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# Research and Analysis of Vacancies and Skills Needs in the European Union, in the Republic of Moldova and Ukraine

Ana Popa, Rodion Kolyshko,  
Natalia Popova and Francesco Panzica



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## **EU-ILO Project «Effective Governance of Labour Migration and its Skill Dimensions»**

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Project Brief: EU-ILO Project in Moldova and Ukraine  
“Effective Governance of Labour Migration and its Skill Dimensions”

This project is implemented by the International Labour Organization in cooperation with Moldovan and Ukrainian tripartite partners, the International Organization for Migration and the World Bank. The project is in the framework of the European Commission’s thematic programme of cooperation with third countries in the areas of migration and asylum.

The overall objective of the project is to strengthen Moldova’s and Ukraine’s capacity to regulate labour migration and promote sustainable return, with a particular focus on enhancing human resources capital and preventing skills waste.

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# Foreword

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The European Union and its immediate neighbours have a mutual interest in cooperating, both bilaterally and regionally, in migration issues. Neighbours like Moldova and Ukraine have a pressing need to regulate emigration and immigration to support development objectives as well as current and future skills and workforce replacement. Simultaneously, current demand for migrant workers in EU member states is fuelled by labour market and skills shortages and by the effects of demographic change: low birth rates and ageing populations.

In this context, knowledge of the skills composition of migration flows of both potential outbound and returning migrants is extremely important for the design of legal labour migration schemes. Moldova and Ukraine are labour-sending countries and information on their labour market needs in different sectors and occupations is crucial for ethical recruitment and prevention of skills waste. Detailed assessment of education and training systems in Moldova and Ukraine regarding development of policies, recognition of qualifications, skills upgrades, skills certification as well as addressing both domestic and foreign conditions are essential.

Within this frame, the ILO proposed project, that was presented to and financed by the European Commission addresses many issues, including: (1) Fostering the links between migration and development; (2) Promotion and capacity building for well-managed labour migration, temporary and circular, by improving: (i) policy dialogue and policy making, based on sound research and data and (ii) formulation of labour migration policies, with a particular focus on proper skills matching, vocational training provision for adequate skills development and portability of social security benefits; and (3) Protection of migrants' rights and prevention of exploitation and exclusion, based on the ILO rights-based approach defined in the ILO Multilateral Framework on Labour Migration and ILO Conventions 97 and 143.

As part of the project, a research was conducted at the EU and Member States level to identify the skill needs and the mechanisms for filling vacancies for jobseekers. The study was complemented by a research conducted on the same subjects in Republic of Moldova and Ukraine. The findings of the research have been presented and validated through specific country-based workshops in Kyiv and Chisinau.

I would like to express my appreciation to Anna Farkas, subregional project coordinator, Oxana Lipcanu and Tetyana Minenko, national project coordinators, for their valuable contribution to the completion of this research.

Antonio Graziosi  
Director  
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## List of Abbreviations

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CATI	Computer-Assisted Telephone Interviewing
CEDEFOP	European Centre for the Development of Vocational Training
CERGE.EI	Center for Economic Research & Graduate Education – Economics Institute Prague University
CPC	Commissions Professionnelles Consultatives
EACEA	Education, Audiovisual and Culture Executive Agency
EJMB	European Job Mobility Bulletin
EURES	European Employment Services Network
EQF	European Qualification Framework
EVM	European Vacancy Monitor
FTE	Full Time Equivalent
ILO	International Labour Organization
ISCED	International Standard Classification of Education
ISCO	International Standard Classification of Occupations
ISFOL	Istituto per lo Sviluppo della Formazione Professionale dei Lavoratori
KBB	Kenniscentra Beroepsonderwijs Bedrijfsleven
LFS	Labour Force Survey
MLSPF	Ministry of Labour, Social Protection and Family
NACE	Nomenclature Statistique des activités économiques dans la Communauté Européenne
NEA	National Employment Agency
NQF	National Qualification Framework
OPCA	Organismes Collecteur Paritaires Agréés
PES	Public Employment Service
ROA	Research Centre for Education and the Labour Market of the Maastricht University School of Business and Economics
SSC	Sector Skill Council
TSE	Tripartite Advisory Committee
VET	Vocational and Educational Training



## Executive Summary

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The labour market in Europe is confronted with a crisis of old forecast models for the identification of labour market needs and for education and training systems to respond to them. One of the factors contributing to the situation is the internationalization of economy that transfers manufacturing to different locations and therefore leads to the polarization in skill demand: low-qualified jobs that cannot be off-shored on the one hand, and highly qualified professions (managers, technical and administrative staff) on the other hand. In addition, rapid technology change makes many skills outdated. The situation is further complicated by demographic changes caused by ageing population and migration flows.

To address these issues, research and studies are carried out using projection instruments, such as:

- National-level, quantitative, model-based projections;
- Sector or occupational studies;
- Employers' surveys;
- Foresight analysis using scenario development exercises.

None of the above forecasting methods can provide accurate and precise forecasts for skills needs, but they can produce useful insights on how labour markets develop in response to various external influences. Are these exercises useful and cost-effective? It seems so, seeing that the outputs are used by a broad set of users for careers guidance, labour market policy development, and education and training programmes planning.

Anticipating labour market requirements and skills needs is a top priority for the EU in order to:

- *Promote better anticipation of future skills needs;*
- *Develop better matching between skills and labour market needs;*
- *Bridge the gap between education and work.*

There are two pan-European studies on future skills: (a) one conducted by the CEDEFOP; (b) Sector studies.

The forecast from CEDEFOP runs till 2020. It covers EU Member States, Norway and Switzerland and considers the impact of the financial crisis and the subsequent global recession.

The main indications are:

- In the period 2010–20, employment in agriculture will have a loss of around 2.5 million jobs, and around 2 million in manufacturing and production industries.
- Growth will occur in marketed services: around seven million jobs.
- Distribution and transport will have significant increases.
- Non-marketed services (e.g. healthcare and education) may be affected by the budgetary constraints of public administration.
- Concerning occupations, the tendency is towards the “job polarization” due to the increasing demand for high-skilled non-manual occupations as well as elementary occupations.
- Concerning qualifications, many jobs will require more highly-skilled/qualified people than in the past.
- Net employment will increase by seven million in the 2010–20 period.
- Replacement demand (around 73 million jobs) is projected to be positive for all occupations. Consequently, the total number of job openings may be around 80 million over the next decade.

The other pan-European forecast instrument is constituted by the EU sector studies: there are 19 individual sector studies covering around 60 per cent of total EU employment. The studies confirm the tendency towards polarization of the labour market and skills needs, as in the CEDEFOP study, with a growing distance between low-skilled (e.g. elementary occupations) and high-skilled jobs (e.g. professionals, managers and so forth) and a decline in skilled jobs (e.g. craftsmen among others). European production is moving towards specialization and excellence, requiring high-skilled jobs but also the up-skilling of traditional jobs. Many new skills and competencies emerge from the sector studies, but some are common to all sectors. The most required emerging competencies are within technical (hard) skills and social/cultural (soft) skills.

How are results of skill forecast translated into the education systems? Early identification of future required skills allows timely planning of education and training supply. A solid partnership of stakeholders in education is vital, particularly with the business sector and employers’ representatives.

Several countries have established sector committees charged with different tasks in skill forecasting and its translation into education and training provision; they are sometimes directly involved in the design of occupational standards and in curricula development.

Virtually all European countries have adopted or are in the process of establishing qualification frameworks providing additional mechanisms to link education and training to labour market requirements.

The adoption of NQF focusing on learning outcomes allows many countries to provide ways in which non-formal and informal learning can be recognized.

- **Skill forecast in some EU Member States**

The definition of “skills” is not uniform: in many EU countries “skills” are defined using occupational skills and/or educational attainment. Many countries carry out regular forecasting activities to anticipate labour market needs and skills requirements, using different tools and methods. Most long-term forecasts are done at the national level, whereas short-term forecasts are undertaken more generally at the regional or local level often through Public Employment Services (PES). In some countries information on skills needs is collected through *ad-hoc* studies.

- **Skill forecast in Czech Republic**

Long-term forecasts combine employment-age structure information from the LFS with education-system data and with information on the skills structure of the short-term unemployed. The forecasting model has been developed applying the methodology designed by the Labour Market (ROA) of Maastricht University for the Netherlands. Sector studies have been carried out in 2007 on energy supply, electrical engineering and ITC. The studies explored how demand for skilled labour would develop over the period 2008–2018 in terms of number, changes in knowledge and skills requirements and identifying trends for the creation of new occupations. Expected new jobs in the decade 2010–2020 would be 1.4 per cent (0.1 per cent per annum). Increase for distribution/transport, business services and non-marketed services; declining employment levels in primary manufacturing and construction sectors. Jobs will be available only for high qualification holders (ISCED 5–6); jobs requiring low (ISCED 0–2) and medium (ISCED 3–4) qualification level will have a sensible contraction. The most relevant source of employment will derive from replacement of current workers: +31 per cent of total employment in 2010. The replacement will affect all professions.

