

BULLETIN

Anticipating skills needs in Europe: issues and implications

This Bulletin draws on results from a major new programme of research undertaken by Warwick Institute for Employment Research, funded by Cedefop. This research considers what useful messages can be delivered about the way the economy and labour markets at European level are changing, and what this means for the demand for skills and priorities for education and training. It focuses on the implications of structural changes in European economies and labour markets on the changing patterns of demand for and supply of formal qualifications.

Background

The New Skills for New Jobs agenda has emphasised the importance of trying to anticipate changing skill needs. Individuals making career choices, as well as education and training providers, need to form views about the kinds of education and training that will best serve in an increasingly uncertain environment. Recent events in financial markets, and their ramifications for the world economy, have highlighted the problems in trying to peer into the future, yet the rising demand for such information shows no sign of abating.

Europe has seen dramatic changes in its employment structure over the past 60 years. While primary industries (including agriculture) and manufacturing are still important in economic terms, they account for an increasingly small part of total employment. Knowledge based activities and the application of intellectual and professional capacities are crucial for economic success, while caring for the environment and an ageing population are becoming the most significant areas for new employment activities. This project explores what this means for the future of education and work.

Context and rationale for skills forecasting in a market economy

We live in a rapidly changing and uncertain world. Long lead times on investment decisions such as education

and training choices mean that it is necessary for all those who are involved in the labour market and making choices about education and training to undertake a cool, logical and systematic assessment of future prospects. This includes those concerned with macro level policy in these spheres, as well as individuals and organisations and institutions making more personal choices and decisions. Such work can help to fill information deficits and avoid future imbalances and mismatches, as well as guiding and informing individual decision making and choices.

It is important to recognise that such work is generally not seen as an attempt to plan the system from the top down. Rather it aims to inform all participants in the labour market and education and training arena, in order to help make markets work better.

Some have argued that systematic anticipation of changing skill needs is both unnecessary and impossible. It is clear that nobody can predict the future with certainty. However, everybody can prepare or plan for what it might hold, including governments, employers, educational institutions and individuals. To do this involves some element of forecasting: either implicitly or explicitly. In this sense, not only is forecasting possible, it is also inevitable. The only meaningful questions are how should it be undertaken, by whom, and with what end in mind? The revealed preference of governments across the world suggests that there is general acceptance of the case for carrying out such

work as a “public good”. It is telling that the USA, which is one of the most capitalist economies in the world, devotes more resources to this activity than any other country.

The experience of the USA and other countries across the world suggests that forecasting can provide a systematic analysis of the implications of a continuation of past and current trends and patterns of behaviour. It can help to map out different scenarios based on alternative assumptions that can form a basis for intelligent and informed debate and further research, as well as helping to inform individuals making career decisions. What it cannot do is to make precise predictions that can be used for detailed “manpower planning”. Nobody has a crystal ball!

Aims & objectives of Cedefop work

The overall aims of the Cedefop work in this area are to provide better understanding of past trends in skill demand and supply at a pan-European level, and then to develop consistent skills projections, using existing comparable data. On the demand side, the focus is on skill needs (jobs) as measured by the numbers employed and number of job openings by sector, occupation and qualification (including replacement demands arising from retirement, etc). On the supply side, the focus is on the available skills, as measured by the highest qualification held by members of the population that are economically active. The analysis has a long-term aim of helping to identify possible imbalances and mismatches (although technical and other problems limit what can be achieved in this regard given existing data). It is important to emphasise that the Cedefop work is not intended to substitute for national level work but aims to provide a broader pan-European perspective. This is becoming increasingly important as labour mobility between countries rises.

The Cedefop work builds on two pilot studies that arose as a result of deliberations at Skillsnet workshops in Paphos and Warwick in 2005. These established the overall feasibility and cost effectiveness of such work. The need for such regular and systematic exercises was given new prominence in the New Skills for New Jobs initiative. As a result, DG Employment made funds available to Cedefop for a 4 year work programme covering the period 2009-2013. This work is being conducted by a multinational team lead by the University of Warwick Institute for Employment Research, and including Cambridge Econometrics, ROA from Maastricht University and Alphametrics, plus input from many others (including individual country experts who are members of the Skillsnet network set up by Cedefop to discuss such research). The first results from this new work programme were published at the beginning of this year, covering both the demand for and supply of skills.

