11.7	-3.4	-8.5	1.3	9.9 pps
	Male	-0.8	-15.6	-3.6	-8.6	2.5	11.1 pps
	Female	1.1	-7.6	-3.2	-8.4	0.2	8.7 pps
8 -	**Self employed** (15-64, % of total employment)	8.5	9.7	9.9	10.1	10.2	0.2 pps
	Male	11.1	12.6	12.1	12.4	12.6	0.2 pps
	Female	5.9	6.9	7.8	7.9	8.0	0.1 pps
9 -	**Temporary employment** (15-64, % of total employment)	3.3	4.4	6.8	6.7	4.7	-2.0 pps
	Male	4.6	5.9	8.9	8.0	6.3	-1.7 pps
	Female	1.9	3.0	5.0	5.5	3.3	-2.2 pps
10 -	**Part-time** (15-64, % of total employment)	5.5	8.4	9.3	8.8	8.9	0.1 pps
	Male	3.9	7.0	7.5	7.0	6.7	-0.3 pps
	Female	7.1	9.6	11.0	10.4	11.0	0.6 pps
11 -	**Unemployment rate** (harmonised:15-74)	8.0	18.2	19.8	16.2	15.0	-1.2 pps
	Young (15-24)	13.1	33.6	34.5	31.0	28.5	-2.5 pps
	Prime age (25-49)	7.1	15.6	17.1	14.8	13.7	-1.1 pps
	Older (55-64)	6.2	13.4	15.6	14.9	14.7	-0.2 pps
	Low-skilled (15-64)	14.6	31.4	32.3	30.0	27.4	-2.6 pps
	Medium-skilled (15-64)	7.7	18.7	20.4	18.5	17.8	-0.7 pps
	High-skilled (15-64)	4.2	8.4	10.5	7.3	6.6	-0.7 pps
	Nationals (15-64)	7.1	16.4	17.6	15.4	13.9	-1.5 pps
	Non-nationals (15-64)	11.1	23.5	26.1	22.2	22.9	0.7 pps
	Male	8.6	21.7	23.1	18.6	16.2	-2.4 pps
	Female	7.4	14.8	16.7	13.8	14.0	0.2 pps
12 -	**Long-term unemployment** (% of total unemployment)	25.7	26.7	45.1	54.5	52.1	-2.4 pps
13 -	**Worked hours** (full-time, average actual weekly hours)	40.7	40.6	40.2	40.3	40.1	-0.5 %
	Male	41.3	41.1	40.6	40.8	40.5	-0.7 %
	Female	40.0	40.0	39.8	39.8	39.7	-0.3 %
14 -	**Sectoral employment growth** (% change)						
	Agriculture	:	-5.0	-3.2	-7.4	-9.0	-1.6 pps
	Building and construction	0.2	-38.7	-19.5	-6.5	5.0	11.5 pps
	Services	4.7	-9.4	-4.4	:	:	: pps
	Manufacturing industry	:	-18.8	0.8	-10.1	2.6	12.7 pps
15 -	**Indicator board on wage developments** (% change)						
	Compensation per employee	15.7	-12.7	-6.7	17.2	6.8	-10.4 pps
	Real compensation per employee based on GDP	2.4	-11.6	-5.6	10.7	2.8	-7.9 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	22.2	0.5	-2.8	3.4	4.0	0.6 pps
	Labour cost index (wages and salaries, total)	21.8	-0.4	-1.9	3.8	4.2	0.4 pps
	Labour productivity (GDP/person employed)	-3.7	-5.2	3.7	14.6	3.4	-11.2 pps

Lithuania		2008	2009	2010	2011	2012	2011-2012
1 -	**Population** (LFS, total, 1000 pers.)	3366	3350	3142	3032	2991	-1.3 %
2 -	**Population** (LFS, working age:15-64, 1000 pers.)	2316	2309	2127	2037	2007	-1.5 %
	(% of total population)	68.8	68.9	67.7	67.2	67.1	-0.1 pps
3 -	**Labour force** (15-64, 1000 pers.)	1584	1612	1494	1454	1441	-0.9 %
	Male	801	805	737	722	713	-1.2 %
	Female	783	807	757	732	728	-0.5 %
4 -	**Activity rate** (% of population 15-64)	68.4	69.8	70.2	71.4	71.8	0.4 pps
	Young (15-24)	30.8	30.4	28.4	28.2	29.3	1.1 pps
	Prime age (25-54)	85.5	87.3	88.4	89.8	89.7	0.0 pps
	Older (55-64)	55.6	57.6	56.5	58.0	58.7	0.8 pps
	Nationals (15-64)	68.3	69.8	70.2	71.4	71.8	0.4 pps
	Non-nationals (15-64)	76.1	63.8	70.7	64.6	79.3	14.7 pps
	Male	71.4	72.0	72.0	73.5	73.7	0.1 pps
	Young (15-24)	35.4	33.8	31.3	32.1	32.4	0.3 pps
	Prime age (25-54)	87.4	88.3	89.0	90.7	90.5	-0.2 pps
	Older (55-64)	63.0	63.9	62.6	64.3	64.6	0.3 pps
	Female	65.5	67.8	68.6	69.4	70.1	0.7 pps
	Young (15-24)	26.0	26.7	25.4	24.1	26.1	2.0 pps
	Prime age (25-54)	83.8	86.3	87.8	88.9	89.0	0.1 pps
	Older (55-64)	50.0	52.9	51.7	53.1	54.2	1.1 pps
5 -	**Employment rate** (% of population 15-64)	64.3	60.1	57.6	60.2	62.0	1.8 pps
	Young (15-24)	26.7	21.5	18.3	19.0	21.5	2.5 pps
	Prime age (25-54)	81.2	76.3	73.6	76.9	78.5	1.5 pps
	Older (55-64)	53.1	51.6	48.3	50.2	51.7	1.5 pps
	Low-skilled (15-64)	20.7	17.7	14.0	14.4	15.7	1.2 pps
	Medium-skilled (15-64)	68.1	61.9	57.5	59.7	61.7	2.0 pps
	High-skilled (15-64)	87.7	85.9	85.3	87.2	87.0	-0.2 pps
	Nationals (15-64)	64.3	60.1	57.6	60.3	62.0	1.8 pps
	Non-nationals (15-64)	73.5	51.7	53.1	49.6	64.7	15.0 pps
	Male	67.1	59.5	56.5	60.1	62.3	2.1 pps
	Young (15-24)	30.9	22.0	19.1	20.9	22.8	1.9 pps
	Prime age (25-54)	82.7	74.6	71.1	75.7	77.7	2.1 pps
	Older (55-64)	60.2	56.0	52.1	54.1	55.9	1.8 pps
	Female	61.8	60.7	58.5	60.2	61.8	1.6 pps
	Young (15-24)	22.2	20.9	17.4	17.0	20.1	3.1 pps
	Prime age (25-54)	79.7	78.0	75.9	78.1	79.1	1.0 pps
	Older (55-64)	47.7	48.3	45.4	47.2	48.6	1.3 pps
6 -	**Employed persons** (15-64, 1000 pers.)	1490.2	1387.5	1224.2	1225.7	1244.4	1.5 %
7 -	**Employment growth** (%, National accounts)	-0.7	-6.8	-5.1	2.0	0.6	-1.4 pps
	Employment growth (%, 15-64, LFS)	-1.0	-6.9	-11.8	0.1	1.5	1.4 pps
	Male	-1.2	-11.4	-13.1	2.0	2.1	0.1 pps
	Female	-0.8	-2.2	-10.6	-1.5	1.0	2.5 pps
8 -	**Self employed** (15-64, % of total employment)	10.0	10.2	9.1	9.0	9.6	0.6 pps
	Male	13.1	13.3	11.5	11.0	12.0	1.0 pps
	Female	6.8	7.3	6.9	7.1	7.3	0.1 pps
9 -	**Temporary employment** (15-64, % of total employment)	2.4	2.3	2.4	2.7	2.6	-0.1 pps
	Male	2.9	3.0	3.3	3.7	3.5	-0.2 pps
	Female	1.9	1.6	1.7	1.8	1.9	0.1 pps
10 -	**Part-time** (15-64, % of total employment)	6.5	8.0	7.8	8.3	8.9	0.6 pps
	Male	4.7	6.7	6.4	6.7	6.9	0.2 pps
	Female	8.3	9.1	8.9	9.9	10.7	0.8 pps
11 -	**Unemployment rate** (harmonised:15-74)	5.3	13.6	18.0	15.4	13.4	-2.0 pps
	Young (15-24)	13.4	29.2	35.7	32.6	26.7	-5.9 pps
	Prime age (25-49)	5.1	12.5	16.7	14.3	12.6	-1.7 pps
	Older (55-64)	4.4	10.4	14.4	13.4	11.9	-1.5 pps
	Low-skilled (15-64)	13.7	30.9	41.3	40.2	36.2	-4.0 pps
	Medium-skilled (15-64)	6.7	16.4	22.0	19.2	16.7	-2.5 pps
	High-skilled (15-64)	3.0	6.1	7.8	6.3	5.7	-0.6 pps
	Nationals (15-64)	5.9	13.9	18.0	15.6	13.6	-2.0 pps
	Non-nationals (15-64)	0.0	0.0	0.0	0.0	0.0	0.0 pps
	Male	5.5	17.1	21.6	17.9	15.2	-2.7 pps
	Female	5.2	10.1	14.4	12.9	11.6	-1.3 pps
12 -	**Long-term unemployment** (% of total unemployment)	21.1	23.2	41.7	52.1	49.2	-2.9 pps
13 -	**Worked hours** (full-time, average actual weekly hours)	40.3	39.9	39.9	39.9	39.8	-0.3 %
	Male	40.9	40.5	40.4	40.4	40.2	-0.5 %
	Female	39.7	39.4	39.4	39.4	39.3	-0.3 %
14 -	**Sectoral employment growth** (% change)						
	Agriculture	:	9.2	-15.5	-3.4	5.5	8.9 pps
	Building and construction	-2.4	-26.3	-29.0	-2.0	5.1	7.1 pps
	Services	3.6	-4.9	-7.6	:	:	: pps
	Manufacturing industry	:	-13.1	-15.1	1.6	2.8	1.2 pps
15 -	**Indicator board on wage developments** (% change)						
	Compensation per employee	14.3	-9.9	-0.3	4.6	4.2	-0.4 pps
	Real compensation per employee based on GDP	4.3	-6.7	-2.4	-1.7	-0.2	1.5 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	17.8	-6.6	-4.6	2.7	4.9	2.2 pps
	Labour cost index (wages and salaries, total)	17.7	-7.5	-3.8	3.0	4.1	1.1 pps
	Labour productivity (GDP/person employed)	3.6	-8.6	15.3	5.5	1.9	-3.6 pps

Luxembourg		2008	2009	2010	2011	2012	2011-2012
1 -	**Population** (LFS, total, 1000 pers.)	467	481	488	500	513	2.6 %
2 -	**Population** (LFS, working age:15-64, 1000 pers.)	318	330	335	344	355	3.1 %
	(% of total population)	68.1	68.5	68.6	68.9	69.3	0.3 pps
3 -	**Labour force** (15-64, 1000 pers.)	213	227	229	234	247	5.3 %
	Male	120	128	128	131	137	4.4 %
	Female	92	99	100	103	110	6.6 %
4 -	**Activity rate** (% of population 15-64)	66.8	68.7	68.2	68.0	69.4	1.5 pps
	Young (15-24)	29.1	32.3	24.7	24.9	26.8	1.8 pps
	Prime age (25-54)	83.4	84.8	85.7	85.7	87.0	1.4 pps
	Older (55-64)	35.1	39.3	40.5	40.3	41.9	1.6 pps
	Nationals (15-64)	62.7	64.8	64.3	63.7	64.7	1.0 pps
	Non-nationals (15-64)	71.9	73.3	72.8	72.8	74.7	1.8 pps
	Male	74.7	76.5	76.0	75.0	75.9	1.0 pps
	Young (15-24)	30.8	34.8	26.7	26.2	29.0	2.8 pps
	Prime age (25-54)	93.8	94.1	94.8	93.9	94.7	0.8 pps
	Older (55-64)	39.6	47.7	48.9	48.4	48.3	-0.1 pps
	Female	58.7	60.7	60.3	60.7	62.8	2.0 pps
	Young (15-24)	27.0	29.2	22.5	23.2	24.6	1.4 pps
	Prime age (25-54)	72.9	75.3	76.3	77.1	79.1	2.0 pps
	Older (55-64)	30.4	30.8	32.2	32.0	35.0	3.0 pps
5 -	**Employment rate** (% of population 15-64)	63.4	65.2	65.2	64.6	65.8	1.2 pps
	Young (15-24)	23.9	26.7	21.2	20.7	21.7	1.0 pps
	Prime age (25-54)	80.0	81.2	82.3	82.0	83.1	1.2 pps
	Older (55-64)	34.1	38.1	39.6	39.2	41.1	1.8 pps
	Low-skilled (15-64)	48.4	45.0	43.8	44.2	44.7	0.5 pps
	Medium-skilled (15-64)	65.3	65.8	66.7	64.4	65.8	1.4 pps
	High-skilled (15-64)	83.7	83.8	83.8	83.7	83.5	-0.2 pps
	Nationals (15-64)	60.8	62.8	62.5	61.5	62.6	1.1 pps
	Non-nationals (15-64)	66.6	67.9	68.4	68.2	69.4	1.2 pps
	Male	71.5	73.2	73.1	72.1	72.4	0.3 pps
	Young (15-24)	27.1	29.0	22.1	22.8	23.5	0.6 pps
	Prime age (25-54)	90.2	90.8	92.0	90.8	91.1	0.3 pps
	Older (55-64)	38.8	46.6	47.8	47.0	47.2	0.3 pps
	Female	55.2	57.0	57.2	56.9	59.1	2.1 pps
	Young (15-24)	20.6	24.2	20.4	18.4	19.9	1.5 pps
	Prime age (25-54)	69.5	71.4	72.5	72.8	75.0	2.1 pps
	Older (55-64)	29.5	29.6	31.4	31.2	34.3	3.1 pps
6 -	**Employed persons** (15-64, 1000 pers.)	201.8	214.8	218.6	222.4	233.7	5.1 %
7 -	**Employment growth** (%, National accounts)	4.7	1.0	1.8	2.7	2.0	-0.7 pps
	Employment growth (%, 15-64, LFS)	-0.4	6.4	1.8	1.7	5.1	3.3 pps
	Male	1.6	6.1	1.0	1.9	3.6	1.7 pps
	Female	-2.8	6.9	2.7	1.7	6.9	5.2 pps
8 -	**Self employed** (15-64, % of total employment)	6.1	7.4	7.2	7.7	8.0	0.3 pps
	Male	6.5	8.7	8.3	8.7	8.7	0.1 pps
	Female	5.7	5.6	5.7	6.4	7.1	0.6 pps
9 -	**Temporary employment** (15-64, % of total employment)	6.2	7.2	7.1	7.1	7.6	0.5 pps
	Male	5.9	6.3	6.2	6.3	7.2	0.9 pps
	Female	6.6	8.3	8.3	8.2	8.2	0.0 pps
10 -	**Part-time** (15-64, % of total employment)	17.9	17.6	17.5	18.0	18.5	0.5 pps
	Male	2.7	4.5	3.4	4.3	4.7	0.4 pps
	Female	38.2	34.9	35.8	35.9	36.1	0.2 pps
11 -	**Unemployment rate** (harmonised:15-74)	4.9	5.1	4.6	4.8	5.1	0.3 pps
	Young (15-24)	17.9	17.2	14.2	16.8	18.8	2.0 pps
	Prime age (25-49)	4.2	4.2	3.9	4.3	4.5	0.2 pps
	Older (55-64)	0.0	3.0	0.0	2.8	2.1	-0.7 pps
	Low-skilled (15-64)	6.6	8.2	6.1	8.3	8.5	0.2 pps
	Medium-skilled (15-64)	5.9	4.3	4.0	4.4	5.2	0.8 pps
	High-skilled (15-64)	2.4	4.2	3.8	3.7	3.6	-0.1 pps
	Nationals (15-64)	3.0	3.0	2.8	3.5	3.3	-0.2 pps
	Non-nationals (15-64)	7.3	7.3	6.1	6.4	7.0	0.6 pps
	Male	4.1	4.5	3.8	3.9	4.5	0.6 pps
	Female	5.9	5.9	5.5	6.0	5.8	-0.2 pps
12 -	**Long-term unemployment** (% of total unemployment)	32.2	23.2	29.3	28.6	30.3	1.7 pps
13 -	**Worked hours** (full-time, average actual weekly hours)	40.4	41.4	41.4	41.3	41.8	1.2 %
	Male	40.9	42.4	42.2	42.1	42.5	1.0 %
	Female	39.3	39.3	39.6	39.6	40.4	2.0 %
14 -	**Sectoral employment growth** (% change)						
	Agriculture	:	-4.7	2.4	-2.4	0.0	2.4 pps
	Building and construction	4.0	-0.8	0.5	2.0	1.2	-0.8 pps
	Services	5.6	0.2	1.9	:	:	: pps
	Manufacturing industry	:	-2.9	-0.3	0.9	-1.2	-2.1 pps
15 -	**Indicator board on wage developments** (% change)						
	Compensation per employee		3.4	1.6	2.7	2.6	2.5	-0.1 pps
	Real compensation per employee based on GDP		3.0	1.3	-4.6	-2.9	-2.6	0.3 pps
	Labour cost index (compens. of employees plus taxes minus subs.)		3.2	3.9	2.2	3.1	2.4	-0.7 pps
	Labour cost index (wages and salaries, total)		3.5	4.5	2.3	3.3	2.3	-1.0 pps
	Labour productivity (GDP/person employed)		-5.5	-6.4	1.3	-1.0	-2.6	-1.6 pps