- **Skill forecast in France**

Skill forecasting is carried out at national, sector and regional level: *at national level*: the main responsibility lies with the Centre for Strategic Analysis; *at sector level*, 126 observatories for forecasting occupations and qualifications have been created in all sectors; *at regional level*: 26 observatories aimed at providing advice to decision makers in the field of employment, training and economic development perspectives. Declining employment trends in agriculture, light industries (textile, leather, wood, graphics); mechanics, metal work, processing industries and management, administration; positive employment trends in communication, information, entertainment, studies and research and hotel/restaurant/catering (Horeca) sectors. The sectors with the strong possibility of producing new jobs are: personal services (family jobs, security and so on), healthcare, social work, culture and sports, business and ITC.

Tendency towards tertiarization of the economy and a certain polarization: especially for managers (+14 per cent) and professions requiring low level qualification (+15 per cent).

At the same time, increased requirements are expected in most job categories in terms of know-how, communication skills and ability to assume responsibilities.

As at the overall European Union level, the most important source of employment may derive from replacement of current workforce.

- **Skill forecast in Italy**

Periodic surveys on labour market forecasting are conducted by social partners especially through bilateral entities (e.g. in agriculture and construction sectors);

Estimates from an econometric model, run by the ISFOL, on the forecasting of employment flows by sector and profession (4-digit ISCO 88). The short-term labour market forecast is made available by the Excelsior Information System (CATI interviews 100,000 enterprises). It reports negative employment trend for primary sector and utilities, manufacturing and construction, but robust positive development for services.

Modest, but positive trend for the other broad sectors. Tendency to polarization with broad development for technicians and associate professionals, legislators, senior officials and managers, professionals, but also for elementary occupations.

Tendency to increased requirements in terms of skills and competencies as a signal of increased requirements for tasks that in the past did not require medium or high level of qualification. Limited openings for new jobs, but important employment from the replacement of current workers.

- **Mobility of workers in Europe**

Freedom of movement and residence for the European citizens also means that workers have the right to move to a different Member State to look for work and be employed under the same conditions as nationals of that State (with some specific limitations).

The same does not apply to citizens of non Member States. Here labour mobility becomes a migration subject to strict rules and conditions if not formally forbidden. To prevent irregular migration, avoid exploitation and brain waste, some EU Member States have promoted information initiatives with some migrant-sending countries.

Managing a labour market for 490 million people (and with an active population of over 238 million people) requires special mechanisms and tools. For job matching a network of national Employment Services (EURES) was created. Established in 1993 by the European Commission, EURES is a cooperation network between the Public Employment Services of the 27 Member States of the European Union, plus Norway, Iceland, Liechtenstein, Switzerland and other partner organizations.

In autumn 2011, there were 1.23 million job vacancies advertised by over 25,000 registered employers. The highest share (35 per cent) of all job vacancies posted on EURES is for low-skilled non-manual jobs. A high demand for *service and shops and market sales workers* is present in the majority of countries.



- **Skill needs and forecast in Moldova**

Over the last decade Moldova has seen one of the most significant declines in employment in Europe and in the region. The employment rate fell from 54.8 per cent in 2000 to 39.4 per cent in 2011.

There is a certain degree of skill mismatch in the labour market that creates a vicious circle: productivity is low and does not satisfy employers and, conversely, wages are low and do not satisfy employees. Mismatch is also caused by the low quality of education and the field of studies chosen by future workers.

The agricultural sector employs the largest share of population in Moldova – 27.5 per cent in 2011. The sector is characterized by high informality (around 72 per cent). Therefore, the number of vacancies registered at the NEA does not reflect the real situation. In 2011, only 7.4 per cent of registered vacancies were in the agricultural sector. There are very few jobs offered for specialists and more for auxiliary workers during the summer season. The websites do not advertise almost any positions for agricultural workers as these are considered to be low-educated and without access to internet. The deficit of workforce will persist for mechanic workers; specialists (accountants, etc.); unqualified labour force. The need for qualified manual workers, currently almost non-existent, will further increase in the medium-term. In this respect, in the long-term the number of unskilled jobs will shrink significantly; the only sector that will employ unskilled workers will be grape picking for wine production.

Like in the case of agricultural sector, the degree of informality in the construction sector is quite high – 66.3 per cent in 2011. Based on the NEA data, there is a shift towards demand for more complex professions such as: constructor – designer, quarries – builder and carpenters with various skills. Construction companies report a deficit of: (i) qualified workforce, who left the country; (ii) unqualified workforce, refusing to work due to low wages; and (iii) other specialists (economists, lawyers, etc.) at times.

IT companies have expanded significantly since the introduction of fiscal facilities in 2005. Thus, employment for IT workers has increased almost tripled since 2004. However, there is still a large component of grey economy, mainly with small IT companies. Currently companies find it difficult to hire new skilled professionals in IT, especially program managers and QA engineers. The opinion in the sector is that only 10 per cent to 20 per cent of graduates are employable and they also need some experience and training. Jobs in the IT sector are frequently advertised through websites.

- **Skill needs and forecast in Ukraine**

Labour demand is relatively low: by the end of June 2011, the number of vacancies reached 90,500, 13.6 per cent more than in the corresponding period of 2010. Growth was achieved in all sectors, except finance. The greatest growth of demand for workforce was seen in industry (+31.9 per cent). There is still a significant number of qualified craftsmen (21.7 per cent of the total number of vacancies), low-skilled workers in trade, services, industry, construction, transport and others (16 per cent),

specialists in service, operation and control of process equipment, making of equipment and machinery (14.6 per cent).

Looking at a mid-term perspective (up to 2015), the most required professions will be those related to the development of business services and those required by industrial production (skilled craftsmen). In terms of occupations major changes will occur in the groups of managers, employees providing services to businesses and individuals, experts in food processing industry, skilled craftsmen, operators and equipment assemblers. The trend for less qualified jobs in key economic sectors (except construction) will be positive. However, tendencies of employment in the agricultural sector are a bit conflicting: the need for managers and certain professionals is increasing, while for unskilled workers it is declining.

Concerning future skills needs, it is considered difficult to make long-term forecasts due to: (a) lack of appropriate tools, (b) economic uncertainty, (c) lack of long-term company development programs and staff development planning. Nonetheless, the skill forecast up to 2020 shows that employment in service sector will increase significantly by as much as 35.9 per cent; in transportation and communication it will be slightly reduced (3 per cent) and in agriculture it will decrease dramatically by 51 per cent. The most significant reduction by 2020 will be in openings for teachers and other specialists in education.

As in the rest of Europe, there is a tendency to polarization with an increased need for elementary occupations and managers, and diminished need for medium level experts such as machine operators and car assemblers.

Highly sought professions will be:

- Engineers and designers in the fields related to high technologies: IT services (electronic, high-tech, support); processing industry specialists, pharmaceutical industry, development of technological solutions;
- Experts in biology, agronomy (new modern agricultural technologies, efficient use of soil and so on) and medicine;
- Municipal managers, food sales and grain food sales managers.

Based upon interviews conducted with employers in IT, construction and tourism, it appears that the knowledge and skills provided by the education system do not always correspond to the needs of the enterprises.

## CHAPTER 1

# Labour Mobility and Skill Forecast

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The labour market (LM) in Europe is confronted with a failure of old forecast models for the identification of labour market needs and a consequent failure of education and training systems to anticipate the needs, which results in an increasing skill mismatch and waste. One originating factor for this situation is the internationalization of economy that transfers manufacturing to different locations and thereby generates a polarization in skill demand: low-qualified jobs that cannot be off-shored on the one hand, and highly qualified professions (managers, technical and administrative staff) on the other hand. In addition, rapid technology change makes many skills outdated. The situation is further complicated by demographic changes caused by ageing population and migration flows.

To address these issues, both individual Member States and the European Union as an institution are carrying out research and studies aimed at skill forecasting.

The main projection instruments used at the country level<sup>1</sup> are:

- national-level, quantitative, model-based projection; by and large, it is a consistent, comprehensive, transparent but costly tool, and requires data that are not always available.
- sector or occupational study; it is a valid instrument, reliable for the relevant sector, but can be inconsistent across sectors or areas.
- employers' survey; it is strong in foreseeing the involvement of direct user/customer, but may be very subjective and inconsistent and focus on current vacancies rather than skill gaps within the current workforce.
- foresight analysis using scenario development exercises (based on focus groups, round tables, Delphi-style surveys, observatories); holistic approach with the involvement of direct user/customer, but being non-systematic, may prove to be overly subjective and inconsistent.

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1. <http://www.newskillsnetwork.eu/doc/931>.

None of the above forecasting methods can provide accurate and precise forecasts for skills needs in different sectors, but only give labour market actors and policy makers useful insights on how labour markets develop in response to various external influences. Therefore, the question is not about the precision of the forecasts, but if they are useful and cost-effective compared with the investment national governments are making in this activity. The answer seems to be positive, considering that the outputs of the projection exercises are used by a broad set of users for career guidance, as well as for labour market policy design and education and training programmes planning.

