

European Vacancy Monitor

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Further Information

- European Job Mobility Bulletin
- EU Employment and Social Situation Quarterly Review
- Employment Package

HIGHLIGHTS

VACANCIES: Stagnant despite strong recovery in some countries

Total job vacancies in the first quarter of 2013 were back at the same level (1.9 million for 19 EU countries) as in 2012 ending a period of decline. Vacancies increased in Hungary, Latvia, Romania and UK, but fell by 76 per cent in Cyprus. The PES vacancy inflow declined by 3 per cent (19 EU countries), but increased in some countries in the south and east of Europe. Temporary work agency vacancies (Randstad) over the first half of 2013 showed a decline in four of the five countries covered and a stable number in UK.

Read more on page 3

HIRINGS AND JOB PROSPECTS: Worsening overall but tending to equalise across Europe

EU27 hirings fell by 2 per cent between the first quarters of 2012 and 2013 and even by 18 per cent in Cyprus. The ratio of unemployed to hirings increased from 2.9 to 3.2 indicating worsening job prospects. The ratios generally increased but remained the lowest in the north and west of Europe, and generally decreased but remained the highest in the south and east of Europe.

Read more on page 7

OCCUPATIONAL DEMAND: Decline in medium skilled jobs

Hirings were down in six main occupational groups: professionals (by 3 per cent) and all five medium skilled groups. High-skilled jobs where both employees and hirings grew in the first quarter of 2013 are mostly in the private sector (ICT, administration, finance and architecture), contrasting with nursing and teaching in previous quarters. The PES however still registered increasing vacancies in nursing.

Read more on page 11

EDUCATIONAL DEMAND: Signs of crowding out of low educated job seekers

Hirings of low educated workers declined by 20 per cent (EU27). Combined with the recent change from medium to low skilled jobs, this may indicate a crowding out of low educated in the labour market.

Read more on page 20

ICT JOBS – increasing employment may result in skills shortages

Employees in ICT jobs increased since 2008 despite the crisis, but at the same time the number of ICT students in higher education declined between 2004 and 2011, especially in the west of Europe. In the east of Europe the share of young workers aged 15-29 in ICT reaches up to 40 per cent or higher in Estonia, Latvia, and Malta. The share of males in ICT jobs is 75 per cent or higher across Europe except in Bulgaria and Romania. The share of non-nationals in ICT is 7 per cent but is 1 per cent or less in most newer Member States and significantly higher in the west of Europe suggesting a flow of workers with ICT skills from east to west.

Read more on page 21

- TOP 10 employee growth per country on page 26
- TOP 5 growth PES inflow per country on page 32
- TOP 5 in EURES Job Mobility Portal on page 34

Top 5 growth occupations (employees)

- Primary school and early childhood teachers
- Business services and administration managers
- Software and applications developers and analysts
- Personal care workers in health services
- Finance professionals

Top 5 growth occupations (hirings)

- Domestic, hotel and office cleaners and helpers
- Legal, social and religious associate professionals
- Food preparation assistants
- Waiters and bartenders
- Car, van and motorcycle drivers

PES Top 5 growth occupations (vacancy inflow)*

- Nursing and midwifery associate professionals
- Other teaching associate professionals
- Personal care and related workers
- Manufacturing labourers
- Motor vehicle drivers

* 7 countries using ISCO-88

INTRODUCTION

As part of its Europe 2020 flagship initiative 'An Agenda for New Skills and Jobs', in 2010 the European Commission (EC) launched the 'Monitoring Labour Market Developments in Europe' project. The objective of this project is to increase labour market transparency for all stakeholders who need information about recent developments on the demand side of the labour market, such as decision-makers in the fields of education and employment, public and private employment services including EURES advisers, education and training providers, career guidance services, and policy and labour market analysts.

The European Vacancy Monitor is a component of the European Commission's endeavour to develop a labour market monitoring system focusing on changes in the demand for skills including contractual arrangements, sector demand, occupational demand, growing occupations, hard-to-fill vacancies (bottleneck occupations) and skills requirements. Monitoring the activities of different recruitment agencies is important because they are at the interface of labour demand and supply, matching vacancies with suitable jobseekers in particular segments of the labour market. Results of the analysis are disseminated on a quarterly basis.

Other initiatives within this project include a second quarterly bulletin, the 'European Job Mobility Bulletin', and a biennial report, the 'European Vacancy and Recruitment Report' (EVRR)¹. Together with other relevant studies, labour market data and analyses, these form part of the European Commission's "Skills Panorama" launched in December 2012.

THE EUROPEAN VACANCY MONITOR (EVM)

The key sources of information for the EVM include European and national sources:

the Labour Force Survey (data of recent job hirings for 29 countries) including a breakdown by sector, occupation, educational level and educational fields, as well as the relationship of unemployment to job hirings (a measurement of the tightness of the labour market), the Job Vacancy Statistics (vacancy data for 19 countries) including by sector, PES data for job vacancy inflow and registered unemployed (19 countries), data from a Temporary Work Agency (TWA) (5 countries) and Eurociett, the European Confederation of Private Employment Agencies.

EVM provides regular updates on developments in the following aspects of labour demand:

- Numbers of job vacancies and of job hirings (quarterly)
- Inflow of newly registered vacancies with PES, also by occupational group (quarterly)
- Recruitment demand in TWAs (quarterly)
- Relationship between recruitment demand and supply (quarterly)
- Occupational demand (quarterly)
- Educational level (quarterly)
- Educational field (annually)
- Job vacancies by economic sector (annually)

THE EUROPEAN JOB MOBILITY BULLETIN (EJMB)

The main sources of data analysis for the European Job Mobility Bulletin are

- Job vacancies uploaded by the PES to the European Job Mobility portal (EURES portal)
- The EURES database including a breakdown by sectors, occupations and skills.

THE EUROPEAN VACANCY AND RECRUITMENT REPORT (EVRR)

The biennial report is based upon the data analysis for the European Vacancy Monitor and further national labour market information and studies. In addition to the topics presented in the European Vacancy Monitor, the report focuses on the identification of 'top-growth occupations' with most recent recruits. It also provides an analysis of the job opportunities via recruitment agencies, in particular of PES and of TWAs.

The analysis of the demand for occupations is based on the International Standard Classification of Occupations (ISCO-08 for job hirings and a mix of ISCO-88 and ISCO-08 for PES data). To allow for international comparisons where necessary, some PES data on occupations have been harmonised with ISCO. The analysis of demand by educational level is based on the International Standard Classification of Education (ISCED).

Part 1

VACANCIES, HIRINGS AND JOB PROSPECTS

1.1 TRENDS IN VACANCIES

Stagnant number of vacancies overall despite nascent recovery in public sector

The number of job vacancies was back to the same level of 1.7 million as a year ago, for the 15 EU countries covered in the whole period 2008Q1 – 2013Q1, despite some small seasonal fluctuations from quarter to quarter (Chart 1). It suggests that there were no clear signs of any real improvement in the growth of public and private sector vacancies which are still well below the base quarter at the beginning of 2008.

In the first quarter of 2013 the total vacancies index was around the same value as in the same quarter of 2012 at 74 but down by three points on the previous quarter (i.e. fourth quarter of 2012). In broad terms the public and private sector job vacancies indices were still following the same fluctuating patterns, but there were signs that the public sector index was beginning to outperform that for the private sector. By the first quarter of 2013 the gap between the public and private sector indices had increased to 11 points compared to nine in the fourth quarter of 2012 and three in the first quarter of 2012.

Job vacancies (Eurostat Job Vacancy Statistics)

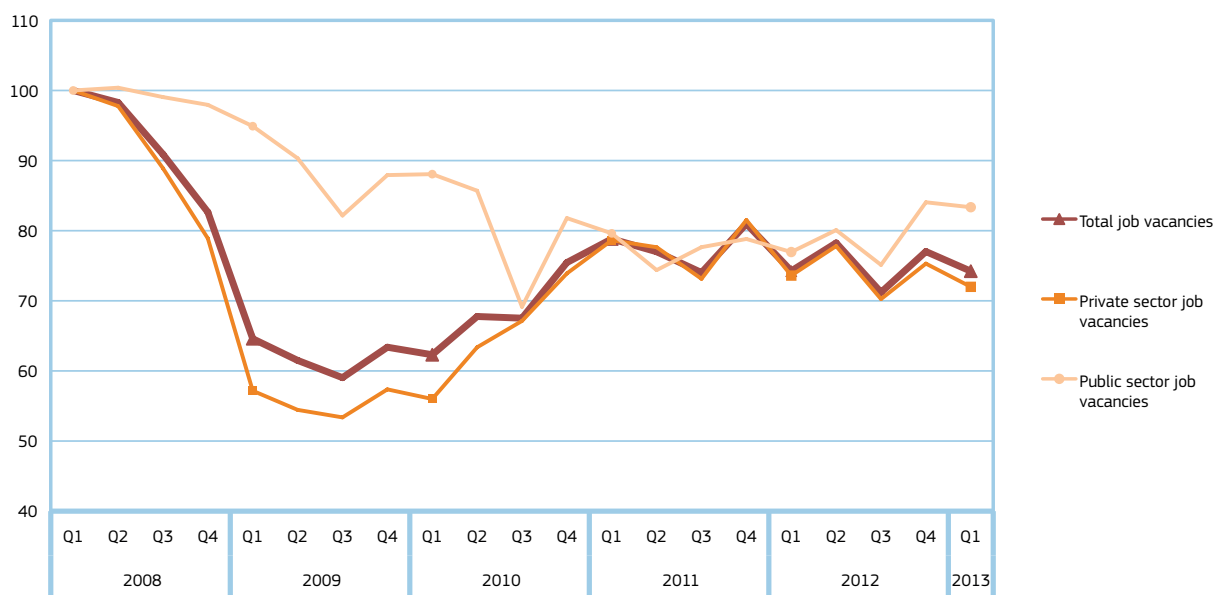
Job vacancies refer to vacant paid posts (i.e. for employees), exclusive of internal vacancies (see Annex A3 for a full definition). Their number is measured by taking stock of the open vacancies at a certain moment of time. Chart 1 shows the changes over

the period from the first quarter of 2008 (the base year) to the latest quarter (in this case the first quarter of 2013) in index form.

Of the total job vacancies, those in the private sector account for almost four out of every five and are the most sensitive to changes in economic activity. The private sector job vacancies index was slightly down (by just two points) in the first quarter of 2013 compared to the same quarter in 2012 and three points down on the previous quarter. This is in line with GDP development where the decline also came almost to stop in the first quarter of 2013: a fall of -0.1 per cent in GDP for the EU27 over the previous quarter. Over the twelve month period to the first quarter of 2013 the decline in GDP was -0.7 per cent, most of which could be attributed to the fourth quarter of 2012.² In the EU27 economic decline was strongest in the industry, construction and wholesale and retail trade sectors (as through most of the crisis) while some parts of the services sector performed better. Also, in the first quarter of 2013 more Member States recorded positive quarterly economic growth than in the previous quarter including all four countries with a significant growth in job vacancies (Hungary, Latvia, Romania and the United Kingdom).

Over the same period public sector vacancies have been more buoyant with an increase of six points between the first quarter of 2012 and the same quarter in 2013 (from 77 to

Chart 1: Development of job vacancies (total, private, and public sector)
Index, 2008Q1 - 2013Q1, 2008Q1 = 100



Source: Eurostat, Job Vacancy Statistics (15 countries) - own calculations. Countries included in the EU15 total: Bulgaria, the Czech Republic, Germany, Estonia, Cyprus, Latvia, Lithuania, Luxembourg, the Netherlands, Portugal (Portugal exclusive public administration), Romania, Slovenia, Slovakia, Sweden, the United Kingdom. A job vacancy is defined as a paid post that is newly created, unoccupied, or about to become vacant. Here, the public sector is defined as the total of four NACE sectors: 1. public administration, 2. education, 3. human health and 4. arts and other services. Due to data limitations, the private sector here is defined as the rest of the economy exclusive agriculture. Agriculture is not in the total either.

Number of job vacancies in 2013Q1 (EU15, in thousands): total: 1,725; in private sector: 1,344; in public sector: 381.

83), though there was a slight fall of one point on the previous quarter (i.e. fourth quarter of 2012). However in view of the austerity measures the buoyancy of public sector vacancies could be partly due to replacement demand for all kinds of reasons but including retirement. This is supported by the occupational data (Part 2) which shows strong demand for jobs in the health and education sectors, all big public sector employers that in some countries face ageing workforces (see EVM10 Special Focus on white jobs).

Longer term developments in the job vacancy indices show that those for the first quarter of 2013 were still well below those for the base period of the first quarter of 2008. The latest index of 72 for the private sector showed little sign of improvement since the beginning of 2011 following a period of recovery in the index from its lowest point of 53 in the third quarter of 2009. While the public sector index has more or less tracked that for the private sector, since the second quarter of 2011 it has been consistently higher, reaching 84 in the fourth quarter of 2012 before falling slightly to 83 in the latest quarter. However, the relatively small fluctuations in both the private and public indices since the beginning of 2011 to some extent reflect seasonal changes in demand and the overall trend over this longer period is flat with no signs of a recovery in job vacancies.

Falls in job vacancies overall for most countries

Between the first quarters of 2013 and 2012 there was no change in total job vacancies in 15 EU Member States (Chart 2). This was an improvement on the negative change of -6 per cent in the previous reference period (EVM 10). However the growth in the first quarter of 2013 compared to the same

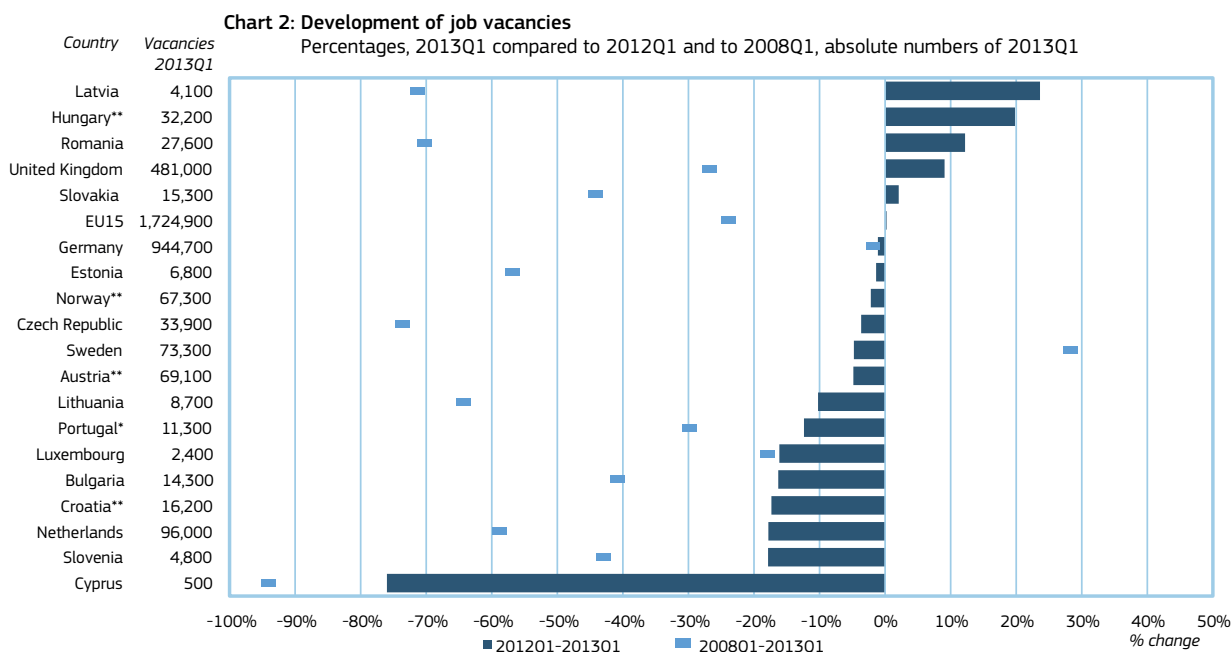
quarter of the preceding year was concentrated in fewer countries than in the previous reference period. Just five countries (Hungary, Latvia, Romania, Slovakia and the United Kingdom) saw vacancies increase between the first quarters of 2013 and 2012. In three of these countries (Latvia, Romania and the United Kingdom) this continued the developments observed in the previous quarter suggesting a more sustained growth in vacancies. Hungary and Slovakia joined the group of countries with vacancy growth in the first quarter of 2013 confirming the trend for growth to be concentrated in the newer Member States.

The grouping of all 19 countries according to the level of change in the stock of job vacancies between the first quarters of 2012 and 2013 is summarised below. Five countries showed some growth, though this was significant (i.e. above 5 per cent) in only four of them.

- Growth (> +5 %) Hungary*, Latvia*, Romania*, the United Kingdom
- Relatively stable (> -5 % and ≤ +5 %) Austria, the Czech Republic, Estonia, Germany, Norway, Slovakia, Sweden
- Decline (≤ -5 %) Bulgaria*, Croatia*, Cyprus*, Lithuania, Luxembourg*, the Netherlands*, Portugal*, Slovenia*

Note: in the countries marked with ** the change was more than 10%.

In the four countries which had significant growth in job vacancies (and in GDP as noted below Chart 1) in the latest figures (Latvia, Hungary, Romania, the United Kingdom) it was the third quarter in a row in three of these four countries that increases were recorded. The exception was



Source: Eurostat, Job Vacancy Statistics - own calculations (19 countries). Countries included in the EU15 total: Bulgaria, Cyprus, the Czech Republic, Estonia, Germany, Latvia, Lithuania, Luxembourg, the Netherlands, Portugal, Romania, Slovenia, Slovakia, Sweden, the United Kingdom. A job vacancy is defined as a paid post that is newly created, unoccupied, or about to become vacant.

* For Portugal public administration is excluded.

** Changes for Austria, Croatia, Norway and Hungary are only shown for 2012Q1-2013Q1 due to missing values for 2008Q1. The EU15 total for 2011Q4-2012Q4 does not include these three EU-countries and Norway.

Total number of job vacancies (EU15, in thousands): in 2008Q1: 2,324; in 2012Q1: 1,726; in 2013Q1: 1,725.

Total number of job vacancies (EUR19 including Norway, in thousands): in 2012Q1: 1,913; in 2013Q1: 1,909.

in Hungary where the level of vacancies increased for the first time (and substantially) in the first quarter of 2013. In each of these four countries, vacancies increased in both the public and the private sectors. In Latvia, for example, the number of vacancies in ICT and professional services almost doubled, although these two sectors combined accounted for only 6 per cent of all vacancies. In Hungary the largest increases in private sector vacancies were for construction and administrative services, which are likely to have been stimulated by public sector investments. In Romania, the most significant growth of job vacancies was in transport services, food and accommodation, public administration and health. In the United Kingdom there was particularly high growth in finance, real estate, education and health, reflecting a mix of private and public sector labour demand. However, in none of these sectors in any of these four countries did vacancies reach the pre-crisis levels of the first quarter of 2008. Only health sector vacancies in the United Kingdom (-3%) and ICT vacancies in Latvia (-6%) came close to these levels.