Hungary		2008	2009	2010	2011	2012	2011-2012
1 - **Population** (LFS, total, 1000 pers.)		9893	9867	9852	9833	9802	-0.3 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)		6794	6771	6769	6770	6716	-0.8 %
(% of total population)		68.7	68.6	68.7	68.9	68.5	-0.3 pps
3 - **Labour force** (15-64, 1000 pers.)		4178	4172	4225	4247	4318	1.7 %
	Male	2267	2260	2270	2292	2323	1.3 %
	Female	1911	1912	1955	1954	1995	2.1 %
4 - **Activity rate** (% of population 15-64)		61.5	61.6	62.4	62.7	64.3	1.6 pps
	Young (15-24)	25.0	24.6	24.9	24.8	25.9	1.1 pps
	Prime age (25-54)	80.1	80.2	80.9	81.3	82.9	1.6 pps
	Older (55-64)	33.1	35.0	37.3	39.2	40.0	0.9 pps
	Nationals (15-64)	61.4	61.5	62.4	62.7	64.3	1.5 pps
	Non-nationals (15-64)	70.4	73.8	67.8	63.6	68.0	4.5 pps
	Male	68.3	68.2	68.3	68.8	70.5	1.7 pps
	Young (15-24)	28.6	27.7	27.7	27.3	28.0	0.7 pps
	Prime age (25-54)	87.0	86.9	87.2	88.3	89.5	1.3 pps
	Older (55-64)	40.5	42.6	43.1	44.0	46.4	2.5 pps
	Female	55.0	55.3	56.7	56.8	58.3	1.5 pps
	Young (15-24)	21.3	21.5	22.1	22.1	23.7	1.5 pps
	Prime age (25-54)	73.3	73.6	74.6	74.3	76.3	2.0 pps
	Older (55-64)	27.0	28.8	32.4	35.2	34.8	-0.3 pps
5 - **Employment rate** (% of population 15-64)		56.7	55.4	55.4	55.8	57.2	1.4 pps
	Young (15-24)	20.0	18.1	18.3	18.3	18.6	0.3 pps
	Prime age (25-54)	74.4	72.9	72.5	73.1	74.6	1.5 pps
	Older (55-64)	31.4	32.8	34.4	35.8	36.9	1.1 pps
	Low-skilled (15-64)	27.2	25.7	25.9	25.7	26.5	0.8 pps
	Medium-skilled (15-64)	63.3	61.6	61.1	61.1	62.5	1.4 pps
	High-skilled (15-64)	79.5	78.1	77.8	78.4	78.7	0.3 pps
	Nationals (15-64)	56.6	55.3	55.4	55.8	57.2	1.4 pps
	Non-nationals (15-64)	66.7	65.6	62.2	57.8	60.6	2.8 pps
	Male	63.0	61.1	60.4	61.2	62.5	1.3 pps
	Young (15-24)	23.1	19.9	20.0	19.9	20.0	0.1 pps
	Prime age (25-54)	81.0	78.9	77.9	79.6	80.4	0.8 pps
	Older (55-64)	38.5	39.9	39.6	39.8	42.7	2.9 pps
	Female	50.6	49.9	50.6	50.6	52.1	1.5 pps
	Young (15-24)	16.9	16.3	16.6	16.7	17.2	0.5 pps
	Prime age (25-54)	67.9	66.9	67.1	66.6	68.9	2.2 pps
	Older (55-64)	25.7	27.0	30.1	32.4	32.2	-0.2 pps
6 - **Employed persons** (15-64, 1000 pers.)		3849.2	3751.2	3750.1	3779.0	3842.8	1.7 %
7 - **Employment growth** (%, National accounts)		-1.4	-2.8	0.3	0.3	1.0	0.7 pps
Employment growth (%, 15-64, LFS)		-1.2	-2.5	0.0	0.8	1.7	0.9 pps
	Male	-1.5	-3.2	-1.0	1.7	1.1	-0.6 pps
	Female	-0.9	-1.8	1.2	-0.3	2.4	2.7 pps
8 - **Self employed** (15-64, % of total employment)		11.6	11.9	11.7	11.4	10.9	-0.4 pps
	Male	14.7	14.8	14.8	14.5	13.5	-1.0 pps
	Female	8.0	8.4	8.2	7.7	8.0	0.3 pps
9 - **Temporary employment** (15-64, % of total employment)		7.8	8.4	9.6	8.9	9.4	0.5 pps
	Male	8.6	9.0	10.0	9.4	10.3	0.9 pps
	Female	7.0	7.8	9.2	8.4	8.5	0.1 pps
10 - **Part-time** (15-64, % of total employment)		4.3	5.2	5.5	6.4	6.6	0.2 pps
	Male	3.0	3.6	3.6	4.4	4.3	-0.1 pps
	Female	5.8	7.1	7.6	8.8	9.3	0.5 pps
11 - **Unemployment rate** (harmonised:15-74)		7.8	10.0	11.2	10.9	10.9	0.0 pps
	Young (15-24)	19.9	26.5	26.6	26.1	28.1	2.0 pps
	Prime age (25-49)	7.1	9.1	10.4	10.1	10.0	-0.1 pps
	Older (55-64)	5.0	6.3	7.8	8.7	7.9	-0.8 pps
	Low-skilled (15-64)	18.9	23.4	25.3	24.9	24.9	0.0 pps
	Medium-skilled (15-64)	7.2	9.4	10.6	10.6	10.7	0.1 pps
	High-skilled (15-64)	2.8	4.0	4.7	4.5	4.5	0.0 pps
	Nationals (15-64)	7.9	10.1	11.3	11.0	11.0	0.0 pps
	Non-nationals (15-64)	0.0	11.2	8.4	8.9	11.1	2.2 pps
	Male	7.6	10.3	11.6	11.0	11.2	0.2 pps
	Female	8.1	9.7	10.7	10.9	10.6	-0.3 pps
12 - **Long-term unemployment** (% of total unemployment)		46.5	41.6	49.3	47.9	45.0	-2.9 pps
13 - **Worked hours** (full-time, average actual weekly hours)		40.7	40.5	40.5	40.3	39.6	-1.7 %
	Male	41.5	41.1	41.1	40.9	40.3	-1.5 %
	Female	39.8	39.8	39.8	39.5	38.9	-1.5 %
14 - **Sectoral employment growth** (% change)							
	Agriculture	:	-5.0	0.8	3.7	3.9	0.2 pps
	Building and construction	-6.3	-5.4	-5.9	-2.1	-2.7	-0.6 pps
	Services	0.0	-2.4	1.9	:	:	: pps
	Manufacturing industry	:	-6.4	-1.1	3.6	-2.4	-6.0 pps
15 - **Indicator board on wage developments** (% change)							
	Compensation per employee	6.8	-1.4	0.1	3.1	3.6	0.5 pps
	Real compensation per employee based on GDP	1.9	-5.0	-2.7	-0.1	-0.1	0.0 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	7.9	2.4	-0.7	5.6	5.8	0.2 pps
	Labour cost index (wages and salaries, total)	8.1	3.8	2.6	5.5	5.7	0.2 pps
	Labour productivity (GDP/person employed)	2.7	-4.4	0.2	1.3	-1.8	-3.1 pps

Malta		2008	2009	2010	2011	2012	2011-2012
1 -	**Population** (LFS, total, 1000 pers.)	411	414	416	419	421	0.5 %
2 -	**Population** (LFS, working age:15-64, 1000 pers.)	288	290	289	289	288	-0.2 %
	(% of total population)	70.1	70.0	69.5	69.1	68.6	-0.5 pps
3 -	**Labour force** (15-64, 1000 pers.)	169	171	174	178	182	2.2 %
	Male	113	113	115	115	114	-0.9 %
	Female	57	58	60	63	68	8.0 %
4 -	**Activity rate** (% of population 15-64)	58.9	59.1	60.4	61.6	63.1	1.5 pps
	Young (15-24)	52.2	51.3	51.4	51.8	51.2	-0.7 pps
	Prime age (25-54)	70.8	71.8	73.1	74.7	76.7	2.0 pps
	Older (55-64)	30.5	29.4	31.7	32.7	34.9	2.2 pps
	Nationals (15-64)	58.9	59.0	60.2	61.5	63.1	1.6 pps
	Non-nationals (15-64)	56.1	60.0	64.5	64.5	63.2	-1.3 pps
	Male	76.9	76.7	77.8	78.5	78.0	-0.5 pps
	Young (15-24)	55.4	55.1	55.5	56.1	53.6	-2.5 pps
	Prime age (25-54)	93.6	93.7	94.4	94.9	94.1	-0.8 pps
	Older (55-64)	47.9	47.6	50.3	51.5	53.3	1.7 pps
	Female	40.2	40.7	42.3	44.1	47.7	3.6 pps
	Young (15-24)	48.8	47.5	47.3	46.9	48.2	1.3 pps
	Prime age (25-54)	46.7	48.8	50.8	53.6	58.4	4.8 pps
	Older (55-64)	13.2	11.7	13.5	14.1	16.8	2.7 pps
5 -	**Employment rate** (% of population 15-64)	55.3	55.0	56.1	57.5	59.0	1.5 pps
	Young (15-24)	45.8	43.9	44.6	44.7	43.9	-0.8 pps
	Prime age (25-54)	67.4	68.0	68.8	70.6	72.7	2.0 pps
	Older (55-64)	29.3	27.9	30.3	31.8	33.5	1.7 pps
	Low-skilled (15-64)	45.5	44.7	46.7	46.4	47.8	1.5 pps
	Medium-skilled (15-64)	64.6	64.3	63.1	65.7	67.4	1.7 pps
	High-skilled (15-64)	85.4	83.0	82.6	86.2	86.9	0.7 pps
	Nationals (15-64)	55.4	55.0	56.0	57.5	59.1	1.6 pps
	Non-nationals (15-64)	53.7	52.6	58.1	60.5	56.6	-3.9 pps
	Male	72.6	71.5	72.4	73.6	73.3	-0.3 pps
	Young (15-24)	47.7	46.2	47.5	48.3	46.4	-1.9 pps
	Prime age (25-54)	89.5	88.9	88.8	89.8	89.5	-0.3 pps
	Older (55-64)	46.5	45.2	48.3	50.2	51.5	1.4 pps
	Female	37.4	37.6	39.2	40.9	44.2	3.3 pps
	Young (15-24)	43.8	41.4	41.5	40.7	41.2	0.4 pps
	Prime age (25-54)	44.1	45.8	47.7	50.5	55.2	4.7 pps
	Older (55-64)	12.5	11.0	13.1	13.8	15.8	2.0 pps
6 -	**Employed persons** (15-64, 1000 pers.)	159.2	159.3	162.1	166.3	170.3	2.4 %
7 -	**Employment growth** (%, National accounts)	2.6	-0.3	2.4	2.4	0.6	-1.8 pps
	Employment growth (%, 15-64, LFS)	2.4	0.1	1.8	2.6	2.4	-0.2 pps
	Male	0.6	-0.5	0.7	1.6	-0.6	-2.2 pps
	Female	6.0	0.9	4.1	4.5	7.9	3.4 pps
8 -	**Self employed** (15-64, % of total employment)	13.1	13.3	13.8	13.0	12.9	-0.2 pps
	Male	16.7	16.8	17.9	16.7	16.6	-0.1 pps
	Female	6.0	6.4	5.8	6.2	6.4	0.2 pps
9 -	**Temporary employment** (15-64, % of total employment)	4.2	4.8	5.5	6.5	6.8	0.3 pps
	Male	3.3	3.6	4.5	5.7	6.3	0.6 pps
	Female	5.7	6.8	7.2	7.9	7.7	-0.2 pps
10 -	**Part-time** (15-64, % of total employment)	11.1	10.7	11.7	12.4	13.2	0.8 pps
	Male	4.0	4.4	5.0	5.3	5.7	0.4 pps
	Female	25.3	23.2	24.6	25.6	26.0	0.4 pps
11 -	**Unemployment rate** (harmonised:15-74)	6.0	6.9	6.9	6.5	6.4	-0.1 pps
	Young (15-24)	12.2	14.4	13.1	13.8	14.2	0.4 pps
	Prime age (25-49)	4.8	5.4	6.0	5.5	5.2	-0.3 pps
	Older (55-64)	4.0	5.7	4.2	2.7	3.7	1.0 pps
	Low-skilled (15-64)	8.7	10.0	9.6	9.5	9.4	-0.1 pps
	Medium-skilled (15-64)	4.4	4.7	5.9	5.3	4.8	-0.5 pps
	High-skilled (15-64)	0.0	2.7	1.9	1.7	2.2	0.5 pps
	Nationals (15-64)	6.1	6.8	6.9	6.5	6.3	-0.2 pps
	Non-nationals (15-64)	0.0	12.2	8.8	0.0	10.3	10.3 pps
	Male	5.6	6.6	6.9	6.2	5.9	-0.3 pps
	Female	6.9	7.6	7.1	7.1	7.3	0.2 pps
12 -	**Long-term unemployment** (% of total unemployment)	42.2	43.5	46.5	46.4	47.2	0.8 pps
13 -	**Worked hours** (full-time, average actual weekly hours)	41.2	41.0	40.5	40.3	40.4	0.2 %
	Male	42.0	41.8	41.4	41.3	41.4	0.2 %
	Female	39.1	38.9	38.5	38.0	38.1	0.3 %
14 -	**Sectoral employment growth** (% change)						
	Agriculture	:	3.3	1.0	-0.1	-0.5	-0.4 pps
	Building and construction	0.5	0.6	-1.8	-1.6	-1.1	0.5 pps
	Services	4.5	1.7	2.9	:	:	: pps
	Manufacturing industry	:	-8.7	2.1	2.5	0.1	-2.4 pps
15 -	**Indicator board on wage developments** (% change)						
	Compensation per employee	4.2	4.1	0.4	0.8	3.6	2.8 pps
	Real compensation per employee based on GDP	1.2	0.5	-1.7	-1.5	0.1	1.6 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	3.2	2.2	3.7	1.2	2.9	1.7 pps
	Labour cost index (wages and salaries, total)	3.2	2.1	3.8	1.2	2.9	1.7 pps
	Labour productivity (GDP/person employed)	1.4	-2.6	2.3	-1.2	-1.5	-0.3 pps

