



Employment and the changing labour market

Global societal trends to 2030:
Thematic report 5

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EUROPE

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Abbreviations

BEPA Bureau of European Policy Advisers

ESPAS European Strategy and Policy Analysis System

EUISS EU Institute for Security Studies

EU-OSHA European Agency for Safety and Health at Work

HDR Human Development Report

ILO International Labour Organization

OECD Organization for Economic Cooperation and Development

STEM science, technology, engineering and mathematics

Preface

This Research Report forms part of our series on global societal trends and their impact on the EU in 2030. This analysis is embedded within the framework of the European Strategy and Policy Analysis System (ESPAS) set up to develop a lasting framework to assess global trends and to develop policy responses across EU institutions over the next institutional cycle (2014–2019). The first phase of the project assessed the long-term, international, domestic, economic and political trends facing the European Union over the next two decades; the second phase of the project split trends into three streams, namely the economy, governance and power, and society. RAND Europe’s assessment of likely global societal trends constituted ‘Trend Report 2 – Society’ for this second phase.

This report presents the evidence base, uncertainties and potential trajectories surrounding trends in one of the six major themes which form part of Trend Report 2 – Society, namely employment and the changing labour market. Other themes studied as part of this series include the rise of a global ‘middle class’; the spread of information and knowledge through technology, the new media and education; the empowerment of individuals; the changing demographic profile of the world’s population; and the role of migration and mobility. Overall findings from all reports can be found in the Synthesis Report published by RAND Europe, while evidence on the other themes may be found in the research reports published as part of this series.

This work is based on desk research in the form of a non-systematic review of the academic and grey literature on the major trends for this theme. It also includes additional information for each of the themes studied, which was harnessed through a Delphi with international participants, as well as a series of semi-structured interviews with experts from academia and think tanks, policymakers and leading thinkers from the private or voluntary sector further exploring the findings from the Delphi exercise and desk research. Acknowledgements, and a full list of contributors, can be found in the Synthesis Report.

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1.1. The context for this study and the European Strategy and Policy Analysis System effort

Over recent years, the European Union has experienced a number of challenges. Facing these issues has required much effort from European policymakers. These reflect the unstable and fast-changing global environment in which the Union is navigating. In the long term, this may challenge the Union's economic and political influence, and perhaps its ideals and values.

In this new context, expanding the Union's capacity to anticipate future challenges and outcomes and to coordinate responses across institutions will be crucial. The objective of this study was to help the European Union to prepare for a future strategic landscape that will be more competitive and perhaps less cooperative than before, and certainly more uncertain than a superficial reading of opinion pieces and forward-looking reports might suggest.

The European Strategy and Policy Analysis System (ESPAS) project emerged in 2010 when the European Commission sought to investigate the global trends that will prevail in 2030 and to determine the challenges that European policymakers will be faced with in the coming decades. Its purpose is embedded within a wider context of building a permanent EU forecasting capacity, relying on the collaboration of various EU institutions and actors in the individual Member States, and it also aims to set up a continuous framework to assess global trends and to develop policy responses across the EU institutional framework.

The initial effort, carried out by the EU Institute for Security Studies (EUISS 2012), aimed at assessing 'the long-term, international and domestic, political and economic environment facing the European Union over the next 20 years'. The report acted as a pilot project setting the scene for further investigation and evaluation of global trends in 2030 in the field of (i) international relations and governance, (ii) society, and (iii) macroeconomic trends.

In 2012, the Bureau of European Policy Advisers (BEPA) commissioned RAND Europe to investigate further the theme of societal changes by drawing from the experience of the pilot project, by analysing key global trends in this field and by drawing their implications for the Union. The task force at BEPA identified six main thematic areas which were to be refined, documented and analysed, namely:

1. The rise of a global 'middle class'
2. The role of new technologies, new media and increased access to education
3. The empowerment of individuals

4. The changing demography of a globalised world and its impact on different societies
5. The role of mobility and migrations and their impact on identities
6. Old and new labour – and work.

Each of the research reports published as part of this series revolves around one of the six themes. This report focuses on education, technology and connectedness. The overall findings from the analysis may be viewed in the Synthesis Report (Hoorens et al., 2013). The research team has sought to cluster the trends identified above into five major areas in the Synthesis Report. In addition, the Synthesis Report introduces a number of cross-cutting issues that may interact with each of these six themes to influence the long-term strategic landscape and the policy challenges that the European continent may face in the future. In doing so, it relies extensively on strategic and long-term analysis, an approach which may help policymakers grasp the contours of the future and understand how global trends are likely to interact, converge and influence the future landscape.

1.2. The methods used for this Research Report designed to set out the evidence base for major trends

This Research Report presents the reader with findings on the future of labour and the world of work, as well as on their impact on the EU landscape, including potential policy challenges for the next 20 years.

Several reports – most of which are referenced in this analysis – have attempted to describe, assess and determine which trends are likely to shape the international strategic landscape or the landscape of a specific region, the EUISS report and the regular efforts of the National Intelligence Council being perhaps among the most notable examples in this context. The objective of the research team as a result is not to replicate these existing efforts, but rather to bring the existing uncertainty surrounding these trends to policymakers' attention.

The findings analysed in this report are based on two phases of research, namely a non-systematic review of the literature available on each of the major trends listed under the six themes identified by ESPAS for the Society Trend Report, and analysis of the quantitative data available. Our approach is designed to identify the consensus as well as the disagreement on a given trend within a specific theme, and therefore to describe this trend, relying on previous analysis and literature. It has allowed the research team to identify the drivers behind the trends and the conditions and assumptions under which they will materialise. The team has sought to review and discuss the evidence for these assumptions and conditions and the level of uncertainty surrounding them. When appropriate, and relying on the assessment of this uncertainty, the researchers have been able to generate alternative narratives for specific trends, which stand in contrast to the consensus.

The second phase of the research (expert consultation) harnessed the knowledge of leading experts worldwide for each of the themes studied through an approach based on the Delphi method. This effort was followed by a series of interviews with leading academics, policymakers and thinkers from the private or voluntary sector to build on findings from the Delphi exercise. Information from the expert consultation phase was used to discuss and to uncover further the surrounding uncertainty for each of the global trends derived from the literature review.

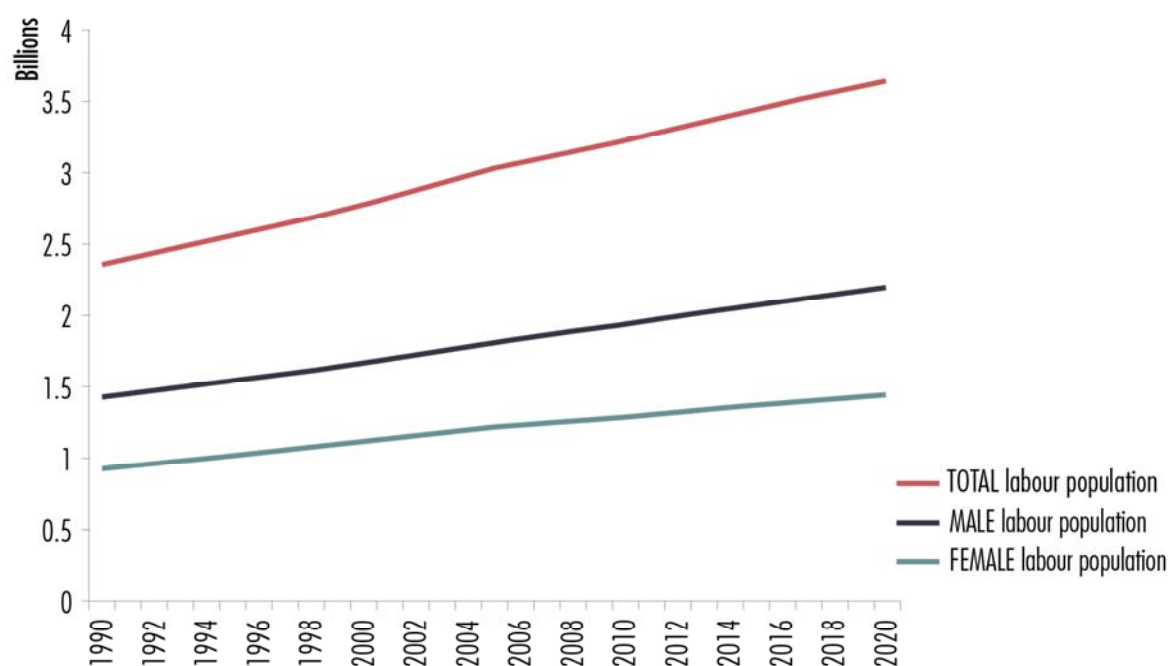
This approach is not, of course, without limitations. The report considers trends one by one and therefore in isolation from all others when in fact they are likely to interact with each other. We try to alleviate this issue by making clear the assumptions of the literature we review.

By emphasising uncertainty and by attempting to raise policymakers' awareness of alternative narratives and paths, we hope to contribute to the debate on global trends that will prevail in 2030, and to facilitate the goals of greater flexibility and resilience. While this approach contrasts with previous, widely publicised strategic analysis reports, it also looks to complement these analyses.