Europe’s Future Skill Needs

Building on the Conceptual Framework and Modular Approach developed in the two pilot studies, the latest

Cedefop projections focus on skill demand and skill supply (skill being measured by occupation and qualification). The analysis also considers the implications for skill imbalances (focusing on qualifications). It takes into account the impact of the financial crisis and subsequent recession, although the full effects remain uncertain.

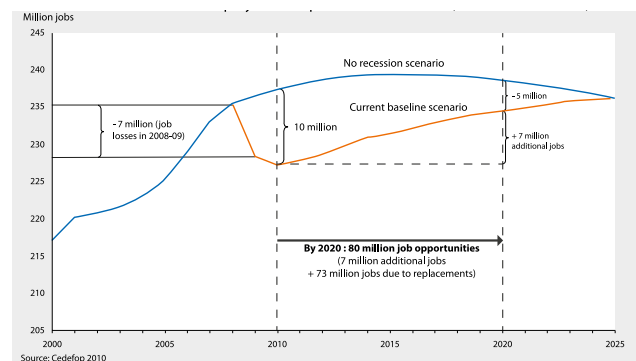
The general approach adopts quantitative, econometric methods, based around the well established E3ME macroeconomic model and Eurostat LFS data. The methodology has also involved systematic dialogue and discussion with individual country experts within the Skillsnet network, and continuous and ongoing improvement of methods and data.

The analysis focuses on future demand and supply trends at a pan-European level (EU-27+Norway and Switzerland). The “Demand” side covers: sector (up to 41 industries); occupation (up to 27 occupations); qualification (currently just 3 broad levels). The supply side covers numbers qualified, and economically active by highest qualification held, distinguished by age and gender. Three broad scenarios have been developed, covering the period to 2020 and beyond.

The full results are available on line and in particular in the main report (see: <http://www.cedefop.europa.eu/EN/identifying-skills-needs/index.aspx>).

The recession has had a major impact on the overall number of jobs. Employment is not expected to return to its pre-crisis levels (of around 235 million in 2008) until around 2020. Some 10 million jobs are estimated to have been lost as a result of the crisis. Nevertheless, some 7 million new additional jobs are projected to be created as the economy recovers from the current depressed levels. There are likely to be over 73 million job openings jobs due to replacements (the need to replace those retiring over the next decade).

Scenarios on the employment impact of the recession (EU-27 + NO and CH)



These broad figures disguise some significant changes in the structure of employment. Jobs are generally expected to become more knowledge- and skills-intensive (although there are some exceptions to this as discussed below).

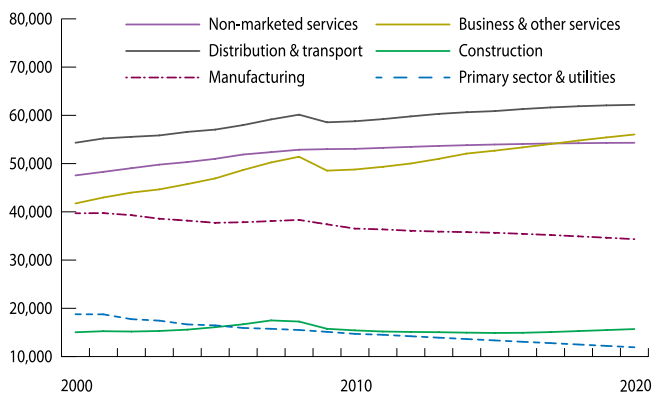
Changing Patterns by Sector and Occupation

These developments are driven by the continued impact of globalisation and technological change. These will alter the sectoral structure of employment and the demand for different types of skills. In general the recession has tended to accelerate these changes.