Among the 14 countries with falls in job vacancies between the first quarters of 2012 and 2013 half of them fell significantly by more than -10 per cent. By far the biggest fall in vacancies was in Cyprus with -76 per cent which was around three times the fall recorded in the previous quarter's figures. Here the decline in vacancies was felt across the economy and appeared to be unaffected by the usual increase of vacancies in the tourism sector in the first quarter. Among the other countries with falls in vacancies between the first quarters of 2013 and 2012, the biggest fall was in Slovenia, though at -18 per cent it was well below that for Cyprus and was similar to the falls in four other countries (Bulgaria, Croatia, Luxembourg, and the Netherlands). In most countries with falling overall vacancies, they reflected the contributions of many sectors.

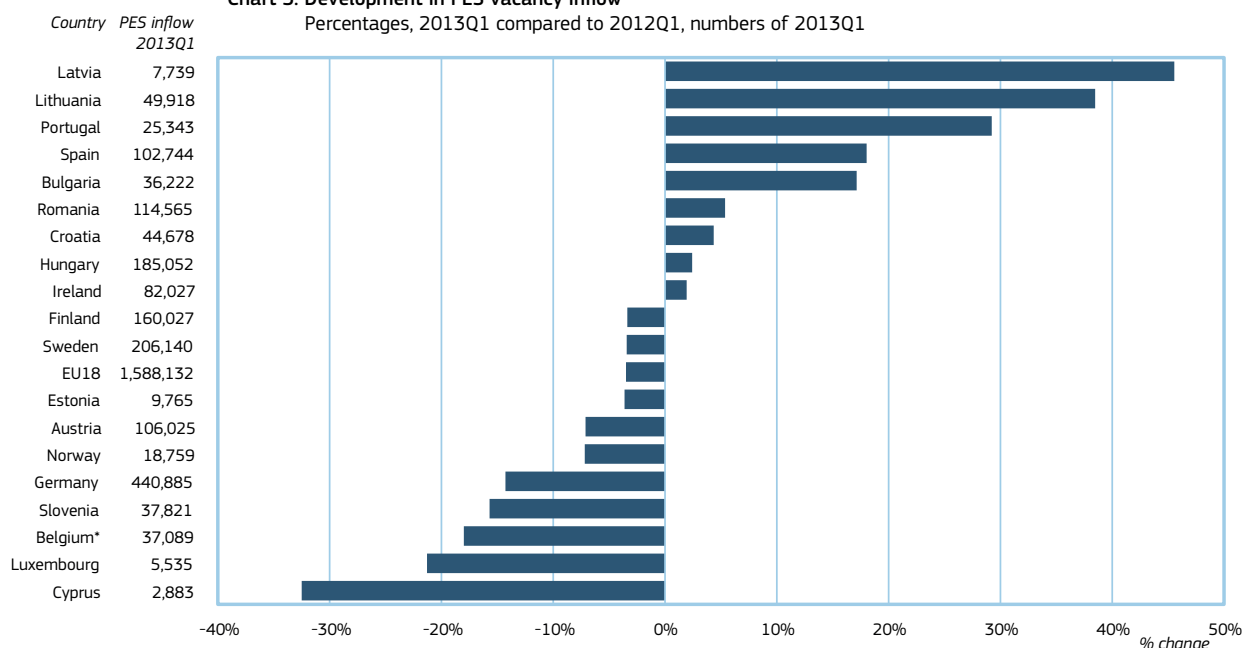
However, the health sector was the most notable exception to this decline, with growth recorded in six countries (Cyprus, Estonia, Germany, Lithuania, Norway and Sweden).

Over the longer term, increases in job vacancies between the first quarters of 2013 and 2008 were evident in just one country, Sweden, with an increase over the period of 30 per cent. This was down on the 46 per cent growth recorded in the preceding quarter when Germany and Luxembourg also showed sustained vacancy growth. These differences between the first and the fourth quarters reflect that the crisis started late in 2008 in these countries. However the longer term development in Germany was still more or less stable (-2%), and in Luxembourg the number of vacancies has always been volatile. In all other countries the decline over the longer term was stronger than -20 per cent. Cyprus again led the group of 18 countries with falls in vacancies over this period of -96 per cent, though the gap between this country and the rest was much closer than in the short-term figures. For example, the fall in the Czech Republic was -76 per cent and even among the few countries with recent growth in vacancies, the longer term falls were high with -73 per cent in Latvia and -72 per cent in Romania.

PES inflow recovering in south and east of Europe

The latest PES vacancy inflow statistics show overall decreasing labour demand through this recruitment channel, though with some improvement over the previous reference period (Chart 3). Between the first quarters of 2013 and 2012 the vacancy inflow declined by -3 per cent for the EU19 countries but this compares favourably with falls of -9 per cent and -10 per cent in the previous two quarters, though does not represent an upturn in labour demand.

Chart 3: Development in PES vacancy inflow
Percentages, 2013Q1 compared to 2012Q1, numbers of 2013Q1



Source: PES - own calculations (19 countries). The EU18 total includes Austria, Belgium*, Bulgaria, Croatia, Cyprus, Estonia, Finland, Germany, Hungary, Ireland, Lithuania, Latvia, Luxembourg, Portugal, Romania, Slovenia, Spain and Sweden.
* Belgium includes the Walloon region and the Brussels region but not the Flemish region due to a new occupational classification in 2013Q1. Slovakia is excluded due to a new information system in 2012Q2 and the United Kingdom is excluded due to a new information system in 2012Q4. PES inflow refers to new job vacancies which have been registered in a certain quarter.
Total PES inflow (EU18 excl. Norway, in thousands): in 2012Q1: 1,646; in 2013Q1: 1,588.
Total PES inflow (EUR19 incl. Norway, in thousands): in 2012Q1: 1,666; in 2013Q1: 1,607

Among the 19 countries covered there were varying fortunes and they are grouped according to their change in PES vacancy inflows below:

- Growth (> +5 %) Bulgaria*, Latvia*, Lithuania*, Portugal*, Romania, Spain*
- Relatively stable (> -5 % and ≤ +5 %) Croatia, Estonia, Finland, Hungary, Ireland, Sweden
- Decline (≤ -5 %) Austria, Belgium*, Cyprus*, Germany*, Luxembourg*, Norway, Slovenia*

Note: in the countries marked with "*" the change was more than 10%.

Six countries had significant levels of PES vacancy growth of more than 5 per cent with Latvia showing the biggest increase of 45 per cent. Lithuania and Portugal were not far behind with 38 per cent and 29 per cent respectively. When these six are added to the other three countries with some growth (Croatia, Hungary and Ireland) the concentration is clearly among the newer Member States with the addition of those older Member States that have been among those most affected by the crisis. Much of this growth is for manufacturing labourers (Bulgaria, Estonia, Latvia, Lithuania, Portugal, Spain) and heavy goods vehicle drivers (Latvia, Lithuania, Romania), see further Part 5. This may signal a nascent recovery of industrial activity in these countries.

In Latvia, Hungary and Romania the growth in PES vacancies is consistent with the durable growth of the total number of vacancies (Chart 2) which suggests that the PES is benefiting from a general surge in vacancy postings. In Bulgaria and Croatia the total PES inflow also increased for jobs of various skills levels. The situation is different in Portugal and Spain however, where increasing notifications to the PES were almost solely for elementary jobs. The continuing negative total vacancy development in Portugal further indicates that apart

from unskilled work, job opportunities were still scarce despite the increase in PES inflow.

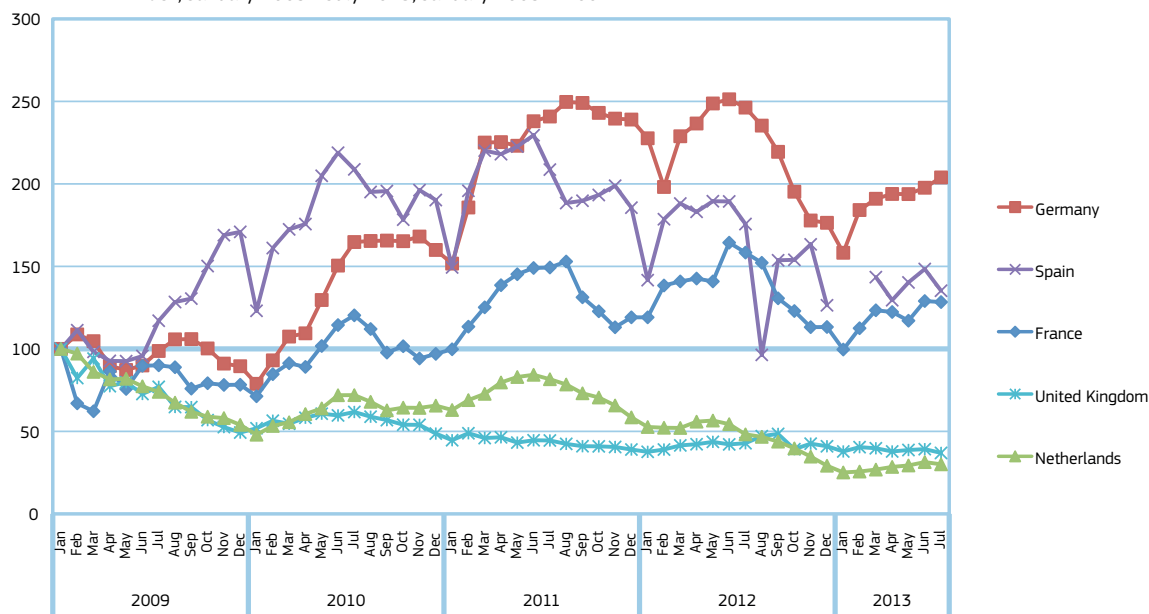
Demand for temporary agency workers continued to pick up in France and Germany in second quarter of 2013

The first seven months of 2013 show different patterns of development in the demand for temporary agency workers among the five countries represented (Chart 4). In the cases of France and Germany job vacancies increased overall, with the index for Germany increasing by 46 points and for France by 28 points between January and July 2013. Most of this increase is attributable to the usual seasonal pattern (excepting 2009). The absence of the expected seasonal increase in Spain (a fall of 8 points between March and July 2013) and the United Kingdom (a fall of just one point since January 2013) signals a lower than usual demand for temporary agency workers, although some demand may have shifted towards the PES (Chart 3). In the Netherlands the Randstad vacancies have dropped to 25 per cent of their base value and the increase by 5 points since January 2013 must be considered marginal.

The seasonal increase in France and Germany indicates the use of temporary workers in seasonal sectors such as agriculture, construction and tourism. Another possibility is that temporary agency workers provide cover for permanent workers in France and Germany taking their main holiday whereas in Spain it may be the case that more employers have closures for the annual summer holiday.

To control for seasonal effects it is interesting to examine the year-on-year developments of the Randstad vacancies. Comparing these with the trends in total job vacancies

Chart 4: Development of job vacancies in temporary work agencies (Randstad)
Index, January 2009 - July 2013, January 2009 = 100



Source: Randstad (5 countries). The index is based on the number of open vacancies published by the subsidiaries of the Randstad Group on the internet. Randstad only publishes job vacancies that cannot be filled directly from the available pool of candidates. The figures are based on daily measurements of the number of open job vacancies.

Number of Randstad vacancies July 2013: France: 7,556; Germany: 8,328; the Netherlands: 3,116; Spain: 967; the United Kingdom: 6,798.

For Spain, January and February 2013 were left out due to extremely low values.

from the JVS (Chart 2) confirms the year on year declines in Germany and the Netherlands, as well as the stability in the United Kingdom private sector statistics between the first quarters of 2012 and 2013.

The development of temporary work agency vacancies in the Netherlands and the United Kingdom is rather different. Here the fluctuations over the period January 2009 to July 2013 have been small and suggest that Randstad (and other major temporary work agencies) in those countries do not specialise in seasonal work, but rather seek to post their temporary agency workers all year round. However this approach to deploying temporary agency workers is much harder to sustain in a period of crisis than offering workers for the season only.

The limitations of the Randstad figures were fully discussed in EVM9, in particular emphasising that they form only a small proportion of the total temporary work agency market. Nevertheless they tend to respond more quickly to changes in

economic activity than indicators covering the whole labour market and as such are a useful indicator of changes in labour demand. Looking in more detail at this segment of the labour market, a recent OECD review³ pointed out that temporary work agency workers tend to be regulated⁴ and in each of the five countries this includes a requirement that they have comparable terms and conditions with regular workers in the “user firms” where the workers do the actual work (after a 12 week qualifying period in the UK). It went on to say that temporary agency work has a valuable potential to workers in offering opportunities to train (more so than under standard temporary contracts) and providing a stepping stone into regular employment. A key advantage of agency workers to the employer is the ability to adjust labour supply quickly and without severance costs. As a result, in countries where hiring and firing is relatively easy (such as the United Kingdom and in the Netherlands for fixed-term contracts), this advantage is reduced.

1.2 TRENDS IN HIRINGS AND JOB PROSPECTS

Job hirings (based on Eurostat Labour Force Survey - LFS)

For job hirings LFS data are used on employees in a ‘reference week’ who had started working for an employer at the most three months earlier – this excludes contract renewals. For a person who started multiple jobs within the same quarter, only the last hire is counted. Statistical offices often define such persons as job-finders. Eurostat uses the neutral term “time since job started”. Job hirings reflect completed recruitment even if no formal vacancies had been posted.

Hirings decrease overall though more countries show signs of growth

Hirings in the EU26 countries covered fell by -2 per cent between the first quarters of 2013 and 2012 which was less than the -4 per cent fall in the previous quarter (Chart 5). The change is consistent with the development of the total number of vacancies which also decreased by -2% over the same period. Over half of the countries (15) had changes in hirings better than the EU26 average and of these, twelve were significant positive changes (see table below). The remaining countries had falls in hirings of varying degrees and the grouping according to the significance of the changes is summarised below.

- Growth (> +5 %) Bulgaria*, Croatia, Denmark, Greece*, Hungary*, Ireland, Latvia, Lithuania, Malta*, Romania*, Slovakia*, the United Kingdom

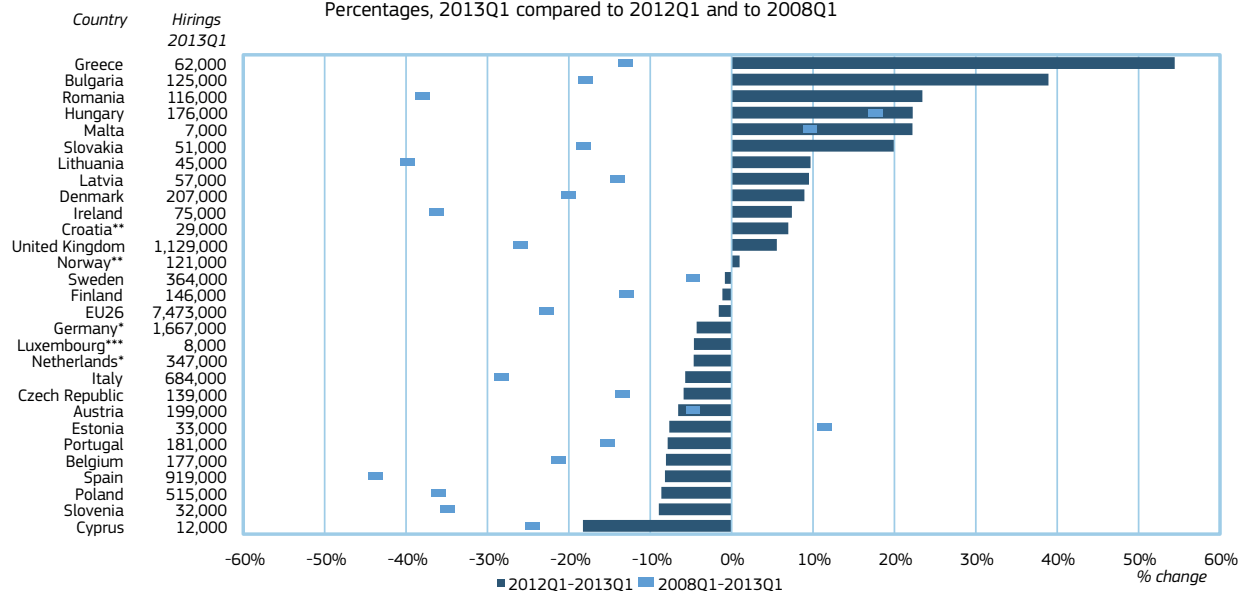
- Relatively stable (> -5 % and ≤ +5 %) Finland, Germany, Luxembourg, the Netherlands, Norway, Sweden
- Decline (≤ -5 %) Austria, Belgium, the Czech Republic, Cyprus*, Estonia, Italy, Poland, Portugal, Slovenia, Spain

Note: in the countries marked with "" the change is more than 10%*

In the first quarter of 2013, slightly more countries recorded some growth in hirings than the previous reference period (EVM10), 13 compared to ten. These 13 countries include eight newer Member States. The strongest growth in hirings is also concentrated in the newer Member States, besides Greece. Greece had by far the largest increase of 54 per cent followed by Bulgaria (39 per cent) and Romania (23 per cent), Hungary (22 per cent), Malta (22 per cent) and Slovakia (20 per cent). Hirings further increased in the older Member States Denmark, Ireland and the United Kingdom but the increases were below 10 per cent. These changes come generally on top of similar increases for many of these countries in the previous reference period and may be indicative of a continuing recovery in recruitment activity. The concentration of increasing hirings in the Nordic and Anglo-Saxon countries may be indicative of their flexible labour markets: greater declines in times of crisis and stronger increases in times of recovery. This may also be true to some extent of the newer Member States.

Of the 15 countries with falls in the number of hirings between the first quarters of 2013 and 2012, all but one had falls of under 10 per cent, the exception being Cyprus with a fall of -18 per cent. This represents an improvement on the situation in

Chart 5: Development in hirings
Percentages, 2013Q1 compared to 2012Q1 and to 2008Q1



Source: LFS - own calculations (28 countries). Countries included in EU26: EU28 exclusive France (no data 2013Q1) and Croatia (no data 2008Q1).

Job hirings: employees who were employed in a 'reference week' and had started working for their employer at most three months earlier.

* For the Netherlands and Germany no comparison is made with 2008Q1 because the LFS non-response in 2008-2010 job start data is very high and compromises the calculation of the percentage change.

** Changes for Croatia and Norway are only shown for 2012Q1-2013Q1 due to missing values for 2008Q1.

*** The change in hirings 2008Q1-2013Q1 is +86% for Luxembourg outside the range of the chart.

Numbers of job hirings (EU26, in thousands): in 2008Q1: 9,865; in 2012Q1: 7,593; in 2013Q1: 7,473.

Numbers of job hirings (EUR28, in thousands): in 2012Q1: 7,739; in 2013Q1: 7,622.

Box: Comparing vacancies and hirings indicators

Comparing the direction of short-term developments of hirings with job vacancies (Chart 3) shows that countries can fall into one of three categories as illustrated below.