1.1. The demography of the global workforce will be shaped by population growth and population ageing

The changing demographic landscape at the international level – with global population growth and population ageing – is projected to have a significant impact on the labour market in the future. It is estimated that the size of the global labour force will expand over the next decade, but this growth would not be uniformly experienced in particular regions. It is also estimated that the growth would be at a slower pace than at present (International Labour Office 2012b). A study by Dobbs and colleagues (2012) shows that from 1980 to 2010 the number of workers in the world rose by 1.2 billion, to approximately 2.9 billion, with most of this growth in developing countries. The United Nations' calculations (2010) show even higher workforce growth, to about 3.2 billion in 2010, and project a further growth to about 3.6 billion workers in 2020 – as illustrated in Figure C.1.1.

Figure C.1.1: Projected size of the global labour force



Source: ILO Laborsta based on United Nations, World Population prospects, the 2010 revision

The projected future change in working-age population estimates an explosive workforce growth of nearly 1 billion in the developing countries, mainly driven by high fertility rates in these countries. About half of that growth is projected to occur in Asia and nearly 40% in Africa (Hayutin 2010). Fine and colleagues (2012) show that Africa's economic growth accelerated after 2000, making it the world's second fastest-growing region. The authors suggest that Africa has a potential demographic dividend but needs to create jobs at a faster pace to absorb its growing labour force. The group of experts consulted through an online elicitation Delphi exercise was divided about many Asian and African countries' ability to have enough jobs available for the additional manpower stemming from working population growth. Around 20% of the experts projected a relatively small likelihood (between 20% and 30%), while nearly half expressed a 50–80% likelihood of an adequate number of jobs for the additional manpower in Africa and Asia. As highlighted by one expert, countries may 'automate before they educate', leading to 'jobless growth'. The estimations of Dobbs et al. (2012b) assume that India and other economies of South Asia and Africa will be the largest suppliers of new workers in the global market. These regions will replace China and are projected to supply 60% of the more than 600 million new workers, bringing the total global labour force to 3.5 billion by 2030. According to long-term projections of the Organization for Economic Cooperation and Development (OECD), China is facing rapid ageing of its workforce. The old-age dependency ratio is estimated to quadruple in China by 2060. The rapid ageing of China's workforce explains why, according to the OECD report, India and Indonesia will overtake China's growth rate in less than a decade (OECD 2012g).

The opposite trend is predicted for the most advanced economies, with a future decline in the working-age population, driven mainly by the decline in fertility rates and gains in longevity. In addition, evidence

from the interviews suggests increasing caring responsibilities for the elderly will have an impact on an individual's ability to work. Yet, older people and retirees should not only be seen as a burden but also as contributors to society, for instance through employment, volunteering and caring for children and relatives. According to the UN's (2010) projections, Europe's working-age population will remain stable between 2010 and 2020, at about 364 million workers. Hayutin's (2010) study projects that Europe's working population will shrink by 10%, or nearly 50 million, by 2030 (compared with the current level). Interviewees proposed migration as a potential channel to alleviate labour shortages, but considered that a 'fundamental shift in attitudes and perceptions' would be necessary, along with a better recognition of qualifications across countries. As suggested during the ESPAS RAND Europe conference, the decline in the working-age population makes it even more important to build an inclusive labour market and to make work sustainable.

1.2. Demographic change will drive changes in dependency ratios and shift the global economic and political balance

Based on the UN predictions, Dadush and Stancil (2010) estimate that the relative size of the working-age population will shrink in developed countries from 62.8% of the total population in 2009 to 52% in 2050. The working-age population is also projected to shrink, albeit marginally, in developing countries: from 61.1% in 2009 to 59.5% in 2050. The OECD's long-term estimations suggest that over the next 50 years the old-age dependency ratios will double in Asia, Eastern European and southern European countries (OECD 2012g). Dobbs et al. (2012b) suggest that the effects of an increase in dependency ratios will be further exacerbated by a low labour market participation rate and low employment rates for people over 55. The authors estimate that by 2020 worldwide there could be 360 million people who are not part of the labour force – for example, owing to early retirement – with 40% of these in developed countries and China. Studies by McKinley and Cozzi (2013) and by the European Commission (2013) suggest using the economic dependency ratio to monitor future labour market challenges. The authors argue that focusing on the economic dependency ratio, which combines the young and elderly share of the population with the unemployed and economically inactive working-age population, would allow comparison between the effects on dependency of purely demographic trends and employment-related trends.

Labour force growth in developing countries is likely to affect the total productivity of these regions and in turn shift the balance of global economic power. China and India may gain importance, whereas Europe may lose traction in global governance and economy (Dadush & Stancil 2010). However, as discussed reports on employment in India, the large share of informal employment vis-à-vis formal employment as well as jobless growth (coming mainly from capital-intensive clusters of the economy) may be seen as an inhibitor towards further gains in productivity and formal labour growth in India. On the other hand, a shrinking working-age population and workforce in developed countries may be counterbalanced by other labour market factors, such as levels of unemployment, skills utilisation and productivity per capita. A higher employment rate and increasing productivity per capita as a consequence of efficiency gains – for example, through technological improvements – may compensate for a lower number of workers in Europe. The underutilisation of manpower in developing economies may

undermine their growing numbers of workers (International Labour Office, 2012b; Bloom, Canning and Sevilla, 2003).

Delphi experts tended to agree on the relatively high likelihood (about 60% to 80%) of Europe's decreasing political and economic influence on the world stage as a result of a drop in its working-age population. Other reasons impacting on Europe's competitiveness and economic growth cited by the experts in the Delphi exercise included high labour costs through heavy social contributions and a possibly growing shadow economy.

The likelihood of whether other factors of production (e.g. land, technology and capital) would be able to compensate for the decline in human capital in order to deliver economic growth in Europe was judged to be rather low by the majority of Delphi respondents; on average they did not expect the likelihood to be higher than 50%. Delphi participants also ranked other policy measures which might contribute to offset the shrinking European workforce. The majority agreed that an increase in female labour force participation may have the highest impact, followed by an increase in labour migration and lastly an increase in retirement age. As one expert highlighted in the online discussion, 'the forced retirement at fixed age seems both arbitrary and unnecessary'. Other experts corroborated this, saying that a decision about retirement should be left to 'personal attitudes and preferences' about whether people want to remain in the labour market, rather than being a result of financial or structural pressures. One of the interviewees considered that this will have to lead to a rise in the statutory retirement age: 'people will have to work longer over the next two to three decades than they initially expected' if 'there isn't a dramatic deterioration in the health status of the older working population'. However, another interviewee emphasised that this will require employers to adapt and be more accommodating to the needs of an ageing workforce, especially where jobs are physically demanding.

Chapter 2. The changing faces of labour market participation and growing vulnerabilities at the workplace

2.1. Changing labour force participation rates

The rise of unemployment (and underemployment) and the shrinking labour force participation rates are two of the central features of societies in crisis (EUISS 2012). The decline in global labour force participation rates has been observed for over a decade, and since 2007 there has been evidence of an accelerated decline in labour force participation. Analysis conducted by the International Labour Organization (ILO 2012: 33) shows that ‘the decline in the labour force participation at the global level since 2007 has been two-and-a-half times greater than in the five years leading up to the crisis’. Experts from the Delphi exercise seemed to be in moderate agreement about a further decline in the global labour force participation, by 0.5% to 1%, by 2030. Women and young workers are likely to be particularly hard hit by this trend (International Labour Office, 2012b). It is estimated that 50 million jobs are missing globally relative to the pre-crisis situation (Curci et al. 2012).

ILO (2012) analysis shows that falling global labour force participation may mask unemployment trends. ILO research shows that difficulties in finding jobs may discourage unemployed individuals from looking for work altogether. It means that these people may become economically inactive (i.e. outside the labour force) and not be counted among the unemployed.

As discussed during the ESPAS RAND Europe conference, the decline in labour force participation may also be linked to working conditions. Seminar participants suggested that lack of improvements, and in some cases deterioration, in working conditions may have discouraged labour market entry.

According to the European Commission’s (2011b) report, about 6 million jobs have been lost in Europe during the recession between mid-2008 and the last quarter of 2010, and only 1.5 million jobs were gained between 2009 and mid-2011. The shortfall in global employment creation, with the number of newly created jobs not catching up with increase in the global labour force, is the main driver behind this trend. The ILO (2012b: 36) projects a flat to slightly declining global employment generation up to 2016 (ILO 2012b).¹ It also estimates that this will have a direct impact on the increase in the global unemployment rates, hidden unemployment levels and the persistence of working poverty, and may have an impact on the divergence in living standards and the increasing levels of poverty.

¹ The ILO’s global employment generation is examined by looking at the employment-to-population ratio that is the proportion of working-age population (defined as aged 15 and above) in employment.