Netherlands	2008	2009	2010	2011	2012	2011-2012
1 - **Population** (LFS, total, 1000 pers.)	16190	16223	16350	16400	16507	0.7 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	10970	10970	11017	10994	10992	0.0 %
(% of total population)	67.8	67.6	67.4	67.0	66.6	-0.4 pps
3 - **Labour force** (15-64, 1000 pers.)	8704	8742	8614	8614	8714	1.2 %
Male	4705	4700	4632	4609	4649	0.9 %
Female	3999	4042	3982	4005	4065	1.5 %
4 - **Activity rate** (% of population 15-64)	79.3	79.7	78.2	78.4	79.3	0.9 pps
Young (15-24)	73.2	72.8	69.0	68.8	69.9	1.1 pps
Prime age (25-54)	88.5	88.8	87.9	87.5	87.7	0.2 pps
Older (55-64)	54.7	56.8	55.9	58.5	61.5	3.0 pps
Nationals (15-64)	79.8	80.2	78.7	78.9	79.8	0.9 pps
Non-nationals (15-64)	68.8	68.4	67.0	67.2	69.6	2.4 pps
Male	85.3	85.3	83.7	83.5	84.2	0.7 pps
Young (15-24)	73.7	72.7	68.6	67.8	68.5	0.7 pps
Prime age (25-54)	94.5	94.4	93.3	93.0	92.9	0.0 pps
Older (55-64)	65.9	67.6	67.3	68.6	71.7	3.0 pps
Female	73.3	74.1	72.6	73.1	74.3	1.1 pps
Young (15-24)	72.6	72.9	69.4	69.9	71.4	1.6 pps
Prime age (25-54)	82.5	83.0	82.4	81.9	82.4	0.4 pps
Older (55-64)	43.5	46.0	44.5	48.4	51.3	2.9 pps
5 - **Employment rate** (% of population 15-64)	77.2	77.0	74.7	74.9	75.1	0.2 pps
Young (15-24)	69.3	68.0	63.0	63.5	63.3	-0.2 pps
Prime age (25-54)	86.8	86.3	84.7	84.2	83.8	-0.4 pps
Older (55-64)	53.0	55.1	53.7	56.1	58.6	2.5 pps
Low-skilled (15-64)	62.8	62.2	59.2	59.8	59.7	-0.1 pps
Medium-skilled (15-64)	80.9	80.9	78.7	78.5	78.4	-0.1 pps
High-skilled (15-64)	88.0	87.6	86.6	86.7	87.1	0.3 pps
Nationals (15-64)	77.8	77.6	75.3	75.6	75.8	0.2 pps
Non-nationals (15-64)	64.6	63.6	60.6	60.7	62.5	1.8 pps
Male	83.2	82.4	80.0	79.8	79.7	-0.1 pps
Young (15-24)	69.8	67.5	62.6	62.7	62.4	-0.3 pps
Prime age (25-54)	93.0	92.0	90.0	89.4	88.6	-0.7 pps
Older (55-64)	63.7	65.4	64.5	65.8	68.1	2.3 pps
Female	71.1	71.5	69.3	69.9	70.4	0.5 pps
Young (15-24)	68.8	68.4	63.5	64.4	64.3	-0.1 pps
Prime age (25-54)	80.5	80.7	79.3	79.0	78.9	0.0 pps
Older (55-64)	42.2	44.7	42.8	46.4	49.1	2.7 pps
6 - **Employed persons** (15-64, 1000 pers.)	8467.6	8443.4	8226.9	8231.7	8254.1	0.3 %
7 - **Employment growth** (%, National accounts)	1.5	-0.7	-0.4	0.7	-0.1	-0.8 pps
Employment growth (%, 15-64, LFS)	1.5	-0.3	-2.6	0.1	0.3	0.2 pps
Male	0.9	-1.0	-2.5	-0.5	0.0	0.5 pps
Female	2.2	0.6	-2.6	0.7	0.6	-0.1 pps
8 - **Self employed** (15-64, % of total employment)	12.1	12.4	13.8	13.7	14.0	0.3 pps
Male	14.8	15.1	17.0	16.9	17.2	0.3 pps
Female	9.0	9.2	10.0	10.1	10.4	0.3 pps
9 - **Temporary employment** (15-64, % of total employment)	17.9	18.0	18.3	18.2	19.3	1.1 pps
Male	16.2	16.0	16.9	17.0	18.2	1.2 pps
Female	19.8	20.2	19.8	19.5	20.5	1.0 pps
10 - **Part-time** (15-64, % of total employment)	46.8	47.7	48.3	48.5	49.2	0.7 pps
Male	22.8	23.6	24.2	24.3	24.9	0.6 pps
Female	75.2	75.7	76.2	76.5	76.9	0.4 pps
11 - **Unemployment rate** (harmonised:15-74)	3.1	3.7	4.5	4.4	5.3	0.9 pps
Young (15-24)	5.3	6.6	8.7	7.6	9.5	1.9 pps
Prime age (25-49)	2.0	2.7	3.6	3.8	4.4	0.6 pps
Older (55-64)	3.2	3.1	4.0	4.2	4.7	0.5 pps
Low-skilled (15-64)	4.6	5.5	7.4	6.9	8.4	1.5 pps
Medium-skilled (15-64)	2.4	3.1	4.0	4.1	5.0	0.9 pps
High-skilled (15-64)	1.6	2.1	2.8	2.8	3.1	0.3 pps
Nationals (15-64)	2.6	3.2	4.3	4.2	5.0	0.8 pps
Non-nationals (15-64)	6.2	7.0	9.5	9.7	10.2	0.5 pps
Male	2.8	3.7	4.4	4.5	5.3	0.8 pps
Female	3.4	3.8	4.5	4.4	5.2	0.8 pps
12 - **Long-term unemployment** (% of total unemployment)	34.4	24.2	27.5	33.5	33.7	0.2 pps
13 - **Worked hours** (full-time, average actual weekly hours)	41.1	41.0	41.2	41.4	41.3	-0.2 %
Male	41.7	41.6	41.8	42.0	41.8	-0.5 %
Female	38.9	38.8	38.9	39.1	39.4	0.8 %
14 - **Sectoral employment growth** (% change)						
Agriculture	:	-2.0	-0.7	-0.6	-3.9	-3.3 pps
Building and construction	1.9	-1.8	-2.4	-1.8	-1.6	0.2 pps
Services	1.6	-2.0	-2.0	:	:	: pps
Manufacturing industry	:	-2.6	-2.6	-0.9	-0.4	0.5 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	3.4	2.1	1.2	1.5	0.6	-0.9 pps
Real compensation per employee based on GDP	1.1	2.4	0.7	0.5	0.5	0.1 pps
Labour cost index (compens. of employees plus taxes minus subs.)	3.8	1.9	1.7	2.3	1.3	-1.0 pps
Labour cost index (wages and salaries, total)	3.3	2.5	1.2	1.7	0.9	-0.8 pps
Labour productivity (GDP/person employed)	0.3	-3.0	1.9	0.2	-1.1	-1.3 pps

Austria		2008	2009	2010	2011	2012	2011-2012
1 -	**Population** (LFS, total, 1000 pers.)	8220	8238	8259	8290	8329	0.5 %
2 -	**Population** (LFS, working age:15-64, 1000 pers.)	5576	5588	5606	5644	5666	0.4 %
	(% of total population)	67.8	67.8	67.9	68.1	68.0	0.0 pps
3 -	**Labour force** (15-64, 1000 pers.)	4182	4207	4209	4248	4298	1.2 %
	Male	2259	2252	2256	2275	2296	0.9 %
	Female	1923	1955	1953	1973	2002	1.5 %
4 -	**Activity rate** (% of population 15-64)	75.0	75.3	75.1	75.3	75.9	0.6 pps
	Young (15-24)	60.8	60.5	58.8	59.9	59.9	0.0 pps
	Prime age (25-54)	87.3	87.7	87.7	88.1	88.7	0.6 pps
	Older (55-64)	41.9	42.1	43.3	42.9	44.4	1.6 pps
	Nationals (15-64)	75.7	75.9	75.8	76.0	76.6	0.6 pps
	Non-nationals (15-64)	69.5	70.3	70.1	70.5	71.2	0.6 pps
	Male	81.4	81.0	80.9	81.1	81.4	0.3 pps
	Young (15-24)	64.6	64.0	63.6	64.9	64.5	-0.4 pps
	Prime age (25-54)	93.0	92.6	92.5	92.8	93.1	0.3 pps
	Older (55-64)	52.8	52.3	53.0	52.6	54.4	1.8 pps
	Female	68.6	69.6	69.3	69.5	70.3	0.8 pps
	Young (15-24)	56.9	57.0	54.1	55.0	55.3	0.3 pps
	Prime age (25-54)	81.5	82.8	82.8	83.4	84.3	0.9 pps
	Older (55-64)	31.6	32.4	34.2	33.7	35.0	1.3 pps
5 -	**Employment rate** (% of population 15-64)	72.1	71.6	71.7	72.1	72.5	0.4 pps
	Young (15-24)	55.9	54.5	53.6	54.9	54.6	-0.3 pps
	Prime age (25-54)	84.4	84.0	84.2	84.9	85.4	0.4 pps
	Older (55-64)	41.0	41.1	42.4	41.5	43.1	1.6 pps
	Low-skilled (15-64)	51.0	49.1	49.3	49.9	49.3	-0.6 pps
	Medium-skilled (15-64)	77.1	76.6	76.7	76.8	77.0	0.2 pps
	High-skilled (15-64)	86.1	86.1	85.1	85.9	86.8	0.9 pps
	Nationals (15-64)	73.2	72.8	72.8	73.2	73.7	0.5 pps
	Non-nationals (15-64)	64.1	63.0	64.0	64.6	64.9	0.3 pps
	Male	78.5	76.9	77.1	77.8	77.8	0.1 pps
	Young (15-24)	59.5	57.3	57.9	59.8	58.8	-1.0 pps
	Prime age (25-54)	90.2	88.5	88.7	89.6	89.6	0.0 pps
	Older (55-64)	51.8	51.0	51.6	50.6	52.5	1.9 pps
	Female	65.8	66.4	66.4	66.5	67.3	0.7 pps
	Young (15-24)	52.3	51.6	49.4	50.1	50.5	0.3 pps
	Prime age (25-54)	78.6	79.5	79.7	80.2	81.1	0.9 pps
	Older (55-64)	30.8	31.7	33.7	32.9	34.1	1.2 pps
6 -	**Employed persons** (15-64, 1000 pers.)	4019.8	4002.4	4021.1	4069.6	4109.3	1.0 %
7 -	**Employment growth** (%, National accounts)	2.0	-0.7	0.8	1.7	0.4	-1.3 pps
	Employment growth (%, 15-64, LFS)	1.4	-0.4	0.5	1.2	1.0	-0.2 pps
	Male	0.5	-1.8	0.6	1.5	0.6	-0.9 pps
	Female	2.6	1.2	0.3	0.9	1.4	0.5 pps
8 -	**Self employed** (15-64, % of total employment)	11.1	10.9	11.3	11.3	11.0	-0.3 pps
	Male	13.3	13.2	13.6	13.6	13.3	-0.4 pps
	Female	8.5	8.2	8.6	8.6	8.4	-0.3 pps
9 -	**Temporary employment** (15-64, % of total employment)	9.0	9.1	9.3	9.6	9.3	-0.3 pps
	Male	8.9	9.1	9.8	9.7	9.3	-0.4 pps
	Female	9.1	9.0	8.9	9.5	9.3	-0.2 pps
10 -	**Part-time** (15-64, % of total employment)	22.6	23.7	24.3	24.3	24.9	0.6 pps
	Male	6.9	7.4	7.8	7.8	7.8	0.0 pps
	Female	41.1	42.4	43.3	43.4	44.4	1.0 pps
11 -	**Unemployment rate** (harmonised:15-74)	3.8	4.8	4.4	4.2	4.3	0.1 pps
	Young (15-24)	8.0	10.0	8.8	8.3	8.7	0.4 pps
	Prime age (25-49)	3.3	4.2	4.0	3.6	3.8	0.2 pps
	Older (55-64)	2.1	2.4	2.2	3.2	3.0	-0.2 pps
	Low-skilled (15-64)	8.1	10.1	8.7	8.6	9.1	0.5 pps
	Medium-skilled (15-64)	3.3	4.2	4.0	3.6	3.9	0.3 pps
	High-skilled (15-64)	1.8	2.3	2.4	2.4	2.1	-0.3 pps
	Nationals (15-64)	3.4	4.2	3.9	3.6	3.8	0.2 pps
	Non-nationals (15-64)	7.8	10.4	8.7	8.4	8.8	0.4 pps
	Male	3.6	5.0	4.6	4.0	4.4	0.4 pps
	Female	4.1	4.6	4.2	4.3	4.3	0.0 pps
12 -	**Long-term unemployment** (% of total unemployment)	24.2	21.3	25.2	25.9	24.7	-1.2 pps
13 -	**Worked hours** (full-time, average actual weekly hours)	42.9	42.0	41.9	42.1	41.7	-1.0 %
	Male	43.7	42.8	42.7	42.8	42.4	-0.9 %
	Female	41.1	40.4	40.4	40.6	40.3	-0.7 %
14 -	**Sectoral employment growth** (% change)						
	Agriculture	:	-0.7	-0.4	-1.5	-4.7	-3.2 pps
	Building and construction	0.8	0.1	0.9	1.7	1.2	-0.5 pps
	Services	2.1	-1.2	1.7	:	:	: pps
	Manufacturing industry	:	-3.8	-1.5	1.5	1.1	-0.4 pps
15 -	**Indicator board on wage developments** (% change)						
	Compensation per employee	3.2	1.7	1.2	1.9	3.8	1.9 pps
	Real compensation per employee based on GDP	1.4	0.9	-0.3	0.3	0.8	0.5 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	4.8	4.2	1.2	3.6	4.4	0.8 pps
	Labour cost index (wages and salaries, total)	4.8	3.6	1.1	3.7	4.4	0.7 pps
	Labour productivity (GDP/person employed)	-0.5	-3.1	0.8	1.1	-0.4	-1.5 pps