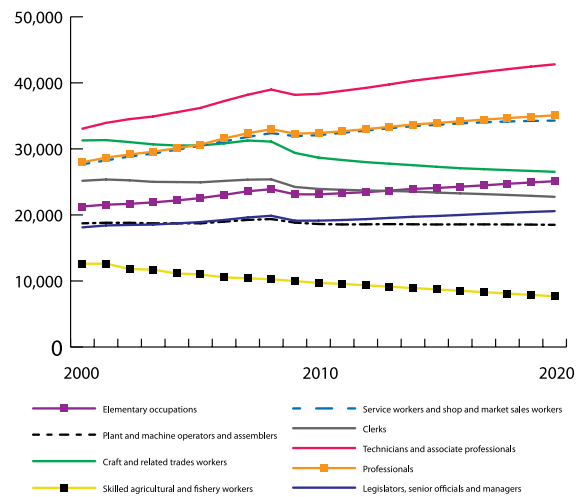
Projected trends by sector are expected to continue the well established paths of rising employment shares for knowledge based sectors and other services, with declines for primary industries (especially agriculture) and manufacturing. By 2020 “non-market” services (which include health and education) are expected to account for almost 50% of employment, while primary and manufacturing industries will account for fewer than 1 in 5 jobs. Business and related services are expected to account for the bulk of the new jobs. Significant job losses are likely in primary industries (especially agriculture) and in certain parts of manufacturing (especially those facing the most intense competition from low cost developing countries).

These structural changes have direct implications for the demand for skills, as occupational structures are very different across sectors. While the trends in occupational employment at the broad level are not quite as dramatic as those for sectors, they are unrelenting. Higher level occupations such as managers, professionals and associate professionals are the main beneficiaries of the recovery. Knowledge and skills intensive jobs are generally on the rise. However, there are also some increases projected for occupations which are less skilled, including various service occupations (sales and social care) and some unskilled occupations too. As with sectors, there are significant job losses as well as gains, and indications that the polarisation of skill demand noted by some authors is likely to continue to be a feature. Not all the jobs will be “good” jobs. Job losses are focussed amongst agricultural, clerical and traditional craft workers.

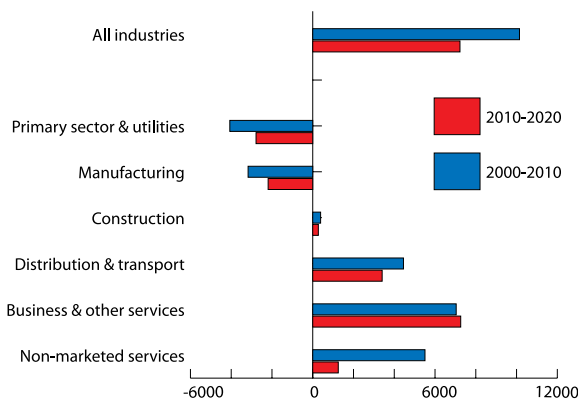
Past and likely future trends by sector (EU-27*)



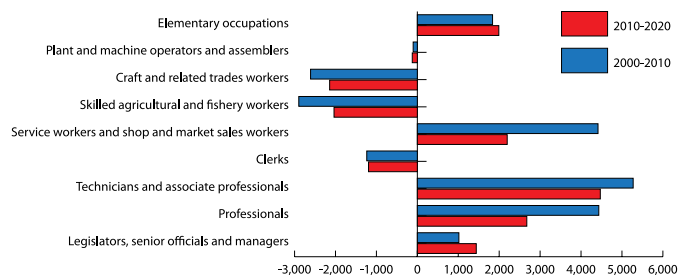
Past and likely future trends by occupation