In some countries a manpower planning concept<sup>2</sup> is used, for instance, to restrict the intake of students per educational field or institution to a maximum on the basis of manpower requirement forecasts<sup>3</sup>. The manpower planning concept was popular at the beginning of sixties. Parnes (1962) developed a manpower planning model on the basis of economy input-output structure. Starting from the GDP target growth labour requirements in various occupations, the corresponding educational qualifications are extracted, which are then compared with forecasts of working population and the flow of graduates from various types of training onto the labour market.

Various objections have been made to this approach. Methodological objections focus on the fixed coefficients, which are used in the forecasting models to translate economic development into changes in employment (Blaug, 1967). A fundamental objection is that future developments are not in fact sufficiently predictable, and that an exclusive relationship between job requirements and training is assumed without adequate justification. These objections, and the lack of sufficient statistical data for the estimation of the forecasting models, led to the rejection of this approach.

## 1.1 Skills Forecast at the European Union Level

Knowledge about future skills needs in the labour market is an essential tool to prevent future mismatch between labour supply and demand and support decision makers in human resource policy changes. The importance of anticipating labour market requirements and skills needs is becoming a top priority at the EU level.

In the framework of the Lisbon strategy for growth and jobs and the European employment strategy, the integrated guidelines No 20 “Improve matching of labour market needs” and No. 24 “Adapt education and training systems in response to new competence requirements”, highlight the issue of skills needs forecasting and the importance of corresponding policy response.

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2. Also called Human Resource Planning, encompasses four steps: (a) Analysing the current manpower inventory; (b) Making future manpower forecasts; (c) Developing employment programmes; (d) Design training programmes.

3. Frank Cörvers: *Forecasting Skills and Labour Market Needs*, 2006.

Accordingly, the Commission launched *New Skills for New Jobs*<sup>4</sup> in December 2008, the objectives of which include:

- Promote better anticipation of future skills needs;
- Develop better matching between skills and labour market needs.

Within the above policy context, two main sources of information about future supply of and demand for skills have been developed: (1) the CEDEFOP projections of qualifications needs up to 2015 and 2020, and (2) the EU studies on 19 economic sectors in Europe, accounting for two thirds of European employment.

### 1.1.1 CEDEFOP Forecast

The European Centre for the Development of Vocational Training (CEDEFOP<sup>5</sup>) carried out in 2007–08 a skills forecast covering the period 2006–15. The forecast has now been updated and extended up to 2020. It covers all EU Member States plus Norway and Switzerland and takes on board the impact of the financial crisis and the subsequent global recession. The study envisages three possible scenarios based on the expected recovery trends from the crisis: (1) baseline scenario; (2) a more optimistic view about the speed with which the world economy will return to the previous rates of growth, and (3) a pessimistic one that considers a more delayed and slower pace of recovery. All scenarios envisage a return to normal rates of economic growth by 2020.

The study covers all 41 sectors (NACE rev 1.1) of the entire economy. The analysis is quite extensive in terms of skills needs by broad sectors, occupational groups and broad qualifications, but does not produce an in-depth skill analysis as skills are represented only by level of education: low, medium and high according to ISCED classification<sup>6</sup>.

Those with high-level qualifications will rise by almost 28 million and those with medium-level qualifications by almost 20 million. This increase will be compensated by a decrease of about 33 million people holding low qualifications.

In the period 2010–20, employment in agriculture will register a loss of around 2.5 million jobs, and around two million in manufacturing and production industries. Growth is projected in marketed services: business and other services are expected to grow by around seven million jobs. Distribution and transport will have significant increases. Increasing projections are forecast for non-marketed services (e.g. in healthcare and education), but this provision might be affected by the budgetary constraints of public administration.

4. <http://ec.europa.eu/social/main.jsp?catId=568>

5. It is a European agency that helps promote and develop vocational education and training in the European Union.

6. Level of Qualification: Low (ISCED 0–2); Medium (ISCED 3–4); High (ISCED 5–6).

The replacement of workers leaving for various reasons (mainly due to retirement) will be around 73 million jobs and is projected to be positive for all occupations. More details on the CEDEFOP study can be found in Annex 1.

### 1.1.2 EU Sector Studies

Globalization and the impact of the current economic and financial crisis, require the adoption of tools that allow the European market to detect trends and changes that harm its competitiveness. In this perspective, the European Commission has carried out 19 individual sector studies together covering around 60 per cent of total EU employment.

A transversal analysis on the evolution of skills needs in 19 targeted sectors was conducted in 2010 by Oxford Research A/S, integrating existing data with the impact analysis of the current crisis.

One of the findings of the transversal sector study seems to confirm the tendency to the polarization of labour market and skills needs, already identified by the CEDEFOP study, envisaging an increased distance between low-skilled (e.g. elementary occupations) and high-skilled jobs (e.g. professionals, managers and so on) and a decline in skilled jobs (e.g. craftsmen among others)<sup>7</sup>.

The study confirms the increasing importance for the European economy of the service sector for the next 10–15 years. European production trends towards specialization and excellence, requiring high-skilled jobs but also the up-skilling of traditional jobs.

Many new skills and competencies are mentioned in the sector studies; however, some of them seem to be common to all the sectors. The most required emerging competencies seem to be within technical (hard) skills and social/cultural (soft) skills. Also, there seems to be a tendency towards multi-skilling and the need for new combinations of skills and competencies within many sectors.

New competences have been identified at occupational levels. Different approaches and definitions of competencies and occupations in the sector studies do not allow for a complete list; however, it is possible to identify emerging skills and competencies within management occupations and basic production and service occupation.

Some new skills and competencies, e.g. ICT and E-skills, are relevant in all sectors; others appear to be sector specific. The service sector's soft/social competencies, such as intercultural skills and conflict solution, are more important while the emerging competencies within production are related to new processes and materials, and the internationalization of supply and values chains.

More details on the EU sector studies can be found in Annex 2.

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7. *The Economist*: "The disappearing middle", 9 September 2010.

### 1.1.3 Skills Forecast and Education Systems

An important aspect linked to the skills forecast is how the results are translated into the education systems. Early identification of skills required in the labour market allows timely adaptation, planning and regulation of education and training supply. To achieve these results, a solid partnership between different stakeholders in education is absolutely necessary, particularly with the business sector and employers' representatives to ensure that labour market information is taken into account when designing education and training programmes. Several countries have established sector committees charged with different tasks in skills forecasting and its translation into education and training provision and sometimes they are directly involved in the design of occupational standards and in curricula development (EACEA 2010).

In the **United Kingdom** there are Sector Skills Councils (SSCs) which are independent, employer-led, UK-wide organizations. The SSCs and the UK Commission are committed to working in partnership across the four nations to create the conditions for increased employer investment in skills which will drive enterprise and create jobs and sustainable economic growth. There are currently 22 SSCs covering over 90 per cent of the economy<sup>8</sup>. Inspired by the UK *Sector Skills Councils*, the **Czech Republic** has established 20 Sector Councils so far, whose activities met the needs of almost 50 per cent of the labour market (description of qualification requirements for various professions). Their activities include the identification of changes in the sector affecting employers' and workforce needs; supporting VET and the development of professional competencies of the sector; promoting innovation in the curricula for qualifications in the sector; cooperating with schools and training institutions. **The Netherlands** have a long tradition with Sector Councils. There are 17 *Kenniscentra Beroepsonderwijs bedrijfsleven* (KBB – Centres of Expertise on Vocational Education and Training and the Labour Market). The board of a KBB consists of representatives of the employers' organization, trade unions, training system and the Ministry of Education. KBBs ensure that sector-specific occupational profiles (at secondary level), upon which exams and training programmes are developed, are based on and up-to-date with requirements on the labour market. In addition, in the field of Continuing Vocational Training there are 140 Sectorfondsen (Sectoral Training Funds), covering 116 sectors, managed by the sector level social partners. In **France**, there are two parallel systems of Sector Councils, one for initial and one for continuing training. In the initial training system, there are sector level *Commissions Professionnelles Consultatives* (CPCs – Advisory Committees on Occupations). Established in 1972 and based upon partnership approach between the training and the social partners, they ensure consistency between the competences acquired in training programmes and the qualitative skills requirements on the labour market. An almost exclusive role is played by social partners in the field of continuing training through the almost 100 sector level *Organismes Collecteur Paritaires Agréés* (OPCA – approved joint collecting organizations), which collect funds from private employers and finance continuing training initiatives. In **Greece**, Tripartite Advisory Committees (TSEs) have been established by the Organization of

8. <http://www.ukces.org.uk/ourwork/sector-skills-councils>

Vocational Education and Training (OEEK). The main task of these bodies is to monitor labour market needs at regional and local level and make proposals for new specializations needed in the regional labour market.

Many European countries have adopted or are in the process of establishing qualification frameworks as additional mechanisms to link education and training provision with labour market requirements.