Poland	2008	2009	2010	2011	2012	2011-2012
1 - **Population** (LFS, total, 1000 pers.)	37158	37196	36585	36600	36610	0.0 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	26266	26338	25842	25814	25697	-0.5 %
(% of total population)	70.7	70.8	70.6	70.5	70.2	-0.3 pps
3 - **Labour force** (15-64, 1000 pers.)	16765	17039	16879	16968	17086	0.7 %
Male	9170	9310	9297	9350	9394	0.5 %
Female	7595	7728	7582	7618	7691	1.0 %
4 - **Activity rate** (% of population 15-64)	63.8	64.7	65.3	65.7	66.5	0.8 pps
Young (15-24)	33.1	33.8	34.6	33.5	33.6	0.1 pps
Prime age (25-54)	82.5	83.4	84.1	84.2	84.6	0.4 pps
Older (55-64)	33.3	34.5	36.7	39.6	41.8	2.1 pps
Nationals (15-64)	63.8	64.7	65.3	65.7	66.5	0.8 pps
Non-nationals (15-64)	71.4	72.6	68.4	70.5	71.7	1.3 pps
Male	70.9	71.8	72.1	72.6	73.3	0.7 pps
Young (15-24)	36.5	38.1	39.3	38.7	38.5	-0.2 pps
Prime age (25-54)	88.8	89.4	89.6	89.7	90.0	0.3 pps
Older (55-64)	46.8	47.5	48.9	51.6	53.5	1.9 pps
Female	57.0	57.8	58.5	58.9	59.7	0.8 pps
Young (15-24)	29.6	29.4	29.6	28.1	28.4	0.3 pps
Prime age (25-54)	76.3	77.5	78.6	78.6	79.1	0.5 pps
Older (55-64)	21.6	23.2	25.9	29.0	31.3	2.3 pps
5 - **Employment rate** (% of population 15-64)	59.2	59.3	58.9	59.3	59.7	0.4 pps
Young (15-24)	27.4	26.8	26.4	24.9	24.7	-0.2 pps
Prime age (25-54)	77.5	77.6	77.2	77.3	77.2	-0.1 pps
Older (55-64)	31.6	32.3	34.1	36.9	38.7	1.8 pps
Low-skilled (15-64)	25.5	24.6	23.6	23.4	23.4	-0.1 pps
Medium-skilled (15-64)	63.3	62.7	61.8	62.0	61.7	-0.2 pps
High-skilled (15-64)	83.7	83.7	82.5	82.2	82.1	-0.1 pps
Nationals (15-64)	59.2	59.3	58.9	59.3	59.7	0.4 pps
Non-nationals (15-64)	69.7	64.7	60.0	62.4	66.1	3.7 pps
Male	66.3	66.1	65.3	66.0	66.3	0.3 pps
Young (15-24)	31.0	30.4	30.5	29.6	29.3	-0.3 pps
Prime age (25-54)	84.0	83.7	82.5	83.0	82.9	-0.1 pps
Older (55-64)	44.1	44.3	45.2	47.8	49.3	1.5 pps
Female	52.4	52.8	52.6	52.7	53.1	0.5 pps
Young (15-24)	23.7	23.2	22.1	20.0	19.9	-0.1 pps
Prime age (25-54)	71.0	71.6	71.7	71.5	71.5	0.0 pps
Older (55-64)	20.7	21.9	24.2	27.2	29.2	2.0 pps
6 - **Employed persons** (15-64, 1000 pers.)	15557.4	15629.5	15233.0	15312.8	15340.3	0.2 %
7 - **Employment growth** (%, National accounts)	3.9	0.4	0.5	1.0	0.3	-0.7 pps
Employment growth (%, 15-64, LFS)	3.7	0.5	-2.5	0.5	0.2	-0.3 pps
Male	3.8	0.1	-1.9	0.9	0.0	-0.9 pps
Female	3.7	1.0	-3.4	0.0	0.4	0.4 pps
8 - **Self employed** (15-64, % of total employment)	18.3	18.3	18.7	18.7	18.4	-0.3 pps
Male	21.8	21.9	22.4	22.3	22.2	-0.2 pps
Female	14.1	14.0	14.1	14.2	13.8	-0.3 pps
9 - **Temporary employment** (15-64, % of total employment)	26.9	26.4	27.2	26.8	26.8	0.0 pps
Male	26.2	26.2	27.4	27.5	27.3	-0.2 pps
Female	27.6	26.6	27.0	26.1	26.2	0.1 pps
10 - **Part-time** (15-64, % of total employment)	7.7	7.7	7.7	7.3	7.2	-0.1 pps
Male	5.1	5.0	5.0	4.7	4.5	-0.2 pps
Female	10.9	10.9	10.9	10.5	10.6	0.1 pps
11 - **Unemployment rate** (harmonised:15-74)	7.1	8.1	9.7	9.7	10.1	0.4 pps
Young (15-24)	17.3	20.6	23.7	25.8	26.5	0.7 pps
Prime age (25-49)	6.1	6.9	8.3	8.2	8.8	0.6 pps
Older (55-64)	5.3	6.3	7.1	6.9	7.4	0.5 pps
Low-skilled (15-64)	12.8	15.4	18.3	19.1	20.3	1.2 pps
Medium-skilled (15-64)	7.6	8.8	10.6	10.5	11.0	0.5 pps
High-skilled (15-64)	3.8	4.4	5.0	5.3	5.7	0.4 pps
Nationals (15-64)	7.2	8.3	9.7	9.8	10.2	0.4 pps
Non-nationals (15-64)	0.0	0.0	0.0	0.0	0.0	0.0 pps
Male	6.4	7.8	9.4	9.0	9.4	0.4 pps
Female	7.9	8.6	10.0	10.4	10.9	0.5 pps
12 - **Long-term unemployment** (% of total unemployment)	33.5	30.3	31.1	37.2	40.3	3.1 pps
13 - **Worked hours** (full-time, average actual weekly hours)	41.8	41.4	41.3	41.1	41.0	-0.2 %
Male	43.4	42.9	42.8	42.5	42.4	-0.2 %
Female	39.7	39.4	39.3	39.2	39.2	0.0 %
14 - **Sectoral employment growth** (% change)						
Agriculture	:	-4.5	-2.8	-0.3	-4.2	-3.9 pps
Building and construction	15.5	5.5	-2.4	2.9	-5.7	-8.6 pps
Services	3.6	3.2	2.5	:	:	: pps
Manufacturing industry	:	-5.2	-3.3	1.9	-4.0	-5.9 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	8.9	3.5	4.7	4.1	3.0	-1.1 pps
Real compensation per employee based on GDP	5.6	-0.2	3.3	1.1	3.7	2.6 pps
Labour cost index (compens. of employees plus taxes minus subs.)	10.1	5.2	1.2	4.4	3.1	-1.3 pps
Labour cost index (wages and salaries, total)	10.1	4.7	3.1	4.4	3.1	-1.3 pps
Labour productivity (GDP/person employed)	1.2	1.2	3.4	3.5	5.6	2.1 pps

Note: 2010 and 2011 data is based on National Census of Population and Housing 2002, while the rates for 2012 and 2013Q1 are based on National Census of Population and Housing 2011.

Portugal		2008	2009	2010	2011	2012	2011-2012
1 - Population (LFS, total, 1000 pers.)		10623	10638	10636	10647	10600	-0.4 %
2 - Population (LFS, working age:15-64, 1000 pers.)		7145	7143	7114	7097	7038	-0.8 %
(% of total population)		67.3	67.1	66.9	66.7	66.4	-0.3 pps
3 - Labour force (15-64, 1000 pers.)		5299	5263	5264	5261	5205	-1.1 %
	Male	2811	2775	2755	2762	2719	-1.6 %
	Female	2488	2488	2509	2499	2486	-0.5 %
4 - Activity rate (% of population 15-64)		74.2	73.7	74.0	74.1	73.9	-0.2 pps
	Young (15-24)	41.6	39.2	36.7	38.8	37.9	-1.0 pps
	Prime age (25-54)	88.0	87.9	88.7	88.4	88.6	0.1 pps
	Older (55-64)	54.4	53.9	54.0	53.7	53.4	-0.3 pps
	Nationals (15-64)	73.8	73.4	73.7	73.8	73.8	-0.1 pps
	Non-nationals (15-64)	82.2	79.8	80.8	82.1	80.2	-1.9 pps
	Male	79.5	78.5	78.2	78.5	77.9	-0.7 pps
	Young (15-24)	44.4	40.8	38.6	41.1	40.1	-1.0 pps
	Prime age (25-54)	93.2	92.4	92.5	92.3	92.0	-0.3 pps
	Older (55-64)	63.0	62.7	61.8	61.6	60.3	-1.3 pps
	Female	68.9	69.0	69.9	69.8	70.1	0.3 pps
	Young (15-24)	38.6	37.5	34.8	36.4	35.6	-0.9 pps
	Prime age (25-54)	82.9	83.4	84.9	84.5	85.1	0.6 pps
	Older (55-64)	46.6	45.9	47.0	46.5	47.0	0.5 pps
5 - Employment rate (% of population 15-64)		68.2	66.3	65.6	64.2	61.8	-2.4 pps
	Young (15-24)	34.7	31.3	28.5	27.2	23.6	-3.5 pps
	Prime age (25-54)	81.6	79.7	79.2	77.8	75.4	-2.4 pps
	Older (55-64)	50.8	49.7	49.2	47.9	46.5	-1.3 pps
	Low-skilled (15-64)	65.8	62.9	61.8	59.6	56.7	-2.9 pps
	Medium-skilled (15-64)	65.8	66.3	66.1	65.9	63.3	-2.7 pps
	High-skilled (15-64)	84.7	84.3	82.8	80.9	78.5	-2.4 pps
	Nationals (15-64)	68.0	66.3	65.6	64.2	61.9	-2.3 pps
	Non-nationals (15-64)	73.3	66.7	65.6	64.0	58.8	-5.2 pps
	Male	74.0	71.1	70.1	68.1	64.9	-3.2 pps
	Young (15-24)	38.5	33.2	30.4	29.3	25.5	-3.8 pps
	Prime age (25-54)	87.6	84.5	83.9	81.6	78.4	-3.2 pps
	Older (55-64)	58.5	57.5	55.6	54.2	51.5	-2.7 pps
	Female	62.5	61.6	61.1	60.4	58.7	-1.6 pps
	Young (15-24)	30.8	29.4	26.5	24.9	21.6	-3.3 pps
	Prime age (25-54)	75.8	74.9	74.6	74.1	72.5	-1.6 pps
	Older (55-64)	43.9	42.7	43.5	42.1	42.0	-0.2 pps
6 - Employed persons (15-64, 1000 pers.)		4872.2	4735.5	4663.4	4557.4	4349.4	-4.6 %
7 - Employment growth (%, National accounts)		0.5	-2.6	-1.5	-1.5	-3.3	-1.8 pps
Employment growth (%, 15-64, LFS)		0.7	-2.8	-1.5	-2.3	-4.6	-2.3 pps
	Male	0.5	-3.9	-1.8	-2.9	-5.4	-2.6 pps
	Female	1.0	-1.5	-1.2	-1.6	-3.6	-2.0 pps
8 - Self employed (15-64, % of total employment)		18.8	18.5	17.5	16.5	16.8	0.3 pps
	Male	20.3	20.8	19.9	19.7	20.0	0.3 pps
	Female	17.0	16.0	14.8	13.0	13.3	0.3 pps
9 - Temporary employment (15-64, % of total employment)		22.9	22.0	23.0	22.2	20.7	-1.5 pps
	Male	21.7	20.8	22.4	22.0	20.9	-1.1 pps
	Female	24.2	23.3	23.7	22.4	20.5	-1.9 pps
10 - Part-time (15-64, % of total employment)		8.6	8.4	8.4	10.1	11.0	0.9 pps
	Male	4.1	4.3	4.9	7.0	8.2	1.2 pps
	Female	13.9	13.0	12.3	13.7	14.1	0.4 pps
11 - Unemployment rate (harmonised:15-74)		8.5	10.6	12.0	12.9	15.9	3.0 pps
	Young (15-24)	16.4	20.0	22.4	30.1	37.7	7.6 pps
	Prime age (25-49)	7.3	9.3	10.7	12.0	14.8	2.8 pps
	Older (55-64)	6.6	7.7	8.9	10.8	12.8	2.0 pps
	Low-skilled (15-64)	8.3	11.0	12.5	14.6	17.5	2.9 pps
	Medium-skilled (15-64)	7.9	9.7	11.4	13.4	17.7	4.3 pps
	High-skilled (15-64)	7.0	6.5	7.2	9.3	12.0	2.7 pps
	Nationals (15-64)	7.9	9.7	11.1	13.0	16.1	3.1 pps
	Non-nationals (15-64)	10.9	16.4	18.9	22.1	26.6	4.5 pps
	Male	7.9	10.7	11.8	12.7	16.0	3.3 pps
	Female	9.2	10.5	12.2	13.2	15.8	2.6 pps
12 - Long-term unemployment (% of total unemployment)		47.4	44.2	52.3	48.1	48.6	0.5 pps
13 - Worked hours (full-time, average actual weekly hours)		40.4	40.4	40.5	41.3	41.5	0.5 %
	Male	41.2	41.2	41.3	42.2	42.5	0.7 %
	Female	39.4	39.3	39.5	40.1	40.2	0.2 %
14 - Sectoral employment growth (% change)							
	Agriculture	:	-1.7	-4.5	-3.4	-0.7	2.7 pps
	Building and construction	-2.5	-8.0	-4.7	-7.7	-17.0	-9.3 pps
	Services	1.8	-1.7	-0.3	:	:	: pps
	Manufacturing industry	:	-7.4	-3.4	-0.1	-5.1	-5.0 pps
15 - Indicator board on wage developments (% change)							
	Compensation per employee	3.0	2.8	1.4	-1.5	-3.9	-2.3 pps
	Real compensation per employee based on GDP	1.4	1.8	1.4	-1.2	-2.6	-1.4 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	4.3	3.5	2.4	1.0	-4.9	-5.9 pps
	Labour cost index (wages and salaries, total)	4.3	3.2	2.2	-0.2	-3.7	-3.5 pps
	Labour productivity (GDP/person employed)	-0.5	-0.3	3.5	0.3	1.1	0.8 pps