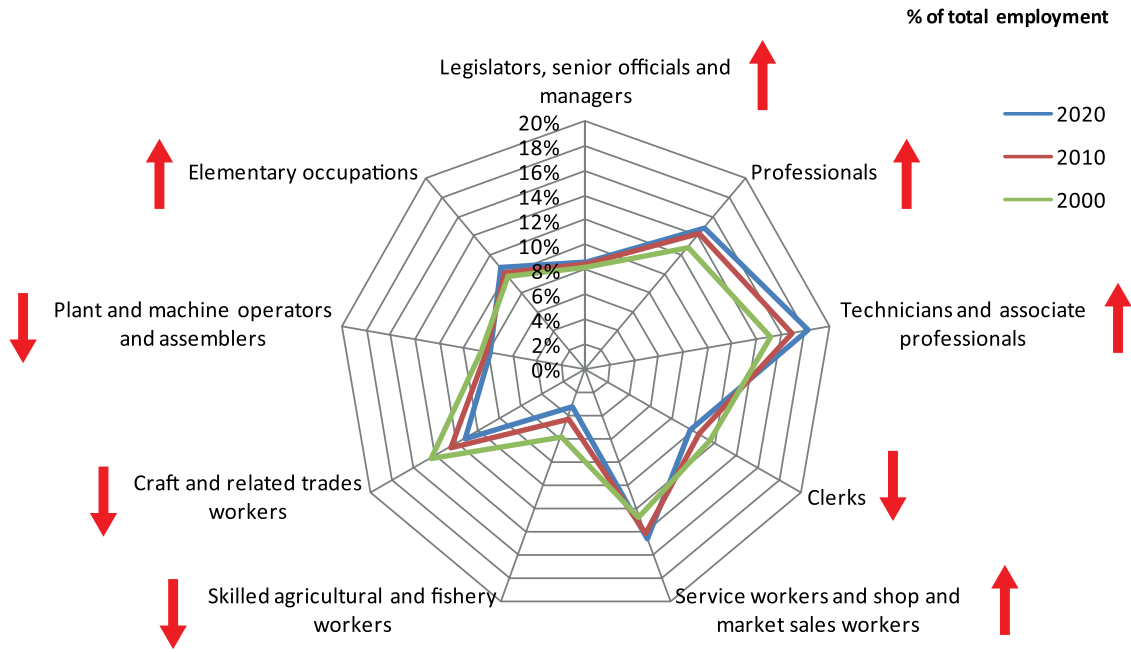
Net changes by sector 2010-2020



Net changes by occupation 2010-2020



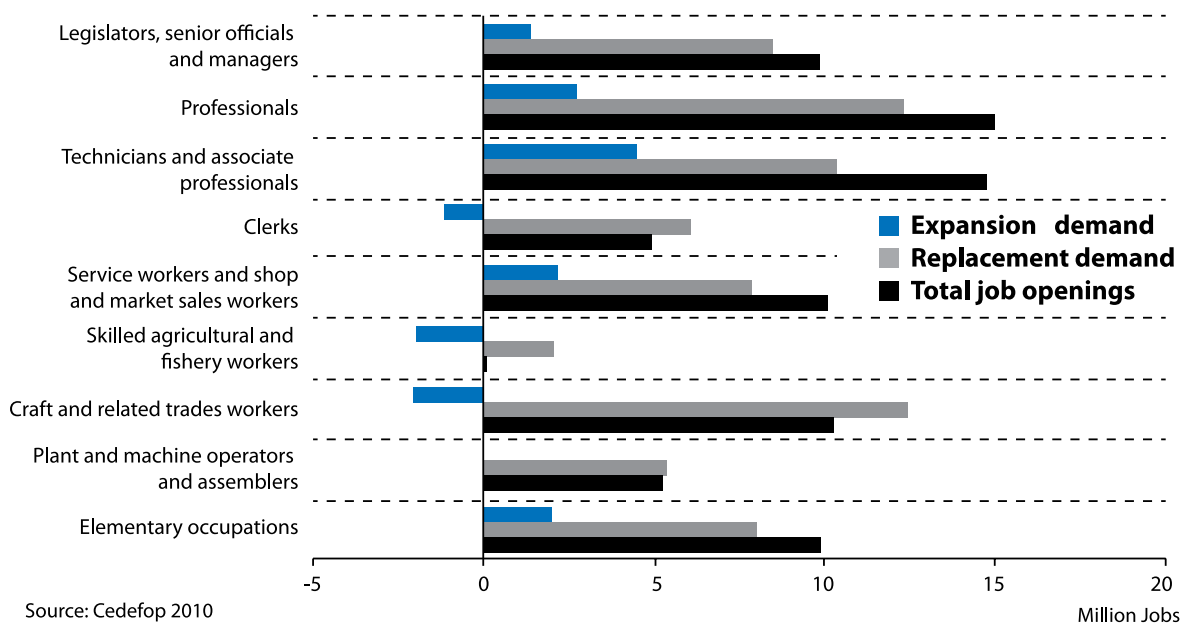
Changing patterns by occupation



The cobweb diagram above provides a further illustration of how the demand for skills is changing. But it is important not just to focus on expected net changes in employment. While overall employment levels are projected to increase by around 7 million between 2010 and 2020, replacement needs to offset retirement and other outflows from the workforce over the next 10 years will be much more significant. In total some 80 million new job openings are projected by 2020, and this benefits all occupations including those where the

overall trend in numbers is negative. This is illustrated in the chart below. Even for skilled agricultural and fishery workers (which are projected to experience one of the fastest rates of decline), replacement needs are sufficient to offset the projected decline in overall employment levels. This highlights the need to maintain education and training for skills in such occupations, despite their generally negative employment trends.