Short-term changes in vacancies (JVS) and hirings (LFS) indicators

Both vacancies and hirings positive
Both vacancies and hirings negative

Vacancies and hirings opposite

Countries affected (19)

Hungary, Latvia, Romania, Slovakia, United Kingdom
Austria, the Czech Republic, Cyprus, Estonia, Germany, Luxembourg, the Netherlands, Norway, Portugal, Slovenia, Sweden
Bulgaria, Croatia, Lithuania

The analyses contained herein attempt to provide an in-depth insight into job-opportunities in the European labour market using a range of data sources on vacancies and related concepts (e.g. hirings). These data sources are often based on different definitions and survey methods. For example, the data on hirings (LFS) is gathered over a three month period from households; the vacancy data (JVS) in contrast is gathered from enterprises in a single day.

For this reason, the trend indicated by these different methods may vary even between the same quarters (e.g. the single day trend might be declining while the three month trend may be rising in a given country). Other factors could also cause divergence. For example, in certain countries, the chronic shortage of IT professionals can cause vacancies to increase and job hirings to decline. It is nevertheless useful to analyse both datasets as they provide useful information on how sectors and occupations are performing in terms of the provision of job-openings.

the previous reference period where the percentage decreases for the 13 countries affected were generally higher. Of this group of countries, only Finland (-2 per cent) and Sweden (-1 per cent) had falls less than or equal to the EU26 average of -1 per cent.

For the four countries where the number of vacancies increased significantly (Hungary, Latvia, Romania and the United Kingdom – Chart 2), the increase corresponds with a significant increase in hirings (of more than +5%). In these four countries, the continued increase in the number of vacancies that started in the third quarter of 2012 preceded the increase

in hirings which increased in the first quarter of 2013 for the first time in Latvia, Romania and the United Kingdom and for only the second quarter in a row in Hungary. The growing stock of vacancies in these four countries may show some potential for continued high levels of recruitment later in 2013.

The longer term developments indicate that hirings are still well below pre-crisis levels. Between the first quarters of 2008 and 2013 the EU26 was down -24 per cent which is comparable to the fall in the number of vacancies of -26 per cent (Chart 2). Just four countries (Estonia, Hungary, Luxembourg, Malta) registered increasing hirings in the longer

term. In all of these four countries, the volatility between seasons and between years is very high. Combining vacancy and hiring developments, recruitment activities were only above pre-crisis levels in Hungary.

The analyses contained herein attempts to provide an in-depth insight into job-opportunities in the European labour market using a range of data sources on vacancies and related concepts (e.g. hirings). These data sources are often based on different definitions and survey methods. For example, the data on hirings (LFS) is gathered over a three month period from households; the vacancy data (JVS) in contrast is gathered from enterprises in a single day.

For this reason, the trend indicated by these different methods may vary even between the same quarters (e.g. the single day trend might be declining while the three month trend may be rising in a given country).

Other factors could also cause divergence. For example, in certain countries, the chronic shortage of IT professionals can cause vacancies to increase and job hirings to decline. It is nevertheless useful to analyse both datasets as they provide useful information on how sectors and occupations are performing in terms of the provision of job-openings.

Overall job prospects for the unemployed still difficult in most countries

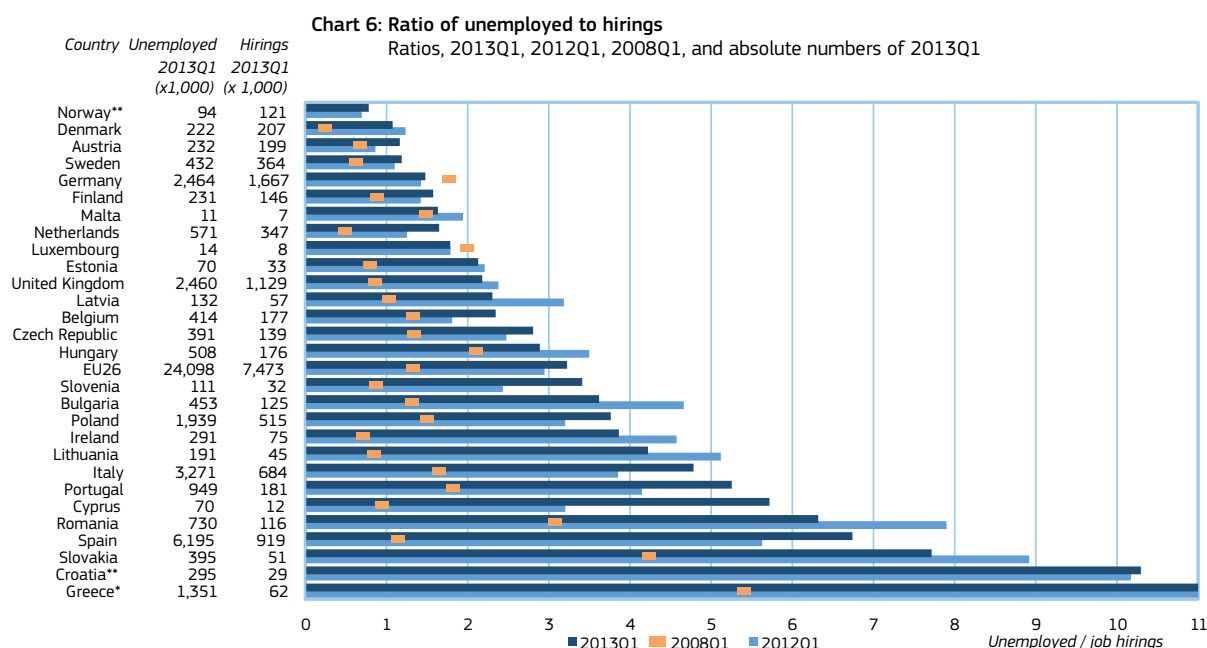
The ratio of unemployed to job hirings indicates the relative ease of hiring, or the relative competition for jobs among unemployed. An increase in the ratio can be due to increasing unemployment, decreasing job hirings or both.

A further increase in the ratio of unemployed to hirings signalled continuing difficulties for jobseekers in the European

labour market (Chart 6). Between the first quarters of 2013 and 2012 the ratio in the EU26 increased from 2.9 to 3.2 which was more than double the ratio in the first quarter of 2008. This increase in the ratio is due to the combined effects of rising unemployment and falling hirings. Over the period between the first quarters of 2013 and 2012 the EU27 unemployment rate increased from 10.8 to 10.9 per cent continuing the longer-term upward trend since the start of the crisis. Over the same period job hirings were down by 4 per cent reducing the recruitment possibilities for jobseekers. The ratio of unemployed to hirings increased in the majority of countries but particularly in countries with low ratios. The ratio fell in ten countries, and most sharply in countries with high ratios, suggesting that job prospects in the EU equalised somewhat.

Below the countries are grouped according to their ratios for the first quarter of 2013. Only one country (Norway) had a ratio of 1.0 or under (at 0.78) which compares to four countries (but not including Norway) in the previous reference period (EVM10). For the next group with the lowest ratios, with the exception of Malta they are all older Member States and include most of the Nordic countries as well as Austria and Germany. In this second group job prospects for the unemployed improved between the first quarters of 2012 and 2013 in Denmark, Luxembourg and Malta, while they deteriorated in the remaining five countries.

- Ratio of 1.0 or under*: Norway↑
- Ratio of over 1.0 and to 2.0: Austria↑, Denmark↓, Finland↑, Germany↑, Luxembourg =, Malta↓, the Netherlands↑, Sweden↑
- Ratio of more than 2.0 to 3.0: Belgium↑, the Czech Republic↑, Estonia↓, Hungary↓, Latvia↓, the



Source: LFS - own calculations (28 countries). Countries included in EU26: EU28 exclusive France (no data 2013Q1) and Croatia (no data 2008Q1).

Stock of unemployed: unadjusted, age 15-65.

Job hirings refer to employees who were employed in a 'reference week' and had started working for their employer at most three months earlier.

* Greece ratio 2012Q1: 27.68; 2013Q1: 21.65.

** Changes for Croatia and Norway are only shown for 2012Q1-2013Q1 due to missing values for 2008Q1.

Stock unemployed (EU26, in thousands): in 2008Q1: 14,507; in 2012Q1: 22,375; in 2013Q1: 24,098; for job hirings see Chart 5.

Stock unemployed (EUR28, in thousands): in 2012Q1: 22,731; in 2013Q1: 24,487; for job hirings see Chart 5.

- Ratio of 3.0 and over: United Kingdom↓
Bulgaria↓, Croatia↑, Cyprus↑,
Greece↓, Ireland↓, Italy↑,
Lithuania↓, Poland↑, Portugal↑,
Romania↓, Slovakia↓, Slovenia↑,
Spain↑

* A ratio of under 1.0 would seem to indicate a shortage of labour supply (fewer people looking for work than there are vacancies available). However this is unlikely to be the case for a number of reasons. Firstly, the LFS unemployment data will not identify all those seeking work – some may remain hidden or undeclared. Secondly, not all job seekers are unemployed – in fact most vacancies are filled by those already in work and who change job without a period of unemployment.

↑ means increasing ratio, ↓ means decreasing ratio, = means equal ratio (0.01 difference).

Overall 12 countries (Bulgaria, Estonia, Denmark, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Malta, Romania and Slovenia) saw their ratios fall between the first quarters of 2013 and 2012. Most of these improvements were small scale, though in the case of a few countries they were more significant. In Romania and Slovenia the falls were highest with 1.6 and 1.2 points respectively, though these countries also had relatively high ratios at the start of the period (7.90 and 8.92 respectively).

In the first quarter of 2013, among the 13 countries with ratios of 3.0 or over, Greece and Croatia had the highest ratios of 11.00 and 10.39 respectively. In the case of Greece this was a significant improvement on the ratio of 16.0 in the fourth quarter of 2012 and the gap between it and the remaining countries narrowed. The countries with the next higher ratios were Slovakia (7.7), Spain (6.9) and Romania (6.2). Two of these countries (Romania and Slovakia), along with Bulgaria, Ireland and Lithuania, saw their ratios fall between the first quarters of 2013 and 2012, falling significantly by 1.4 points in Bulgaria to 3.2 and by 1.6 points in Romania to 6.3.

Taking the longer term perspective the ratio of unemployed to hirings in the EU26 continued its upward trajectory, increasing from 1.5 in the first quarter of 2008 to 3.2 in the same quarter of 2013. Most countries contributed to this increase with just two countries (Germany and Malta) seeing their ratios fall over the period (but only by a very small margin of 0.01 in the case of Malta). Countries such as Cyprus, Greece, Ireland, Italy, Lithuania, Romania, Slovakia and Spain saw their ratios increase particularly sharply over the period ending among the group of countries with the highest ratios in the first quarter of 2013, indicating that in these countries job prospects are still much worse than before the crisis.

Part 2 OCCUPATIONS

2.1 RECRUITMENT DEMAND FOR OCCUPATIONS

Some growth in three occupational groups – highest in ‘technicians and associate professionals’

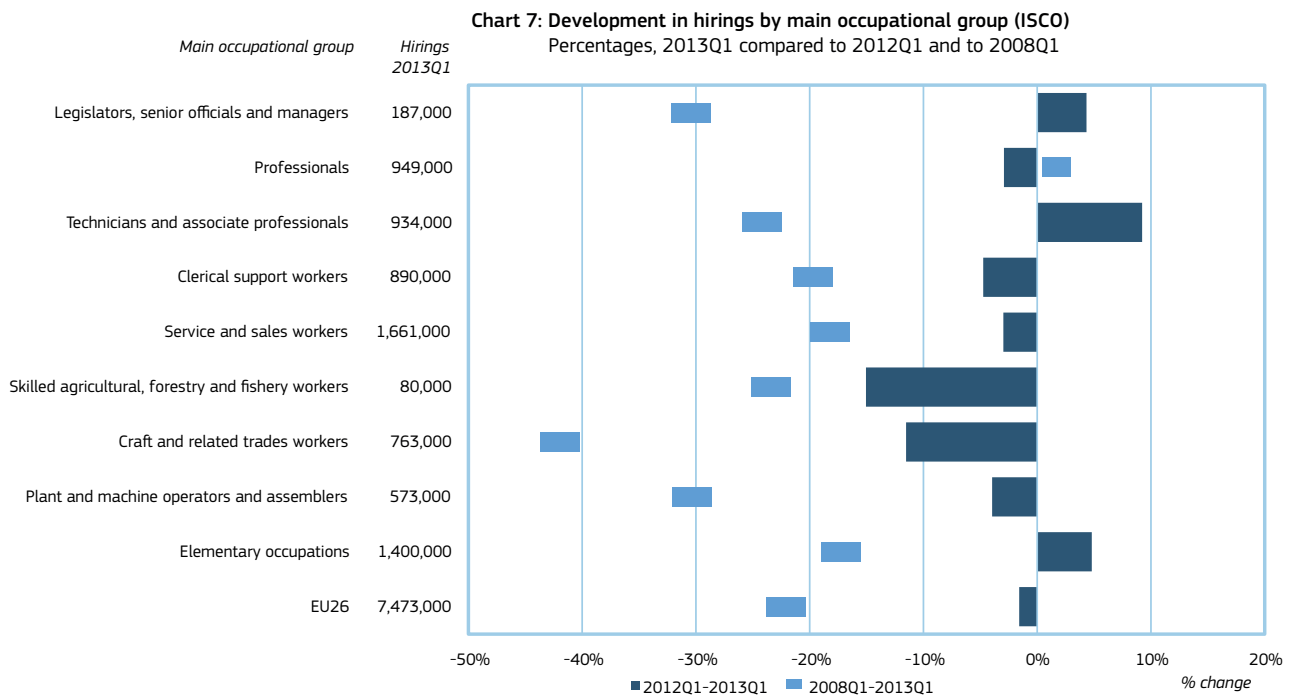
Between the first quarters of 2012 and 2013, hirings were down in all five medium-skilled occupational groups and among professionals and increased in three occupational groups (Chart 7). The ‘technicians and associate professionals’ group had increased hirings of 9 per cent, the most of any of the three occupational groups and was the only one of the three to continue the growth from the previous quarter. The two other occupational groups that grew in the latest quarter were ‘legislators, senior officials and managers’ with an increase of 4 per cent and ‘elementary’ with an increase of 5 per cent.

Among the six occupational groups where hirings fell between the first quarters of 2013 and 2012, the biggest falls by significant margins over the rest were ‘skilled agricultural, forestry and fishery workers’ (down by -15 per cent) and ‘craft and related trades workers’ (down by -12 per cent). Hirings in these medium skilled level jobs have fallen in the past as have hirings in ‘plant and machine operators and assemblers’ (down -4 per cent) and ‘clerical support workers’ (down by -5 per cent). Hirings in ‘service and sales workers’ were also down in the latest quarter (by -3 per cent) whereas this was only one of two occupational groups that grew hirings in the previous reference period. In the case of the highly skilled

‘professionals’ the decrease of -3 per cent in the latest quarter was the second successive quarter of decline.

Over the longer term, between the first quarters of 2013 and 2008 hirings in the EU26 declined by -24 per cent, though with significant variations for the different main occupational groups. The biggest fall over this period was in ‘craft and related workers’ with a -44 per cent drop taking the worst performer place in the previous quarter from ‘skilled agricultural, forestry and fishery workers’. The former occupational group constitutes a much bigger proportion of all hirings than the latter, with 10 per cent of the total compared to just 1 per cent. The large fall in ‘craft and related workers’ reflects the problems in sectors such as construction and manufacturing, that were among the first to be affected by the crisis and which have struggled to recover in the sluggish economic climate since.

Hirings in other medium-level skills have also fallen sharply over the longer period with ‘plant and machine operators and assemblers’ down by -33 per cent and ‘service and sales workers’ down by -20 per cent. However the latter occupational group still accounts for the largest proportion of all hirings at 22 per cent of the total in the first quarter of 2013. The second biggest occupational group, ‘elementary occupations’ accounting for around 19 per cent of all hirings, also fell over the longer period (by -19 per cent) despite showing modest growth in the latest quarter. The only occupational group to



Source: LFS data by ISCO 1 digit level - own calculations (26 countries). Countries included in EU26; EU28 exclusive France (no data 2013Q1) and Croatia (no data 2008Q1). From 2011, the ISCO-08 classification is used in the LFS, for 2008 the ISCO-88 classification was used. Total is inclusive armed forces and non-response (together 35,000). Job hirings: employees who were employed in a 'reference week' and had started working for their employer at most three months earlier.

show some growth over the period, the 'professionals' group, has had negative growth in the past two quarters and this has dragged down the longer term growth to just 2 per cent. This tends to underline the fact that the crisis, which affected hirings in all other main occupational groups, threatens to affect professionals as well.

CEDEFOP forecasts to 2025⁵ see the highest rates of employment growth in the main occupational group of 'technicians and associate professionals'. At the opposite end of the skills spectrum the share of total employment from 'elementary occupations' is also expected to increase between 2010 and 2025. Both these forecasts may appear to be confirmed by the most recent developments in hirings (Chart 7), but looking at the longer term perspective since 2008 there is no clear picture on skills polarization.

High-skilled occupations continue to dominate the Top 25 for employee growth

Top 25 occupational growth

The top 25 occupations are determined by comparing numbers per ISCO category (at 3-digit level) of the first quarter of 2013 compared to the same quarter of 2012. Occupations are ranked by absolute growth rather than percentage change to avoid the numerically smallest occupations always ending on top, or using arbitrary minimum thresholds for selecting larger occupations. To provide a more comprehensive picture of the development of skills demand, this section provides following top 25 occupations:

1. growth in employment (where are increasing numbers of workers needed?)
2. growth in hirings (where are hirings increasing, including those to replace workers leaving employment?)

3. most recent hirings (where is recruitment demand high even if not increasing?)