Romania		2008	2009	2010	2011	2012	2011-2012
1 - **Population** (LFS, total, 1000 pers.)		21517	21484	21447	21384	21336	-0.2 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)		15042	15028	14999	14968	14928	-0.3 %
(% of total population)		69.9	69.9	69.9	70.0	70.0	0.0 pps
3 - **Labour force** (15-64, 1000 pers.)		9457	9485	9547	9480	9587	1.1 %
Male		5294	5313	5352	5281	5371	1.7 %
Female		4164	4172	4195	4200	4216	0.4 %
4 - **Activity rate** (% of population 15-64)		62.9	63.1	63.6	63.3	64.2	0.9 pps
Young (15-24)		30.4	30.9	31.2	31.1	30.9	-0.3 pps
Prime age (25-54)		78.3	78.5	79.5	79.1	79.8	0.7 pps
Older (55-64)		44.2	43.9	42.5	41.5	42.9	1.3 pps
Nationals (15-64)		62.9	63.1	63.6	63.3	64.2	0.9 pps
Non-nationals (15-64)		62.9	64.7	0.0	:	0.0	: pps
Male		70.6	70.9	71.5	70.7	72.1	1.4 pps
Young (15-24)		35.9	35.9	36.2	35.4	35.3	-0.1 pps
Prime age (25-54)		85.8	86.3	87.5	86.5	87.6	1.1 pps
Older (55-64)		55.1	54.5	52.7	51.6	53.6	2.0 pps
Female		55.2	55.4	55.8	56.0	56.4	0.4 pps
Young (15-24)		24.7	25.8	26.1	26.7	26.2	-0.5 pps
Prime age (25-54)		70.7	70.6	71.4	71.7	71.9	0.2 pps
Older (55-64)		34.7	34.7	33.5	32.7	33.5	0.8 pps
5 - **Employment rate** (% of population 15-64)		59.0	58.6	58.8	58.5	59.5	1.1 pps
Young (15-24)		24.8	24.5	24.3	23.8	23.9	0.1 pps
Prime age (25-54)		74.4	73.7	74.4	74.1	74.9	0.8 pps
Older (55-64)		43.1	42.6	41.1	40.0	41.4	1.4 pps
Low-skilled (15-64)		41.0	42.0	43.0	40.5	41.9	1.4 pps
Medium-skilled (15-64)		63.5	62.2	62.2	62.3	63.1	0.8 pps
High-skilled (15-64)		85.7	84.1	82.4	82.1	81.4	-0.7 pps
Nationals (15-64)		59.0	58.6	58.8	58.5	59.5	1.1 pps
Non-nationals (15-64)		58.5	62.8	0.0	:	0.0	: pps
Male		65.7	65.2	65.7	65.0	66.5	1.5 pps
Young (15-24)		29.1	28.3	28.1	27.0	27.4	0.4 pps
Prime age (25-54)		80.9	80.5	81.5	80.7	81.7	1.1 pps
Older (55-64)		53.0	52.3	50.3	48.9	51.2	2.3 pps
Female		52.5	52.0	52.0	52.0	52.6	0.6 pps
Young (15-24)		20.2	20.6	20.4	20.4	20.2	-0.2 pps
Prime age (25-54)		67.8	66.9	67.2	67.4	67.8	0.4 pps
Older (55-64)		34.4	34.1	33.0	32.2	32.9	0.7 pps
6 - **Employed persons** (15-64, 1000 pers.)		8882.2	8804.7	8822.0	8750.0	8885.6	1.5 %
7 - **Employment growth** (%, National accounts)		0.0	-2.0	-1.4	0.4	0.4	0.0 pps
Employment growth (%, 15-64, LFS)		0.4	-0.9	0.2	-0.8	1.5	2.4 pps
Male		1.3	-0.7	0.5	-1.4	2.1	3.5 pps
Female		-0.6	-1.1	-0.2	-0.1	0.8	1.0 pps
8 - **Self employed** (15-64, % of total employment)		18.2	18.4	19.5	17.9	18.1	0.3 pps
Male		23.8	24.1	25.7	23.3	23.6	0.3 pps
Female		11.3	11.3	11.7	11.1	11.2	0.1 pps
9 - **Temporary employment** (15-64, % of total employment)		1.3	1.0	1.1	1.5	1.7	0.2 pps
Male		1.3	1.1	1.2	1.8	2.0	0.2 pps
Female		1.1	1.0	1.0	1.3	1.2	-0.1 pps
10 - **Part-time** (15-64, % of total employment)		8.6	8.5	9.7	9.3	9.1	-0.2 pps
Male		8.1	8.0	9.6	8.7	8.6	-0.1 pps
Female		9.3	9.1	9.9	10.1	9.7	-0.4 pps
11 - **Unemployment rate** (harmonised:15-74)		5.8	6.9	7.3	7.4	7.0	-0.4 pps
Young (15-24)		18.6	20.8	22.1	23.7	22.7	-1.0 pps
Prime age (25-49)		5.0	6.1	6.4	6.4	6.2	-0.2 pps
Older (55-64)		2.5	3.0	3.3	3.7	3.4	-0.3 pps
Low-skilled (15-64)		8.6	8.9	7.2	8.6	8.1	-0.5 pps
Medium-skilled (15-64)		6.0	7.3	8.3	8.1	7.6	-0.5 pps
High-skilled (15-64)		2.7	4.4	5.4	5.2	5.6	0.4 pps
Nationals (15-64)		6.1	7.2	7.6	7.7	7.3	-0.4 pps
Non-nationals (15-64)		0.0	0.0	0.0	0.0	0.0	0.0 pps
Male		6.7	7.7	7.9	7.9	7.6	-0.3 pps
Female		4.7	5.8	6.5	6.8	6.4	-0.4 pps
12 - **Long-term unemployment** (% of total unemployment)		41.3	31.6	34.9	41.9	45.3	3.4 pps
13 - **Worked hours** (full-time, average actual weekly hours)		41.0	40.7	40.7	40.7	40.5	-0.5 %
Male		41.7	41.4	41.3	41.3	41.1	-0.5 %
Female		40.0	39.9	40.0	40.0	39.8	-0.5 %
14 - **Sectoral employment growth** (% change)							
Agriculture		:	-0.1	4.8	-5.7	3.0	8.7 pps
Building and construction		10.6	-1.2	-3.1	-3.4	2.2	5.6 pps
Services		1.0	0.4	-2.0	:	:	: pps
Manufacturing industry		:	-9.7	-6.6	1.5	0.7	-0.8 pps
15 - **Indicator board on wage developments** (% change)							
Compensation per employee		31.9	-1.9	-1.9	5.6	6.5	0.9 pps
Real compensation per employee based on GDP		14.5	-5.9	-8.5	0.1	0.7	0.6 pps
Labour cost index (compens. of employees plus taxes minus subs.)		20.5	11.9	5.2	6.6	6.2	-0.4 pps
Labour cost index (wages and salaries, total)		21.5	11.0	6.0	7.1	6.2	-0.9 pps
Labour productivity (GDP/person employed)		7.3	-4.7	-0.9	3.3	-0.8	-4.1 pps

Slovenia		2008	2009	2010	2011	2012	2011-2012
1 - **Population** (LFS, total, 1000 pers.)		2033	2037	2048	2051	2056	0.2 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)		1422	1414	1422	1421	1415	-0.4 %
	(% of total population)	70.0	69.4	69.4	69.2	68.8	-0.4 pps
3 - **Labour force** (15-64, 1000 pers.)		1021	1016	1017	998	996	-0.2 %
	Male	554	550	551	540	536	-0.6 %
	Female	466	466	466	459	460	0.3 %
4 - **Activity rate** (% of population 15-64)		71.8	71.8	71.5	70.3	70.4	0.1 pps
	Young (15-24)	42.9	40.9	39.9	37.4	34.4	-3.0 pps
	Prime age (25-54)	90.1	89.6	90.0	90.1	90.8	0.6 pps
	Older (55-64)	34.2	36.9	36.5	33.3	35.1	1.8 pps
	Nationals (15-64)	71.8	71.9	71.5	70.2	70.3	0.1 pps
	Non-nationals (15-64)	71.6	64.5	68.9	73.2	74.4	1.2 pps
	Male	75.8	75.6	75.4	73.9	73.7	-0.1 pps
	Young (15-24)	47.6	45.3	44.4	41.9	38.2	-3.7 pps
	Prime age (25-54)	91.6	91.2	91.7	91.8	92.4	0.6 pps
	Older (55-64)	46.4	48.2	47.5	42.7	43.6	0.9 pps
	Female	67.5	67.9	67.4	66.4	66.9	0.5 pps
	Young (15-24)	37.4	35.8	34.8	32.3	30.0	-2.3 pps
	Prime age (25-54)	88.5	88.0	88.1	88.4	89.1	0.7 pps
	Older (55-64)	22.2	25.6	25.5	23.7	26.4	2.7 pps
5 - **Employment rate** (% of population 15-64)		68.6	67.5	66.2	64.4	64.1	-0.3 pps
	Young (15-24)	38.4	35.3	34.1	31.5	27.3	-4.2 pps
	Prime age (25-54)	86.8	84.9	83.7	83.1	83.3	0.1 pps
	Older (55-64)	32.8	35.6	35.0	31.2	32.9	1.7 pps
	Low-skilled (15-64)	42.9	41.1	39.7	35.3	34.6	-0.8 pps
	Medium-skilled (15-64)	72.0	70.0	68.6	66.4	65.8	-0.6 pps
	High-skilled (15-64)	87.5	88.1	86.6	85.5	84.2	-1.4 pps
	Nationals (15-64)	68.6	67.7	66.3	64.4	64.1	-0.3 pps
	Non-nationals (15-64)	67.0	55.2	59.6	64.6	62.8	-1.8 pps
	Male	72.7	71.0	69.6	67.7	67.4	-0.3 pps
	Young (15-24)	43.0	39.1	37.6	35.7	30.4	-5.3 pps
	Prime age (25-54)	88.6	86.4	85.2	84.8	85.4	0.6 pps
	Older (55-64)	44.7	46.4	45.5	39.5	40.7	1.2 pps
	Female	64.2	63.8	62.6	60.9	60.5	-0.4 pps
	Young (15-24)	33.2	31.0	30.0	26.9	23.8	-3.2 pps
	Prime age (25-54)	84.8	83.2	82.1	81.3	81.0	-0.3 pps
	Older (55-64)	21.1	24.8	24.6	22.8	25.1	2.3 pps
6 - **Employed persons** (15-64, 1000 pers.)		975.2	954.8	941.5	914.8	906.5	-0.9 %
7 - **Employment growth** (%, National accounts)		2.6	-1.8	-2.5	-1.7	-1.7	0.0 %
Employment growth (%, 15-64, LFS)		1.9	-2.1	-1.4	-2.8	-0.9	1.9 pps
	Male	1.4	-2.9	-1.3	-2.9	-0.9	2.0 pps
	Female	2.5	-1.1	-1.5	-2.7	-1.0	1.8 pps
8 - **Self employed** (15-64, % of total employment)		9.3	10.1	11.6	11.9	11.6	-0.3 pps
	Male	12.5	13.9	15.2	15.5	15.3	-0.3 pps
	Female	5.4	5.7	7.4	7.6	7.3	-0.3 pps
9 - **Temporary employment** (15-64, % of total employment)		17.3	16.2	17.1	18.0	17.0	-1.0 pps
	Male	15.2	14.9	15.2	16.4	15.6	-0.8 pps
	Female	19.6	17.6	19.2	19.7	18.5	-1.2 pps
10 - **Part-time** (15-64, % of total employment)		8.1	9.5	10.3	9.5	9.0	-0.5 pps
	Male	6.2	7.4	7.4	7.1	6.3	-0.8 pps
	Female	10.4	12.1	13.6	12.2	12.2	0.0 pps
11 - **Unemployment rate** (harmonised:15-74)		4.4	5.9	7.3	8.2	8.9	0.7 pps
	Young (15-24)	10.4	13.6	14.7	15.7	20.6	4.9 pps
	Prime age (25-49)	3.7	5.3	7.0	7.8	8.3	0.5 pps
	Older (55-64)	4.0	3.6	4.0	6.3	6.2	-0.1 pps
	Low-skilled (15-64)	6.6	9.5	12.5	14.4	15.7	1.3 pps
	Medium-skilled (15-64)	4.4	6.4	7.6	8.7	9.2	0.5 pps
	High-skilled (15-64)	3.4	3.2	4.3	5.0	6.1	1.1 pps
	Nationals (15-64)	4.4	5.9	7.3	8.3	8.8	0.5 pps
	Non-nationals (15-64)	6.3	14.8	13.8	11.9	15.5	3.6 pps
	Male	4.0	5.9	7.5	8.2	8.4	0.2 pps
	Female	4.8	5.8	7.1	8.2	9.4	1.2 pps
12 - **Long-term unemployment** (% of total unemployment)		42.2	30.1	43.3	44.2	47.9	3.7 pps
13 - **Worked hours** (full-time, average actual weekly hours)		41.6	41.3	41.2	40.7	40.6	-0.2 %
	Male	42.3	41.9	41.8	41.3	41.2	-0.2 %
	Female	40.6	40.4	40.4	40.0	39.8	-0.5 %
14 - **Sectoral employment growth** (% change)							
	Agriculture	:	-1.7	-2.0	-2.5	-0.9	1.6 pps
	Building and construction	11.6	-0.9	-9.5	-11.4	-7.8	3.6 pps
	Services	3.7	0.3	-0.6	:	:	: pps
	Manufacturing industry	:	-9.5	-6.2	-0.2	-1.6	-1.4 pps
15 - **Indicator board on wage developments** (% change)							
	Compensation per employee	7.2	1.8	4.4	1.7	0.3	-1.4 pps
	Real compensation per employee based on GDP	2.9	-1.7	5.0	0.6	-0.8	-1.5 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	9.4	2.5	2.4	2.2	0.7	-1.5 pps
	Labour cost index (wages and salaries, total)	11.1	4.0	2.4	2.4	1.3	-1.1 pps
	Labour productivity (GDP/person employed)	0.8	-6.2	3.5	2.4	-1.7	-4.1 pps