In **Ireland**, the National Qualification Framework (NQF)<sup>9</sup> was launched in 2003 after a broad consultation process. The 10 levels of the framework capture all learning, from initial stages to the most advanced qualifications achieved in schools. The NQF provides a way to compare qualifications and ensures that they are quality assured and recognised at home and abroad. In the **Czech Republic**, the work on NQF started in 2005, with the aim of covering all types of qualifications in education and training. The core of the NQF is a publicly accessible register (repertoire) of all complete and partial qualifications and their qualifications and assessment standards. The Act on the verification and recognition of results of further education (2006) establishes the legislative basis for the NQF. In **France**, the national qualifications framework started in 2002 with the creation of the *National Committee on Professional Certificates (CNCP)*. With its register (repertoire) on professional certificates and the system for validation of non-formal and informal learning (*validation acquis experientielle*), the French framework can be seen as a first generation of European qualifications frameworks. Now the system is under revision taking into account the impact of the EQF. The establishment of an NQF is ongoing taking on board the specificity of the decentralized vocational training at regional level. **The Netherlands** started preparations for an NQF in January 2009. The framework builds on the qualifications framework for higher education developed (from 2006) in the context of the Bologna process. The main objective of the Dutch NQF will be to increase the transparency of the education and training system, in particular by showing the relationship between the different levels and categories of education and training provisions. In **Romania**, the NQF, based on the NQF for VET, was established after a Tripartite Agreement signed in 2005. It brings together all nationally recognised qualifications from both initial and continuing VET, apprenticeship and higher education (HE). It is articulated in a five-level structure with a common register for qualifications, quality assurance arrangements and accreditation for VET qualifications.

The adoption of NQFs focusing on learning outcomes allows many countries to target how non-formal and informal learning can be acknowledged (**the Flemish Community of Belgium, the Czech Republic, Denmark, Germany, Greece, Spain, Latvia, Slovakia, Slovenia and Iceland**).

Recognition plays an important role in a number of countries by providing validation of competences to facilitate entry to further formal learning. This often involves exemption from certain coursework or parts of a formal study programme.

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9. <http://www.nfq.ie/nfq/en/>



In **Germany**, to address some of the problems which stem from informally acquired learning, the Federal Ministry of Education and Research launched in 2006 the “ProfilPass”. This instrument helps to record and certificate informal learning outcomes.

In **Spain**, the Decree on the recognition of skills acquired through work experience was passed in 2009 and it regulates the recognition of formal and non-formal learning outcomes.

The Parliament of **Latvia** adopted amendments to the Vocational Education Law defining the validation of competencies and skills acquired through non-formal education. The legislative reform ensures the official recognition of competencies previously obtained in a non-formal way, aiming for a more effective integration of adults and young people into the labour market.

#### 1.1.4 Skills Forecast in Some EU Member States

The definition of “skills” is not uniform in European countries<sup>10</sup>. In many countries “skills” are defined using both occupational skills and educational attainment (Austria, Finland, France, Ireland, the Netherlands, Poland and Romania); in Cyprus, Estonia and Italy, skills are defined mainly in terms of occupations, while in the Czech Republic and Germany emphasis is on educational attainment.

Use of international classification systems is rather widespread in European countries. Economic sectors are usually classified according to the European industry standard classification system NACE<sup>11</sup> (Austria, Cyprus, Estonia, Germany, Italy and Romania), whereas in Ireland, the Netherlands and Poland national classification systems are used, which are comparable to NACE.

The ISCO occupational classification is used in Cyprus (1 to 4-digits), the Czech Republic (2-digits), Estonia (broad groups), Greece (2 or 3-digits), Italy (2 to 4-digits). Other countries use national systems compatible with ISCO (e.g. Ireland, the Netherlands, Poland, UK). Germany has a national occupational classification not compatible with ISCO. In France, there is a classification system designed and implemented by the National Employment Service (*Pôle Emploi*), called *Répertoire Opérationnel des Métiers et des Emplois* (ROME), modelled after the Canadian National occupational classification (NOC) which is definitely based solidly on ISCO. The situation with educational classifications is even more problematic. France, the Netherlands and the UK apply national educational classifications compatible with ISCED. The Czech Republic’s forecasts are based on ISCED (1-digit) while the fields of study are coded by a unique national classification. In Germany, a national system is used which is not directly compatible with ISCED. The Polish educational classification system has some links to ISCED, but not fully corresponding.

10. [http://www.cedefop.europa.eu/etv/upload/information\\_resources/bookshop/472/5165\\_en.pdf](http://www.cedefop.europa.eu/etv/upload/information_resources/bookshop/472/5165_en.pdf)

11. NACE is the Statistical Classification of Economic Activities in the European Community; in French: *Nomenclature statistique des activités économiques dans la Communauté européenne*.

Many countries carry out regular forecasting activities to anticipate labour market needs and skills requirements, using different tools and methods. Most long-term forecasts are done at national level, whereas short-term forecasts are undertaken more generally at regional or local level, often through Public Employment Services (PES). In some countries information on skills needs is collected through *ad-hoc* studies. In countries like France, Germany and Italy there are multi-level schemes in anticipating skills needs at national, regional and sector levels.

In Germany, a study on “Occupations and Qualifications in the Future” (“Beruf und Qualifikation in der Zukunft”) was conducted by the Federal Institute of Vocational Education and Training (BIBB) and the Institute for Employment Research (IAB) using databases similar to the CEDEFOP forecasts, but with different taxonomies and methods. The results were published in June 2010.

Beside some country specificities, there is a common pattern of changing demand for skills<sup>12</sup> (occupations/jobs, qualifications<sup>13</sup>, expansion demand and replacement needs). Differences across countries tend to compensate the impact on overall patterns of skill demand at EU-27+ level.

Currently almost 40 per cent of people are employed in knowledge- and skills-intensive occupations and this trend is expected to continue up to 2020.

As employers prefer flexible workers able to adapt quickly to unforeseen changes, individual skills profiles should ideally combine specific skills needed for a job with soft skills such as the ability to analyse and organise complex information, take responsibility, manage risks and take decisive actions (European Commission, 2010).

There is an overall tendency to set higher standards for job requirements due either to the introduction of new high-skilled profiles and for the enhanced technological complexity of tasks.

The skill forecast in some EU Member States (namely, Czech Republic, France and Italy) is presented in detail in Annex 3.

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12. Based upon the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning, “skills” means the ability to apply knowledge and use know-how to complete tasks and solve problems. In the context of the European Qualifications Framework, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments).

13. “Qualification” means a formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards, “learning outcomes” means statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence (EU Parliament and Council of 23 April 2008).

## 1.2 Labour Mobility in Europe

### 1.2.1 Mobility of Workers

As part of the freedom of movement and residence that the European Union Treaties grant to European citizens, workers have the right to move to a different Member State, to look for work and to be employed under the same conditions as nationals of that State (with some specific limitations). Therefore, the European Union is also becoming a potential common Labour Market. Employment issues can be dealt with not only at a country level, but also in a broader context with resources and opportunities available. Managing a labour market which serves more than 490 million people (EU citizens in 2010) and with an active population of 238,140,000 people<sup>14</sup> requires special mechanisms and tools.

The first prerequisite is job matching: vacancies and jobseekers need a venue to meet. The solution was found with the creation of the national Public Employment Services network (EURES). EURES contributes to making the European labour market accessible to all through the international, interregional and cross-border exchange of job vacancies and applications and the exchange of information on living conditions and gaining qualifications.

Due to its structure and scope, EURES provides only information on daily vacancies but not a comparative analysis with other periods.

Therefore, this being the second important need, it is necessary to provide data collection and analysis of this immense labour market and derive effective and quick information on the trends on skills demanded, unmet jobs, possible mismatch and so on. The results of these analyses are important for individuals in terms of career planning, but more important for the Members States and the EU decision makers to help them adopt timely and evidence-based measures to address the identified challenges. The main tools in this area are: (1) The Eurostat vacancy survey; (2) the European Job Mobility Bulletin (EJMB), and (3) the European Vacancy Monitor (EVM) all issued by DG Employment.

### 1.2.2 The EURES Network

Established in 1993 by the European Commission, EURES is a cooperation network between the Public Employment Services of the 27 Member States of the European Union, plus Iceland, Liechtenstein, Norway, Switzerland and other partner organizations.

Services that EURES can offer are:

- Placement for jobseekers;
- Matching services for workers and employers;

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14. Eurostat 2010.

- Support services for employers wishing to recruit staff in another European country;
- Dissemination of up-to-date information on living and working conditions and trends on the labour market.

In autumn 2011, there were 1.23 million job vacancies advertised by over 25,000 registered employers. It is important to notice that the vacancies notified to national PES and then published on EURES do not give an exact picture of the real labour market dynamics: in each Member State there are different rules and habits and recruitment does not always use PES channels, but many different informal ones. This also makes cross-country comparison very difficult. In any case, EURES offers a useful guide for mobile jobseekers. It shows that there are job opportunities in Europe for those who have the relevant skills and can speak the language of the host country.

Even if EURES network is one of the most important pan-European mechanism for job matching, there are many other ways to fill in vacancies: from private employment agencies, including head-hunting organizations, and advertisements in qualified newspapers and magazines. International organizations prefer to advertise their vacancies through newspapers and internet.

