



# Forecasting skill supply and demand in Europe

Skillsnet technical workshop  
15-16 Valletta 2009, Malta

## Workshop summary and conclusions

The workshop was organised by the European Centre for the Development of Vocational Training (Cedefop), within its network of experts on early identification of skill needs 'Skillsnet' and hosted by the National Commission for the Higher Education (NCHE) in Malta.

Participants: 42 experts from 25 European countries (23 EU Member States) attended the workshop.

### Background

Within the New Skills for New Jobs (NSNJ) initiative Cedefop works on a number of activities to anticipate the changing demand for and supply of skills across Europe. Forecasting skill supply and demand in Europe is one of them. This workshop focused on the results of the core project being undertaken by a research team led by the Warwick Institute for Employment Research (comprising the Research Centre for Education and the Labour Market, Maastricht (ROA), Cambridge Econometrics (CE) and Alphametrics (AM)), as well as contributions from a number of other partners involved. It builds on the foundations established by earlier pilot projects<sup>(1)</sup> and aims to develop a robust system for projecting both skills demand and supply at a pan-European level, and to explore the implications of these for skill imbalances and mismatches.

In June 2009 a Skillsnet workshop was held in Thessaloniki to discuss this new project and to present preliminary results. The feedback received in the Thessaloniki event was incorporated into the project and revised results were produced. The prime purpose of the workshop in Malta was to present these results and receive further feedback from individual country experts.

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<sup>1</sup> In October 2005, Skillsnet/Cedefop organised an expert workshop in Cyprus to explore the feasibility of a European skill needs forecasting approach. All participants agreed on the desirability of launching a European-wide skill needs forecasting exercise and asked Cedefop to continue with this initiative and coordinate further steps. Following this decision Cedefop launched a pilot project on developing *Medium-term forecasts of occupational skill needs in Europe*, focusing on the demand side. A research team comprising IER, ROA and CE was entrusted to carry out this work. Preliminary results demonstrating the feasibility of producing a regular and consistent set of pan-European projections were published at Cedefop's Agora conference "*Skills for Europe's future*", which took place in Thessaloniki in February 2008. This was complemented in 2008 by a second study undertaken by the same team, entitled *Medium-term forecast of skills supply in Europe*. The main objective of this second pilot project was to develop data sources, models and methods for conducting forecasts of the supply of skills at a pan-European level, based on available data, and to begin to explore how these compared with the previous demand projections. The results of this project were announced at Cedefop's June 2009 Agora event "*Matching skills and jobs: anticipating needs in challenging times*".

## Workshop objectives

The Malta workshop aimed to take the process described above a further step forward, focusing on the latest developments, and updates of both skill supply and demand projections.

The workshop aimed to provide:

- an opportunity to present an overview of the work in the new project conducted this year, focusing on the new quantitative results;
- a critical reassessment of the basic LFS data which underlie both the demand and supply estimates;
- a chance to present and discuss the updates of the main demand and supply projections and their implications for imbalances and mismatches;
- opportunities to discuss new methodological developments;
- a new opportunity for *Skillsnet* members to comment on the latest results and ongoing work programme, thus helping to shape future work priorities

Compared to the earlier pilot studies, the new project utilizes more consistent time series data from the Labour Force Survey (LFS), corrected, as far as possible, to deal with gaps and discontinuities over time. The latter were some of the main problems highlighted in the pilot projects. Various methodological advancements and other improvements have also been made to enhance the quality and robustness of the results. These include (among others):

- a reflection of the effects of the economic crisis on the macroeconomic forecasts;
- greater consistency between the demand and supply projections; and
- improvements in the treatment of labour market activity rates, by qualification.

## Workshop summary

### Day 1

After a welcome and introduction by the hosts and Cedefop, Rob Wilson (IER) gave a general overview of the new project and presented outline projections of skill demand and supply at the Pan-European level (EU27+2). The key messages of this presentation were:

- confirmation that Europe seems to be on track to raise its qualification profile (in line with the ambitions set out in the Lisbon Agenda);
- but the immediate prospects for the demand for skills are more uncertain, given the financial crisis and subsequent recession. The overall demand for skills is likely to continue to grow, despite the recession, but perhaps not as rapidly as needed to ensure that all those acquiring better qualifications will be able to find jobs that in the past have required such credentials.