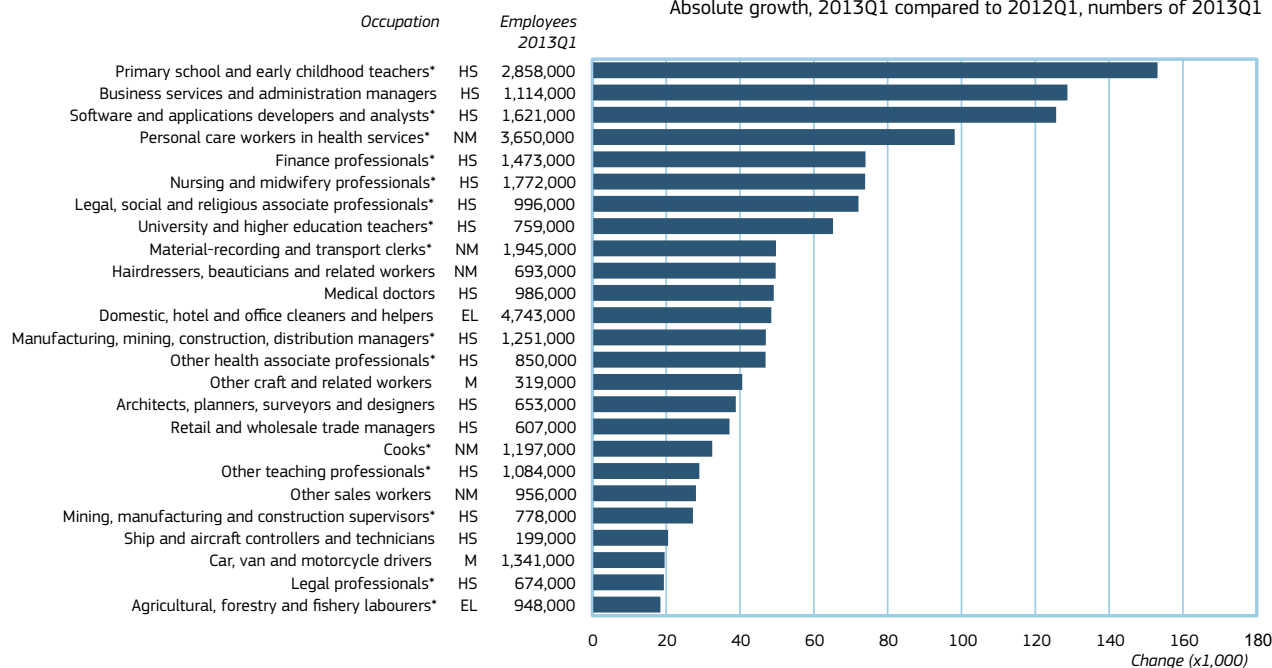
In the charts four skills groups are distinguished. These are related to the main occupational groups as indicated in the table below:

Skills level	Main occupational groups (ISCO 1-digit)
Highly skilled (HS)	Legislators, managers, professionals and technicians
Skilled non-manual (NM)	Clerks and service/sales workers
Skilled manual (M)	Agricultural, craft and trade workers, machine operators
Elementary (EL)	Labourers, elementary service/sales workers

Source: CEDEFOP

High-skilled occupations continue to dominate the Top 25 for growth in employee numbers (Chart 8). In the top 25 growth occupations between 2012 and 2013 there were 16 occupations in the high-skilled category. This is below the highest figure of 19 reached in the previous reference period (EVM10) and is more consistent with the proportions in earlier quarters. To reinforce the importance of high-skilled occupations in the employee growth rankings, they also fill seven of the top ten places. Among the remaining nine occupations in the top 25, the next biggest skills group was skilled non-manual with five occupations in the Top 25, followed by two each in skilled manual and elementary levels. The principal difference with the previous reference period is the appearance of two occupations in the elementary skills category where there were none in the Top 25 for the fourth quarter of 2012.

Chart 8: Top 25 growth occupations (ISCO-08) - employees
Absolute growth, 2013Q1 compared to 2012Q1, numbers of 2013Q1



Source: Eurostat, LFS data by ISCO-08 3 digit level - own calculations (26 countries). Germany is excluded due to changes in the coding of occupations in 2012 and 2013Q1. France is excluded due to missing data for 2013Q1.

* This occupation was also in the top-25 employee growth in the previous quarter (EVM10).

Occupations are indicated with broad skills levels:

HS = high-skilled (ISCO 1-3); NM = Skilled nonmanual (ISCO 4-5); M = Skilled manual (ISCO 6-8); Elementary (ISCO 9).

The occupation with the highest absolute growth between the first quarters of 2013 and 2012 was 'primary school and early childhood teachers' which also appeared high up in the Top 25 of the previous reference period, but at fifth position. In fact the occupation was ranked first or second in just two countries (Belgium and the Czech Republic) but still figures relatively highly in other countries contributing to its elevated position in the aggregate EU rankings. Other occupations in the education sector appearing in the Top 25 included 'university and higher education teachers', and 'other teaching professionals' which, combined with the highest ranked occupation, accounted for around 14 per cent of total employees in the Top25 occupations in the first quarter of 2013.

As in preceding quarters, health occupations again dominated the rankings numerically with four occupations represented ('personal care workers in health services', 'nursing and midwifery professionals', 'medical doctors' and 'other health associate professionals'). These four occupations combined accounted for almost one quarter of all employees in the Top 25 occupations and reinforces the durability of the demand from this sector and the 'white' job opportunities it offers. However, the largest single occupation in terms of employee numbers was not in the high-skilled categories but in the elementary group of 'domestic, hotel and office cleaners and helpers' with twelfth position in the Top 25 and accounting for around 14 per cent of the total.

Comparing changes in the Top 25 rankings for growth in employee numbers in this period with the previous period, shows that 11 high-skilled occupations and 4 other occupations appeared in both rankings suggesting some sustained employee growth in these occupations (marked * in Chart 8).

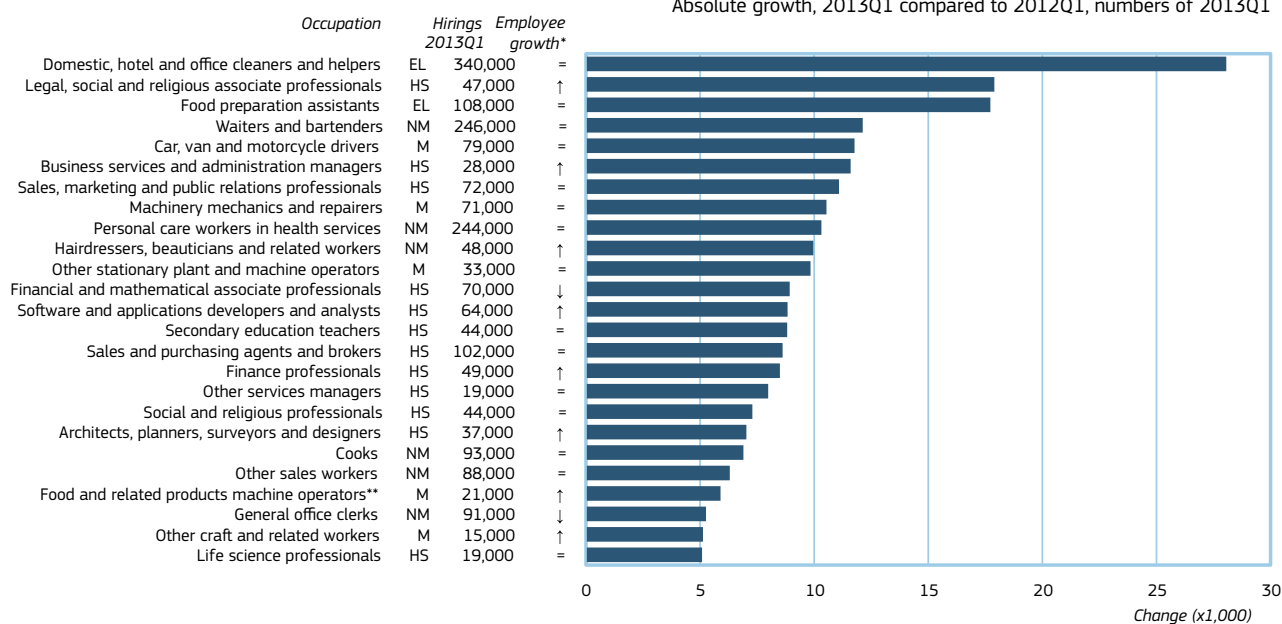
Half of the top 25 occupations with growing hirings are high-skilled

High-skilled occupations also continued to feature strongly in the Top 25 for hirings growth with 12 in the first quarter of 2013 compared to the same quarter in 2012 (Chart 9). However, contrasting with the 16 high-skilled occupations in employee growth, they are less dominant in the top 25 of hirings growth. Medium skilled occupations featured equally strongly in the top 25 occupations with hiring growth, shared between skilled non-manual with six occupations and skilled manual with five. Elementary occupations featured just twice, though both had significant growth and occupied the first and third places in the Top 25. While the number of high-skilled occupations was the same as in the previous reference period (EVM10), there were fewer elementary occupations (two compared to five) with skilled manual increasing from two to five. It suggests that hirings in higher skilled occupations continue to grow, though some middle ranking skills are also in increasing demanded.

Further analysis shows that much of the increased hirings in the elementary occupations 'domestic, hotel and office cleaners and helpers' and 'food preparation assistants' can be attributed to increasing labour turnover, though a few countries did see an increase in employee numbers for these occupations (notably Belgium, Italy, Poland and Portugal). Of the twelve high-skilled occupations in the top-25 with increasing hirings, six are related to business administration and finance.

The coincidence of growth in hirings and growth in employee numbers is a good guide to whether the increase in hirings is due to the creation of new jobs rather than for

Chart 9: Top 25 growth occupations (ISCO-08) - hirings
Absolute growth, 2013Q1 compared to 2012Q1, numbers of 2013Q1



Source: Eurostat, LFS data by ISCO-08 3 digit level - own calculations (26 countries). France is excluded due to missing data in 2013Q1 and Germany is excluded due to changes of coding occupations in 2012 and 2013Q1.

Job hirings: employees who were employed in a 'reference week' and had started working for their employer at most three months earlier.

Occupations are indicated with broad skills levels:

HS = high-skilled (ISCO 1-3); NM = Skilled nonmanual (ISCO 4-5); M = Skilled manual (ISCO 6-8); EL = Elementary (ISCO 9).

* Employee growth (year-on-year change): $\leq -5\%$ (↓); $> -5\%$ and $\leq +5\%$ (=); $> +5\%$ (↑).

** Exclusive UK due to apparent inconsistencies in coding various clerical occupations into ISCO-08.

reasons of labour turnover or replacement demand. The following 12 occupations appeared in both the Top 25 for hirings growth and Top 25 for employee growth:

- o **High skilled (5 occupations)** – ‘legal, social and religious associate professionals’; ‘business and administration managers’; ‘software and applications developers and analysts’; ‘finance professionals’; ‘architects, planners, surveyors and designers’;
- o **Skill non-manual (4 occupations)** – ‘personal care workers in health services’; ‘hairdressers, beauticians and related workers’; ‘cooks’; ‘other sales workers’;
- o **Skilled manual (2 occupations)** – ‘car, van and motorcycle drivers’; ‘other craft and related workers’;
- o **Elementary (1 occupation)** – ‘domestic, hotel and office cleaners and helpers’;

More of the Top 25 occupations with most recent hirings also showed growth in hirings

Those occupations with the most numerous recent hirings in the EU27 continue to be dominated by those in the categories ‘skilled non manual’ and ‘elementary’ (Chart 10). However the number of employees did not grow significantly in any of these occupations, only for the high-skilled occupation of ‘primary school and early childhood teachers’. This implies that the larger part of the hiring volumes are to replace workers leaving their job. Of the Top 25 occupations, ten recorded significant growth in job hirings (of more than or equal to 5 per cent) between the first quarters of 2013 and 2012, three more than in the previous reference period (EVM10); hirings were more or less stable in EVM10 for ‘food preparation assistants’, ‘sales and purchasing agents and brokers’ and ‘other sales workers’ and have increased hirings between the first quarters of 2012 and 2013. But since in none of the occupations with increased hirings the number of employees increased significantly as well, the increase in high-volume hirings should be mainly attributed to increasing labour turnover.

Chart 10 Top 25 occupations with most recent hirings (ISCO-08)
With ranking, indication of employee growth, and numbers of 2013Q1

Occupations (ISCO-08, 3-digit level)	Skills level	Employee y-o-y change*	Hirings y-o-y change*	2013Q1 job hirings
1 Shop salespersons	NM	=	↓	416,000
2 Domestic, hotel and office cleaners and helpers	EL	=	↑	340,000
3 Waiters and bartenders	NM	=	↑	246,000
4 Personal care workers in health services	NM	=	=	244,000
5 Agricultural, forestry and fishery labourers	EL	=	↓	175,000
6 Client information workers	NM	=	=	153,000
7 Building frame and related trades workers	M	↓	↓	152,000
8 Transport and storage labourers	EL	=	=	122,000
9 Heavy truck and bus drivers	M	=	=	117,000
10 Child care workers and teachers’ aides	NM	=	=	115,000
11 Food preparation assistants	EL	=	↑	108,000
12 Manufacturing labourers	EL	=	=	107,000
13 Sales and purchasing agents and brokers	HS	=	↑	102,000
14 Cooks	NM	=	↑	93,000
15 General office clerks**	NM	↓	↑	91,000
16 Other sales workers	NM	=	↑	88,000
17 Other elementary workers	EL	=	=	85,000
18 Protective services workers	NM	=	↓	85,000
19 Primary school and early childhood teachers	HS	↑	=	80,000
20 Car, van and motorcycle drivers	M	=	↑	79,000
21 Mining and construction labourers	EL	↓	↓	75,000
22 Sales, marketing and public relations professionals**	HS	=	↑	72,000
23 Cashiers and ticket clerks**	NM	=	↓	72,000
24 Building finishers and related trades workers**	M	↓	↓	71,000
25 Machinery mechanics and repairers**	M	=	↑	71,000
Total top 25***				3,358
Total ***				5,752

Source: LFS, EU26 by ISCO-08, 3 digit level - own calculations. France (no data 2013Q1) and Germany (coding issues 2012-2013Q1) are excluded.

* «=» change > -5% and ≤ +5%; ↑ increase ≥ +5%; ↓ decrease < -5%.

** Newcomers in the top 25 with most recent hirings compared to the previous reference period (EVM10)

*** Total exclusive Germany and France

HS = high-skilled (ISCO 1-3); NM = Skilled nonmanual (ISCO 4-5); M = Skilled manual (ISCO 6-8); EL = Elementary (ISCO 9).

In the first quarter of 2013 there were ten skilled non manual occupations in the Top 25, seven elementary, five skilled manual and three high-skilled. Compared to the first quarter of 2012 there was no change in the Top 5 occupations which remained (in descending order) 'shop salespersons', 'domestic, hotel and office cleaners and helpers', 'waiters and bartenders',

'personal care workers in health services' and 'agricultural, forestry and fishery workers'. These five occupations combined accounted for around two out of every five hirings in the first quarter of 2013, underlining their importance for job opportunities, although competition for these jobs is likely to be strong.

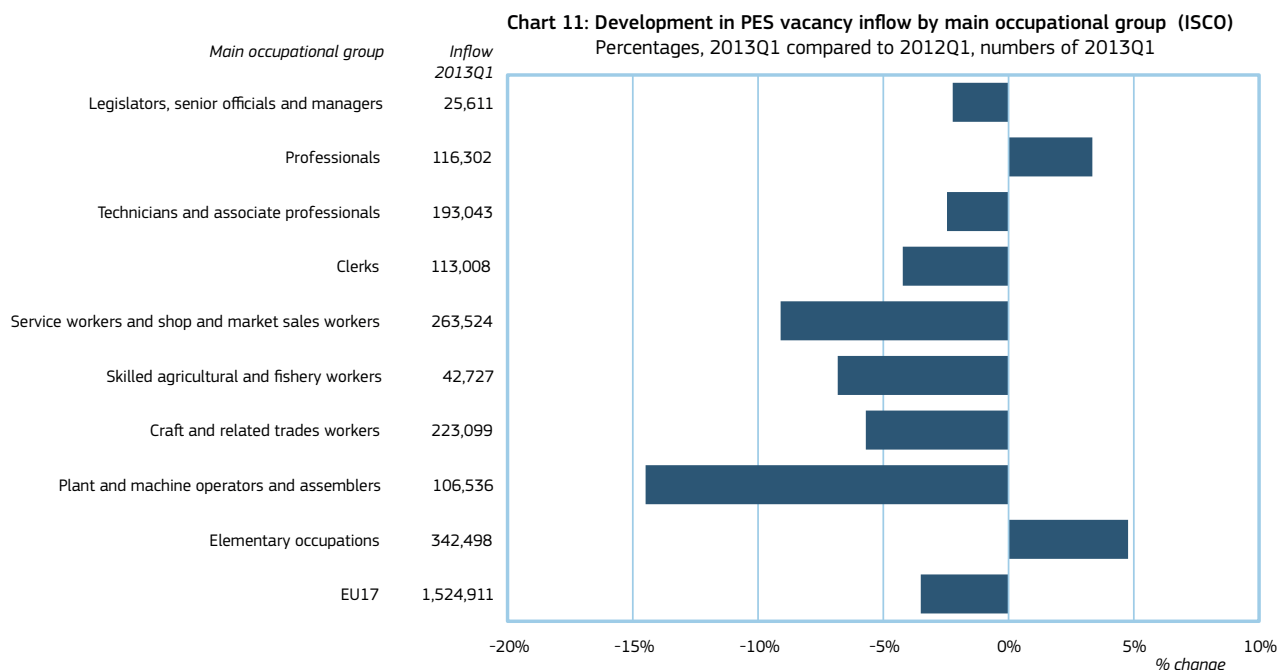
2.2 PES VACANCY INFLOW BY OCCUPATION

PES vacancy inflows increased at opposite ends of the skills spectrum

Among the EU17 countries with available information, the overall inflow of job vacancies to PES fell by approximately -4 per cent between the first quarters of 2012 and 2013 (Chart 11). Among the nine main occupational groups, just two managed some growth over the period with 'professionals'

increasing by 3 per cent and at the other extreme of the skills spectrum, 'elementary occupations' increased by 5 per cent.

In the previous reference period (EVM10) neither of these two main occupations displayed any growth and then the only one to increase was 'legislators, senior officials and managers' (by 8 per cent).



Source: PES by ISCO, 1-digit, 17 countries, own calculations. Countries included (with ISCO-88 or ISCO-08 classification between brackets): Austria (88), Belgium* (88), Bulgaria (08), Cyprus (88), Croatia (08), Estonia (08), Germany (08), Hungary (08), Ireland (08), Latvia (08), Lithuania (88), Luxembourg (88), Portugal (88), Romania (08), Slovenia (08), Spain (08) and Sweden (88).

* Belgium includes the Walloon region and the Brussels region but not the Flemish region due to a new occupational classification in 2013Q1.

EU17 total is inclusive armed forces and vacancies for undefined occupations.

Germany changed from ISCO88 to ISCO08 as from 2013Q1, however a comparison at 1 digit level is still considered reliable.

For the seven main occupational groups where PES vacancy inflows fell between the first quarters of 2012 and 2013, *'technicians and associate professionals'* and *'legislators, senior officials and managers'* registered the smallest decreases of -2 per cent each. These small falls, along with the growth in the *'professionals'* occupational group suggest that the flow of vacancies to PES in higher skilled and elementary occupations have been less adversely affected than the medium skilled occupations, in line with the total hirings development (Chart 7).

The biggest fall in PES vacancy inflows was in *'plant and machine operators and assemblers'* (down by -14 per cent) and the two other skilled manual main occupational groups of *'craft and related trades workers'* and *'skilled agricultural and fishery workers'* were down by -6 per cent and -7 per cent respectively. The non manual skills were not immune from this decline in PES vacancy inflows and *'service workers and shop and market sales workers'* had the second highest slide of -9 per cent while *'clerks'* fell by -4 per cent.

Skilled manual and skilled non-manual occupations dominate the Top 25 for growth in PES vacancy inflows among seven countries

Two classifications of occupations

The International Standard Classification of Occupations (ISCO) has been revised in 2008 and the PES of nine countries use this revised ISCO-08 since 2012. However seven countries still use the old ISCO-88. The largest Member States such as France, Germany, Italy and the United Kingdom are absent in both groups. The latter group using the ISCO-88 is dominated by Sweden (share of 48 per cent in PES inflow) and the former group is dominated by Hungary (33 per cent).