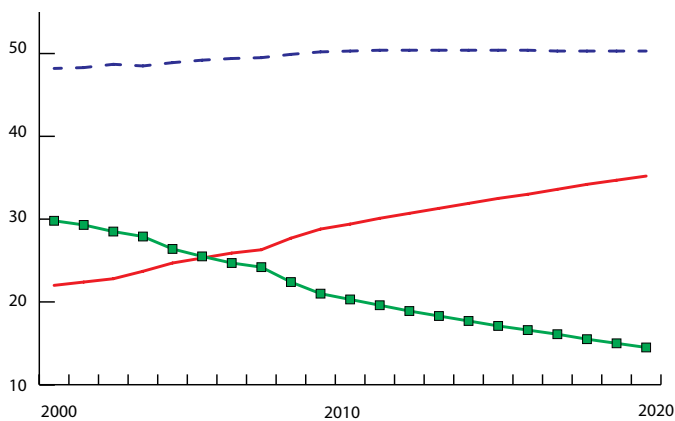
Job opportunities 2010-2020: change by occupational group (EU-27 + NO and CH)



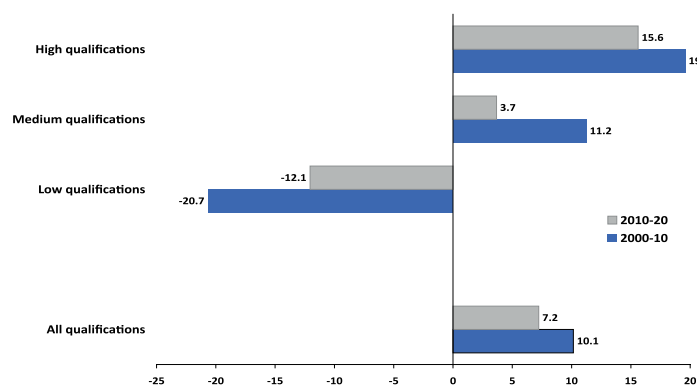
The Demand for Formal Qualifications

The other main indicator of skills in the Cedefop analysis is formal qualifications held. The demand for skills, as measured by highest qualification held for those in employment, is also expected to show steady increases between 2010 and 2020. There are going to be many more jobs for the better qualified. Employment shares for those with low (or no) formal qualifications are projected to decline sharply, falling to below 15% by 2020 (less than half the value in 2000). In contrast, those with high level qualifications, which in 2000 accounted for just over 20% of all those in employment, are projected to see their share rise to around 35% by 2020. Overall, the number of jobs employing highly qualified people is projected to rise to over 1/3 of the total while the number of jobs requiring medium-level qualifications will account for 1 out of every 2 jobs.