The EUISS projected a rise in the high levels of structural unemployment and underemployment in Europe, potentially leading to greater poverty among older people and career instability for other workers (EUISS 2012). However, it may have underestimated the importance of the phenomenon. In fact, in view of the global crisis, the ILO has recently revisited its unemployment projections. Pre-crisis projections assumed the possibility of lower unemployment rates, but recent figures are less optimistic about the recovery from the crisis and unemployment levels are projected to increase globally (ILO 2012b). The OECD's analysis of the global unemployment trends also show that job recovery has generally been too weak to allow for a significant fall in unemployment (OECD 2012h). The OECD also projects a rise in persistent high levels of unemployment over the next few years (OECD 2012h).

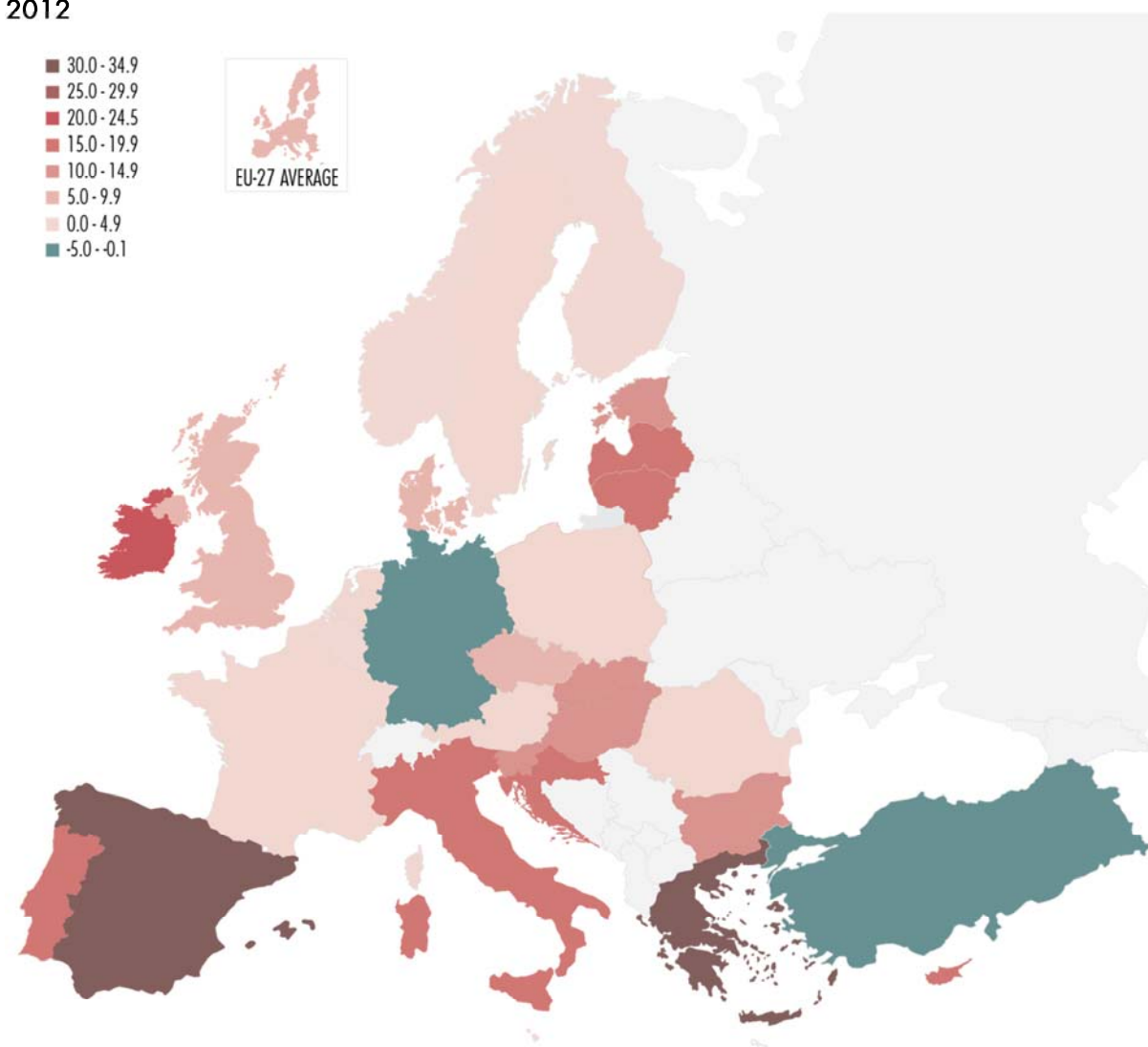
Yet, the OECD is more optimistic about labour market developments in the long run. The organisation projects long-term growth to 2060 and identifies sustained improvements in productivity as the main drivers of growth. The OECD's long-term scenario up to 2060 assumes a decline in the share of the population of working age but it does not fully translate into lower labour force participation. The scenario projects that the legal pensionable age is indexed to longevity and in this way allows individuals to maintain a stable share of lifetime spent in the labour force. In addition, a higher level of labour force participation (compared with current levels) will result from an expansion in education. The OECD's scenario for the population older than 15 years assumes a roughly constant rate of labour force participation at the 60% level over the next half century. The unemployment trend scenario also assumes a gradual return to the pre-crisis levels, and highlights the challenge for governments to ensure that periods of long-term unemployment do not disconnect workers from the labour markets completely (OECD 2012g).

2.2. Divergence in employment and unemployment across world regions and workforce groups

Predictions of employment and unemployment levels vary between countries, sectors of the economy and particular groups of workers (OECD 2012h). It is estimated that developing and emerging economies will recover faster from the crisis than the developed countries will, mainly due to an increase in employment rates. Recent analysis shows that employment rates have increased in less than 20% of developed economies and 60% of developing economies (ILO & ILS 2012). Estimates about future employment rates vary substantially: results from the Delphi expert elicitation yielded a bimodal distribution. About 30% of the participating experts projected a relatively high likelihood (between 70% and 90%) that, on average, 75% of 20- to 64-year-olds in the EU will be employed by 2020, while others were more sceptical, with answers clustering between 20% and 60% likelihood. This may be traced back to different schools of thought; whereas pessimists doubt Europe's ability to create jobs owing to the 'gloomy forecast of economic growth during the next years', optimists project higher employment rates premised on 'rapid pace of female employment growth in EU countries' and a set of policies aimed at reducing structural employment. In developed countries, the unemployment reduction strategy often included more short-term employment (involuntary part-time and temporary employment), low wages in newly created jobs and for temporary workers, wages deceleration, flexible working arrangements, assistance in job-search

strategies, access to training and other policies fostering a return to work (for instance, tax cuts, employment protection legislation, and active labour market policies) (OECD 2012h).

Figure C.2.1: Change in unemployment rate in EU Member States, Norway and Turkey, 2007–2012



Source: Eurostat

In Europe, a new interesting (and not yet fully acknowledged) employment pattern seems to emerge. The European Commission (2012c) shows that there is a growing gap between nominal (head count) employment rates and full-time equivalent rates (a raw indicator for effective employment rates). The study reports modest gains in employment rates in the last decade, and concludes that these gains were even more limited when counted in full-time equivalents. The authors suggest that the gap between nominal and full-time equivalent rates reflects people's wishes to change their employment relationship over the course of their life (e.g. transition between part-time and full-time, and spending time in education or training). However, the authors conclude that this new pattern may also signal some negative employment characteristics, such as involuntary part-time work and absenteeism due to job dissatisfaction.

2.3. Long-term unemployment on the rise, leading to inequality and poverty increase

With the share of long-term unemployment rising significantly during the crisis in many developed economies, persistent unemployment remains one of the main concerns in many countries. A Eurofound (2012) study reports that the number of long-term unemployed has grown very quickly over recent years, and that currently the long-term unemployed represent more than a third of the total jobless population in the European Union. The significant risk of unemployment duration dependence could lead to labour force withdrawal and growing marginalisation among the jobless, becoming a trap for the individual (OECD 2012e ; OECD 2012h). It may also slow down economic recovery.

In developing countries, long-term unemployment may be linked to an increase in informal employment, employment of a precarious nature and vulnerable employment. In these ways, unemployment has an impact on overall employment quality and the presence of informal work arrangements, within which workers typically lack adequate social protection and coverage by social dialogue arrangements. Furthermore, informal and vulnerable employment has been characterised by low pay, in-work poverty and difficult working conditions, in which workers' fundamental rights may be undermined and potentially discourage people from staying in the labour market, leading to individuals falling into persistent poverty (European Commission 2011a; European Commission 2012c; ILO 2013; International Labour Office 2012b; OECD 2012h).

A study by Curci et al. (2012) shows that diverging employment trends and slow recovery from the crisis increase the risk of social unrest. The authors report that in 57 out of 106 countries the economic situation worsened between 2010 and 2011. The authors also show that poverty rates have been growing from the onset of the economic crisis, and project a further increase in poverty rates in half of advanced economies and one third of developing countries. A report by the European Commission (2011a) shows that many EU Member States have already experienced polarisation of incomes and increased risks of long-term exclusion from the labour market, which has resulted in rising inequalities and poverty levels. For instance, between 2008 and 2010 the share of children and adults living in jobless households increased from 9% to 10% in the EU overall. Young, older workers and low-skilled workers remain particularly affected by the crisis.