In countries where the PES use both the old and the new classification of occupations, employers notify increasing numbers of vacancies for health occupations, including *'nursing and midwifery professionals (or associate professionals)'*, *'personal care and related workers'* and *'health professionals'* (Chart 12 and 12b) This confirms the increasing demand for health care workers in general (Chart 7) and the opportunities for the PES to initiate filling these 'white job' vacancies .

Apart from the concentration of health occupations, the similarities between the two groups of countries are more diverse. Drivers of various descriptions feature in both charts 12 and 12b, as do occupations such *'textile, fur and leather products machine operators'*, clerks of various sorts and agriculture occupations.

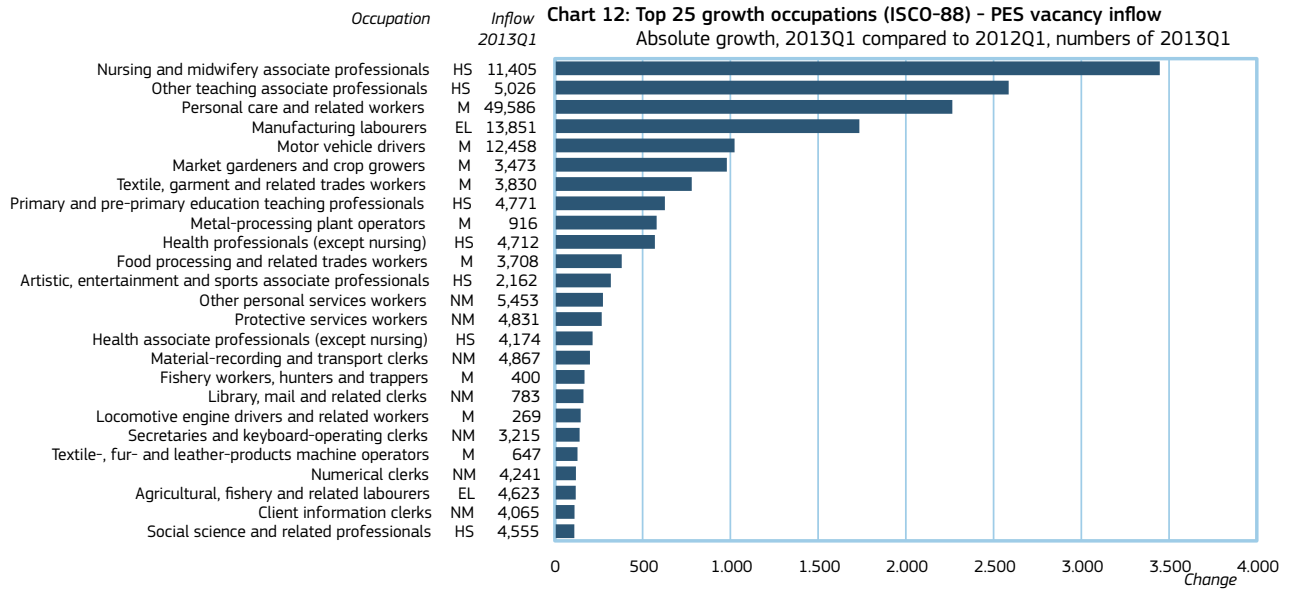
In Chart 12b, the top position of *'mining and construction labourers'* can be attributed to Spain and is not representative for the other countries.

Vacancies for engineers notified to the PES across Europe

The Top 25 occupations for PES vacancy inflows in terms of absolute numbers for the first quarter of 2013 (Charts 13 and 13b) are presented in a similar way to the growth in inflow figures with two separate charts reflecting the availability of comparable information according to the different ISCO classifications.

Eleven occupations most notified across Europe are visible in both Charts 13 and 13b. These include the highly skilled *'engineers'* and *'engineering technicians'*, the skilled manual jobs *'building frame workers'*, *'building finishers'* and *'machinery mechanics'*, the skilled non-manual jobs *'personal care workers'*, *'protective service workers'* and *'shop salespersons'*, and the elementary jobs *'manufacturing labourers'*, *'transport labourers'*, and *'domestic cleaners and helpers'*. Overall the largest PES inflows are for the lower skilled occupations.

The absolute numbers of PES vacancy inflows for the first quarter of 2013 for the seven countries using ISCO-88 (Chart 13) showed a roughly similar mix of skills as the growth occupations (Chart 12). There were nine high-skilled occupations, eight skilled non manual, five skilled manual and three elementary which includes a few high-skilled and skilled non manual occupations than for the inflow change figures. For the second group of nine countries using ISCO-08 the most notified occupations are broadly less skilled (Chart 13b). Three high-skilled occupations feature in the top 25 compared to nine for the first group of countries and seven elementary (compared to three).



Source: PES by ISCO-88, 3-digit - own calculations; 7 countries included: Austria, Belgium*, Cyprus, Lithuania, Luxembourg, Portugal and Sweden.

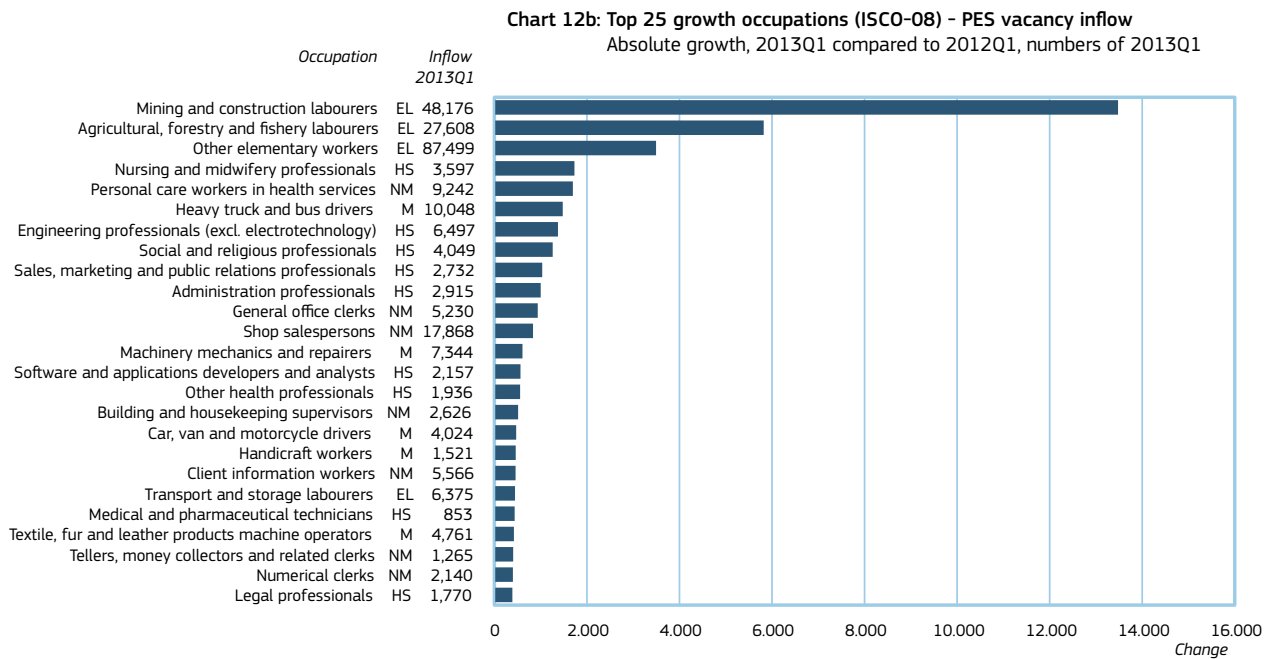
* Belgium includes the Walloon region and the Brussels region but not the Flemish region due to a new occupational classification system in 2013Q1.

Germany is excluded due to a change from ISCO-88 to ISCO-08. This causes high-skilled jobs to be less dominant than in EVM10.

PES inflow refers to new job vacancies which have been registered in a certain quarter.

Occupations are indicated with broad skills levels: HS = high-skilled (ISCO 1-3);

NM = Skilled nonmanual (ISCO 4-5); M = Skilled manual (ISCO 6-8); EL = Elementary (ISCO 9).



Source: PES by ISCO-08, 3-digit - own calculations; 9 countries: Bulgaria, Croatia, Estonia, Hungary, Ireland, Latvia, Romania, Slovenia, Spain.

PES inflow refers to new job vacancies which have been registered in a certain quarter.

Occupations are indicated with broad skills levels:

HS = high-skilled (ISCO 1-3); NM = Skilled nonmanual (ISCO 4-5); M = Skilled manual (ISCO 6-8);

EL = Elementary (ISCO 9).

Chart 13 Top 25 occupations with highest recent PES vacancy inflow

	Occupations (ISCO-88, 3-digit level)	Skills level	Change compared to 2012Q1	2013Q1 PES inflow
1	Personal care and related workers	NM	=	49.586
2	Housekeeping and restaurant services workers	NM	=	34.058
3	Shop salespersons and demonstrators	NM	=	32.138
4	Finance and sales associate professionals	HS	↓	20.120
5	Domestic and related helpers, cleaners and launderers	EL	=	18.779
6	Manufacturing labourers	EL	↑	13.851
7	Motor vehicle drivers	M	↑	12.458
8	Nursing and midwifery associate professionals	HS	↑	11.405
9	Physical and engineering science technicians	HS	↓	9.911
10	Building frame and related trades workers	M	↓	8.613
11	Business professionals	HS	↓	8.252
12	Transport labourers and freight handlers	EL	↓	7.962
13	Machinery mechanics and fitters	M	↓	7.848
14	Stall and market salespersons	NM	↓	7.467
15	Computing professionals	HS	↓	7.454
16	Building finishers and related trades workers	M	=	7.062
17	Administrative associate professionals	HS	=	6.332
18	Other office clerks	NM	↓	6.001
19	Electrical and electronic equipment mechanics and fitters	M	↓	5.757
20	Architects, engineers and related professionals	HS	↓	5.666
21	Other personal services workers	NM	↑	5.453
22	Other teaching associate professionals	HS	↑	5.026
23	Material-recording and transport clerks	NM	=	4.867
24	Protective services workers	NM	↑	4.831
25	Primary and pre-primary education teaching professionals	HS	↑	4.771
	Total top 25			305.668
	Total			432.933

Source: PES by ISCO-88, 3-digit - own calculations; 7 countries: Austria, Belgium*, Cyprus, Lithuania, Luxembourg, Portugal and Sweden.

* Belgium includes the Walloon region and the Brussels region but not the Flemish region due to a new occupation classification in 2013Q1.

«=» change > -5% and ≤ +5%; ↑ increase > +5%; ↓ decrease ≤ -5%.

HS = high-skilled (ISCO 1-3); NM = Skilled nonmanual (ISCO 4-5); M = Skilled manual (ISCO 6-8); EL = Elementary (ISCO 9).

Chart 13b Top 25 occupations with highest recent PES vacancy inflow

	Occupations (ISCO-08, 3-digit level)	Skills level	Change compared to 2012Q1	2013Q1 PES inflow
1	Other elementary workers	EL	=	87.499
2	Mining and construction labourers	EL	↑	48.176
3	Agricultural, forestry and fishery labourers	EL	↑	27.608
4	Market gardeners and crop growers	M	=	26.829
5	Manufacturing labourers	EL	=	25.966
6	Building frame and related trades workers	M	=	20.322
7	Shop salespersons	NM	=	17.868
8	Domestic, hotel and office cleaners and helpers	EL	↓	13.108
9	Sales and purchasing agents and brokers	HS	=	12.698
10	Waiters and bartenders	NM	=	10.513
11	Heavy truck and bus drivers	M	↑	10.048
12	Metal workers *	M	↓	9.351
13	Personal care workers in health services	NM	↑	9.242
14	Vehicle, window, laundry and other hand cleaning workers	EL	↓	8.143
15	Protective services workers	NM	↓	7.678
16	Cooks	NM	=	7.392
17	Machinery mechanics and repairers	M	↑	7.344
18	Assemblers	M	=	6.509
19	Engineering professionals (excluding electrotechnology)	HS	↑	6.497
20	Transport and storage labourers	EL	↑	6.375
21	Blacksmiths, toolmakers and related trades workers	M	↓	5.718
22	Mobile plant operators	M	↓	5.653
23	Client information workers	NM	↑	5.566
24	Physical and engineering science technicians	HS	↑	5.531
25	Building finishers and related trades workers	M	=	5.441
	Total top 25			397.075
	Total			554.287

Source: PES by ISCO-08, 3-digit - own calculations; 9 countries: Bulgaria, Croatia, Estonia, Hungary, Ireland, Latvia, Romania, Slovenia and Spain.

* Sheet and structural metal workers, moulders and welders, and related workers

"=" change > -5% and ≤ +5%; ↑ increase ≥ +5%; ↓ decrease < -5%.

HS = high-skilled (ISCO 1-3); NM = Skilled nonmanual (ISCO 4-5); M = Skilled manual (ISCO 6-8); EL = Elementary (ISCO 9).

Part 3 EDUCATIONAL REQUIREMENTS

Continuing slow growth in the recruitment of highly educated workers

Improving job opportunities for the higher educated are confirmed by both hiring and employment data. Developments in hirings by educational level over the short-term suggest that the growth in job opportunities for those with tertiary education (Chart 14) continued to slow down, from 5 per cent in the third quarter of 2012 to just 1 per cent in the first quarter of 2013. At the same time the number of employees with tertiary education increased by 3 per cent in the EU26 (excluding Croatia and France), which suggests that employers started to increase efforts to retain high-skilled workers.

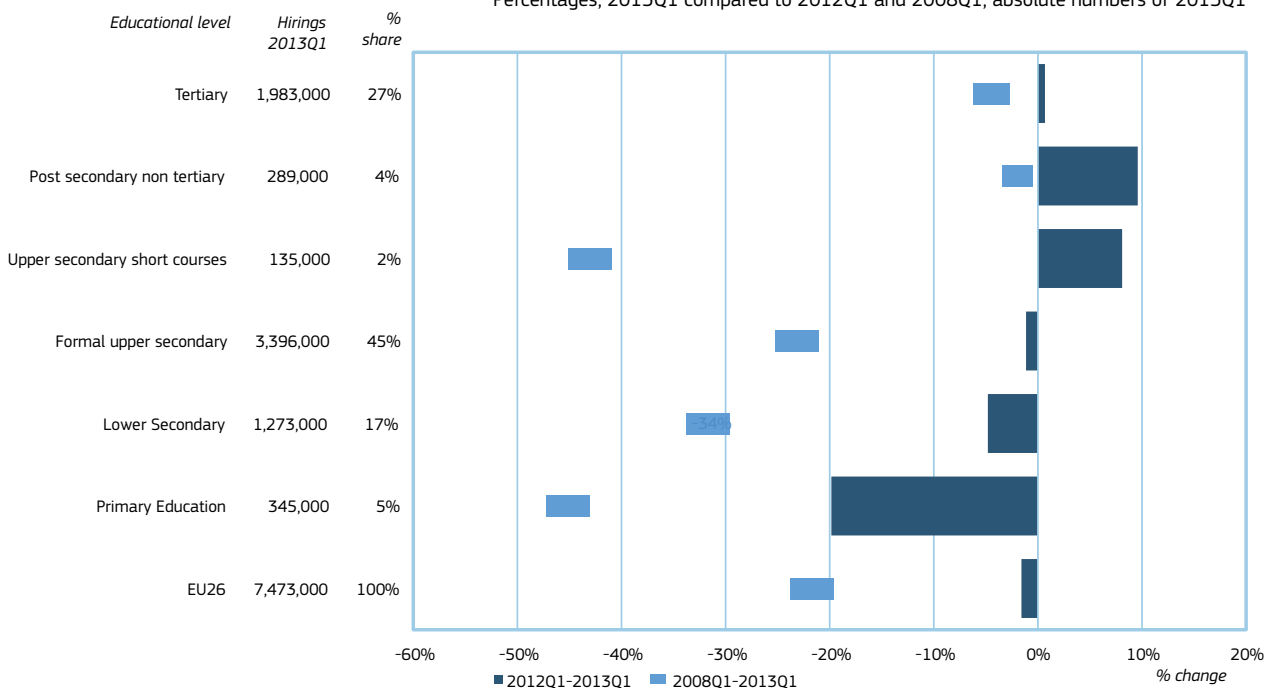
However the marginal increase at EU26 level masks a large diversity across Europe, with strongly increasing recruitment of tertiary educated workers in Greece and seven newer Member States (at 20 per cent or more in Bulgaria, Hungary, Latvia, Lithuania, Malta, Romania and Slovakia), and declining recruitment of -5 per cent or worse in Cyprus and five older Member States (Austria, Finland, Germany, Portugal and Sweden). This suggests that hirings of high-educated are sensitive to the general job prospects which are deteriorating in some older Member States and improving in some newer Member States (Chart 6).

There was also a reversal of fortunes for two other educational levels though with low absolute numbers of hirings (around 6 per cent combined). The hirings for upper secondary short courses increased by 8 per cent, while those for post secondary non tertiary went up by 10 per cent.

For the remaining educational levels hirings decreased between the first quarters of 2012 and 2013. In the biggest group of formal upper secondary education with a share of around 45 per cent, hirings fell by -1 per cent which was much less than the fall of -8 per cent in the preceding quarter. For lower secondary the fall was around -5 per cent as in the preceding quarter and for primary education hirings fell by -20 per cent which was greater than the -14 per cent in the preceding quarter. Compared to the increased hirings into elementary occupations, this suggests accelerated 'crowding out' of the low-educated by the medium educated.

The longer term developments in hirings by educational level tend to confirm that the demand for those with tertiary level education is still relatively robust, though 7 per cent less than the pre-crisis levels in the first quarter of 2008. The hirings in all the other educational levels except one were 20 per cent or more below pre-crisis level. The other exception was post secondary non tertiary level where recruitment almost reached pre-crisis levels in the first quarter of 2013.

Chart 14: Development in hirings by educational level (ISCED)
Percentages, 2013Q1 compared to 2012Q1 and 2008Q1, absolute numbers of 2013Q1



Source: LFS - own calculations (26 countries). Countries included: EU28 exclusive France (no data 2013Q1) and Croatia (no data 2008Q1).
Exclusive 55,000 non-response on educational level (0.4%) for the educational levels. In the EU26 total non-response is included.
Job hirings: employees who were employed in a 'reference week' and had started working for their employer at most three months earlier.

Part 4 SPECIAL FOCUS: ICT JOBS

According to a recent report by the OECD⁷, Information and Communication Technologies (ICT) are being increasingly seen as a vital infrastructure for all sectors of the economy and this in turn highlights the crucial role played by ICT skills and employment and its growing attention in the policy arena. Here ICT employment includes those directly employed in the ICT sector and those indirectly as, for example, ICT specialists in non-ICT sectors such as health, but also those ICT-intensive users in all those sectors where such use is required to do their job including for example planners, researchers, and designers. According to the report, employment in the ICT industry and the employment of ICT specialist skills account for around 5 per cent each of total employment in OECD countries, but ICT intensive users account for another 20 per cent of all workers.