While the mobility of European citizens is practically guaranteed by the freedom of movement, the same does not apply to citizens of non-Member States. Here, labour mobility is an issue subject to strict rules and conditions, sometimes even made illegal. In order to prevent irregular migration, avoid exploitation and brain drain, some EU Member States have promoted information initiatives with some migration sending countries. A good example is offered by the EU/Moldova Mobility Partnership Agreement<sup>15</sup>, the implementation of which included information packages containing data on the migrants' country of destination (Bulgaria, Czech Republic, Germany, Italy, Lithuania and Romania) to facilitate their integration. In the attempt to win back Moldovan migrants, two job fairs have been organized (in Germany and Italy), where Moldovan employers presented various job offers with competitive financial conditions.

At individual country level, one of the most active in promoting cooperation with migration sending countries is Italy. Brief descriptions of some of the activities are given Box 1.

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15. With the participation of 15 EU member states: Bulgaria, Czech Republic, Cyprus, France, Germany, Greece, Hungary, Italy, Lithuania, Poland, Portugal, Romania, Slovakia, Slovenia, Sweden.

**BOX 1****Egypt**

Two examples of bilateral cooperation on migration are the projects “Integrated Migration Information System (IMIS)” and the “Information Dissemination for the Prevention of Irregular Migration from Egypt”. The institutional frameworks of these projects are based on cooperation between the Italian government as a funding agency, the International Organization for Migration (IOM) as the provider of technical support, and the Emigration Sector of the Ministry of Manpower and Emigration. The setting up and launching of a website for *job opportunities* abroad and the creation of a *portal for Egyptian migrants* represent the main outputs of the project. The website is tailored to provide services to employers abroad and Egyptian jobseekers. It furnishes an automatic job matchmaking system between demand and offer.

The portal for Egyptians abroad is a tool provided to the Egyptian government to reinforce relationships between the Egyptian diaspora and the home country.

The “Information Dissemination for the Prevention of Irregular Migration from the Arab Republic of Egypt” project (IDOM) aimed at limiting irregular migration and curbing its risks, through an information campaign presenting the migration reality.

**Moldova and Ukraine**

Trade unions have been implementing the pilot project “Safe Bridges for Migrant Workers”, co-financed by the EU and the Italian Trade Union, CISL, through its Cooperation Institute, ISCOS. The aim was to improve legal migration channels between Moldova and Ukraine with Italy. In Ukraine, 10 information points on legal migration were foreseen to be created, but only two became fully operational (Ternopil and Kyiv), while the others acted only as referral centres for the two operational ones. The operators of the information points have been duly trained by the IAL Friuli Venezia Giulia. Being project based, the initiative ended once the project was over at the end of 2012, and therefore, the sustainability is not guaranteed. The information points, in addition to providing information on administrative and legal issues, have acted also as facilitators for the recruitment of skilled workers on demand in the Italian labour market in the field of mechanics (e.g. Miller) and ICT specialists. The call for the latter proved to be unsuccessful due to the presence of decent working conditions for this group of skilled workers.

**Moldova**

As part of the technical assistance in support of the bilateral agreement on migration signed recently between Moldova and Italy, “Italia Lavoro”, the implementing agency of the Italian Ministry of Labour launched in 2012 a project aimed at compiling a long list of jobseekers wanting to migrate to Italy. Training will be provided in Italian language, cultural orientation and technical issues. There is no real link to migration packages: the list could be activated just in case, if and when there is a legal possibility.

### 1.2.3 Data Analysis and Statistics on Vacancies

One of the main objectives of the European employment strategy is the improvement of labour market mechanisms, increasing the effectiveness of job supply and demand matching. It requires the modernization and strengthening of labour market institutions, especially employment services; removing obstacles to worker mobility across Europe; anticipating skills needs, labour market shortages and bottlenecks; managing economic migration; and improving the adaptability of workers and enterprises so that there is a greater capacity to anticipate, trigger and absorb economic and social change. Therefore the importance for national and European Union stakeholders to rely upon rapid and reliable information on the labour market trends is self-evident. The most important set of statistics on the subject are those produced by Eurostat. Among them, the job vacancy<sup>16</sup> statistics provide information on unmet labour demand and mismatches on labour markets.

The Eurostat vacancy survey is conducted quarterly and creates statistics on vacancy stocks with a breakdown by sectors (NACE). Once a year, a breakdown by occupation is provided based on ISCO 88 at the one-digit level. A breakdown by region is also provided for some countries in the annual data collection.

An important indicator that helps identify potential mismatches between the skills and availability of those who are unemployed and those sought by employers is the job vacancy rate (JVR): it measures the proportion of total posts that are vacant, expressed according to the following formula:

$$\text{Job Vacancy Rate} = \left( \frac{\text{Number of job vacancies}}{\text{Number of occupied posts} + \text{Number of job vacancies}} \right) \times 100$$

In order to provide support to Member States in tracking, analysing and anticipating the skills needed in future labour markets, in 2008 the European Commission launched the “New Skills for New Jobs Initiative”. As part of the initiative, the European Commission has created two analysis tools: the European Job Mobility Bulletin (EJMB) and the European Vacancy Monitor (EVM).

The European Job Mobility Bulletin (EJMB) provides an in-depth analysis of data from the EURES Job Mobility portal and the corresponding database. Both publications are issued on a quarterly basis.

The European Vacancy Monitor (EVM) provides an up-to-date, dynamic picture of developments in demand for labour and an insight into areas with recruitment difficulties and skills shortages. Key sources of information for the EVM are the Public Employment Services (PES), National Statistical organizations (NSOs), Temporary Work Agencies (TWAs), online recruitment services (ORS) and research institutions.

16. According to the Eurostat definition, a job vacancy is defined as a post (newly created, unoccupied or about to become vacant) for which the employer is taking active steps to find a suitable candidate from outside the enterprise concerned and is prepared to take more steps and which the employer intends to fill, either immediately or in the near future. [http://epp.eurostat.ec.europa.eu/cache/ITY\\_SDDS/en/jvs\\_q\\_esms.htm](http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/en/jvs_q_esms.htm)

While the instrument is important, it is necessary to underline a certain margin of impreciseness as data depend on the will, and different methodologies and approaches, of the participating institutions.

#### 1.2.4 Vacancies at the European Level

The highest share (35 per cent) of all job vacancies posted on EURES is for low-skilled non-manual jobs. Demand for this category varies according to country: Strong ( $\geq 40$  per cent): Estonia, Latvia, Greece, France, Malta and the United Kingdom; Medium ( $< 40$  per cent and  $> 20$  per cent): Luxembourg, Lithuania, Cyprus, Italy, Romania, Slovakia, Spain and Belgium; Low ( $\leq 20$  per cent): Germany, Poland, Iceland, Hungary and the Netherlands.

A high demand for *service and shops and market sales workers* is present in the majority of countries. *Clerks* are more in demand in Estonia, France and Greece. More than one third of the countries post over 30 per cent of their job vacancies on the EURES portal for *skilled manual* labour (especially Germany, Lithuania and the Netherlands). The vast majority of job offers within the skilled manual category relate to the occupational group *crafts and related trade workers*. Further details on vacancies in Europe can be found in Annex 4.





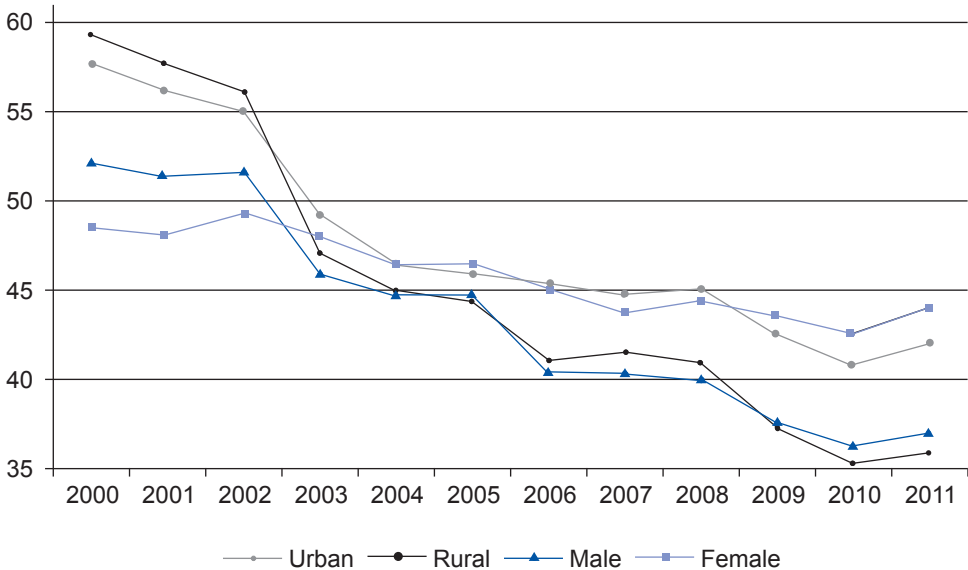
# CHAPTER 2

## Skills Needs and Vacancies in Moldova

### 2.1 Main Features of the Moldovan Labour Market

After a decade of painful transition, the Moldovan economy began its recovery path in 2000. However, despite constant growth (except 2009), the situation in the labour market has actually worsened. Over the last decade Moldova has experienced one of the most significant declines in employment in Europe and in the region. The employment rate fell from 54.8 per cent in 2000 to 39.4 per cent in 2011. In this period Moldova lost 341.1 thousand jobs. While at the beginning of the decade employment was higher in rural areas, the employment rate is currently higher in urban areas, due to urban-based growth, concentrated mainly in the capital area. The employment rate decreased for both male and female, with a slightly higher rate of decline for men due to the downfall of the industrial sector important for employing men.