Analysis of unemployment trends shows that young, less skilled workers and older workers have been disproportionately affected by the rise in unemployment. Low-skilled workers were particularly hit by the decrease in jobs in the manufacturing and construction sectors. While the total number of jobs in the manufacturing sector has now largely returned to the pre-crisis levels, it is projected that construction jobs will remain depressed in most countries (OECD 2012h). Withdrawals from labour markets have been observed among young and low-skilled workers, although to different degrees. It is estimated that for many older workers long-term sickness and disability benefit schemes remained the potential routes for labour force withdrawal and were used by those older workers who might otherwise have become unemployed (OECD 2012h). However, the reforms of the pensions systems and tightening of other potential routes to withdraw from the labour market had an impact on the overall number of older workers during the latest recession.

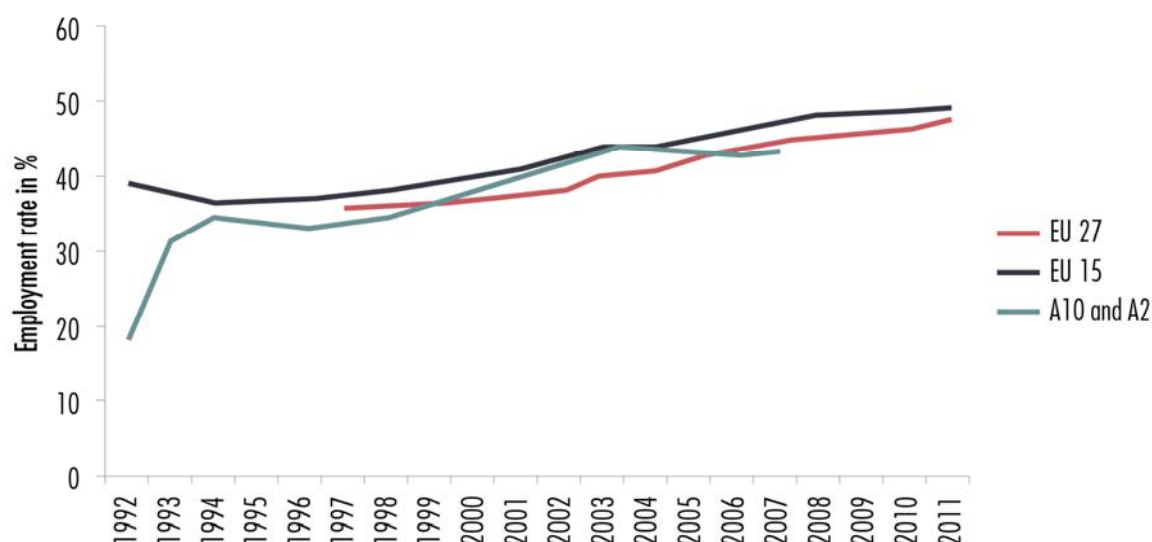
Expert opinion collected through the Delphi exercise suggested that low-skilled workers would be quite strongly affected by structural unemployment in the next 10 years, and they would be followed by migrant workers. As for female and young workers aged 15 to 24 years, predictions diverged between seeing the respective group as the most or least affected one vis-à-vis the other groups of workers.

Pension and labour market reforms, including tightening of the other potential routes to withdraw from the labour market (such as early retirement schemes and disability schemes), have had an impact on the overall number of older workers during the current recession. Further pension reforms will also affect future labour market participation trends among older workers (OECD 2012h), with an increase in the retirement age already being implemented or planned in many European countries (van Stolck 2012).

Furthermore, as well as life expectancy, healthy life expectancy is increasing. A growing number of older people are willing and able to remain actively involved in the labour market. A Eurobarometer (2012a) study shows that 61% of Europeans support the idea that people should be allowed to continue working once they have reached their official retirement age. In addition, two thirds of Europeans agree that part-time work (with partial pension) would be more appealing than full retirement. As good health is 'the very basic prerequisite to enable longer working lives' (Eurobarometer 2012a: 7), ensuring healthy ageing is the key challenge to keeping workers engaged with the labour market. Access to lifelong learning opportunities facilitating skills development has been also identified as a factor leading to longer working lives. Finally, perceptions about older workers, their capacities and productivity also play a role in keeping older people in work. The latest Human Development Report (HDR 2013:5) emphasised that 'social policy has to promote inclusion and provide basic social services, which can underpin long-term economic growth by supporting the emergence of a healthy, educated labour force'. During the interviews, experts raised concerns that people's attitudes towards working longer would have to change, and agreed that it will require significant preparation from politicians and policymakers to help people understand that 'longer working lives are inevitable and desirable'.

The ILO predicts a slight increase in older workers' participation rates globally. In Europe, the labour force participation rate of older workers has been rising for over a decade, with further increase projected up to 2020. In addition, as Figure C.2.2 shows, the employment rate for older workers in Europe has been increasing. Recent European Commission (2013) reports show that older workers (55–64) have increasingly stayed in the labour market. Yet, their employment rate remains still relatively low, at 49.5% in 2013.

Figure C.2.2: Employment rate of older workers (% of the labour force) in the EU



Source: Eurostat

Note: EU-15 countries include Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

A10 and A2 countries cover countries that joined the EU in 2004 and 2007 respectively, and include Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia.

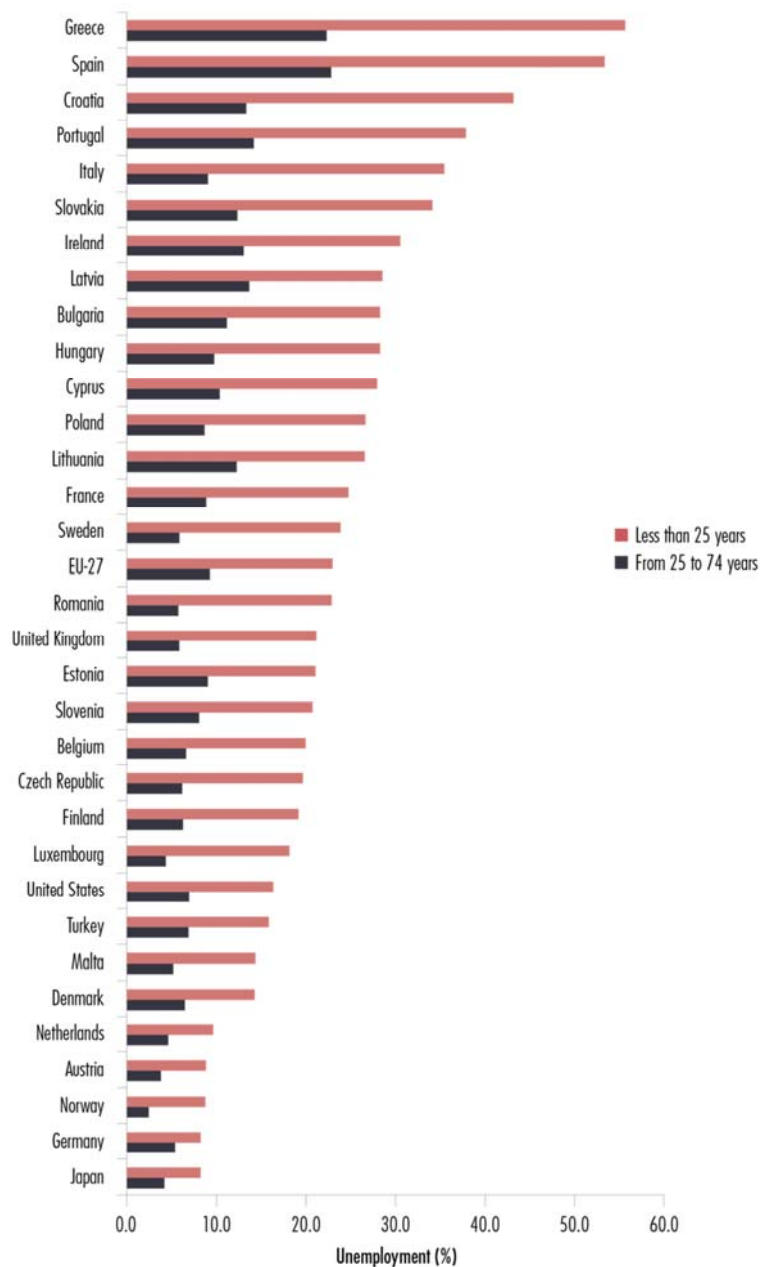
2.4. The rising number of vulnerable young workers

Young workers have been struck particularly hard by the rise in unemployment during the economic crisis. Recent estimates show that youth unemployment rates have increased in about 80% of developed economies and two thirds of the developing countries (ILO and ILS 2012). Analysis shows that economic crisis has led to the withdrawal of 6.4 million young people from the labour force globally, with a particularly pronounced increase in youth unemployment levels in developed economies and the EU (International Labour Office 2012a). ILO's analysis (2013: 32) shows that there were '22.9 million fewer employed youth in 2012 than in 2007, despite growth in the global youth population of more than 12 million'. The global youth labour force participation rate decreased by about 2 percentage points between 2007 and 2012. ILO's analysis suggests that this decrease may be partly explained by increased time spent in education, yet it concludes that in the development economies and in the EU Member States a more plausible explanation for this trend is the growing number of youth not in education, employment or training (NEETs) (ILO 2013). In 2012, the global youth unemployment rate was 12.7%, 1% above the pre-crisis level. The ILO projects that the youth unemployment rate will remain at the same high level until 2016, with large increases particularly experienced in the Western world, Latin America and South Asia (International Labour Office 2012a).