The overview was followed by discussion on the improvements to the basic datasets utilised for the project (the Labour Force Survey). This discussion was introduced by Terry Ward and Robert Stehrer (AM) and focused on the significant developments made towards constructing consistent databases able to be used as a solid foundation for the forecasts. Nevertheless, it was pointed out that there is still some way to go before the pan-European LFS data available through Eurostat set is entirely free of problems and inconsistencies.

Hector Pollitt (CE) then elaborated on the possible macroeconomic scenarios facing Europe, focusing on the impacts of the recession on the economies of the European Union, and subsequent paths to recovery, illustrating how this is captured by the multisectoral macroeconomic model (E3ME), and thus reflected in the employment projections. These macroeconomic results form the cornerstone for the quantitative projections. The core message from this discussion was that the economic crisis will have significant impact on the projections for both the demand and supply, with the impact being especially strong on the demand side in sectors related to household spending.

The next session focussed on the modelling of the demand for and supply of skills. Ilias Livanos (IER) introduced the improvements made towards increasing the consistency of the results for both the expansion demand and the supply of skills. The data available only allow simple methods to be utilised, however this project has made significant improvements towards increasing the consistency of the projections and incorporating various checks in the analysis. These include better consistency in the activity rates by qualification (as implied by the population and labour force forecasts), and improvements in dealing with the implied cohort effects of qualification acquisition. The overall results suggest some polarization of demand for skills. Regarding the supply of skills they highlight that the stock of highly educated individuals is likely to keep increasing at a fast pace in virtually all countries.

Jan Sauerman (ROA) then provided an overview of results on replacement demands and discussed the influence of the economic crisis on the projections. The analysis of the replacement demands suggested a substantial average annual replacement demand of around 2.5% per annum on average, highlighting the crucial need to focus on replacement needs as well as expansion demand.

The final session on the first day of the workshop was introduced by Ben Kriechel (ROA) and Rob Wilson (IER) who discussed implications for skill imbalances by confronting the demand and supply projections. They highlighted that, even though in principle the demand and supply projections can be compared directly, there are various conceptual and methodological issues that make simplistic comparisons potentially misleading.

## *Day 2*

The second day of the workshop focused on assessing the results of the project in more detail and discussing future steps. The detailed results were scrutinized within country groups (identifying different regions in Europe). The individual country experts were split into corresponding working groups, which then critically assessed the results. The discussion was facilitated by country group experts (CGE) who introduced the discussion. Minutes of the working groups were kept by assigned rapporteurs who then reported back. Various points arose during this process. The main considerations can be summarised as follows:

- in general, common patterns in terms of overall demand for and supply of skills were noted in most countries, with the supply side heading towards a much more highly skilled population, but without necessarily a corresponding increase in the demand for such individuals - this was felt to be of particular concern in some of the Eastern European countries, creating the notion, among experts, that these countries remain at the periphery of Europe;
- some experts thought that some important factors influencing employment structure were not fully reflected in the E3ME projections. In the case of some of the recent accession countries, entering the Euro-zone could have a significant impact on their sectoral structure. Cohesion policies may also be an important factor and determinant for sectoral employment. Absorption of sectoral funds could be another key factor which may vary across countries. Similarly, the government responses to EU regulations may vary, as will subsequent reactions to the continuing economic crisis. Capturing these issues in E3ME remains a challenge;
- regarding the projection of labour demand, clarification was sought about the assumptions being made about the development of part-time employment, and/or quantities of hours worked (e.g. in the Netherlands rapid increases in employment number are projected, which could be the result of increasing proportions of part-timers);
- on the supply side comments were also made about differences in retirement age (effective as well as official), across countries, as well as the significance of cross-border migration and commuting, with a request that (where possible) any assumptions about these matters should be made more transparent;
- some concerns were expressed regarding the population projections. For example, it was noted that in some cases, e.g. Bulgaria, the total levels of population were

projected to drop significantly, which did not seem to be plausible. Similarly, there are other cases (e.g. Greece) where the possible extent of immigration may not be fully reflected in the projections. This may have a significant effect on the projections including the impact on qualifications structure (in cases like Greece), which attracts mainly low skilled individuals as inward migrants. It was emphasised that the demographic projections used were those provide by Eurostat;