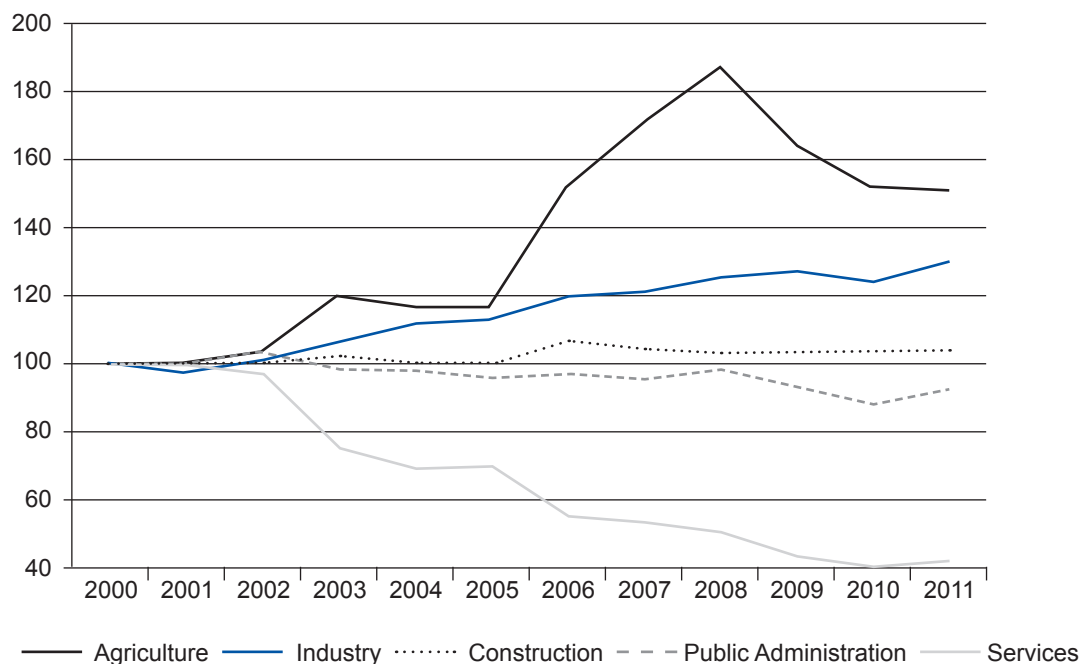
**Figure 1:** Employment rate by residence area and by gender, 2000–2011 (per cent)



Source: NBS.

The changes in the structure of the economy were partially reflected in employment trends. The inability of the agricultural sector to modernize and use new technologies determined the low added value of agricultural production, therefore failing to provide decent incomes for the population employed in the sector. This generated a significant decline of employment in the agricultural sector during the last decade. Also employment in the industrial sector was 8 per cent lower in 2011 compared to 2000, while in the service and construction sectors there was a 30 per cent and 50 per cent increase, respectively.

**Figure 2: Employment by economic sector, 2000–2011 (2000 = 100 per cent)**



Source: NBS.

In addition to low employment rates, and especially during the global economic crisis, the underemployment<sup>17</sup> phenomenon gained momentum, with its peak of 9.3 per cent in 2010, after relatively low levels in 2002–2004 (around 3–4 per cent). In 2011 the underemployment rate went down to 7.7 per cent. Emigration has significantly altered the employment rate both directly (reducing of the number of people physically present and working in the country) and indirectly (by increasing the reservation wage of those remaining in the country). Not only do migrants refuse to return to work for low wages in Moldova (in case they are able to find a job); many of those who depend on migrants’ remittances are not willing to accept poorly paid jobs in Moldova as long as they have constant – though not necessarily very high – incomes from relatives working abroad.

17. People are considered to be underemployed if they are employed but are willing to work additional hours and are available to work, and the total number of weekly hours actually worked is below a threshold determined according to national circumstances.

Despite the general decrease in employment, some sectors performed relatively well during the last five years. The available statistical data does not allow for an accurate identification of the emerging sectors. Data on employment from the LFS, where overall employment is included, cannot be disaggregated at a very low level due to the relatively small sample and high margins of error. At the same time, data collected directly from enterprises (establishment surveys), that includes the number of employees disaggregated at the necessary level, was collected before 2011 only from enterprises with more than 19 employees. Thus, this data does not necessarily reflect the change in overall employment; it may result from the increase in size of enterprises and the transfer from informality to formality of some businesses/ employees. However, based on the LFS statistics, interviews, statistics on new jobs created reported until 2009 and sectoral evolutions, few successful sectors for employment in the last few years could be identified.

**Table 1: Economic sectors where employment increased since 2005**

Sector	2005–2008	2009–2010
Trade and repair of vehicles, retail trade of fuel for vehicles	Yes	Yes
Manufacture of leather and footwear	Yes	Yes
Manufacturing of electrical machinery and equipment	Yes	No
Construction	Yes	No
Computers and related activities	Yes	Yes
Manufacture of rubber and plastic	Yes	Yes
Manufacture of furniture	Yes	Yes
Real estate	Yes	No
Finance	Yes	Yes
Hotels and restaurants	Yes	No
Manufacture of clothes	Yes	No
Insurance	Yes	No
Mining and quarrying	Yes	No
Wholesale and retail trade	Yes	No
Manufacture of metal products, except machinery	Yes	No

*Note:* As the global economic crisis interrupted some trends established in 2005, the table presents the trends for two periods: before and after the crisis. Source: NBS and author's elaboration.

During this period, most of the new jobs were created mainly by small enterprises. While the average number of employees has decreased in most enterprises in the post-crisis period, the decrease was lower in micro and small enterprises. Also, the number of SMEs has increased constantly since 2005, even during the economic crisis. There were few sectors where employment growth, and activity in general, was linked to some objective factors: tax facilities (computers and related activities)<sup>18</sup>, a more favourable tax regime for

18. Since the introduction of fiscal facilities for companies whose main activity is in the IT sector in 2004 (facilities for personal and corporate income tax and social contributions), employment in this sector started a strong upward trend, especially in the formal sector of the economy.

some exported goods (manufacture of clothes<sup>19</sup>), or the settlement of a single large foreign company in Moldova (manufacturing of electrical machinery and equipment<sup>20</sup>).

### 2.1.1 Anticipating Skills Needs and Matching Demand and Supply of Skills at the National Level

The *Ministry of Labour, Social Protection and Family (MLSPF)* is the main institution involved in the formulation of labour market policies and anticipating and matching skill demand and supply. In particular, the Division of Human Capital Development and Employment Policies within the Ministry deals with<sup>21</sup>:

- Analysis and forecasts of labour market developments, elaborates strategies and national programmes for labour force employment;
- Coordinates professional formation and orientation activities, labour market placement of individuals searching for a job;
- Informs the population about labour force demand and supply;
- Elaborates and monitors forecasts regarding human capital development;
- Identifies main directions for human capital development;
- Elaborates enrolment plans for tertiary education (both university and master studies), post-secondary non-tertiary and secondary professional and the mid-term enrolment forecast.

Annually the MLSPF (and earlier the Ministry of Economy) conducts a mid-term forecast for the labour market and proposes enrolment plans that are further used for the elaboration of the Governmental Enrolment Plans.

The *National Employment Agency (NEA)*, subordinated to the MLSPF, is also responsible for some activities related to the analysis and needs forecast of the labour market and namely for:

- receiving, analysing and systematizing information related to the use of labour (regional, sector) and based on this data, elaborating of labour market forecasts for the short, mid- and long-term, together with specialized research institutions;
- conducting research and sociological surveys in the labour market field;

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19. The reduction/elimination of import duties for some goods in the process of advancing EU-Moldova trade regimes, European FDI in some sectors (including clothes) increased significantly, causing a higher demand for labour force.

20. A good example is the branch of the Draexlmaier company located in Moldova in 2008. This caused an immediate increase in employment in the manufacture of electrical machinery and apparatus sector by approximately 50 per cent. By now the company has employed more than 2,000 employees, which is more than one half of sector's total employment (in companies with more than 19 employees).

21. Regulation of the Ministry of Labour, Social Protection and Family approved by Governmental Decision No. 691 from 17 November 2009.

- organization and coordination of the activities of territorial agencies in the field of statistics and activity reports.

Since 2009, the NEA has annually elaborated the short-term forecast, with financial resources from donors, as no resources were allocated from the state budget. The results of the survey and the monthly vacancies' information are used for selecting the training courses for the unemployed.