The long-term unemployment rate among young workers has also increased in the last few years. It is estimated that globally young people are three times as likely as adult workers to be unemployed (Curci et al. 2012; International Labour Office 2012b). In the EU Member States, youth unemployment had

reached nearly 24% by 2013, over two and a half times higher than the rate for adults. Youth unemployment ranged from 15% or less in Austria, Denmark, Germany and the Netherlands, to more than 55% in Greece and Spain (European Commission 2011a; European Commission 2012c) (see also Figure C.2.3 below).

Figure C.2.3: Comparison of unemployment rate (%) of young workers (less than 25 years) and workers aged 25 to 74 years in the EU Member States, United States, Turkey, Norway and Japan, 2012



Source: Eurostat

The 2013 HDR confirms that mass protests, especially by educated people, tend to erupt when bleak prospects for economic opportunities lower the opportunity cost of engaging in political activity. Delphi respondents similarly highlighted that higher structural youth unemployment in EU countries may lead to a higher incidence of societal unrest. Despite disagreement among participants, experts agreed that the estimated likelihood was above 50%, with a 70% likelihood on average overall. This was supported by the findings from interviews, with one interviewee describing the situation as a ‘generation of people growing up without the experience of work, which cannot be sustained’ because it will lead to disaffection and the questioning of political establishments.

Unemployment is not the only difficulty faced by youth in Europe. Increasing numbers of young people aged 15–29 years old are classified as NEET. The NEET rate in Europe has increased significantly since the start of the economic recession. Eurostat data for 2012 show that 12.8% of young people aged 15–24 and 19.7% of those aged 24–29 years old fall into the NEET category. NEETs face multiple disadvantages and are at high risk of marginalisation since they are excluded not only from the labour market but also from education and training systems. Apart from unemployment and NEET risks, many young workers are increasingly employed in non-standard jobs with limited opportunities for professional development and career progression. This underemployment includes involuntary low-productivity, temporary and low-paid jobs that fall short of young people’s aspirations. For those young workers, mainly in Europe, the transition into appropriate work continues to be postponed. It is estimated that youth part-time and temporary employment has been growing faster than equivalent adult employment. The European Commission’s (2011a) analysis shows that temporary contracts account for over 50% of all new hires across the EU, with almost 60% of young people getting their job that way. A recent survey conducted across several EU countries shows that young people believe they will have fewer opportunities than their parents’ generation to have a secure and satisfying job, and to have a high salary in the future.

A longer time in education and training may serve for many young people as a potential way to overcome unemployment risk. Education and training increase young people’s productivity and employability and postpone their entry to the labour market (International Labour Office 2012a; OECD 2012h).

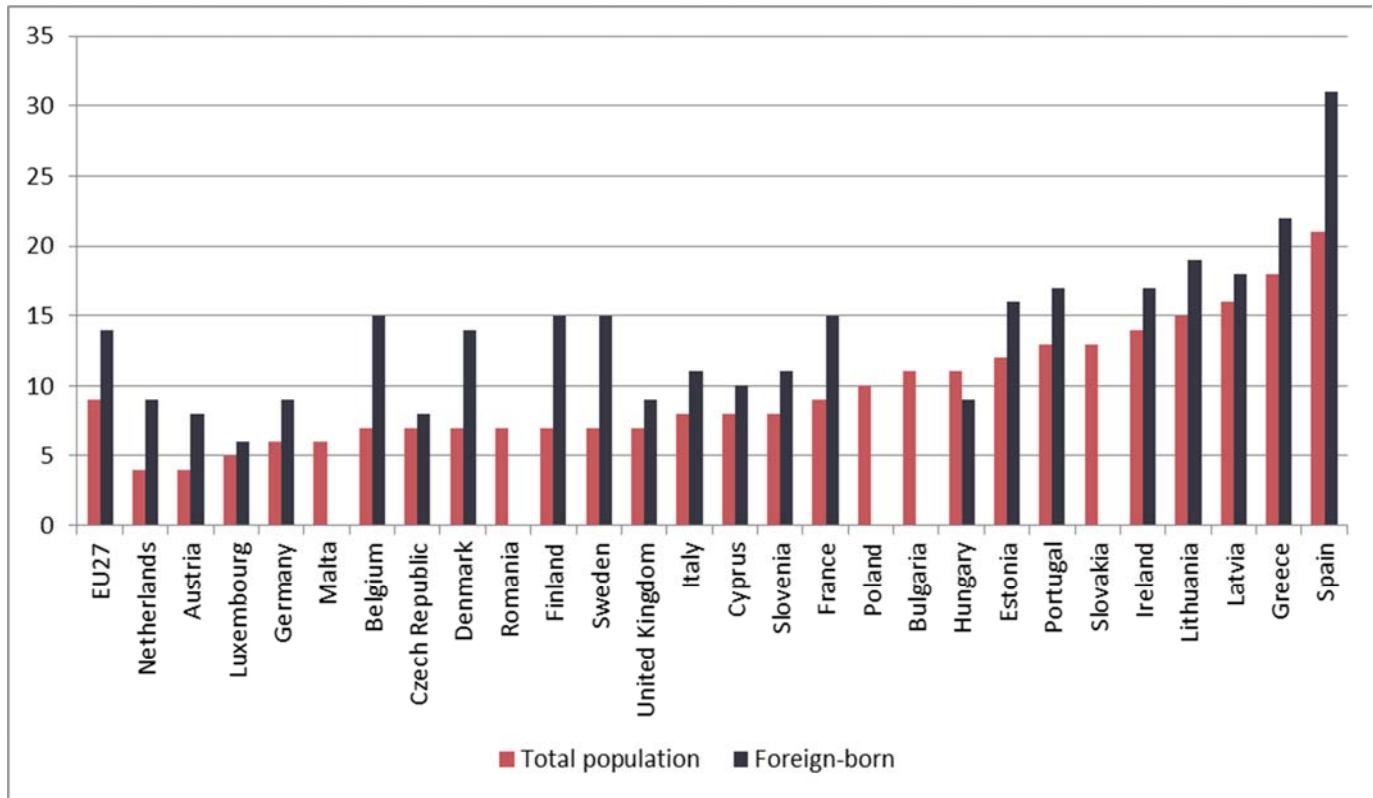
2.5. The challenge of integrating migrants in the labour market

Migrants and migrants’ children (second-generation migrants) are also disadvantaged vis-à-vis native populations in their education and labour market outcomes. As discussed in the Synthesis Report, future migration flows to Europe are highly unpredictable, but the challenges surrounding immigrants already resident within Europe are more certain. With the growing proportion of residents having immigrant background, it is not just an integration task but a matter of how well European governments adapt to what has become a permanent change in the population. Research shows that differences between the socio-economic status of migrants and natives persist, and are to some extent passed down to generations born in the host country. For instance, existing research shows that education outcomes of the first- and second-generation of migrant children lag behind the outcomes of their native peers in host countries. The results of the OECD Programme for International Student Assessment show that, on average, migrant children reach lower levels of educational attainment than their peers. Research also shows that migrant children are overrepresented in special needs schools and in vocationally oriented schools that

typically do not lead to higher education, have higher drop-out rates and leave school younger than their peers, are concentrated in urban areas and often attend schools with a high concentration of foreign pupils. These lower levels of educational attainment often translate in weaker labour market performance. A study by Algan and colleagues (2010) compared the experiences of first- and second-generation immigrants in France, Germany and the UK in terms of their education, earnings and employment. The authors found that in all three countries, the labour market performance of most immigrant groups as well as their descendants is, on average, worse than that of the native population (after controlling for education, potential experience and regional allocation). Analysis of the labour force data also shows that migrants are disadvantaged in the labour market in most European countries. In 2011, migrants' unemployment rate for EU-27 was 14%, 5 percentage points difference compared to the total population (see Figure C.2.5 below). Migrants' employment rate is also considerably different from the employment rate of the total population across EU Member States. In 2011, the employment rate of the foreign-born population was 64%, compared with 69% for the total population in EU-27. There are, however, considerable differences across European countries in respect of migrants' employment rates. For instance, in southern European countries such as Italy, Portugal and Greece, the migrants' employment rate is higher than the employment rate of the total population. On the other hand, in countries such as Belgium, Denmark, Finland, France, the Netherlands and Sweden the migrants' employment rate is lower by 10 or more percentage points compared with the employment rate of the total population (see Figure C.2.6 below).