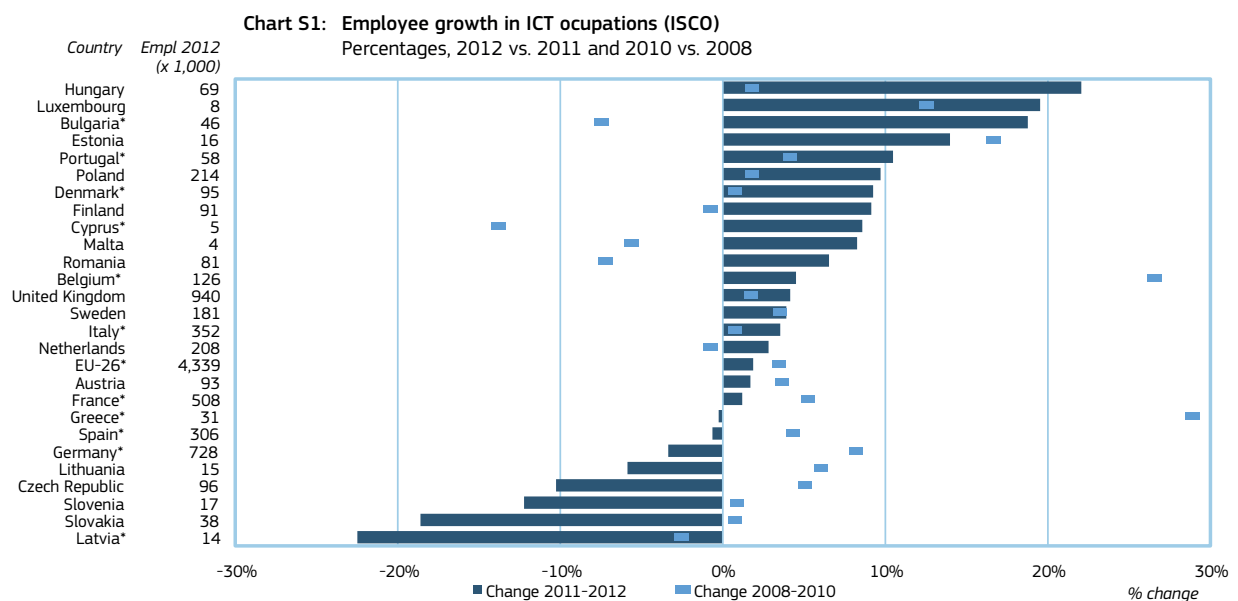
Additionally ICT specialists have tended to move from traditional forms of employment (such as an employee) to self employment offering services to a wide client base. There

are very few areas where ICT does not have a presence and this need is set to grow, putting pressure on the supply of labour with the requisite skills and qualifications. It is against this backdrop that this Special Focus examines some key indicators for ICT jobs across the EU. It analyses employment development in ICT occupations, the specialization of ICT in countries, and the job opportunities for younger, female and non-national workers in ICT.

All three occupations fall into the high-skilled category and while many would hold tertiary qualifications, others would have acquired their expertise through a combination of mid range vocational studies and on-the-job experience. It is also the case that as people tend to use ICT more in their everyday lives (such as building websites, multi-media environments or configuring PC's) they can have a head start when they begin their specialised studies or enter the labour market.

There are three principal ICT occupations that make up the employee figures used in this Special Focus. These are given in the table below, with the ISCO-08 codes for the data of 2011-2012 and the older ISCO-88 codes for the data of 2008-2010. ICT professionals consist of software and applications developers and analysts (code 251) and database and network professionals (code 252). ICT technicians consist of ICT operations and user support technicians (code 351, roughly ISCO-88 code 312) and telecommunications and broadcasting technicians (code 352)

Occupation	ISCO-08 codes	ISCO-88 codes
ICT managers	133	1236
ICT professionals	251; 252	213
ICT technicians	351; 352	3114; 312; 3132



Source: Eurostat, LFS - own calculations (26 countries). Excluded are Ireland (classification issues), Croatia and Norway (data 2012 only).

Occupations include (ISCO codes in brackets):

ICT managers (ISCO-88 1236 and ISCO-08 133);

ICT professionals (ISCO-88: 2130, 2131, 2139 and ISCO-08: 251, 252);

ICT technicians (ISCO-88: 3114, 3120, 3121, 3122, 3123, 3132 and ISCO-08: 351, 352)

* For Bulgaria, Portugal, Denmark, Cyprus, Belgium, Italy, France, Greece, Spain, Germany and Latvia ISCO-88-codes 1236 (ICT managers),

3114 and 3132 (telecom technicians) were missing. For these 11 countries the change in 2008-2010 relates only to ICT professionals and computer

Increasing employment in ICT against general trend

ICT provides an important source of jobs in the EU with around 4.3 million employees in 2012 or around 2.5 per cent of all employees (Chart S1). Despite the fall of -2.9 per cent across all occupations, employees in ICT occupations increased by 2 per cent between 2011 and 2012 in the 26 EU countries covered. The majority of Member States (18) saw increases over the period, though with significant variation ranging from between 1 to 4 per cent in six older Member States, up to between 10 to 22 per cent in Portugal, Luxembourg and four newer Member States. The number of employees in ICT occupations fell in seven Member States between 2011 and 2012. The most affected were five newer Member States ranging from a fall of -6 per cent in Lithuania to -22 per cent in Latvia. The combination of large increases and decreases in different newer Member States is indicative of the fast and volatile development of ICT employment in these countries.

The longer term development in 2008-2010 confirms the pattern of 2011-2012, with 4 per cent employee growth in ICT occupations against a decline of -0.6 per cent across all occupations. Nineteen countries saw ICT jobs increase with most percentage growth in Greece (up by 30 per cent), Belgium (27 per cent), Estonia (17 per cent), Cyprus (15 per cent) and Luxembourg (13 per cent). Only in Latvia did the number of employees in ICT occupations decline in both periods. For the seven countries where the number of ICT employees fell between 2008-2010, the falls were comparatively large in Cyprus (down -15 per cent) and also in Bulgaria and Romania (both -8 per cent), underlining once more the volatile nature of developments in ICT jobs in the newer Member States.

Most of the employee growth in ICT occupations was achieved in the ICT sector itself rather than in other sectors.⁸ The growth in the ICT sector between 2011 and 2012 was 2.4 per cent, slightly higher than the 2 per cent growth among

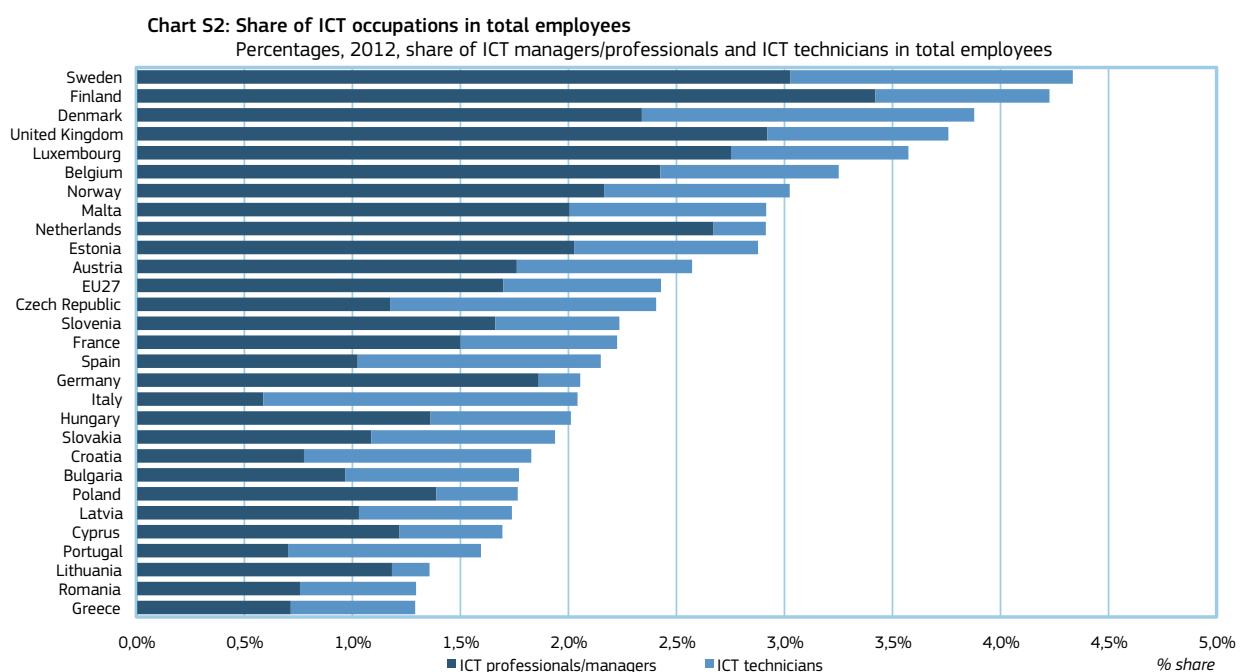
ICT occupations, while over the whole period 2008-2012 the average annual growth of employees in the ICT sector was 3.5 per cent.

The number of self-employed in the ICT sector was around 680,000 representing almost one in six of total employment (employees and self employed) in the sector. The number of self-employed in the ICT sector was stable between 2008 and 2010, but increased by an average of 9 per cent per year in the EU27 between 2010 and 2012, mostly in Romania, Slovakia and the United Kingdom, corresponding with the recent growth in employees. In 2010, around 85 per cent of the ICT specialists in central and eastern European countries were employed in companies with over 100 employees⁹, but the rapid development of self-employment in the ICT sectors in Romania and Slovakia may indicate that the labour market is transforming in some countries.

Highest penetration of ICT employees in northern Member States

Overall, in the EU27 some 2.5 per cent or one in every forty employees is in an ICT occupation (Chart S2). There are significant differences between countries with the older Member States dominating the eleven with above average shares. The proportion is highest in the Nordic countries Sweden, Finland and Denmark, the United Kingdom and Luxembourg. Countries with the lowest proportions of ICT employees are mostly among the newer Member States, though Greece and Portugal are also represented alongside Romania, Lithuania, Cyprus and Latvia. Of the largest Member States apart from the United Kingdom, they are all below the EU27 average with 2.0 to 2.2 per cent in France, Germany, Italy and Spain.

The reason for the lower penetration of ICT employees in the newer Member States is unlikely to be poor access to finance in the ICT sector. In general terms enterprises in newer Member



Source: Eurostat, LFS - own calculations (28 countries). Ireland is excluded due to classification issues.
ICT managers & professionals (ISCO-08 codes 133, 251, 252)
ICT technicians (ISCO-08 codes 351, 352).

States have less easy access to finance than enterprises in the older Member States, but according to the Eurostat Structural Business Statistics (for 2010)¹⁰, 71 per cent of the bank loans requested by ICT enterprises were accepted in five newer Member States with available data, compared to 65 per cent in twelve older Member States. Therefore, a more likely explanation for the lower penetration is a lower supply of ICT workers, a factor also visible in the age breakdown of ICT workers (see below).

Those countries with the highest shares of ICT employees also have large service sectors where ICT is central to their operation. Taking financial services, real estate, professional and administrative services together, their share is 15 per cent or more in six countries, namely each of the four countries with the highest ICT penetrations plus Cyprus and Ireland. These countries may also benefit from other factors encouraging ICT employment such as high levels of research and development investment across all sectors and software development where the use of the English language may create an advantage (particularly with the dominance of US-owned companies such as Microsoft, Apple and Google), this includes Belgium and the Netherlands to a less extent. In countries such as France and Germany where the proportions of ICT employees are comparatively low, the greater relative importance of manufacturing over services is likely to be the cause where ICT use can be more diffuse though vital.

Even higher concentration of ICT professionals in the north of Europe

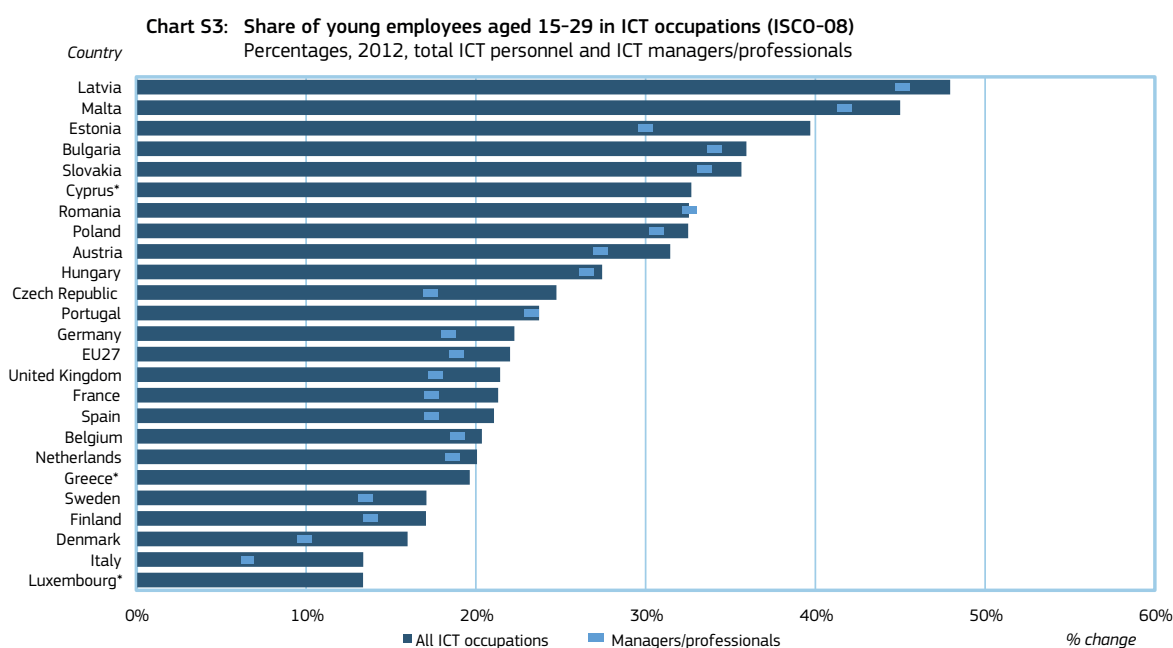
As discussed above, the penetration of ICT is generally highest in the north of Europe and lowest in the south of Europe. ICT professionals are even more concentrated in the north of Europe. 'ICT professionals and managers' are more likely to be working in higher value-added jobs (such as R&D and software and systems development) than 'ICT technicians'. Across Europe the share of ICT employees among all occupations

were 1.7 per cent and 0.7 per cent for 'ICT professionals and managers' and 'ICT technicians' respectively. This means that around 71 per cent of the employees in ICT occupation were 'ICT professionals and managers'. Higher shares of 'ICT professionals and managers' of between 76 and 81 per cent were found in countries such as Finland, Luxembourg and the United Kingdom, while lower proportions of 44 to 62 per cent were found in countries such as Portugal, Greece and Romania. But the highest share of 'ICT professionals and managers' is found in Germany, with over 90 per cent although the overall proportion of ICT employees in Germany is slightly below the EU average.

Younger age profile of ICT employees in the newer Member States

ICT is often thought to have a younger age profile than many other occupational groups and in the EU27 around 22 per cent of employees in 2012 were aged 15-29 (Chart S3), which is only slightly higher than the average of 21 per cent across all occupations. Taking into account that ICT jobs are mostly high-skilled and high-skilled workers tend to enter the labour market at a later age, the above average share of young workers further underlines that ICT occupations are an important source of employment for younger workers: the share of young professionals in ICT occupations is 20 per cent, compared to 18 per cent across all tertiary educated workers. The job opportunities in ICT occupations for young workers are particularly important given the high levels of youth unemployment in the EU since the crisis.

Around half (13) of the Member States had shares of younger workers in ICT occupations higher than the EU27 average of 22 per cent. Eight of these had significantly higher proportions in the range >32 per cent and all of these were newer Member States as summarised below:



Source: Eurostat, LFS - own calculations (27 countries). Ireland is excluded due to classification issues. ICT personnel includes ICT managers (ISCO 133), ICT professionals (ISCO 251, 252) and ICT technicians (ISCO 351, 352). For Croatia, Lithuania and Slovenia the share of younger ICT employees has limited reliability and is not shown. For Cyprus, Greece and Luxembourg only the share of younger ICT managers/professionals has limited reliability and is not shown.

Share of young employees aged 15-29 in ICT occupations

- Significantly above EU27 average (>=33 %) Latvia (48), Malta (45), Estonia (40), Bulgaria (36), Slovakia (36), Cyprus (33), Romania (33), Poland (33)
- Close to the EU27 average (22 - 32 %) Austria (31), Hungary (27), the Czech Republic (25), Portugal (24), Germany (22)
- Significantly below EU27 average (<22 %) The United Kingdom (21), France (21), Spain (21), Belgium (20), the Netherlands (20), Greece (20), Sweden (17), Finland (17), Denmark (16), Italy (13), Luxembourg (13)

Those countries with proportions of younger employees in ICT below the EU27 average were all older Member States. Other Member States such as Denmark, Italy and Luxembourg had much lower proportions. Many of these countries show the highest penetrations of ICT employees (Chart S2) and it is likely the case that they have mature ICT sectors where employment has been significant for some time.

The high share of young workers in newer Member States combined with the low penetration rates suggest that the ICT sector in the newer Member States is in an earlier stage of growth. The supply of ICT educated workers is also rapidly catching up in the newer Member States. In the EU the share of tertiary students in ICT education declined from 5 per cent to 4 per cent between 2004 and 2011, but this share increased in six Member States, namely Greece and the five newer Member States of Bulgaria, Croatia, the Czech Republic, Estonia and Poland, according to Eurostat data.

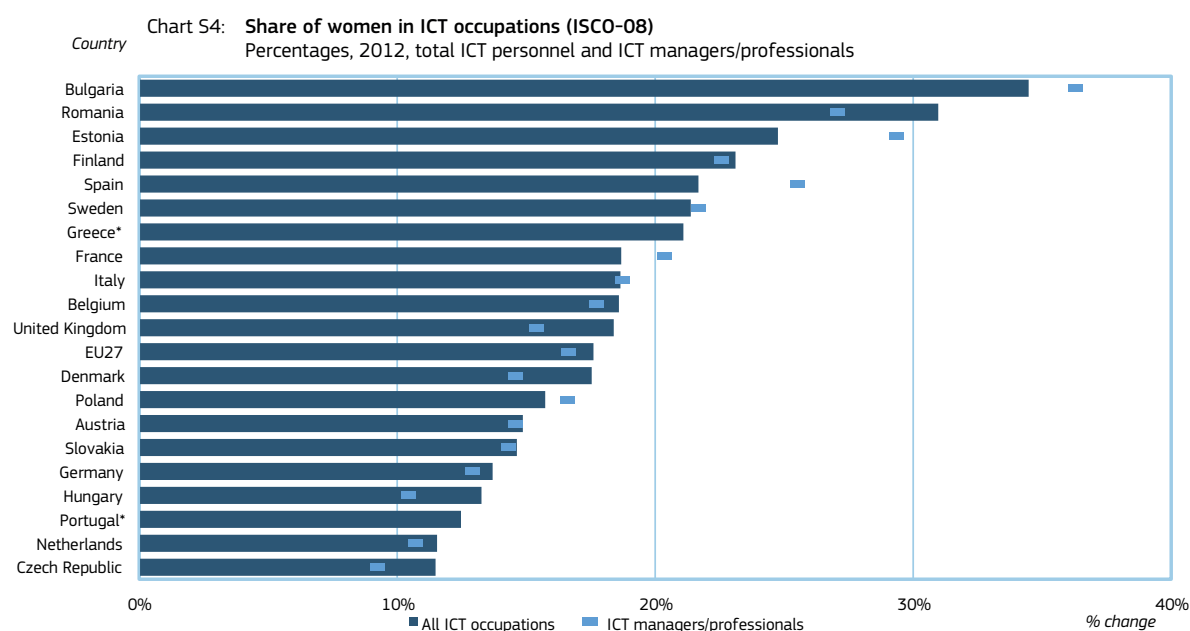
The increasing demand for ICT professionals, combined with the declining number of tertiary students in ICT education, imply an increasing likelihood of future skills shortages. The number of young people following computer science courses

has been falling since 2006 and is a significant contributory factor to the future scenario, highlighted recently by the European Commission. Under its *Digital Agenda for Europe* (a Europe 2020 initiative)¹¹ it estimated that there is likely to be a short-fall of around 900,000 ICT workers in 2015 unless the supply is ramped up quickly. In tackling this issue it calls for action on encouraging more young people to follow relevant studies and in particular encouraging more females into the occupation.