The demand for skills: trends by highest qualification for those in employment, 2000-2020 (%)



Demand for qualifications 2000-2020: net change of jobs (EU-27 + NO and CH)



These trends continue those observed over the first decade of the millennium. They also reflect what is happening on the supply side. Indeed it is a moot point whether they are more driven by supply rather than demand factors. Typically, better qualified people are more likely to find and retain employment than those less well qualified. The results

suggest that many of those with high and medium level qualifications will be taking up jobs that have previously not necessarily required them. Whether this reflects rising job requirements in such jobs or excess supply of formal qualifications remains the subject of heated debate. There is some evidence that the returns to qualifications are holding up, which suggests real changes in job demands, but other evidence suggests over-qualification may be becoming increasingly common.

There are many common trends across countries. On the demand side, there are broadly similar changes projected by sector, occupation, and qualification, including replacement needs. On the supply side increases in the numbers of those with high level qualifications and decreases in numbers with low level qualifications are a common feature. There have been strong cohort effects operating here (younger people are much better qualified), but the impact of this is moderating as previous generations that were less well qualified drop out of the working age population as they reach retirement age. There are also some significant differences between countries, reflecting stage of economic development, and different industrial and occupational structures, with evidence of a process of convergence and catch up effects for some.

Key findings and implications

The demand for skills is likely to continue to rise, although there are also concerns about polarisation, with significant increases in the number of some low level jobs.

On a positive note the results suggest that, across Europe as a whole, significant progress is being made towards the Lisbon targets. Europe is on track to raise its qualifications profile:

- more Europeans are acquiring high and medium qualifications;
- there are fewer low-qualified Europeans;
- younger cohorts are the best qualified ever.

Overall, rising supply has paralleled rising demand, and there is still evidence of high returns to education (in terms of both employment and wages). But there is no room for complacency:

- the rest of the world is not standing still - BRIC countries are increasing their shares of high-level jobs;
- there are questions about whether or not:
 - demand will continue to grow at the same pace and provide good quality jobs for all?
 - rising supply trends can be maintained?
 - the actual skills being produced by the education and training systems match with the labour market need?

The crisis has accelerated structural changes in the demand for skills:

- there is a continuing rise in demand for many high level jobs requiring high level qualifications;
- but there are also likely to be many job opportunities for the low-qualified;
- the share of better qualified people who may have to accept jobs requiring lower qualifications could increase.

Skills mismatches and imbalances remain a persistent phenomenon. We need to develop the right skill mix to:

- match and anticipate knowledge- and skills-intensive jobs;
- manage transitions in the labour market.

Conclusions and Caveats

Some form of regular and systematic anticipation of changing skills needs is an essential element to ensure a match between the changing demand for and supply of skills.

But there are limits to the extent to which the educational and training system can be “planned” from the top down. A

prime function of such activity should be seen as improving the information base upon which individual choices and decisions are made.

The Cedefop project has delivered the first comprehensive, pan-European skill demand and supply projections. These offer a sound foundation for further progress in anticipating future change, but much further work is needed. These next steps include:

- extension and improvements to models and methods;
- additional levels of detail, including discipline/fields of study;
- more indicators and issues to be covered and considered;
- there is a need for much better data;
- of course, this will incur costs, but the costs of ignorance about such matters are even higher.

It is important to recognise that this is an ongoing process – not the end in itself – but just the beginning of an attempt to ensure that Europe’s citizens are as well informed as they possibly can be about the economic, labour market and educational and training situation they face. It is also important to bear in mind that this is just one possible future. If we don’t like the look of it we need to take action to end up somewhere better!

Further details are available on the Cedefop website: <http://www.cedefop.europa.eu/EN/identifying-skills-needs/index.aspx>

Rob Wilson made a Keynote presentation at a New Skills Network event in Reykjavik on 31 May/1 June <http://www.newskillsnetwork.eu/id/1431>

CEDEFOP RESULTS: <http://www.cedefop.europa.eu/EN/identifying-skills-needs/index.aspx>

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