Given the large and growing proportion of residents (and citizens) with an immigrant background in Europe, it is crucial that migrants are seen as a core part of Europe's population. In addition, immigrant children represent a significant proportion of the current school populations in many European countries and as such will form large group of new entrants into the labour market in the coming years. Therefore, as suggested during the ESPAS RAND Europe seminar, migrants are no longer a separate policy issue but a mainstream policy issue requiring systematic policy change. Treating migrants as an integral part of education and labour market policies may facilitate migrants in achieving high educational attainment and better integration in the labour market, reducing income inequality and alleviating the risk of a lost generation – those of immigrant background being at a significant disadvantage.

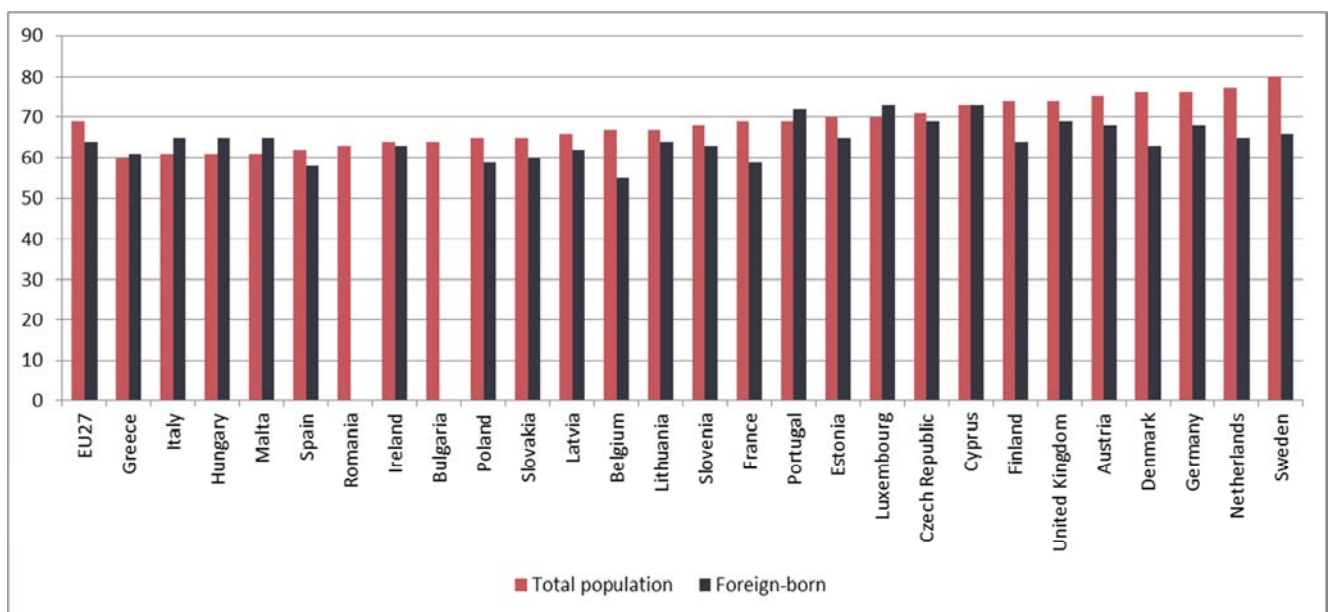
Figure C.2.4: Comparison of unemployment rate (%) of total population and foreign-born population in the EU-27, 2011



Source: Eurostat, Labour Force Survey

Note: DE data – DESTATIS estimates. No data for foreign-born population in Bulgaria, Malta, Poland, Romania and Slovakia.

Figure C.2.5: Comparison of employment rate (%) of total population and foreign-born population in the EU-27, 2011



Source: Eurostat, Labour Force Survey

Note: DE data– DESTATIS estimates. No data for foreign-born population in Bulgaria and Romania.

2.6. Marked differences in male and female vulnerable employment

Analysis of the World Bank's vulnerable employment data shows that levels of vulnerable employment significantly vary between female and male workers, and between regions. Over the last decade, vulnerable employment, defined as unpaid family workers and own-account workers as a percentage of total employment, has been decreasing for women in the EU Member State countries and the OECD countries. With regard to female employment, experts from the Delphi exercise discussed the role of part-time work. Although it helps women to enter the labour force initially by enabling them to combine work and family life, 'it has a negative impact on career opportunities for women' and thereby reinforces gender inequality. On the other hand, while interviewees recognised that more needs to be done, the overall view on gender equality was more positive than that presented in the Delphi exercise. One interviewee explained that there now existed a more 'modern and egalitarian approach to gender relations, with the diminishment of the idea that the man should be the bread winner and the woman should be the housewife'. Another interviewee confirmed the gradual improvement in gender pay gaps and an increasing number of women in higher-level positions, challenging male domination of these jobs. However, one interviewee did point towards 'acute polarisation because there has not been much progress for women in lower skilled jobs' with regard to working conditions or income inequality.

In contrast to decreasing female vulnerable employment, male vulnerable employment seems to be stagnating and even growing over the same time frame, with the most pronounced increases occurring in the Eurozone countries in the EU. This is in line with the European Commission's (2011a) analysis of employment trends in the EU and RAND Europe's study, which shows that men seem to have been hit hardest by the crisis.

Chapter 3. The skills mismatch: diverging demand and supply of skills, employment creation

3.1. Global surplus of low-skilled workers and shortage of medium- and high-skilled workers

The most significant imbalances in the labour market, such as unemployment and underemployment, are increasingly linked to the growing mismatch between the demand for and supply of workers with specific capabilities. Overall, it is estimated that there will be a potential surplus of low-skilled workers around the world and a global shortage of medium- and high-skilled workers. This skills mismatch is projected despite rising college completion rates in developed countries and a dramatic rise in educational attainment in developing countries. Dobbs et al. (2012b) estimate a potential surplus of 90–95 million low-skilled workers globally (10% of the supply of such workers) and a potential shortage of high-skilled workers of about 38 million to 40 million (13% of demand for such workers) by 2020. Expert opinion in the Delphi exercise seemed divided about the impact of the skills mismatch on economic growth in China, India and Brazil by 2030; most, however, seemed to disagree with the statement that it would suppress economic growth in these countries. Interviewees also emphasised that Asian countries generally are becoming skilled and will be able to compete with highly skilled Western economies. According to the European Commission (2012c: 4), despite progress in recent years, ‘Europe is still not sufficiently skilled. Nearly one third of Europe’s population aged 25–64 — around 77 million people — have no, or low, formal qualifications and only one quarter have high-level qualifications. Those with low qualifications are much less likely to upgrade their skills and follow lifelong learning.’ Experts from the Delphi exercise seemed to agree that the difference in employment rates for low- and high-skilled workers will increase in the next 20 years slightly, from 30 to 34 percentage points. In their discussion, they mainly attributed the growing skills mismatch to the impact of technology on modes of production and the disappearance of traditional manual low-skilled jobs.

Modelling studies suggest that after an initial displacement of jobs, net employment will recover. As new technologies mature, their adoption will be driven more by quality improvements than cost savings (Hoorens et al. 2012). Moreover, efficiency of the labour market is likely to improve as well, as a result of labour force networking, improved job search and better matching of workers to jobs (Caliendo et al. 2010; Goyal 2011; Kalleberg 2006). The employment contributions of the new technologies are not limited to the number of jobs. Earnings gains from productivity growth have been heavily concentrated among high-income workers and families. It is not clear whether economic insecurity has truly increased. Recent increases in perceived inequality and insecurity have been attributed to changes in the stability and

quality of jobs available (Rosenblum et al. 2010). But job destruction may lead to insecurity, even if matched by job creation. Displaced workers have difficulty fully replacing previous earnings and tenure (Rosenblum et al. 2010).