Employees in ICT occupations are mostly male but less in Bulgaria and Romania

The gender mix in ICT occupations reflects to a great extent the choices made by young women in their studies and careers. The share of women employees in ICT occupations in the EU27 was just 18 per cent in 2012 or less than one in five (Chart S4). There are significant differences between Member States ranging from 11 per cent female employees in the Czech Republic and the Netherlands, to around one in three in Bulgaria and Romania, and Estonia for 'ICT professionals and managers'. Those women that work in ICT occupations furthermore tend to be concentrated in sectors other than the ICT sector, in particular health and education, finance and insurance and public administration.¹²

For two of the three countries with the highest shares of female employees in ICT, Bulgaria and Estonia, they also had relatively high shares of young workers in ICT and in particular in the 'ICT manager and professionals' group. This tends to suggest that these two Member States have been more successful in attracting women into the occupation, a process that is likely to have started by increasing the take-up of relevant higher education courses by young women. In some respects it may be easier to break down any gender barriers in countries where the employing sectors are starting from a more recent base than may be the case in the older Member States. Certainly the extremely low percentages



Source: Eurostat, LFS - own calculations (27 countries). Ireland is excluded due to classification issues.
ICT personnel includes ICT managers (ISCO 133), ICT professionals (ISCO 251, 252) and ICT technicians (ISCO 351, 352)
For Croatia, Cyprus, Latvia, Lithuania, Luxembourg, Malta and Slovenia the share of female ICT employees has limited reliability and is not shown.
* For Greece and Portugal only the share of female ICT managers/professionals has limited reliability and is not shown.

of female employees in ICT occupations in Member States such as Germany (14 per cent) and the Netherlands (11 per cent) where ICT employment opportunities are significant, suggests the possible prevalence of an image problem that may be tracked back to the careers advice and guidance given to young females, but another factor may be the difficulties combining work and (family) life.

The share of 17 per cent women employees in the occupational group 'ICT managers and professionals' was not significantly different from that of 18 per cent for the total of ICT employees in the EU27. Only in Estonia and Spain was the proportion of women in 'ICT managers and professionals' significantly higher than for 'ICT technicians' with 30 and 26 per cent respectively, suggesting a larger supply of women with higher education in ICT in those countries.

Share of non-nationals in ICT jobs mostly similar to shares among all employees

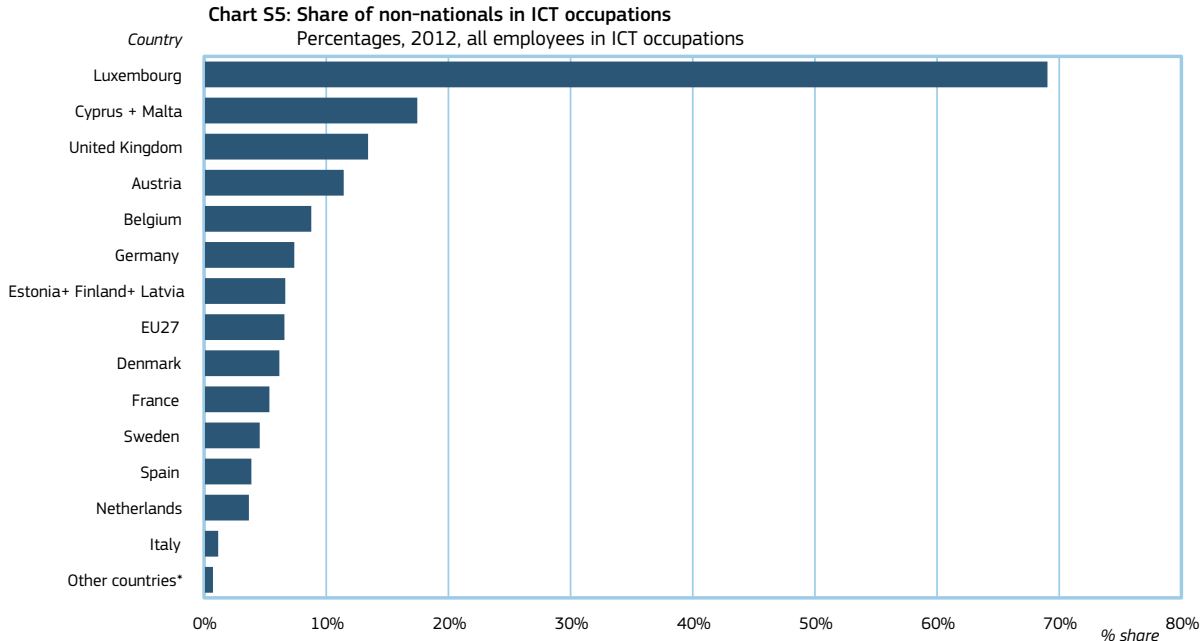
In the EU27 in 2012 around 7 per cent of all employees in ICT occupations were non-nationals (Chart S5) which is the same as the average across all occupations. However the real share of non-nationals is probably higher because of the difficulties of accurate measurement through the Labour Force Survey. Most of the employment of non-nationals involves workers moving within the EU, though the figures include those non-EU/EEA nationals coming to EU Member States to work. There were considerable variations in the shares of non-nationals in ICT occupations for the range of countries (or groups of countries) represented in the 2012 figures, ranking from below 1 per cent in eleven mostly newer Member States to 13 per cent for the United Kingdom, 17 per cent for Cyprus and Malta combined and even 69 per cent for Luxembourg. The latter figure represents the somewhat unique position of this small Member State with disproportionate numbers of

high-using ICT employers in internationally operating sectors as banks and international institutions.

Among those countries with below EU27 average shares of non-nationals were some older Member States such as Denmark (6 per cent), France and Sweden (5 per cent), Spain and the Netherlands (4 per cent) and Italy (1 per cent). This does not necessarily mean that employers in these countries work with fewer non-nationals, since they may have moved their locations to workers in other countries (near-shoring) rather than moving workers to the home location (worker migration). According to the Central and Eastern European Outsourcing Review 2010¹³ roughly one in five ICT companies in CEE countries were companies exporting outsourcing services.

The group of 'other countries' (also at a very low share of 1 per cent) includes mostly newer Member States. Given that some of these countries have witnessed their own growth in ICT employees (Chart S1), it suggests that the supply of those qualified in ICT suffices to meet the home demand, and likely also that employment conditions in the ICT sector in older Member States are still better than in the newer Member States.

The persistence of high unemployment in some of the southern Member States (notably Greece, Portugal and Spain) is, according to a recent report¹⁴, persuading more and more jobless young people in these countries with digital skills to seek work in the more buoyant northern Member States. While the label of a 'brain drain' might be overstating the situation, for some young people from Portugal and Spain in particular, their job search is much wider with these countries seeing increased outflows of young people to South American countries that share the Spanish and Portuguese languages of these Member States and in this case their skills are lost to the EU.



Source: Eurostat, LFS - own calculations (27 countries). Ireland is excluded due to classification issues.
 ICT personnel includes ICT managers (ISCO 133), ICT professionals (ISCO 251, 251) and ICT technicians (ISCO 351, 352).
 *The 11 other countries are: Bulgaria, Croatia, the Czech Republic, Greece, Hungary, Lithuania, Poland, Portugal, Romania, Slovakia and Slovenia.

Part 5 TOP OCCUPATIONS PER COUNTRY

5.1 TOP 10 GROWTH OCCUPATIONS PER COUNTRY - EMPLOYEES

How to read the table

The top 10 absolute growth occupations of employees (based on the Eurostat Labour Force Survey, 2012Q1-2013Q1) is presented for 20 countries and the EU26. For each top growth occupation, the number of employees in the first quarter of 2013 is shown together with the change compared to the first quarter of 2012. The occupations are based on the ISCO-08 classification of occupations, at 3-digit level.

Occupations are not presented as a top growth occupation if the growth is an "outlier". An outlier is defined if growth is +60% or higher and (1) if employment is twice as high or low as in neighbouring quarters, or (2) if the number of job hirings is zero or negligible.

Changes with a * indicate numbers with limited reliability. If less than 10 occupations are presented, this does not

necessarily mean that employment has increased in less than 10 occupations, but that no significant increase could be identified for 10 occupations. When employment would expand again in the future, it is to be expected that significant growth can be identified for 10 occupations in all or perhaps nearly all countries.

Germany is excluded due to changes of coding occupations in 2012 and 2013Q1 and France is excluded due to missing data for 2013Q1. Both countries are not included in the EU26 total either. For Bulgaria, Croatia, Estonia, Latvia, Lithuania, Malta and Portugal no significant growth occupations could be identified, which reflects the negative development in the labour market overall in these countries. These seven countries are included in the EU26 but no listing is presented for these individual countries.

Top 10 growth occupations per country

	EU26	Employees	Change
1	Primary school and early childhood teachers	2,858,200	+153,100
2	Business services and administration managers	1,113,800	+128,700
3	Software and applications developers and analysts	1,621,200	+125,700
4	Personal care workers in health services	3,649,500	+98,200
5	Finance professionals	1,472,700	+74,000
6	Nursing and midwifery professionals	1,771,700	+73,900
7	Legal, social and religious associate professionals	995,700	+72,100
8	University and higher education teachers	758,800	+65,200
9	Material-recording and transport clerks	1,944,800	+49,700
10	Hairdressers, beauticians and related workers	693,100	+49,700

	Austria	Employees	Change
1	Administrative and specialised secretaries	131,800	+25,900
2	Protective services workers	45,200	+12,900
3	Finance professionals	42,100	+10,100
4	Car, van and motorcycle drivers	31,700	+9,500
5	Building finishers and related workers	64,700	+9,400
6	Heavy truck and bus drivers	66,900	+8,400
7	Child care workers and teachers' aides	37,000	+7,800*
8	General office clerks	168,800	+7,100*
9	Administration professionals	29,300	+6,800*
10	Software and applications developers and analysts	40,700	+6,600*

Top 10 growth occupations per country

Belgium			Cyprus				
	Employees	Change		Employees	Change		
1	Primary school and early childhood teachers	112,300	+24,800	1	Cashiers and ticket clerks	8,100	+2,200
2	Administrative and specialised secretaries	92,900	+21,000	2	Machinery mechanics and repairers	4,600	+1,800
3	Domestic, hotel, office cleaners and helpers	255,900	+20,200	3	Physical and engineering science technicians	4,400	+1,600
4	Finance professionals	61,200	+18,900	4	Sales and purchasing agents and brokers	8,500	+1,100*
5	Business services and administration managers	56,000	+17,600	5	Other teaching professionals	2,100	+900*
6	Sales, marketing and development managers	64,700	+17,500	6	Electronics and telecommunications installers and repairers	2,200	+800*
7	Metal workers**	51,200	+16,800	7	Architects, planners, surveyors and designers	1,700	+700*
8	Material-recording and transport clerks	105,400	+14,200	8	Protective services workers	8,000	+600*
9	Shop salespersons	139,700	+13,800	9	Administration professionals	2,300	+600*
10	Personal care workers in health services	104,000	+13,400	10	Agricultural, forestry and fishery labourers	2,600	+500*

** Sheet and structural metal workers, moulders and welders, and related workers

Top 10 growth occupations per country

Czech Republic			Denmark				
	Employees	Change		Employees	Change		
1	General office clerks	59,300	+15,600	1	Cashiers and ticket clerks	57,100	+14,900
2	Primary school and early childhood teachers	66,200	+10,000	2	Physical, engineering science technicians	74,300	+9,900
3	Sales, marketing and development managers	26,000	+9,100	3	Sales and purchasing agents and brokers	83,400	+8,700
4	Engineering professionals (excluding electrotechnology)	44,000	+8,900	4	Administration professionals	67,600	+8,500
5	Legal, social and religious associate professionals	29,500	+7,700	5	University and higher education teachers	33,500	+6,300*
6	Professional services managers	29,600	+7,600	6	Software and applications developers and analysts	50,000	+4,900*
7	ICT operations and user support technicians ***	46,000	+7,400	7	Assemblers	15,800	+4,500*
8	Sales and purchasing agents and brokers	82,500	+7,100	8	Secretaries (general)	22,200	
9	Numerical clerks	127,000	+7,100	9	Regulatory government associate professionals	16,600	
10	Software and applications developers and analysts	31,300	+6,400	10	Animal producers	9,100	

*** Information and communications technology operations and user support technicians

Top 10 growth occupations per country

Finland		Employees	Change
1	Sales, marketing and public relations professionals	42,900	+10,100
2	Shop salespersons	100,500	+8,100
3	Engineering professionals (excluding electrotechnology)	53,200	+6,500
4	Mining, manufacturing and construction supervisors	24,800	+5,900
5	Sports and fitness workers	14,200	+4,500
6	Software and applications developers and analysts	62,900	+3,900*
7	Heavy truck and bus drivers	49,700	+3,700*
8	Metal workers**	20,100	+3,700*
9	Medical and pharmaceutical technicians	14,300	+3,300*
10	Legal, social and religious associate professionals	41,500	+3,200*

Greece		Employees	Change
1	Nursing and midwifery professionals	17,500	+7,000
2	Administrative and specialised secretaries	50,400	+6,500
3	Business services and administration managers	14,800	+5,500
4	Other clerical support workers	50,800	+5,200
5	Software and applications developers and analysts	15,800	+5,200
6	Finance professionals	52,500	+4,500*
7	Engineering professionals (excluding electrotechnology)	27,100	+3,600*
8	Other elementary workers	12,700	+3,600*
9	Food and related products machine operators	15,000	+3,200*
10	Authors, journalists and linguists	12,700	+2,500*

** Sheet and structural metal workers, moulders and welders, and related workers

Top 10 growth occupations per country

Hungary		Employees	Change
1	Shop salespersons	195,600	+14,900
2	Other stationary plant and machine operators	44,800	+11,200
3	ICT operations and user support technicians ***	24,600	+10,200
4	Sales and purchasing agents and brokers	74,000	+8,900
5	Legal professionals	27,300	+8,600
6	Material-recording and transport clerks	49,300	+8,400
7	Client information workers	39,200	+7,600
8	Other craft and related workers	18,000	+6,900
9	Social and religious professionals	44,100	+6,800
10	Numerical clerks	60,500	+6,100

Ireland		Employees	Change
1	ICT professionals	39,400	+5,100
2	Other clerical support workers	54,100	+5,000
3	Numerical clerks	32,000	+4,300
4	Finance professionals	37,100	+3,600*
5	Car, van and motorcycle drivers	15,200	+3,600*
6	Primary school and early childhood teachers	40,300	+3,300*
7	Food preparation assistants	22,500	+3,000*
8	Sales, marketing and public relations professionals	22,700	+2,800*
9	Personal care workers in health services	60,400	
10	Agricultural, forestry and fishery labourers	9,300	

*** Information and communications technology operations and user support technicians

Top 10 growth occupations per country

	Italy	Employees	Change
1	Personal care workers in health services	555,400	+63,000
2	Transport and storage labourers	224,100	+43,000
3	Mining, manufacturing and construction supervisors	137,800	+41,300
4	Domestic, hotel and office cleaners and helpers	1,062,000	+38,500
5	Other elementary workers	324,200	+32,000
6	Software and applications developers and analysts	88,200	+29,900
7	University and higher education teachers	114,000	+24,700
8	Metal workers **	236,600	+24,400
9	Secondary education teachers	403,200	+24,100
10	Hairdressers, beauticians and related workers	133,300	+18,600

	Luxembourg	Employees	Change
1	Finance professionals	16,200	+3,400
2	Social and religious professionals	8,200	+2,200
3	General office clerks	7,300	+1,700
4	Material-recording and transport clerks	2,700	+1,100
5	Secretaries (general)	4,500	+1000
6	Authors, journalists and linguists	5,000	+900*
7	Numerical clerks	3,900	+800*
8	Cooks	2,000	+800*
9	Administration professionals	8,600	+800*
10	Electrical equipment installers and repairers	3,400	+700*

** Sheet and structural metal workers, moulders and welders, and related workers

Top 10 growth occupations per country

	Netherlands	Employees	Change
1	Software and applications developers and analysts	135,100	+58,800
2	Sales and purchasing agents and brokers	121,500	+52,300
3	Legal, social and religious associate professionals	205,100	+50,500
4	Numerical clerks	114,200	+50,200
5	Nursing and midwifery professionals	110,200	+40,100
6	Material-recording and transport clerks	165,400	+30,100
7	Secondary education teachers	97,400	+26,400
8	Other health associate professionals	100,100	+26,200
9	Client information workers	150,700	+25,900
10	Administrative and specialised secretaries	105,900	+25,900

	Norway	Employees	Change
1	Sales and purchasing agents and brokers	71,700	+12,400
2	Software and applications developers and analysts	48,600	+9,400
3	Building frame and related trades workers	54,900	+6,800
4	Metal workers **	22,000	+6,000
5	Car, van and motorcycle drivers	19,600	+5,400*
6	Heavy truck and bus drivers	36,300	+5,000*
7	Business services agents	20,700	+4,600*
8	Shop salespersons	168,300	+3,800*
9	Other teaching professionals	20,300	+3,500*
10	Database and network professionals	8,500	+3,300*

** Sheet and structural metal workers, moulders and welders, and related workers

Top 10 growth occupations per country

	Poland	Employees	Change
1	Administration professionals	259,600	+33,400
2	Car, van and motorcycle drivers	182,300	+24,700
3	Domestic, hotel, office cleaners and helpers	357,200	+23,300
4	Business services and administration managers	141,700	+20,500
5	Mining and mineral processing plant operators	146,100	+17,900*
6	Primary school and early childhood teachers	317,800	+17,800*
7	Material-recording and transport clerks	283,900	+15,300*
8	Mining, manufacturing and construction supervisors	56,300	+14,400*
9	Managing directors and chief executives	86,200	+10,800*
10	Rubber, plastic and paper products machine operators	123,600	+10,800*