- the endogenous nature of growth of the population and labour force, due partly to migration and partly to the participation of women and older people, is likely to be strongly affected by the growth in demand for labour. This is particularly the case in some countries where participation of women is low (Malta is an extreme example, where the effective age of retirement is much less than the official age (which applies to many countries also)). Policy efforts to increase both official and actual retirement ages are being pursued in a number of countries to avoid a pension gap;
- some experts also expressed doubts about the plausibility of the projected labour market activity rates. For instance, in Greece the population forecast shows a significant increase while the labour force is projected to go down. This implies a negative trend for overall activity rates which may be implausible. However, changing demographic profiles, most notably the increasing average age of the population, can lead to apparently counter-intuitive results;
- Although the analysis of qualification structure (low-medium-high) is based on the seven-stage International Standard Classification of Education (ISCED), nevertheless, it is not always clear how the assignment of educational attainments to those three educational levels was rendered for the individual countries (although all information comes from LFS data);
- the future growth of the construction sector seems highly dependent on public expenditure and, therefore, on the future course of government budgetary policy in the light of the large amount of debt which has been accumulated during the crisis. There were different views presented from different experts on this issue in terms of longer term developments in this sector;
- some thought that the projected decline of employment in financial services may be an over-reaction to the crisis, which though it has led to job cuts in the more 'speculative' activities but which might not have a major effect on employment in retail banking. Other were less sanguine, arguing that a general reduction was likely as banks attempt to cut costs;
- in some cases when examining the demand side, the possible impact of the supply side developments (such as demographic change) needs to be more fully taken into account (e.g. in the demand for educational services);
- several country experts suggested corrections in the projections of particular sectoral employment for their countries. For example, there was a possible glitch in the sector 'Hotels & Catering' in the Netherlands. In Belgium the 'Business services' sector is only projected to grow very modestly;
- generally, more detailed explanation was requested on how the economic crisis was modelled within E3ME. For example: are different inputs used in different countries? How appropriate is it to apply such large-scale changes within the modelling frameworks being used? Can this sometimes cause large-scale 'radical' effects, when changes are maintained over time or some sectors are virtually disappearing?
- recovery paths for some particular countries were also queried (e.g. employment growth in Belgium is rather slow after the expected recovery in the crisis). On the other hand, in other cases (such as Finland) the results seemed plausible to the country expert in the long-run.

#### *Alternative approaches and methodological developments*

Alternative approaches and possible methodological developments were also discussed during the second day of the workshop. This included ways to improve the links between skills and technological change (by Unnada Chewpreecha, CE), and alternative approaches

to analysing changing qualification requirements in European labour markets (by Jan Koucký, EPC).

#### *Dissemination strategy*

Various events and channels for dissemination were discussed. It was agreed that Cedefop will inform experts about upcoming events and will distribute them in advance all relevant materials (i.e. press releases, etc.) to support dissemination and awareness raising at national level.

#### **Conclusions**

Overall the workshop enjoyed lively and constructive discussion. It was agreed that although the project faces a lot of methodological and data problems, the open database developed so far has a great success and has contributed visibly to European research and policy.

#### **Further steps/timetable**

The event in Malta, and the detailed comments made by the experts generated various considerations that will need to be addressed by the research team. While it may not be possible to deal with all the points raised, the team will do their best to take them all into account.

Interim reports and country workbooks, including supply/ demand and imbalances data were distributed before the workshop to country experts for their feedback on the general approach and especially the data and results for individual countries. Experts were invited to consider these further and provide any additional comments in writing. The deadline for experts to submit their comments was set for 30 October 2009.

The team will complete the exercise after addressing these final comments from the country experts and produce revised reports for consideration by Cedefop.

These reports will be discussed internally with Cedefop experts, before final review and publication.

- A flyer or briefing note will be published for a launch conference planned for 4 February 2010 in Brussels (in cooperation with the EC and launch of the NSNJ expert group report).
- A synthesis report will be published late March or early April 2010. It is still to be decided how the publication will be launched. One option is Cedefop's Agora conference to be organised in Thessaloniki end March 2010 (still to be confirmed).
- Cedefop will also contribute inputs from the initial results to the New Skills for New Jobs, Spring Communication and Spanish presidency conference on NSNJ taking place in Barcelona 8-9 April 2010.

#### **Next Meeting**

The next expert workshop to discuss the evaluation and validation phase and further modelling developments is planned for Spring 2010. Experts will be informed about the exact date and location in due course.