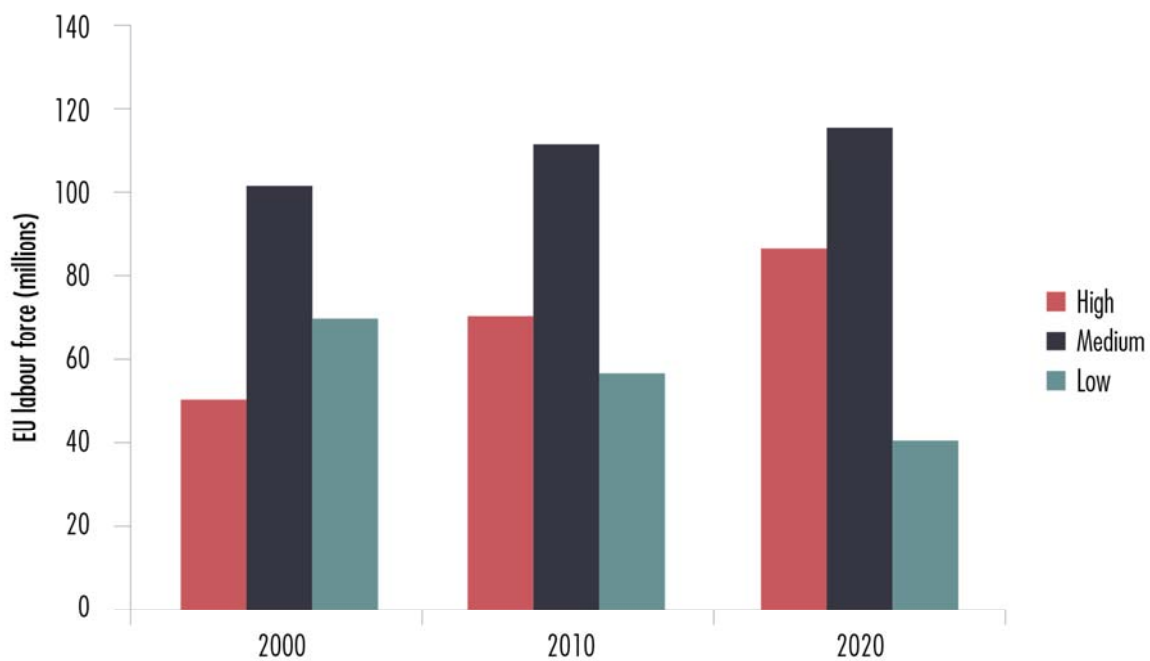
On the supply side of the labour market, however, the longer term is likely to be affected by a projected surplus of low-skilled workers. As highlighted above, Dobbs et al (2012b) expect a potential impact for long-term and permanent joblessness. Young people without post-secondary training would face difficulties in entering the job market, whereas older workers might not qualify for new jobs that are being created.

The deteriorating position of low-skilled workers is reflected in employment figures. In most high-income economies, the position of low-skilled workers has deteriorated over the last few decades. Unemployment rates for this group of workers are two to four times those of the most highly skilled workers. The unemployment rate is particularly high for young workers (Dobbs et al. 2012b; Manyika et al. 2012). In Europe, the difference in unemployment rates between low-educated and highly educated people is three to fourfold (European Commission 2012c). Employment rates also diverge considerably for these two groups, with 53% for low-skilled people and 83% for the highly skilled. The report concludes that these differences in the labour market outcomes for low- and high-skilled workers seem to be growing.

3.2. The importance of educational attainment and skills upgrading, as well as job creation

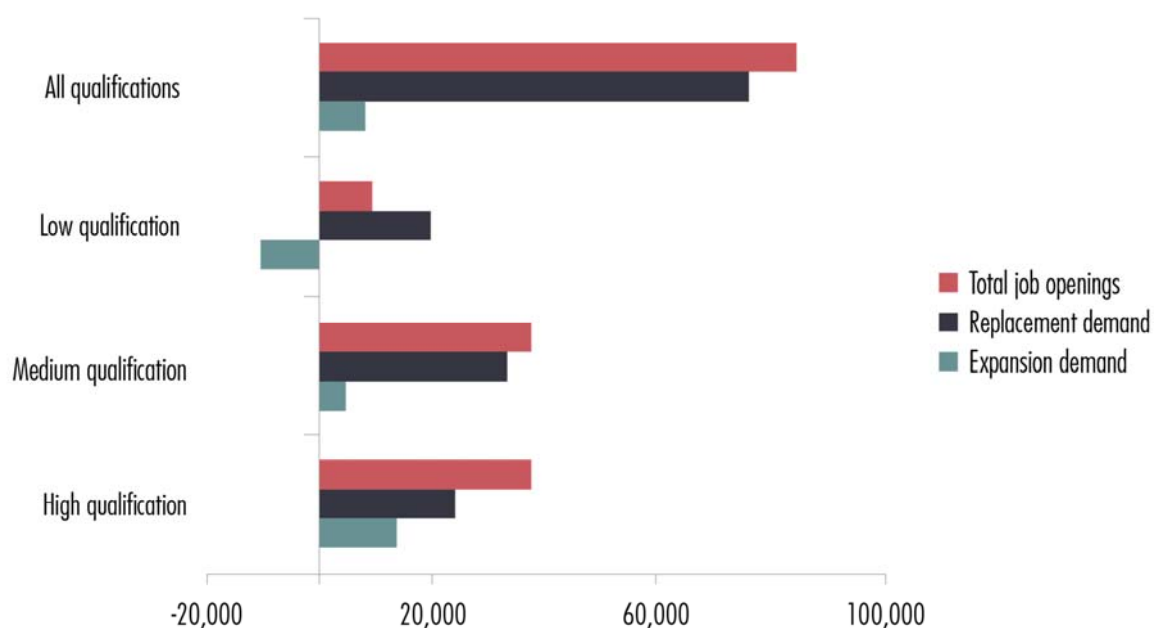
Research shows that the rise of educational attainment increases workers' skills, thus improving workers' position in the labour market. However, workers' skills are projected to increase at a lower rate than the actual needs. Dobbs et al. (2012b) project that if current educational attainment trend persists, in 2020 there could be a billion workers globally who lack secondary education and hundreds of millions of working adults without job-relevant skills who would need training. The authors suggest that in the developing world the capacity of high and vocational schools would have to grow at two to three times the current rate to provide workers with skills required in the labour market. For the developed economies, the study suggests that the growth rate in tertiary education attainment would need to double. In addition to human capital investments and skills upgrading, Delphi respondents suggested that refinement of the definitions 'high-skilled' and 'low-skilled' would be needed, along with the job profiles needed in Europe, comprehensive information systems about educational outcomes, and monitoring of educational quality.

Figure C.3.1: Skills forecast: size of EU-28 labour force by skill level (2000-2020)



Source: Cedefop (2013)

Figure C.3.2: Skills forecast: job openings by qualification, EU28+



Source: Cedefop (2013)

Note: EU-28+ includes EU-28 Member States, Switzerland and Norway.

An increase in the share of science, technology, engineering and mathematics (STEM) graduates has also been suggested as a way to match future labour market needs and workers' skills better (Manyika et al. 2012; Ouye 2011). The majority of experts from the Delphi exercise agree that the proportion of STEM graduates in 2030 will amount to approximately 20%, leaving them with an estimated wage premium of about 20% to 30% over non-STEM degree workers in 2030. In Europe, the Europe 2020 strategy provides clear targets for investment in education and training. It also highlights the importance of anticipation of skills needs and matching and guiding services to raise productivity, competitiveness, economic growth and ultimately employment (European Commission 2012c). This increasing competitiveness of economies may act as a push factor towards reducing labour costs and creation of low-wage jobs. Yet, at the same time there are discussions about labour force well-being and the decline of the welfare state. One interviewee emphasised the need to 'develop people with skills to innovate' because these types of skills 'are not easily replaceable' and would help Europe develop a competitive edge. This was supported by another expert, who forecasted that the rise of technology and artificial intelligence will substitute for many jobs that do not require creativity or imagination. Therefore there is a need to invest in skills required for 'human-only jobs', which could increase the EU's competitive edge. Even though upskilling is predominantly a national competence, interviewees recommended that the EU play a guiding and financing role.

The ILO's (2013) study shows that the low job creation rate may be partly responsible for low employment figures for low-skilled workers; current job creation rates are considered particularly low. Estimates from Delphi respondents confirmed a high likelihood (about 75%) that the skills mismatch will

contribute to long-term unemployment for low-skilled workers in EU Member States by 2030. In addition, jobs created in the coming decades are not likely to resemble those of the past or those lost in the recession. The skills mismatch will leave many EU economies with a generation of workers who will have experienced repeated periods of long-term unemployment and limited career opportunities – according to Delphi estimates, the likelihood is 70%. One interviewee did express the opinion that the problem of a skills mismatch would not be a long-term issue because the market would self-correct. Dobbs et al. (2012b) suggest that the rate of job creation for workers with low skills would need to increase to a level at least five times higher than in the past to provide employment for the global pool of low-skilled workers. The ILO's (2013) analysis suggests that the geographical mismatches between jobs and workers, with low job creation rates in places with the highest unemployment levels and vice versa, would also need to be addressed.

Studies suggest that governments will need to consider steps to raise the demand for low-skilled workers. For instance, in the developing countries there is a need to invest in labour-intensive exports, infrastructure and housing construction. In the developed economies, creation of more jobs in the service sectors – in particular healthcare and other care industries – may provide demand for more low-skilled workers. The European Commission (2011a) suggests that green jobs and white jobs (linked with environmental and health and social work activities) have seen sustained growth in the last decade.

It is suggested that countries should push for productivity improvements and expand knowledge-intensive sectors of the economy (Dobbs et al. 2012b; ILO 2013; OECD 2012h). Cedefop's study (2012a) assessing the future skills supply and demand in Europe shows that in the period up to 2020 there will be job openings in all types of occupation, but most newly created jobs will be at the higher and lower end of the job spectrum, possibly bringing a risk of job polarisation (see Figure C.3.2 above). Due to the retirement of the post-war baby-boomer generation, there will be significant numbers of job opportunities in manufacturing, crafts and agriculture. On the other hand, there will be a high demand for more skill-intensive jobs at all levels, and many traditional manual or routine jobs will decline. Cedefop's study also shows that there would be weak employment growth in the short term, and that the supply of people with high-level qualifications may temporarily exceed the number of jobs requiring that level of qualification.