**The Ministry of Education** is one of the main actors in matching labour force supply and demand – as the main stakeholder on the supply side and through its responsibility and contribution to elaborate enrolment plans. The Ministry of Education uses additional information besides the mid-term forecast provided by the MLSPF and other ministries, the demand estimated by the educational institutions, which is based on the assessment of their capacity to train students (availability of space, teaching staff, equipment). However, due to the poor targeting of the needs of the private sector in estimating labour market demand and a lack of a clear methodology used by the educational institutions, some problems still persist: overreporting by the educational institutions and a lack of trustworthy medium-term forecasts in the private sector.

The **Ministry of Economy** has a very limited role in anticipating and matching the skills supply and demand on the labour market since all related tasks were transferred to the MLSPF in 2010, even though it would be expected that some divisions of the Ministry of Economy, such as the SME development division and the technological development and competitiveness division would have a higher involvement in human capital development, especially through R&D policy.

**The business sector** is expected to contribute to skills creation and matching the skill demand and supply, being the primary beneficiary of the skills. Most of the time, skills are gained through trainings as a part of the adult learning process. During the last decade the total expenditure on adult training grew more than two-fold, with the private sector playing the leading role. However, the share of the adult population participating in continuous training is very low – 0.95 per cent in 2010<sup>22</sup> (compared to the EU average of 9.1 per cent) – due to the limited financial resources of the private sector and the low incentives for such investments.

Currently, the government is concerned about the mismatch on the labour market. Thus, the current draft of the mid-term development strategy for 2012–2020 has seven priorities, which include “Career relevant studies”. The goal of the strategy is to create a modern system, adjusted to the requirements of the labour market and the following aspects are being considered:

- Adjusting the curriculum of technical/vocational and higher education institutions to the National Qualification Framework;
- Using educational software in teaching/studying processes;

22. Share of population aged 25–64 participating in any form of training in total population aged 25–64.

- Establishing an institutes network consortium;
- Creating a professional career-path guidance service within educational institutions (universities, colleges, professional schools);
- Ensuring labour force flexibility by increasing participation in ongoing professional training;
- Consolidating social dialogue (Enterprises, Employers Association, Trade Unions, Education System).

In the process of elaborating the strategy and setting more specific objectives and indicators to be achieved, the forecast for labour force demand is planned to be elaborated. The specific targets of the strategy are as follows:

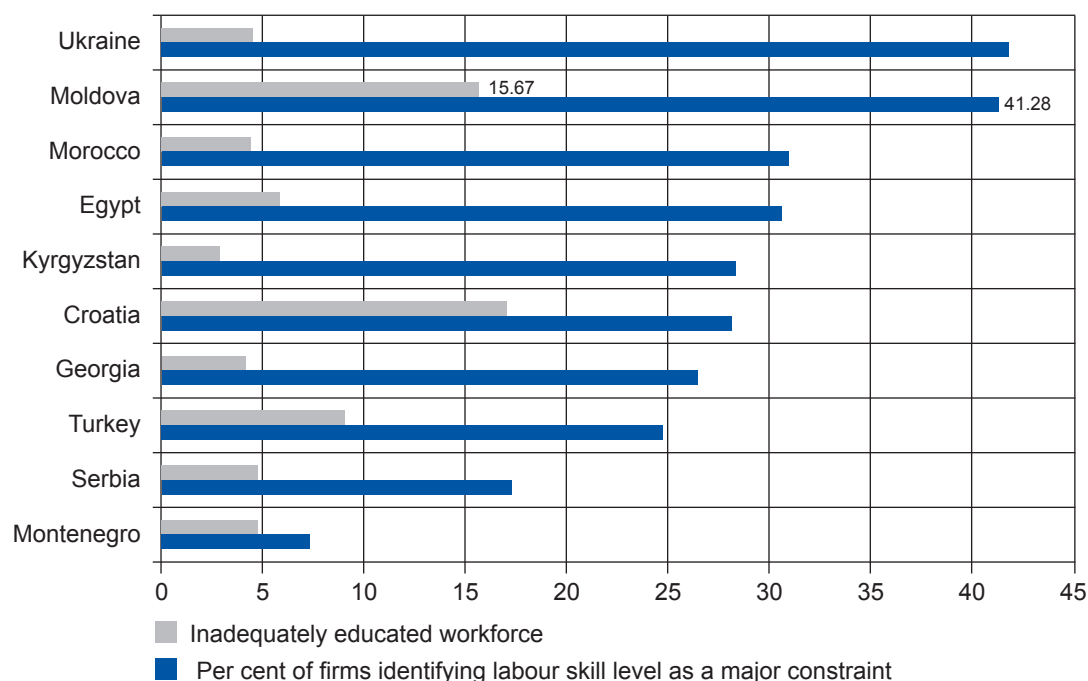
- Matching the supply of the educational system with the labour force demand, so as to reduce the unemployment rate from 9.1 per cent in 2010 to 6.0 per cent in 2015 and in 2020 – to reach the natural unemployment rate of 3–5 per cent;
- Reducing the flow of young emigrants, so as to reduce it from 17.7 per cent (2010) of youth to 15 per cent in 2015 and in 2020 to 10 per cent;
- Ensuring cooperation between education and business by creating sectoral committees, so that in 2015 there are five committees, and in 2020 – ten sectoral committees;
- Ensuring the quality of education at all levels of vocational education so that by 2015, 50 per cent of businesses are satisfied with the quality of labour, and in 2020, 85 per cent (compared to the situation in 2011, when 85 per cent of businesses were dissatisfied with the quality of the labour force);
- Connecting the curriculum to labour market requirements in order to reduce the proportion of graduates who need additional training after graduation from 40 per cent (2010) to 20 per cent in 2015 and 10 per cent in 2020;
- Making structural changes in professional education to increase the return on training investment;
- Increase the level of knowledge about sustainable development priorities among graduates and employees by at least 30 per cent in 2015, and 50 per cent in 2020 compared to 2011, by promoting education about sustainable development.

### **2.1.2 Human Capital: An Advantage or a Constraint for Moldova?**

In the early 2000s Moldova was known for its cheap and relatively qualified labour force. Since 2004 this advantage has brought benefits by increasing FDI from companies looking for the competitive labour force in the region. During the last decade the access to specialized education (vocational and higher education) increased, but Moldova has lost its previous fame. Currently, employers' complaints about the quality of the labour force are rising. According to the Enterprise Survey of the World Bank, 41 per cent of employers identified the labour skill level as a major constraint to their activity and 15.67

per cent of enterprises consider the inadequately educated workforce as a major obstacle, placing Moldova very high in this ranking compared to other countries in transition and developing countries (Figure 3).

**Figure 3: Share of enterprises which identify labour skill level and the inadequately educated workforce as major constraint and obstacle**



Source: Enterprise Survey, World Bank 2008–2009.

Also, the lack of a qualified labour force is often mentioned as a reason not to settle a foreign business in Moldova. Therefore, human capital was identified as one of the major constraints to economic growth in Moldova (along with the business climate, access to finance and road infrastructure)<sup>23</sup>. It is hard to believe that with an employment rate under 40 per cent, rising unemployment and under-employment rate that Moldova can qualify as a country with an insufficient labour force, as some employers mentioned.

The problem of the qualified labour force deficit derives mainly from three reasons:

- There is definitely a labour force deficit of a certain qualification level and in some areas (e.g. technical sciences). Students prefer to enrol in easy fields of studies. This could be partly addressed by interventions in the level of financing of some fields of study and through professional orientation courses for the students who graduate from lower secondary education levels. These courses are currently missing in the curricula;
- Quality of education – both vocational and higher – that needs to be addressed through a comprehensive reform, including changes in the curriculum, financing of

23. Report of Analysis of Constraints to Economic Growth, The Government of Republic of Moldova, 2010.

specialized education and higher involvement of the business sector in all levels of education, including continuous learning;

- High reservation wage that was set at levels higher than local businesses can afford as a result of the possibility to emigrate. The high wage gap between Moldova and other European countries, or even some CIS countries, forces people to leave as long as there is a possibility to find a job outside the country. Moreover, even those who stay in Moldova do not have enough incentives to work for low wages if they receive remittances from abroad.

## 2.2 Skills Needs in the Short-term and Analysis of Vacancies

### 2.2.1 Methodology of the Research

The analysis of the skills needs and vacancies in Moldova was based upon: (i) available statistical data; (ii) relevant studies of labour market developments and labour market needs and surveys conducted in the past in this field, (iv) potential sector economic developments that might have an impact on the labour market and skills needs; and (v) interviews with stakeholders and private companies.

The data sources primarily used in the report are from:

- *National Bureau of Statistics*: LFS and establishment surveys data;
- *National Employment Agency*: official registered vacancies and short-term labour market forecast;
- *Ministry of Labour, Social Protection and Family*: mid-term assessment of the labour market needs;
- *Ministry of Education*: enrolment plans.

Some 30 in-depth interviews were conducted with public and private stakeholders and sector business managers in construction, IT and agriculture.