Slovak Republic		2008	2009	2010	2011	2012	2011-2012
1 - **Population** (LFS, total, 1000 pers.)		5396	5409	5422	5392	5404	0.2 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)		3892	3917	3926	3882	3881	0.0 %
	(% of total population)	72.1	72.4	72.4	72.0	71.8	-0.2 pps
3 - **Labour force** (15-64, 1000 pers.)		2679	2680	2696	2668	2695	1.0 %
	Male	1481	1491	1491	1488	1500	0.8 %
	Female	1198	1189	1205	1180	1195	1.3 %
4 - **Activity rate** (% of population 15-64)		68.8	68.4	68.7	68.7	69.4	0.7 pps
	Young (15-24)	32.4	31.4	31.1	30.1	30.5	0.4 pps
	Prime age (25-54)	87.8	87.2	86.9	87.0	87.1	0.1 pps
	Older (55-64)	41.9	42.8	45.1	46.0	48.5	2.5 pps
	Nationals (15-64)	68.8	68.4	68.7	68.7	69.4	0.7 pps
	Non-nationals (15-64)	77.6	74.2	59.5	72.9	78.7	5.8 pps
	Male	76.4	76.3	76.1	76.6	77.1	0.6 pps
	Young (15-24)	37.8	37.1	36.4	37.2	37.1	-0.1 pps
	Prime age (25-54)	93.4	93.6	92.9	93.5	93.8	0.3 pps
	Older (55-64)	59.9	58.7	59.7	58.8	60.3	1.5 pps
	Female	61.3	60.6	61.3	60.8	61.7	0.9 pps
	Young (15-24)	26.8	25.4	25.5	22.7	23.6	0.9 pps
	Prime age (25-54)	82.1	80.7	80.9	80.4	80.4	-0.1 pps
	Older (55-64)	26.4	29.0	32.2	34.6	38.0	3.4 pps
5 - **Employment rate** (% of population 15-64)		62.3	60.2	58.8	59.3	59.7	0.4 pps
	Young (15-24)	26.2	22.8	20.6	20.0	20.1	0.1 pps
	Prime age (25-54)	80.1	77.8	75.8	76.5	76.4	-0.1 pps
	Older (55-64)	39.2	39.5	40.5	41.4	43.1	1.7 pps
	Low-skilled (15-64)	15.9	14.3	14.3	14.8	15.0	0.2 pps
	Medium-skilled (15-64)	70.1	67.1	65.1	65.4	65.8	0.4 pps
	High-skilled (15-64)	83.9	80.3	78.0	76.7	74.8	-1.8 pps
	Nationals (15-64)	62.2	60.1	58.8	59.3	59.7	0.4 pps
	Non-nationals (15-64)	76.1	72.6	59.5	67.8	68.9	1.1 pps
	Male	70.0	67.6	65.2	66.1	66.7	0.6 pps
	Young (15-24)	30.8	26.8	23.8	24.8	24.1	-0.7 pps
	Prime age (25-54)	86.4	84.2	81.4	82.5	83.0	0.5 pps
	Older (55-64)	56.7	54.9	54.0	52.5	53.7	1.2 pps
	Female	54.6	52.8	52.3	52.5	52.7	0.2 pps
	Young (15-24)	21.5	18.7	17.4	15.0	15.9	0.9 pps
	Prime age (25-54)	73.7	71.2	70.1	70.4	69.6	-0.8 pps
	Older (55-64)	24.2	26.1	28.7	31.4	33.6	2.2 pps
6 - **Employed persons** (15-64, 1000 pers.)		2423.4	2356.6	2307.2	2303.2	2317.2	0.6 %
7 - **Employment growth** (%, National accounts)		3.2	-2.0	-1.5	1.8	0.5	-1.3 pps
Employment growth (%, 15-64, LFS)		3.1	-2.8	-2.1	-0.2	0.6	0.8 pps
	Male	2.9	-2.7	-3.2	0.5	0.9	0.4 pps
	Female	3.3	-2.8	-0.7	-1.0	0.2	1.2 pps
8 - **Self employed** (15-64, % of total employment)		13.6	15.5	15.8	15.8	15.3	-0.5 pps
	Male	18.3	20.2	21.1	20.8	19.7	-1.0 pps
	Female	7.6	9.5	9.2	9.6	9.7	0.1 pps
9 - **Temporary employment** (15-64, % of total employment)		4.5	4.3	5.6	6.5	6.7	0.2 pps
	Male	4.4	4.5	5.5	6.3	6.4	0.1 pps
	Female	4.7	4.0	5.8	6.8	7.2	0.4 pps
10 - **Part-time** (15-64, % of total employment)		2.5	3.4	3.8	4.0	4.0	0.0 pps
	Male	1.3	2.6	2.6	2.7	2.8	0.1 pps
	Female	4.1	4.5	5.2	5.6	5.5	-0.1 pps
11 - **Unemployment rate** (harmonised:15-74)		9.6	12.1	14.5	13.7	14.0	0.3 pps
	Young (15-24)	19.0	27.3	33.6	33.4	34.0	0.6 pps
	Prime age (25-49)	8.7	10.8	12.8	12.1	12.4	0.3 pps
	Older (55-64)	6.4	7.7	10.1	10.1	11.2	1.1 pps
	Low-skilled (15-64)	39.6	41.7	44.3	42.6	44.7	2.1 pps
	Medium-skilled (15-64)	8.1	11.5	14.1	13.4	13.5	0.1 pps
	High-skilled (15-64)	3.6	4.3	5.8	5.9	6.9	1.0 pps
	Nationals (15-64)	9.6	12.1	14.5	13.7	14.0	0.3 pps
	Non-nationals (15-64)	0.0	0.0	0.0	0.0	0.0	0.0 pps
	Male	8.4	11.5	14.3	13.7	13.5	-0.2 pps
	Female	11.0	12.9	14.7	13.7	14.5	0.8 pps
12 - **Long-term unemployment** (% of total unemployment)		69.5	54.0	64.0	67.9	67.3	-0.6 pps
13 - **Worked hours** (full-time, average actual weekly hours)		40.4	39.9	40.3	40.4	40.4	0.0 %
	Male	41.3	40.7	41.1	41.2	41.2	0.0 %
	Female	39.1	38.8	39.2	39.2	39.3	0.3 %
14 - **Sectoral employment growth** (% change)							
	Agriculture	:	-5.2	-5.8	-0.1	-3.4	-3.3 pps
	Building and construction	7.4	3.6	-2.0	-3.5	-3.1	0.4 pps
	Services	2.8	1.0	-1.1	:	:	: pps
	Manufacturing industry	:	-10.8	-3.8	4.0	-0.7	-4.7 pps
15 - **Indicator board on wage developments** (% change)							
	Compensation per employee	7.0	2.5	5.1	1.1	2.2	1.2 pps
	Real compensation per employee based on GDP	4.0	3.7	4.5	-0.6	0.7	1.2 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	5.7	3.6	1.1	4.6	2.7	-1.9 pps
	Labour cost index (wages and salaries, total)	7.4	3.5	0.8	4.1	2.4	-1.7 pps
	Labour productivity (GDP/person employed)	2.4	-3.0	6.0	1.2	1.7	0.5 pps

Finland		2008	2009	2010	2011	2012	2011-2012
1 -	**Population** (LFS, total, 1000 pers.)	5289	5317	5343	5365	5392	0.5 %
2 -	**Population** (LFS, working age:15-64, 1000 pers.)	3514	3527	3537	3518	3505	-0.4 %
	(% of total population)	66.4	66.3	66.2	65.6	65.0	-0.6 pps
3 -	**Labour force** (15-64, 1000 pers.)	2669	2644	2634	2637	2637	0.0 %
	Male	1376	1355	1360	1366	1359	-0.5 %
	Female	1293	1289	1274	1271	1278	0.6 %
4 -	**Activity rate** (% of population 15-64)	76.0	75.0	74.5	74.9	75.2	0.3 pps
	Young (15-24)	53.5	50.4	49.4	50.5	51.6	1.1 pps
	Prime age (25-54)	88.6	88.2	87.5	87.6	87.3	-0.3 pps
	Older (55-64)	59.7	59.1	60.2	60.9	62.3	1.4 pps
	Nationals (15-64)	76.0	75.0	74.6	75.2	75.4	0.2 pps
	Non-nationals (15-64)	72.3	71.7	69.3	67.6	70.2	2.7 pps
	Male	77.9	76.4	76.4	77.2	77.1	-0.1 pps
	Young (15-24)	53.4	49.7	49.4	50.5	51.2	0.6 pps
	Prime age (25-54)	91.2	90.6	90.5	90.9	90.4	-0.5 pps
	Older (55-64)	60.6	58.7	60.1	61.4	61.6	0.2 pps
	Female	73.9	73.5	72.5	72.7	73.4	0.7 pps
	Young (15-24)	53.5	51.2	49.3	50.5	52.0	1.5 pps
	Prime age (25-54)	85.9	85.7	84.4	84.3	84.1	-0.2 pps
	Older (55-64)	58.8	59.5	60.3	60.4	62.9	2.5 pps
5 -	**Employment rate** (% of population 15-64)	71.1	68.7	68.1	69.0	69.4	0.3 pps
	Young (15-24)	44.7	39.6	38.8	40.4	41.8	1.4 pps
	Prime age (25-54)	84.3	82.4	81.6	82.3	82.0	-0.3 pps
	Older (55-64)	56.5	55.5	56.3	57.0	58.2	1.2 pps
	Low-skilled (15-64)	46.4	43.0	41.1	41.2	41.0	-0.2 pps
	Medium-skilled (15-64)	75.1	71.9	71.2	72.2	72.2	0.1 pps
	High-skilled (15-64)	85.6	84.4	84.0	84.3	84.2	0.0 pps
	Nationals (15-64)	71.3	68.9	68.5	69.4	69.7	0.3 pps
	Non-nationals (15-64)	60.9	58.8	55.7	56.1	58.9	2.7 pps
	Male	73.1	69.5	69.4	70.6	70.5	0.0 pps
	Young (15-24)	44.3	37.7	37.7	39.5	41.0	1.4 pps
	Prime age (25-54)	87.3	84.3	83.9	84.8	84.4	-0.4 pps
	Older (55-64)	57.1	54.6	55.6	56.8	56.6	-0.2 pps
	Female	69.0	67.9	66.9	67.4	68.2	0.7 pps
	Young (15-24)	45.0	41.5	40.0	41.2	42.7	1.4 pps
	Prime age (25-54)	81.2	80.5	79.2	79.6	79.4	-0.2 pps
	Older (55-64)	55.9	56.3	56.9	57.2	59.7	2.5 pps
6 -	**Employed persons** (15-64, 1000 pers.)	2497.2	2423.3	2410.1	2428.5	2431.0	0.1 %
7 -	**Employment growth** (%, National accounts)	2.6	-2.6	-0.1	1.1	-0.1	-1.2 pps
	Employment growth (%, 15-64, LFS)	1.6	-3.0	-0.5	0.8	0.1	-0.7 pps
	Male	1.9	-4.5	0.1	1.2	-0.4	-1.6 pps
	Female	1.2	-1.3	-1.2	0.3	0.6	0.4 pps
8 -	**Self employed** (15-64, % of total employment)	11.8	12.6	12.2	12.2	12.3	0.1 pps
	Male	15.4	16.6	16.1	16.2	16.4	0.2 pps
	Female	7.9	8.3	8.2	8.0	8.0	0.0 pps
9 -	**Temporary employment** (15-64, % of total employment)	14.9	14.5	15.4	15.5	15.5	0.0 pps
	Male	11.1	10.5	12.3	12.6	12.6	0.0 pps
	Female	18.7	18.3	18.4	18.4	18.2	-0.2 pps
10 -	**Part-time** (15-64, % of total employment)	12.7	13.3	13.9	14.1	14.1	0.0 pps
	Male	7.9	8.3	8.9	9.4	9.1	-0.3 pps
	Female	17.8	18.5	19.0	19.0	19.4	0.4 pps
11 -	**Unemployment rate** (harmonised:15-74)	6.4	8.2	8.4	7.8	7.7	-0.1 pps
	Young (15-24)	16.5	21.5	21.4	20.1	19.0	-1.1 pps
	Prime age (25-49)	4.9	6.6	6.8	6.1	6.1	0.0 pps
	Older (55-64)	5.4	6.2	6.5	6.4	6.6	0.2 pps
	Low-skilled (15-64)	12.8	15.3	16.7	16.7	16.6	-0.1 pps
	Medium-skilled (15-64)	6.4	9.2	9.0	8.3	8.3	0.0 pps
	High-skilled (15-64)	3.3	4.1	4.5	4.0	3.9	-0.1 pps
	Nationals (15-64)	6.2	8.1	8.2	7.7	7.6	-0.1 pps
	Non-nationals (15-64)	15.8	18.0	19.6	16.8	16.3	-0.5 pps
	Male	6.1	8.9	9.1	8.4	8.3	-0.1 pps
	Female	6.7	7.6	7.6	7.1	7.1	0.0 pps
12 -	**Long-term unemployment** (% of total unemployment)	18.4	16.7	24.0	22.2	21.3	-0.9 pps
13 -	**Worked hours** (full-time, average actual weekly hours)	39.2	38.6	39.0	39.0	38.7	-0.8 %
	Male	40.6	40.1	40.4	40.5	40.2	-0.7 %
	Female	37.3	36.8	37.2	37.1	36.9	-0.5 %
14 -	**Sectoral employment growth** (% change)						
	Agriculture	:	-0.7	0.7	-3.6	-2.0	1.6 pps
	Building and construction	3.6	-5.7	1.9	2.5	-0.6	-3.1 pps
	Services	2.2	-3.2	0.7	:	:	: pps
	Manufacturing industry	:	-7.4	-3.9	1.2	-1.8	-3.0 pps
15 -	**Indicator board on wage developments** (% change)						
	Compensation per employee	4.4	2.3	1.8	3.4	3.3	0.0 pps
	Real compensation per employee based on GDP	1.4	0.8	1.4	0.5	0.6	0.1 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	4.1	4.2	1.5	2.5	4.3	1.8 pps
	Labour cost index (wages and salaries, total)	4.3	4.7	2.0	2.4	4.1	1.7 pps
	Labour productivity (GDP/person employed)	-2.2	-6.1	3.4	1.2	-0.8	-2.0 pps