Chapter 4. A new working environment

Analyses of future work trends also focus on how people work and how working environments might look in the future. It is estimated that these trends are most pronounced in the science- and technology-focused companies. However, as technology and technological advancements become more integral to the operation or mission of a broader range of organisations, these issues may become part of a larger work community.

New automation, production methods and manufacturing technologies are expected to advance further and facilitate the development of new capabilities and competencies, but at the same time they may make certain jobs redundant (Ouye 2011). Innovation is likely to accelerate and to have significant implications for labour markets, even by 2030. Developments in science and technology are also projected to transform existing industries further, create new business models and new types of jobs (Talwar & Hancock 2010).

4.1. Technology increases interconnectedness and may change power relations at work

Trends in new ways of working are driven by the increasing availability and use of new enabling technologies resulting from the growing extension of capabilities of these devices, technologies becoming cheaper, multifunctional (e.g. smart phones) and increasingly easy to use (National Intelligence Council 2012). The increasing capabilities of data solutions provide increasing opportunities to accumulate, store, manage and extract value from data.

These trends may influence the organisation of work in companies, and may facilitate further spatial and organisational distribution of the workforce. For instance, an increase in the outsourcing of some back-office functions is projected. It will potentially lead to shrinking numbers of workers employed directly by the organisation in such activities as HR, IT, accounting, purchasing and property management. A relocation of work to lower-cost locations may also lead to an increasingly complex network of employees, suppliers and customers, both located and dispersed around the world. A new international division of labour may, in turn, increase competitiveness between countries (O'Neill 2009; Ouye 2011).

The nature of organisational governance structures may also change. The growing number of workers employed by transnational companies may be organised on a global scale. For instance, workers may be accountable to managers in a different geographical location. Collaborative working with colleagues located in other offices may also gain importance and further diversify traditional ways of working in the future (Jones 2008). Workers may need to adapt to the new work practices of increasingly global

organisations and would need to coordinate with colleagues in widely different time zones (Deloitte 2009).

Workers may also become increasingly mobile and not be bound to one physical workplace. They may work away from home long-term, work more over distance (telework) and be on more flexible work arrangements (Deloitte 2009; O'Neill 2009). Delphi respondents estimated that the proportion of EU workers working from home will increase to 10–30% by 2030, from a current 7%. The European Agency for Safety and Health at Work (EU-OSHA 2011) expects an increase in connectedness of workers – anyone can be reached at any time – as well as the evolution of mobile working styles. Consequently, workers may want more autonomy and flexibility to combine work and family life better. A Eurofound (2012) report shows that work–life balance is an increasingly important issue for workers in Europe throughout their working life. The study suggests that there is a clear link between working hours and problems with work–life balance, and that flexible work arrangements improve the reconciliation of work with private life. In an interview, one expert explained the benefits of technology in this area. It allows men and women in demanding positions greater flexibility and the opportunity to participate in family moments of ‘huge importance’, such as a child’s performance in a school play or concert. From the employer’s perspective, more flexibility in working hours and practices may provide a challenge to keep workers engaged and connected (Ouye 2011). Experts from the Delphi exercise confirm the positive impact of working from home. One expert predicted a ‘better life balance and all the benefits associated with more flexibility’ and ‘higher job satisfaction’. However, limited ‘human interaction and socialising’ was identified as a negative impact.

Advances in science and technology may also transform jobs themselves. EU-OSHA (2011) suggests that technology will have a significant impact on occupational health and safety in the workplace. Talwar and Hancock (2010) estimate that new jobs will require higher levels of qualification and different skills than more traditional jobs. The authors also suggest that there will be fewer manual and routine jobs in the future. This, in turn, may facilitate a reduced number of occupational health and safety risks and a healthier workforce.

Trends focusing on pressures towards more sustainable organisations and work styles may also influence future ways of working (European Commission 2009a). Owing to the pressures from consumers and government initiatives to discourage wasteful and environmentally unsuitable work practices, companies would probably have to reconsider issues related to sustainability of how and where their workers work. Technology is also seen as a factor for a potential move to a green economy (European Agency for Safety and Health at Work, 2011). The growing importance of ethical consumerism expressed by the purchase of social, ethical and environmental products may also put pressure on companies to act in a socially responsible way (Ouye 2011). However, for human development to become truly sustainable, the close link between economic growth and greenhouse gas emission needs to be severed, and in most developing countries the high costs and low availability of clean energy remain a barrier to progress (HDR 2010).

4.2. Uncertainty about the level of absorption of new technologies

The uncertainty about these trends in new working environments stems from a variety of factors. First of all, these trends are largely focused on the developed economies and it is still unknown to what extent they will shape working environments in the developing countries. Potentially, there is a growing divide between technologically advanced economies and countries lagging behind in their absorption of new technologies (Jones 2008; Ouye 2011). However, some literature suggests that in certain technologically developing economies (South and South East Asia) similar work developments to those in the West will occur (Manyika et al. 2012). Some authors assume that the digital and technological divides within and between countries will diminish or disappear in the coming decades, enabled by the ability of countries to 'leapfrog' certain phases of fixed infrastructure development. This trend could be reinforced by the falling technology process and the increasing demand for connectivity. The spread of mobile phones and smartphones for data communication and accessing the internet has also accelerated over the recent years. It is projected that the mobile internet technology will grow at rates superior to those of fixed internet technologies, and faster in developing countries than in developed ones.

Yet, the extent to which these new technologies would be absorbed in work practices and how they may translate into better socio-economical outcomes for individuals is still debated (ITU 2011; OECD 2012a; World Bank 2012). For instance, workers may still prefer face-to-face interaction and personal relationships with their colleagues, and therefore not fully utilise technological capabilities. Finally, although technological advancements are increasingly becoming an integral part of the working environment, there is uncertainty about the extent to which they will affect particular sectors (Ouye 2011).

Matrix for employment trends

Trend	Drivers	Indicators	Evidence-base (0/+/+/+/+/+)	Time horizon	Outcomes for the EU	Uncertainty (low/ medium/ high)
Decline in the working age population in the EU and developed countries	Decline in fertility rates and gains in longevity in Europe	Fertility rates, population growth/decline, old-age dependency ratios	+++	Short and long term	Potential increase in migration movements and migration pressures on Europe Potential shift in the balance of global economic powers with Europe's decreasing political and economic influence on the world stage	Low
Growth of the labour force in developing countries	High fertility rates in developing countries	Fertility rates, population growth/decline, old-age dependency ratios	+++	Short and long term	Potential social unrest in developing countries if job creation rate too slow to absorb growing labour force Potential increase in migration movements and migration pressures on Europe; potential shift in the balance of global economic powers with Europe's decreasing political and economic influence on the world stage	Low
Increasing unemployment rates in the EU, in particular youth unemployment rate	Shortfall and slow employment creation	Unemployment rate, youth unemployment rate, NEET rate	+++	Short to long term	Job creation; mitigating risk of social exclusion and labour market withdrawal of unemployed; increasing employability of unemployed, in particular among young unemployed people Potential social unrest if particular workforce groups are disproportionately affected by unemployment.	Low
Shrinking labour force participation in Europe and globally	Shortfall in the global employment creation; disbelief among unemployed (in particular young and long-term unemployed people) that jobs	Labour force participation rate, employment and unemployment rates	+++	Short term (5–10 years)	Diverging labour market trends across sectors of the economy and between workforce groups, unemployment rates, labour force participation rates and withdrawal from labour markets, risk of	Medium

Trend	Drivers	Indicators	Evidence-base (0/+/+/+/+++)	Time horizon	Outcomes for the EU	Uncertainty (low/ medium/ high)
	are available, resulting in dropping out of the labour market completely; no improvement in working conditions (and in some regions and sectors of economy deterioration in working conditions) discouraging labour market entry				poverty, vulnerable employment groups, risk of social unrest	
Diverging demand and supply of skills (surplus of low-skilled workers and shortage of medium- and high-skilled workers)	Decline in low-skilled jobs, oversupply of low-skilled workers, increasing demand in high-skilled jobs, insufficient supply of high-skilled workers	Difference in employment rates for low- and high-skilled workers, job creation rate	++	Short and long term	Differences in labour market outcomes of low- and high-skilled workers, need to increase educational attainment (in particular beyond the primary school age) to improve workers' position in the labour market, low demand for low-skilled workers, skills mismatch, risk of 'lost generation'	Low
Changing working environment owing to ICT developments	Developments in science and technology, ICT advances	New technological capabilities, societal acceptance of new technologies	++	Short and long term	Uncertainty about the possibility of a growing divide between technologically advanced economies (and individuals) and countries (and workers) lagging behind in their absorption of new technologies	Medium

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