	Romania	Employees	Change
1	Shop salespersons	420,500	+109,700
2	Building frame and related trades workers	150,300	+24,600
3	Car, van and motorcycle drivers	265,500	+22,100
4	Material-recording and transport clerks	87,500	+13,400
5	Building and housekeeping supervisors	66,200	+13,000
6	Hairdressers, beauticians and related workers	48,500	+12,300
7	Wood treaters, cabinet-makers and related trades workers	89,500	+11,700
8	Personal care workers in health services	89,600	+11,400*
9	Managing directors and chief executives	47,400	+10,600*
10	Cashiers and ticket clerks	37,000	+10,400*

Top 10 growth occupations per country

	Slovakia	Employees	Change
1	Shop salespersons	132,500	+11,700
2	Regulatory government associate professionals	26,500	+10,100
3	Refuse workers	44,000	+9,700
4	Numerical clerks	42,200	+9,200
5	Material-recording and transport clerks	66,800	+9,200
6	Protective services workers	60,500	+8,800
7	Primary school and early childhood teachers	59,300	+7,000
8	Assemblers	84,300	+7,000
9	Building and housekeeping supervisors	25,000	+6,100
10	Metal workers **	36,400	+5,200

	Slovenia	Employees	Change
1	Shop salespersons	46,200	+5,300*
2	Finance professionals	15,900	+3,400*
3	Administration professionals	15,300	+2,700*
4	Other teaching professionals	7,900	+2,600*
5	Cooks	10,700	+2,500*
6	Mobile plant operators	11,100	+2,300*
7	Engineering professionals (excluding electrotechnology)	12,700	+2,200*
8	Other craft and related workers	4,800	+1,900*
9	Electrical equipment installers and repairers	10,600	+1,700*
10	Mining, manufacturing and construction supervisors	6,500	+1,600*

** Sheet and structural metal workers, moulders and welders, and related workers

Top 10 growth occupations per country

Spain		Employees	Change
1	Manufacturing labourers	172,900	+21,100
2	Engineering professionals (excluding electrotechnology)	151,800	+16,500
3	Physical and earth science professionals	41,200	+11,300
4	Other health professionals	90,100	+11,200
5	Professional services managers	97,000	+8,000
6	Cooks	210,600	+7,900*
7	Other teaching professionals	146,600	+7,900*
8	Software and applications developers and analysts	95,600	+7,700*
9	Other personal services workers	30,800	+7,700*
10	Administration professionals	164,100	+6,500*

Sweden		Employees	Change
1	Administrative and specialised secretaries	106,200	+11,300
2	Administration professionals	100,100	+9,400
3	Physical and engineering science technicians	122,500	+6,500
4	Heavy truck and bus drivers	82,500	+5,300
5	Material-recording and transport clerks	46,500	+5,200
6	Business services agents	59,200	+5,000
7	Financial and mathematical associate professionals	62,800	+4,200
8	Business services and administration managers	53,000	+3,900*
9	Primary school, early childhood teachers	187,800	+3,700*
10	Authors, journalists and linguists	29,800	+3,400*

Top 10 growth occupations per country

United Kingdom		Employees	Change
1	Business services and administration managers	470,900	+77,400
2	Retail and wholesale trade managers	333,500	+73,400
3	Manufacturing, mining, construction, and distribution managers	644,900	+64,300
4	Personal care workers in health services	1,077,300	+53,700
5	Transport and storage labourers	557,500	+51,400
6	University, higher education teachers	147,900	+41,800
7	Architects, planners, surveyors and designers	182,900	+36,000
8	Child care workers and teachers' aides	721,900	+35,300
9	Finance professionals	351,100	+35,200
10	Medical doctors	201,900	+34,600

5.2a TOP 5 GROWTH OCCUPATIONS PER COUNTRY – PES INFLOW ISCO 88

Top 5 absolute growth PES inflow (2011Q4-2012Q4), inflow of 2012Q4, 8 countries, ISCO-88 3-digit

Austria		
	Inflow	change
1 Physical and engineering science technicians	4,437	+155
2 Other teaching associate professionals	935	+135
3 Health professionals (except nursing)	520	+130
4 Legal professionals*	170	+120
5 Other personal services workers	2,869	+91

Belgium		
	Inflow	change
1 Police inspectors and detectives	184	+75
2 Garbage collectors and related labourers	102	+26
3 Social work associate professionals	133	+20
4 Wood-processing- and papermaking-plant operators*	51	+6
5 Other personal services workers	336	+4

Cyprus		
	Inflow	change
1 Protective services workers*	69	+41
2 Social science and related professionals*	34	+18
3 Ships deck crews and related workers	65	+8
4 Mathematicians, statisticians and related professionals*	8	+7
5 Primary and pre-primary education teaching professionals*	12	+5

Lithuania		
	Inflow	change
1 Motor vehicle drivers	4,652	+1,679
2 Manufacturing labourers	5,268	+1,356
3 Shop salespersons and demonstrators	3,763	+896
4 Domestic and related helpers, cleaners and launderers	2,452	+821
5 Housekeeping and restaurant services workers	2,570	+812

Luxembourg		
	Inflow	change
1 Agricultural, fishery and related labourers*	382	+369
2 Personal care and related workers	122	+51
3 Market gardeners and crop growers*	67	+27
4 Administrative associate professionals	247	+13
5 Other office clerks	153	+11

Portugal		
	Inflow	change
1 Manufacturing labourers	2,586	+1,098
2 Textile, garment and related trades workers	1,718	+454
3 Agricultural, fishery and related labourers*	468	+393
4 Client information clerks	736	+382
5 Housekeeping and restaurant services workers	2,335	+293

Sweden		
	Inflow	change
1 Nursing and midwifery associate professionals	10,338	+3,411
2 Other teaching associate professionals*	3,600	+2,518
3 Personal care and related workers	46,968	+2,353
4 Market gardeners and crop growers	2,377	+953
5 Primary and pre-primary education teaching professionals	3,314	+749

*: the increase is less than +50 or more than +200%, which are indicators that the top growth occupation could be partly determined by incidental recruitment efforts. These occupations are definitely interesting to follow up, but care needs to be taken with regard to their future potential.

** : Metal moulders, welders, sheet-metal workers, structural-metal preparers, and related trades workers.

5.2b TOP 5 GROWTH OCCUPATIONS PER COUNTRY – PES INFLOW ISCO 08

Top 5 absolute growth PES inflow (2011Q4-2012Q4), inflow of 2012Q4, 8 countries, ISCO-88 3-digit

Bulgaria		
	Inflow	change
1 Personal care workers in health services*	2,630	+2,235
2 Shop salespersons	1,553	+497
3 Sales and purchasing agents and brokers	1,446	+482
4 Manufacturing labourers	1,812	+329
5 Building and housekeeping supervisors*	416	+301

Croatia		
	Inflow	change
1 Nursing and midwifery professionals*	1,840	+1,302
2 Social and religious professionals	1,602	+1,028
3 General office clerks	895	+422
4 Other health professionals	637	+397
5 Financial and mathematical associate professionals	553	+368

Estonia		
	Inflow	change
1 Cooks	454	+187
2 Manufacturing labourers	299	+157
3 Textile, fur and leather products machine operators	420	+139
4 Other sales workers	759	+97
5 Hairdressers, beauticians and related workers	340	+95

Hungary		
	Inflow	change
1 Other elementary workers	82,141	+3,486
2 Agricultural, forestry and fishery labourers	15,707	+2,806
3 Engineering professionals (excluding electrotechnology)	3,008	+1,515
4 Mining and construction labourers	11,305	+713
5 Machinery mechanics and repairers	2,135	+604

Ireland		
	Inflow	change
1 Protective services workers	717	+464
2 Other sales workers	1,929	+376
3 Transport and storage labourers*	113	+70
4 Personal care workers in health services	1,745	+69
5 Car, van and motorcycle drivers	129	+62

Latvia		
	Inflow	change
1 Shop salespersons	783	+409
2 Manufacturing labourers	550	+202
3 Heavy truck and bus drivers	327	+192
4 Sales and purchasing agents and brokers	341	+144
5 Tellers, money collectors and related clerks*	162	+134

Norway		
	Inflow	change
1 Child care workers and teachers' aides	1,415	+325
2 Electrical equipment installers and repairers	1,043	+307
3 Client information workers	711	+187
4 Nursing and midwifery professionals	785	+181
5 Physical and engineering science technicians	571	+159

Romania		
	Inflow	change
1 Heavy truck and bus drivers	4,498	+1,412
2 Textile, fur and leather products machine operators	2,304	+777
3 Shop salespersons	6,788	+712
4 Nursing and midwifery professionals	946	+574
5 Waiters and bartenders	1,899	+517

Slovenia			Spain				
	Inflow	change		Inflow	change		
1	Building finishers and related trades workers	1,668	+210	1	Mining and construction labourers	26,029	+13,599
2	Legal professionals	367	+119	2	Agricultural, forestry and fishery labourers	5,450	+3,486
3	Managing directors and chief executives	196	+42	3	Building frame and related trades workers	8,035	+1,296
4	Other elementary workers	632	+42	4	Sales, marketing and public relations professionals*	1,183	+896
5	Other sales workers	234	+35	5	Manufacturing labourers	1,677	+857

*: the increase is less than +50 or more than +200%, which are indicators that the top growth occupation could be partly determined by incidental recruitment efforts. These occupations are definitely interesting to follow up, but care needs to be taken with regard to their future potential.

** : Metal moulders, welders, sheet-metal workers, structural-metal preparers, and related trades workers.

5.3 TOP 5 JOBS IN EUROPE

1) Finance and sales associate professionals - 43,500 posts

Germany	22,600 posts
Finland	4,480 posts
Sweden	3,090 posts

2) Housekeeping and restaurant services workers – 40,400 posts

Germany	12,250 posts
Austria	11,190 posts
France	3,400 posts

3) Shop salespersons and demonstrators – 33,100 posts

Germany	9,600 posts
Belgium	6,470 posts
Austria	4,000 posts

4) Machinery mechanics and fitters – 30,000 posts

Germany	15,590 posts
Belgium	5,550 posts
Austria	2,670 posts

5) Electrical and electronic equipment mechanics and fitters – 27,200 posts

Germany	20,520 posts
Austria	2,150 posts
Belgium	1,670 posts

Based on figures of the EURES Job Mobility portal on 1st October 2013

The UK is excluded for technical reasons

ENDNOTES

- 1 <http://ec.europa.eu/social/main.jsp?catId=955&langId=en>
- 2 Figures are from Eurostat and reported in *EU Employment and Social Situation – Quarterly Review* (June 2013). Available at: <http://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=1923&furtherNews=yes>
- 3 OECD (2013) *Protecting jobs, enhancing flexibility: A new look at employment protection legislation* in *OECD Employment Outlook 2013* http://dx.doi.org/10.1787/empl_outlook-2013-6-en
- 4 The EU the Directive on Temporary Agency Work (2008/104/EC) sets out a general framework for the regulation of temporary agency workers for Member States to build on <http://ec.europa.eu/social/main.jsp?catId=706&langId=en&intPagId=207>
- 5 CEDEFOP (2013) *Roads to recovery: three skill and labour market scenarios for 2025* (Briefing note, June) http://www.cedefop.europa.eu/EN/Files/9081_en.pdf
- 6 CEDEFOP (2012), *Skills Supply and Demand in Europe, Medium –Term forecast up to 2020* <http://www.cedefop.europa.eu/EN/publications/15540.aspx>
- 7 OECD (2012) *'ICT skills and employment: New competences and jobs for a greener and smarter economy'* (*OECD Digital Economy Papers* No 198) http://www.oecd-ilibrary.org/science-and-technology/ict-skills-and-employment_5k994f3prlr5-en
- 8 The economic ICT sector is defined as the NACE sectors 61 “telecommunications”, 62 “computer programming, consultancy and related activities” and 63 “information services activities” including data processing and web portals, but also new agencies activities.
- 9 Central and East European Outsourcing Association (CEEEOA), 2010: *Central and East European IT Outsourcing Review 2010*, <http://ceeoa.org/assets/Uploads/CEEITORReview2010.final.pdf>
- 10 Eurostat, *Structural Business Statistics*, http://epp.eurostat.ec.europa.eu/portal/page/portal/european_business/introduction
- 11 European Union (2013) *'Women in ICT'* (Digital Agenda for Europe) <http://ec.europa.eu/digital-agenda/en/women-ict>
- 12 OECD (2012) op cit
- 13 Central and East European Outsourcing Association (CEEEOA), 2010: *Central and East European IT Outsourcing Review 2010*, <http://ceeoa.org/assets/Uploads/CEEITORReview2010.final.pdf>
- 14 Euractiv (2013) *'Europe strives to hold back digital brain drain'* <http://www.euractiv.com/specialreport-skills/mediterranean-digital-brain-drai-news-517965>

ANNEX A1 ABBREVIATIONS

Country abbreviations

AT	Austria	IT	Italy
BE	Belgium	LV	Latvia
BG	Bulgaria	LT	Lithuania
CY	Cyprus	LU	Luxembourg
CZ	Czech Republic	MT	Malta
DK	Denmark	NL	The Netherlands
EE	Estonia	NO	Norway
ES	Spain	PL	Poland
FI	Finland	PT	Portugal
FR	France	RO	Romania
DE	Germany	SK	Slovakia
GR	Greece	SI	Slovenia
HU	Hungary	SE	Sweden
IE	Ireland	UK	United Kingdom

Other abbreviations

EJMB	European Job Mobility Bulletin
EVM	European Vacancy Monitor
EVR	European Vacancy and Recruitment Report
EURES	EUropean Employment Services
ISCED	International Standard Classification of Education (1, 2 = primary, lower secondary, 3, 4 = upper, post-secondary, 5 and 6 = tertiary education)
ISCO	International Standard Classification of Occupations
NACE	Classification of Economic Activities in the European Community
JVS	Job Vacancy Statistics (EUROSTAT)
LFS	Labour Force Survey (EUROSTAT)
PES	Public Employment Services
Q1	First quarter of the year
TWA	Temporary Work Agency

ANNEX A2 DEFINITIONS AND CONCEPTS

GDP (National accounts, Eurostat)

Gross Domestic Product (GDP) in volumes, not seasonally adjusted. Measured in millions of euro, chain-linked volumes, reference year 2005 (at 2005 exchange rates). Source: Eurostat.

Job vacancies (JVS, Eurostat)

The official definition of a job vacancy is included in Article 2 of Regulation (EC) No 453/2008 and is used by EUROSTAT:

"A job vacancy shall mean a paid post that is newly created, unoccupied, or about to become vacant:

a) for which the employer is taking active steps and is prepared to take further steps to find a suitable candidate from outside the enterprise concerned, and

b) which the employer intends to fill either immediately or within a specific period of time.

A vacant post that is only open to internal candidates is not treated as a 'job vacancy'."

The stock of job vacancies is the number of job vacancies measured at a certain point in time.

Job hirings (LFS, Eurostat)

Job hirings refer to employees who were employed in a 'reference week' of that quarter and have started working for their employer job in the month, or, at most, three months earlier than the month of the 'reference week'. The calculation of job hirings is based on the tenure variable in the quarterly Eurostat Labour Force Survey. Job hirings exclude the self-employed since a job vacancy is defined as a vacant post for an employee (see definition above). The number of job hirings is used as a reliable proxy indicator of the number of hirings and has the following strength:

Job hiring data are flow data that cover all who found a job over a three-months period, while the Eurostat job vacancy data (JVS) only covers the number of vacancies available at a point of time. As a result job hiring data tend to be significantly higher. Besides, job hiring data are available for all EU27 countries.

Newly registered job vacancies (national PES)

The number of newly registered job vacancies (the inflow) is the sum of new job vacancies registered by the PES in a certain period of time and it is a flow figure rather than a point in time estimate (stock). Inflow is used because for the PES, comparisons of stocks would suffer from differences in national policies for closing registered vacancies. For example, the stock will be higher if vacancies are closed after six months compared to one month. The inflow of registered job vacancies depends not only on the demand for labour, but also on the extent to which employers involve the PES in filling job vacancies.

Stock, inflow and outflow (concepts)

A 'stock' number is a statistical term measuring a variable at a certain moment in time. For example, the number of job vacancies available in Germany at 1 January 2011. A 'flow' number is measured in a period of time. For example, the 'inflow' is the number of new vacancies in the first six months of January. If the stock and flow move in opposite directions, this usually indicates a change in the duration. For example if the stock of job vacancies increases and the number of job hirings decreases, this indicates that it takes longer on average to fill vacancies, other things being equal.

Unemployed to job hirings ratio (LFS, Eurostat)

The relationship between the total number of unemployed and the total number of job hirings is used as an indicator of the degree of 'tightness' of the labour market. In this case the number of job hirings is used as a proxy for the number of filled vacancies. A relation of the stock or the inflow of job vacancies to unemployment would be theoretically preferable, as this ratio would also include vacancies that are not filled. However, no data on the inflow is available at all, and data on the number of job vacancies is not available for all EU27 countries.

Methodological notes on the job vacancy statistics (JVS) of Eurostat

Data on the stock of job vacancies are collected by the national statistical offices in almost all EU countries. In some countries they are collected by the Ministry of Labour. Most countries collect the data by means of surveys, except Luxembourg, the Czech Republic and Slovenia which collect the data by means of administrative data. Also, the sampling unit is the enterprise in most countries, but the local unit in nine countries: Denmark, France, Finland, Germany, Spain, the Netherlands, Poland, Portugal and Sweden. In those nine countries, enterprises are not approached at the corporate level, but a sample of local branches is approached to fill in the survey. These differences need to be born in mind when comparing stocks of vacancies between countries.

Another major difference between countries is that in some countries data are not collected for certain sectors or small companies. No data are collected for the agriculture sector in ten countries: Austria, Cyprus, Denmark, Spain, France, Greece, Ireland, Italy, Portugal and UK. For the other countries, the number of agriculture vacancies comprises 1% of all vacancies or less in most West European countries, 2% in Germany and between 2% and 3% in new Member States. Agriculture is excluded from the analysis for international comparability and because the impact of agriculture on the total level is small.

For the public administration, data on job vacancies are not collected in five countries: Denmark, France, Greece, Italy, Poland. In Denmark and Italy and data for the public sector including education and healthcare are not collected at all. Portugal collects data on public administration vacancies since 2012Q1, so for public administration in Portugal no historical comparison is yet possible. Because no total numbers of vacancies are published at all for France, Italy and Poland, these three countries are excluded.

To represent vacancy developments as fully as possible, Chart 1 presents all available data inclusive the whole public sector (NACE 0 to S) where possible, exclusive the whole public sector for Denmark and exclusive public administration only for Portugal (and Greece). In Spain, vacancy data for the public administration started to be collected in 2010Q1 creating a break in the series. For this reason, Spain is excluded from any analysis of JVS data preceding 2010Q1.

For small enterprises, defined as having less than 10 employees, no job vacancy data are collected in France, Italy and Malta. France only collects it on an annual basis. For this reason, these three countries are left out of the analysis.

But the most important note is that differences between countries may originate from differences in sampling units (corporate versus local) or sources used (administrative versus survey).