Sweden		2008	2009	2010	2011	2012	2011-2012
1 -	**Population** (LFS, total, 1000 pers.)	9203	9297	9364	9419	9460	0.4 %
2 -	**Population** (LFS, working age:15-64, 1000 pers.)	6046	6080	6103	6115	6114	0.0 %
	(% of total population)	65.7	65.4	65.2	64.9	64.6	-0.3 pps
3 -	**Labour force** (15-64, 1000 pers.)	4797	4799	4827	4887	4909	0.5 %
	Male	2508	2513	2538	2561	2567	0.2 %
	Female	2289	2286	2289	2326	2342	0.7 %
4 -	**Activity rate** (% of population 15-64)	79.3	78.9	79.1	79.9	80.3	0.4 pps
	Young (15-24)	52.8	51.0	51.6	53.0	52.6	-0.4 pps
	Prime age (25-54)	90.4	90.0	89.8	90.3	90.6	0.3 pps
	Older (55-64)	72.8	73.9	74.8	76.0	77.0	1.0 pps
	Nationals (15-64)	79.8	79.4	79.7	80.6	81.0	0.4 pps
	Non-nationals (15-64)	71.8	72.5	70.8	70.6	70.3	-0.3 pps
	Male	81.7	81.4	81.9	82.4	82.6	0.2 pps
	Young (15-24)	52.6	51.1	52.0	53.2	51.8	-1.4 pps
	Prime age (25-54)	93.1	92.8	92.9	93.2	93.5	0.3 pps
	Older (55-64)	76.5	77.8	79.3	79.9	80.9	1.0 pps
	Female	76.9	76.4	76.2	77.3	77.9	0.6 pps
	Young (15-24)	53.1	51.0	51.3	52.8	53.4	0.7 pps
	Prime age (25-54)	87.6	87.1	86.6	87.3	87.6	0.3 pps
	Older (55-64)	69.0	69.9	70.3	72.1	73.0	0.9 pps
5 -	**Employment rate** (% of population 15-64)	74.3	72.2	72.1	73.6	73.8	0.2 pps
	Young (15-24)	42.2	38.3	38.8	40.9	40.2	-0.7 pps
	Prime age (25-54)	86.5	84.5	84.0	85.1	85.2	0.1 pps
	Older (55-64)	70.1	70.0	70.4	72.0	73.0	0.9 pps
	Low-skilled (15-64)	49.5	46.7	46.1	46.9	46.3	-0.6 pps
	Medium-skilled (15-64)	81.3	78.3	78.0	79.6	79.7	0.1 pps
	High-skilled (15-64)	87.7	86.6	86.3	86.9	87.0	0.1 pps
	Nationals (15-64)	75.1	73.0	73.1	74.8	75.1	0.3 pps
	Non-nationals (15-64)	61.5	60.3	57.5	56.0	55.6	-0.4 pps
	Male	76.7	74.2	74.6	75.8	75.6	-0.2 pps
	Young (15-24)	42.2	37.6	38.5	40.8	38.8	-2.0 pps
	Prime age (25-54)	89.4	86.9	87.0	87.9	87.8	-0.1 pps
	Older (55-64)	73.4	73.2	74.0	75.2	76.3	1.1 pps
	Female	71.8	70.2	69.7	71.3	71.8	0.6 pps
	Young (15-24)	42.1	38.9	39.2	41.0	41.6	0.5 pps
	Prime age (25-54)	83.5	81.9	80.9	82.2	82.5	0.4 pps
	Older (55-64)	66.7	66.7	66.9	68.9	69.6	0.7 pps
6 -	**Employed persons** (15-64, 1000 pers.)	4493.8	4391.4	4403.2	4498.1	4509.6	0.3 %
7 -	**Employment growth** (%, National accounts)	0.9	-2.4	1.1	2.2	0.1	-2.1 pps
	Employment growth (%, 15-64, LFS)	0.9	-2.3	0.3	2.2	0.3	-1.9 pps
	Male	1.0	-2.8	0.9	1.9	-0.2	-2.1 pps
	Female	0.8	-1.7	-0.4	2.5	0.8	-1.7 pps
8 -	**Self employed** (15-64, % of total employment)	9.4	9.6	9.8	9.3	9.2	-0.1 pps
	Male	13.1	13.3	13.4	12.9	12.8	-0.1 pps
	Female	5.3	5.5	5.8	5.4	5.3	-0.1 pps
9 -	**Temporary employment** (15-64, % of total employment)	15.8	14.9	16.0	16.5	15.9	-0.6 pps
	Male	13.2	12.6	14.1	14.5	13.8	-0.7 pps
	Female	18.5	17.3	17.9	18.5	18.0	-0.5 pps
10 -	**Part-time** (15-64, % of total employment)	25.7	26.0	25.8	25.2	25.0	-0.2 pps
	Male	11.9	12.6	12.7	12.3	12.5	0.2 pps
	Female	40.9	40.5	40.3	39.3	38.6	-0.7 pps
11 -	**Unemployment rate** (harmonised:15-74)	6.2	8.3	8.6	7.8	8.0	0.2 pps
	Young (15-24)	20.2	25.0	24.8	22.8	23.6	0.8 pps
	Prime age (25-49)	4.3	6.2	6.5	5.7	5.9	0.2 pps
	Older (55-64)	3.8	5.3	5.8	5.2	5.2	0.0 pps
	Low-skilled (15-64)	13.2	16.4	17.6	17.1	18.2	1.1 pps
	Medium-skilled (15-64)	5.4	8.1	8.2	7.2	7.2	0.0 pps
	High-skilled (15-64)	3.5	4.6	4.8	4.3	4.4	0.1 pps
	Nationals (15-64)	5.9	8.0	8.2	7.2	7.3	0.1 pps
	Non-nationals (15-64)	14.3	16.8	18.8	20.7	21.0	0.3 pps
	Male	5.9	8.6	8.7	7.8	8.2	0.4 pps
	Female	6.6	8.0	8.5	7.7	7.7	0.0 pps
12 -	**Long-term unemployment** (% of total unemployment)	12.7	13.2	18.6	19.6	19.0	-0.6 pps
13 -	**Worked hours** (full-time, average actual weekly hours)	39.6	39.2	39.9	39.7	39.6	-0.3 %
	Male	40.5	40.0	40.7	40.5	40.3	-0.5 %
	Female	38.2	37.9	38.5	38.4	38.4	0.0 %
14 -	**Sectoral employment growth** (% change)						
	Agriculture	:	-0.5	5.5	-3.5	2.2	5.7 pps
	Building and construction	7.3	-1.0	2.6	4.9	1.4	-3.5 pps
	Services	0.5	-1.7	2.1	:	:	: pps
	Manufacturing industry	:	-9.8	-1.6	1.5	-2.0	-3.5 pps
15 -	**Indicator board on wage developments** (% change)						
	Compensation per employee	1.5	1.6	3.0	0.9	3.5	2.6 pps
	Real compensation per employee based on GDP	-1.6	-0.4	2.3	-0.3	2.1	2.5 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	2.4	3.7	2.0	2.7	4.0	1.3 pps
	Labour cost index (wages and salaries, total)	3.6	2.7	2.2	2.4	3.5	1.1 pps
	Labour productivity (GDP/person employed)	-1.5	-2.7	5.5	0.6	0.2	-0.4 pps

United Kingdom		2008	2009	2010	2011	2012	2011-2012
1 -	**Population** (LFS, total, 1000 pers.)	60305	60734	61099	61515	61906	0.6 %
2 -	**Population** (LFS, working age:15-64, 1000 pers.)	40094	40318	40441	40599	40632	0.1 %
	(% of total population)	66.5	66.4	66.2	66.0	65.6	-0.4 pps
3 -	**Labour force** (15-64, 1000 pers.)	30409	30525	30529	30721	30984	0.9 %
	Male	16416	16433	16433	16512	16642	0.8 %
	Female	13993	14093	14096	14209	14343	0.9 %
4 -	**Activity rate** (% of population 15-64)	75.8	75.7	75.5	75.7	76.3	0.6 pps
	Young (15-24)	61.7	59.7	59.2	58.8	59.3	0.5 pps
	Prime age (25-54)	84.9	85.1	85.0	85.3	85.6	0.3 pps
	Older (55-64)	59.9	60.3	59.9	59.7	61.1	1.3 pps
	Nationals (15-64)	76.1	76.0	75.7	75.8	76.5	0.7 pps
	Non-nationals (15-64)	73.3	73.1	73.6	74.3	73.9	-0.3 pps
	Male	82.4	82.0	81.7	81.7	82.2	0.5 pps
	Young (15-24)	64.8	62.0	61.8	61.5	61.7	0.2 pps
	Prime age (25-54)	91.6	91.7	91.4	91.7	92.0	0.3 pps
	Older (55-64)	69.9	70.3	69.1	68.5	69.5	1.0 pps
	Female	69.4	69.5	69.4	69.7	70.3	0.6 pps
	Young (15-24)	58.4	57.4	56.4	56.0	56.8	0.8 pps
	Prime age (25-54)	78.2	78.7	78.6	79.1	79.3	0.2 pps
	Older (55-64)	50.2	50.6	51.1	51.3	52.9	1.6 pps
5 -	**Employment rate** (% of population 15-64)	71.5	69.9	69.5	69.5	70.1	0.7 pps
	Young (15-24)	52.4	48.4	47.6	46.4	46.9	0.5 pps
	Prime age (25-54)	81.4	80.2	79.8	80.1	80.5	0.4 pps
	Older (55-64)	58.0	57.5	57.1	56.7	58.1	1.3 pps
	Low-skilled (15-64)	56.2	54.1	52.3	52.6	53.2	0.6 pps
	Medium-skilled (15-64)	75.1	72.4	71.5	71.7	71.5	-0.2 pps
	High-skilled (15-64)	85.3	84.2	84.0	82.6	83.1	0.5 pps
	Nationals (15-64)	71.8	70.2	69.8	69.7	70.4	0.7 pps
	Non-nationals (15-64)	68.1	66.6	67.0	67.2	67.1	-0.1 pps
	Male	77.3	74.8	74.5	74.5	75.2	0.8 pps
	Young (15-24)	53.8	48.5	48.5	47.0	47.1	0.1 pps
	Prime age (25-54)	87.7	85.7	85.4	85.9	86.6	0.7 pps
	Older (55-64)	67.3	66.2	65.0	64.2	65.5	1.2 pps
	Female	65.8	65.0	64.6	64.5	65.1	0.5 pps
	Young (15-24)	51.0	48.2	46.6	45.7	46.6	0.9 pps
	Prime age (25-54)	75.2	74.7	74.3	74.5	74.5	0.1 pps
	Older (55-64)	49.0	49.2	49.5	49.6	51.0	1.4 pps
6 -	**Employed persons** (15-64, 1000 pers.)	28670.8	28183.5	28109.6	28207.3	28495.6	1.0 %
7 -	**Employment growth** (%, National accounts)	0.7	-1.6	0.2	0.4	0.4	0.0 %
	Employment growth (%, 15-64, LFS)	0.7	-1.7	-0.3	0.3	1.0	0.7 pps
	Male	0.4	-2.5	-0.1	0.4	1.2	0.8 pps
	Female	1.1	-0.7	-0.5	0.3	0.9	0.6 pps
8 -	**Self employed** (15-64, % of total employment)	12.5	12.7	13.0	13.1	13.5	0.4 pps
	Male	16.9	17.0	17.1	17.2	17.7	0.4 pps
	Female	7.5	7.9	8.2	8.3	8.7	0.4 pps
9 -	**Temporary employment** (15-64, % of total employment)	5.3	5.5	6.0	6.0	6.2	0.2 pps
	Male	4.7	5.1	5.6	5.6	5.7	0.1 pps
	Female	5.9	5.9	6.4	6.4	6.7	0.3 pps
10 -	**Part-time** (15-64, % of total employment)	24.2	25.0	25.7	25.5	25.9	0.4 pps
	Male	9.8	10.4	11.0	11.0	11.5	0.5 pps
	Female	41.0	41.7	42.4	42.2	42.3	0.1 pps
11 -	**Unemployment rate** (harmonised:15-74)	5.6	7.6	7.8	8.0	7.9	-0.1 pps
	Young (15-24)	15.0	19.1	19.6	21.1	21.0	-0.1 pps
	Prime age (25-49)	4.1	5.8	6.1	6.1	6.0	-0.1 pps
	Older (55-64)	3.1	4.6	4.7	5.0	4.9	-0.1 pps
	Low-skilled (15-64)	10.4	13.3	14.2	14.6	14.4	-0.2 pps
	Medium-skilled (15-64)	5.6	7.9	8.3	8.7	8.7	0.0 pps
	High-skilled (15-64)	2.8	4.0	4.1	4.4	4.3	-0.1 pps
	Nationals (15-64)	5.6	7.6	7.8	8.1	7.9	-0.2 pps
	Non-nationals (15-64)	7.0	8.9	9.0	9.5	9.2	-0.3 pps
	Male	6.1	8.6	8.6	8.7	8.3	-0.4 pps
	Female	5.1	6.4	6.8	7.3	7.4	0.1 pps
12 -	**Long-term unemployment** (% of total unemployment)	24.1	24.5	32.6	33.4	34.7	1.3 pps
13 -	**Worked hours** (full-time, average actual weekly hours)	41.0	41.0	41.1	41.1	41.3	0.5 %
	Male	42.4	42.3	42.4	42.4	42.6	0.5 %
	Female	38.4	38.6	38.6	38.6	38.9	0.8 %
14 -	**Sectoral employment growth** (% change)						
	Agriculture	:	0.7	5.8	-3.3	-1.6	1.7 pps
	Building and construction	:	-4.5	-5.3	-2.2	-2.3	-0.1 pps
	Services	:	-2.4	-0.1	:	:	: pps
	Manufacturing industry	:	-6.8	-2.5	-1.6	1.3	2.9 pps
15 -	**Indicator board on wage developments** (% change)						
	Compensation per employee	1.6	2.3	3.1	2.0	2.5	0.5 pps
	Real compensation per employee based on GDP	-1.5	0.1	0.0	-0.4	0.7	1.1 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	4.4	0.2	2.0	1.9	1.4	-0.5 pps
	Labour cost index (wages and salaries, total)	4.6	0.4	2.2	1.7	1.3	-0.4 pps
	Labour productivity (GDP/person employed)	-1.5	-3.6	1.5	0.6	-1.1	-1.7 pps

European Union (28 countries)	2008	2009	2010	2011	2012	2011-2012
1 - **Population** (LFS, total, 1000 pers.)	494897	496614	497107	497979	499223	0.2 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)	333186	333746	333194	333095	332497	-0.2 %
(% of total population)	67.3	67.2	67.0	66.9	66.6	-0.3 pps
3 - **Labour force** (15-64, 1000 pers.)	235675	236486	236314	236805	238302	0.6 %
Male	129408	129301	128950	128832	129283	0.4 %
Female	106267	107185	107364	107973	109018	1.0 %
4 - **Activity rate** (% of population 15-64)	70.7	70.9	70.9	71.1	71.7	0.6 pps
Young (15-24)	44.2	43.6	42.9	42.7	42.5	-0.2 pps
Prime age (25-54)	84.6	84.7	84.9	84.9	85.3	0.4 pps
Older (55-64)	48.0	49.0	49.7	50.8	52.6	1.8 pps
Nationals (15-64)	70.7	70.8	70.9	71.0	71.7	0.6 pps
Non-nationals (15-64)	71.7	71.7	71.7	71.8	71.7	-0.1 pps
Male	77.9	77.7	77.5	77.5	77.9	0.4 pps
Young (15-24)	47.7	46.8	46.1	45.7	45.4	-0.3 pps
Prime age (25-54)	92.0	91.7	91.6	91.5	91.7	0.1 pps
Older (55-64)	57.9	58.6	58.9	59.5	61.1	1.7 pps
Female	63.6	64.1	64.3	64.7	65.5	0.8 pps
Young (15-24)	40.7	40.3	39.6	39.5	39.5	-0.1 pps
Prime age (25-54)	77.3	77.7	78.1	78.3	78.9	0.6 pps
Older (55-64)	38.7	40.1	41.0	42.7	44.7	2.0 pps
5 - **Employment rate** (% of population 15-64)	65.7	64.5	64.0	64.1	64.1	-0.1 pps
Young (15-24)	37.3	34.9	33.9	33.5	32.8	-0.8 pps
Prime age (25-54)	79.4	78.0	77.5	77.6	77.2	-0.4 pps
Older (55-64)	45.5	45.9	46.3	47.3	48.8	1.4 pps
Low-skilled (15-64)	47.9	46.0	45.1	45.3	44.5	-0.8 pps
Medium-skilled (15-64)	70.4	68.8	68.2	68.2	68.0	-0.3 pps
High-skilled (15-64)	83.7	82.7	82.2	82.0	81.7	-0.2 pps
Nationals (15-64)	65.9	64.8	64.4	64.5	64.5	0.0 pps
Non-nationals (15-64)	63.0	59.9	59.7	59.7	59.0	-0.8 pps
Male	72.7	70.6	70.0	70.0	69.6	-0.3 pps
Young (15-24)	40.3	37.0	36.1	35.7	34.7	-0.9 pps
Prime age (25-54)	86.8	84.6	83.8	83.8	83.1	-0.7 pps
Older (55-64)	54.9	54.7	54.5	55.1	56.3	1.2 pps
Female	58.8	58.3	58.1	58.4	58.5	0.2 pps
Young (15-24)	34.3	32.8	31.7	31.3	30.7	-0.6 pps
Prime age (25-54)	72.0	71.4	71.2	71.3	71.2	-0.1 pps
Older (55-64)	36.7	37.7	38.5	40.1	41.7	1.6 pps
6 - **Employed persons** (15-64, 1000 pers.)	218982.1	215104.8	213322.2	213674.5	213041.6	-0.3 %
7 - **Employment growth** (%, National accounts)	:	:	:	:	:	: pps
Employment growth (%, 15-64, LFS)	1.1	-1.8	-0.8	0.2	-0.3	-0.5 pps
Male	0.7	-2.7	-1.0	0.0	-0.6	-0.6 pps
Female	1.6	-0.7	-0.6	0.4	0.1	-0.3 pps
8 - **Self employed** (15-64, % of total employment)	14.2	14.3	14.6	14.4	14.5	0.1 pps
Male	18.0	18.2	18.5	18.3	18.4	0.0 pps
Female	9.6	9.7	9.8	9.8	9.9	0.1 pps
9 - **Temporary employment** (15-64, % of total employment)	14.1	13.5	13.9	14.0	13.7	-0.3 pps
Male	13.3	12.7	13.3	13.6	13.2	-0.4 pps
Female	15.0	14.4	14.5	14.5	14.2	-0.3 pps
10 - **Part-time** (15-64, % of total employment)	17.5	18.0	18.5	18.8	19.2	0.4 pps
Male	7.0	7.4	7.9	8.1	8.4	0.3 pps
Female	30.5	30.8	31.3	31.5	31.9	0.4 pps
11 - **Unemployment rate** (harmonised:15-74)	7.1	9.0	9.7	9.7	10.5	0.8 pps
Young (15-24)	15.6	19.9	20.9	21.4	22.9	1.5 pps
Prime age (25-49)	6.1	7.9	8.6	8.7	9.5	0.8 pps
Older (55-64)	5.1	6.3	6.9	6.8	7.3	0.5 pps
Low-skilled (15-64)	11.6	14.8	16.1	16.7	18.6	1.9 pps
Medium-skilled (15-64)	6.6	8.4	9.1	9.0	9.7	0.7 pps
High-skilled (15-64)	3.9	5.0	5.5	5.6	6.2	0.6 pps
Nationals (15-64)	6.7	8.5	9.2	9.2	10.0	0.8 pps
Non-nationals (15-64)	12.2	16.4	16.8	16.8	17.8	1.0 pps
Male	6.7	9.0	9.7	9.6	10.4	0.8 pps
Female	7.6	9.0	9.6	9.8	10.6	0.8 pps
12 - **Long-term unemployment** (% of total unemployment)	37.2	33.3	40.1	43.1	44.6	1.5 pps
13 - **Worked hours** (full-time, average actual weekly hours)	41.0	40.7	40.8	40.8	40.7	-0.2 %
Male	42.1	41.7	41.9	41.9	41.7	-0.5 %
Female	39.1	38.9	39.1	39.1	39.0	-0.3 %
14 - **Sectoral employment growth** (% change)						
Agriculture	:	-1.9	0.0	-2.4	-1.5	0.9 pps
Building and construction	:	-5.3	-4.4	-2.9	-4.0	-1.1 pps
Services	:	-1.5	0.1	:	:	: pps
Manufacturing industry	:	-6.2	-3.5	0.4	-1.1	-1.5 pps
15 - **Indicator board on wage developments** (% change)						
Compensation per employee	:	:	:	:	:	: pps
Real compensation per employee based on GDP	:	:	:	:	:	: pps
Labour cost index (compens. of employees plus taxes minus subs.)	4.0	2.4	1.8	2.6	2.2	-0.4 pps
Labour cost index (wages and salaries, total)	4.1	2.3	1.8	2.5	2.3	-0.2 pps
Labour productivity (GDP/person employed)	-0.6	-2.8	2.5	1.4	0.2	-1.2 pps

Euro Area		2008	2009	2010	2011	2012	2011-2012
1 - **Population** (LFS, total, 1000 pers.)		323412	324577	325518	326526	327498	0.3 %
2 - **Population** (LFS, working age:15-64, 1000 pers.)		216135	216438	216543	216746	216533	-0.1 %
(% of total population)		66.8	66.7	66.5	66.4	66.1	-0.3 pps
3 - **Labour force** (15-64, 1000 pers.)		154010	154442	154566	155060	155986	0.6 %
	Male	85092	84865	84620	84537	84716	0.2 %
	Female	68919	69577	69946	70523	71270	1.1 %
4 - **Activity rate** (% of population 15-64)		71.3	71.4	71.4	71.5	72.0	0.5 pps
	Young (15-24)	44.4	43.6	42.5	42.2	41.7	-0.5 pps
	Prime age (25-54)	85.0	85.1	85.2	85.2	85.6	0.3 pps
	Older (55-64)	47.1	48.4	49.4	50.8	52.9	2.1 pps
	Nationals (15-64)	71.2	71.4	71.4	71.6	72.1	0.6 pps
	Non-nationals (15-64)	71.4	71.4	71.4	71.4	71.3	-0.1 pps
	Male	78.7	78.4	78.2	78.1	78.3	0.2 pps
	Young (15-24)	47.8	46.7	45.5	44.9	44.4	-0.5 pps
	Prime age (25-54)	93.0	92.6	92.4	92.2	92.2	0.0 pps
	Older (55-64)	56.5	57.5	58.3	59.1	60.9	1.9 pps
	Female	63.8	64.3	64.6	65.0	65.8	0.8 pps
	Young (15-24)	40.9	40.5	39.4	39.4	38.9	-0.6 pps
	Prime age (25-54)	77.0	77.5	77.9	78.2	78.9	0.7 pps
	Older (55-64)	38.1	39.8	41.0	43.0	45.2	2.3 pps
5 - **Employment rate** (% of population 15-64)		65.9	64.5	64.1	64.2	63.8	-0.4 pps
	Young (15-24)	37.5	35.0	33.8	33.5	32.1	-1.4 pps
	Prime age (25-54)	79.3	77.7	77.3	77.2	76.5	-0.8 pps
	Older (55-64)	44.3	45.1	45.8	47.1	48.7	1.5 pps
	Low-skilled (15-64)	49.9	47.7	46.7	47.2	46.0	-1.2 pps
	Medium-skilled (15-64)	71.1	69.9	69.5	69.4	68.9	-0.5 pps
	High-skilled (15-64)	83.0	82.1	81.6	81.6	81.1	-0.5 pps
	Nationals (15-64)	66.2	65.1	64.7	64.9	64.5	-0.4 pps
	Non-nationals (15-64)	61.9	58.6	58.4	58.4	57.5	-0.9 pps
	Male	73.3	71.1	70.4	70.3	69.5	-0.8 pps
	Young (15-24)	40.5	37.1	35.9	35.6	34.1	-1.5 pps
	Prime age (25-54)	87.4	84.9	84.1	83.9	82.7	-1.2 pps
	Older (55-64)	53.3	53.5	53.8	54.6	55.8	1.2 pps
	Female	58.4	58.0	57.9	58.2	58.2	-0.1 pps
	Young (15-24)	34.4	32.8	31.6	31.3	30.1	-1.3 pps
	Prime age (25-54)	71.2	70.6	70.5	70.5	70.2	-0.3 pps
	Older (55-64)	35.7	37.1	38.1	40.0	41.9	1.9 pps
6 - **Employed persons** (15-64, 1000 pers.)		142331.7	139671.5	138898.3	139256.0	138149.6	-0.8 %
7 - **Employment growth** (%, National accounts)		0.8	-1.9	-0.5	0.2	-0.5	-0.7 pps
Employment growth (%, 15-64, LFS)		1.0	-1.9	-0.6	0.3	-0.8	-1.1 pps
	Male	0.3	-2.9	-0.9	-0.1	-1.3	-1.2 pps
	Female	1.7	-0.6	-0.1	0.7	-0.2	-0.9 pps
8 - **Self employed** (15-64, % of total employment)		14.3	14.4	14.5	14.4	14.4	0.0 pps
	Male	17.9	18.1	18.4	18.3	18.3	0.0 pps
	Female	9.8	9.8	9.8	9.8	9.9	0.1 pps
9 - **Temporary employment** (15-64, % of total employment)		16.3	15.4	15.6	15.8	15.3	-0.5 pps
	Male	15.2	14.2	14.8	15.1	14.6	-0.5 pps
	Female	17.4	16.6	16.5	16.6	16.0	-0.6 pps
10 - **Part-time** (15-64, % of total employment)		18.9	19.5	19.9	20.4	20.9	0.5 pps
	Male	6.8	7.3	7.7	8.1	8.5	0.4 pps
	Female	34.1	34.4	34.8	35.2	35.8	0.6 pps
11 - **Unemployment rate** (harmonised:15-74)		7.6	9.6	10.1	10.1	11.4	1.3 pps
	Young (15-24)	15.6	19.8	20.6	20.7	22.9	2.2 pps
	Prime age (25-49)	6.7	8.6	9.2	9.4	10.6	1.2 pps
	Older (55-64)	5.9	6.9	7.4	7.3	8.0	0.7 pps
	Low-skilled (15-64)	11.7	15.1	16.5	17.0	19.5	2.5 pps
	Medium-skilled (15-64)	6.9	8.6	8.9	8.8	9.8	1.0 pps
	High-skilled (15-64)	4.3	5.5	5.9	6.1	6.9	0.8 pps
	Nationals (15-64)	7.0	8.7	9.3	9.4	10.6	1.2 pps
	Non-nationals (15-64)	13.2	17.8	18.1	18.2	19.4	1.2 pps
	Male	7.0	9.4	10.0	9.9	11.2	1.3 pps
	Female	8.5	9.8	10.3	10.5	11.6	1.1 pps
12 - **Long-term unemployment** (% of total unemployment)		39.3	35.6	42.5	45.2	46.5	1.3 pps
13 - **Worked hours** (full-time, average actual weekly hours)		40.9	40.5	40.8	40.8	40.6	-0.5 %
	Male	42.0	41.5	41.8	41.8	41.6	-0.5 %
	Female	39.0	38.7	38.9	39.0	38.9	-0.3 %
14 - **Sectoral employment growth** (% change)							
	Agriculture	:	-2.2	-1.0	-1.9	-1.9	0.0 pps
	Building and construction	-2.0	-6.5	-3.9	-3.8	-4.7	-0.9 pps
	Services	1.4	-1.7	0.1	:	:	: pps
	Manufacturing industry	:	-5.4	-3.2	0.1	-1.1	-1.2 pps
15 - **Indicator board on wage developments** (% change)							
	Compensation per employee	3.3	1.4	1.6	2.2	1.3	-0.9 pps
	Real compensation per employee based on GDP	1.5	0.9	1.1	0.9	0.6	-0.3 pps
	Labour cost index (compens. of employees plus taxes minus subs.)	3.5	2.7	1.7	2.7	2.2	-0.5 pps
	Labour cost index (wages and salaries, total)	3.5	2.7	1.5	2.5	2.3	-0.2 pps
	Labour productivity (GDP/person employed)	-0.4	-2.7	2.4	1.3	0.0	-1.3 pps

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