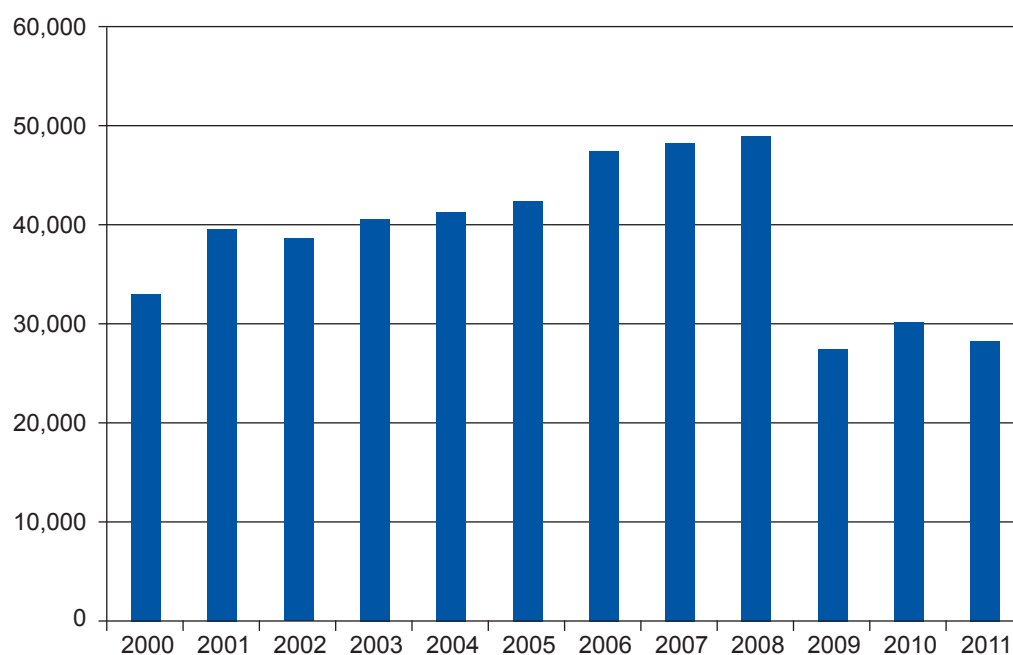
### 2.2.2 Analysis of Official Vacancies

Official registered vacancies cannot be considered the best basis on which to determine the needs of labour force in the short-term in Moldova. Despite legal requirements to report vacancies regularly to the NEA, not many companies comply, due to the lack of sanctions for this. Additionally, many companies do not consider their job offers as vacancies, but rather new jobs created in order to expand their activity. Nevertheless, registered NEA vacancies are the only data source available, collected and reported regularly, and in a few specific sectors they indicate the trends and existence of a mismatch.



The number of vacancies was growing during the 2000–2008 period and decreased significantly during and after the economic crisis. It is worth mentioning that the vacancies reported by the NEA annually are cumulated monthly vacancies; therefore, some may have been counted more than once if they were not filled quickly (during the same month). The data collected by the NEA does not allow for the exclusion of repeated vacancies.

**Figure 4:** Number of registered vacancies at the NEA, 2000–2011



Source: NEA.

The fact that vacancies are not reported by employers is confirmed both by the NEA and by companies interviewed, which do not consider this activity useful or helpful. A survey conducted by the American Chamber of Commerce in Moldova in 2008 also pointed out that the main methods used by the economic units to fill job vacancies are: placing advertisements in the media (particularly newspapers) or in public places (49 per cent) and through acquaintances (42 per cent). Requests for assistance from the state authorities in charge of labour management (local employment offices) are very limited, mentioned by only seven per cent of the interviewed economic units. More often, the requests for assistance from the employment offices are made by companies in urban areas and medium and large enterprises<sup>24</sup>.

24. State of the Labour Market in Moldova – 2008, Centre of Sociological, Political and Psychological Analysis and Investigations CIVIS, 2008.

Around a quarter of vacancies are reported by public institutions and enterprises, which comply to these requirements more easily. Also, around 13 per cent of vacancies are identified through visits of the NEA to companies, the rest are reported by the companies themselves to the NEA.

In 2011, the NEA reported 28,250 vacant positions during the year with the distribution indicated in Table 2.

**Table 2: Vacancies by economic sectors, 2011**

Sector	Number
Agriculture	2,097
Mining and quarrying	111
Processing industry	8,241
Construction	1,797
Retail and wholesale trade	4,612
Transport and communications	1,162
Real estate transactions	8
Public Administration	794
Education	1,565
Health and social assistance	1,854
Hotels and restaurants	98
Financial activities	199
Service of population	1,028
Energy, gas and water	179
Utilities	339
Other	4,166

Source: NEA.

Even if these are cumulated jobs, as mentioned before, from the monthly data it is visible that in most of the sectors the number of vacancies persists over the whole year. Thus, either they are unfilled, or they are filled but people leave after a short time and they are reported again. Certainly, it is not the case that plenty of new jobs are generated every month. The NEA confirmed the difficulties in filling in job vacancies, especially in clothing manufacture and machinery and equipment manufacture; these sectors report the most vacancies (in some cases these are only two companies reporting all the vacancies). The same is also valid for jobs with fewer vacancies. For example in June 2011 there were 16 registered vacancies for researchers in physical and chemical studies, and the same number was reported every month until November, only in December did it decrease to seven. Even in December, it is not certain that the vacancies were filled in, and possibly it was just decided to reduce the number of jobs. Moreover, the current private sector, especially foreign companies, are searching for more than technical skills and abilities. The need for socio-cultural skills and work values of employees has intensified.

**Table 3: Number of vacancies by profession, 2011**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Seamstress, tailor	929	1,479	1,462	1,729	1,598	1,645	1,654	1,640	1,401	1,414	1,463	1,338
Worker	36	187	292	410	485	882	492	490	623	610	493	234
Assembler	517	692	665	531	500	502	502	55	170	83	193	185
Salesmen	62	82	21	102	148	160	170	159	165	174	200	171
Doctor	129	322	392	351	331	248	243	186	187	185	185	146
Machinist	31	51	6	52	47	88	90	106	105	128	140	83
Chef, baker	34	44	59	66	76	63	74	88	117	137	119	80
Computer operators						76	70	100	65	72	32	71
Controller	21	39	32	19	68	62	68	57	69	74	55	60
Inspector	33	43	47	44	42	33	39	117	46	41	46	55
Cashier	6	11	16	31	71	66	69	67	80	32	57	53
Driver	31	52	59	91	80	74	82	94	93	99	69	52
Agent	67	95	97	65	55	58	40	49	36	55	39	48
Porter	4	7	17	28	36	77	79		110	123	127	48
Waiter, bartender	34	45	43	61	75	75	86	69	65	102	58	46
Engineer	18	48	42	40	52	45	44	59	61	58	47	45
Chief exchange	25	28	28	29	32	20	20	43	29	28	19	38
Electrician and gas plumber						31	61	47	66	60	53	35
Manager	13	40	31	36	54	64	48	72	70	68	27	32
Accountant	16	45	46	40	38	40	34	40	27	34	30	31

Source: NEA.

Generally, the number of vacancies varies across the year between 2,500 to over 5,000 depending on the month, which reflects the seasonality of the Moldovan economy. More than 50 per cent of the job vacancies are in the Chisinau and Balti municipalities, except for a few summer months. From the total number of vacant positions, on average per year, about 24 per cent are for tertiary education and post-secondary non-university graduates, 75 per cent for VET graduates, and less than 1 per cent for unskilled labour force. The shares almost do not change over the year.

Not all employers report the salaries for the jobs. Although, some data is available, it is very unreliable. Generally, the salaries reported are under the national average. The situation seems even worse for tertiary education graduates. At the end of 2011, around 15 per cent of job vacancies offered a salary above the national average wage, while for

those with secondary education the share is around 18 per cent. Moreover, this is usually the maximum wage the company can offer, based on the maximum productivity, which is not met every time. Therefore the final wage may be even lower and the job soon becomes vacant again.

The problem of vacancy filling is currently quite serious in the country. This is confirmed by the NEA, after its usual visits. There is a vicious circle on the labour market: low productivity and lack of skilled workers versus low salaries that do not motivate the employees. The survey conducted for the American Chamber of Commerce in Moldova confirms that every third company has faced difficulties in filling vacant positions. Medium and large enterprises face the vacancy filling problem most often (76 per cent of medium and large enterprises surveyed), as compared with 51 per cent of small and 27 per cent of micro enterprises. The difficulties related to vacancy filling were recorded more often in companies operating in such areas as industry (60 per cent), health services (50 per cent), transport (42 per cent), services (40 per cent) and the agricultural sector (40 per cent). Most (59 per cent) employers face the problem of vacancy filling for specialized skilled personnel and the reasons mostly relate to the salary size and levels of staff qualifications<sup>25</sup>.

More jobs are advertised on the internet, though these should not be considered as vacancies every time. These are mostly positions for higher qualified and better educated workers, who use the internet. According to the American Chamber of Commerce in Moldova survey, in 2008, six per cent of respondents placed vacancy advertisements on the internet, and these were exclusively by enterprises in urban areas and more frequently by medium and large enterprises<sup>26</sup>.

### **2.2.3 Short-Term Labour Market Forecast**

The NEA produces the only national survey on the needs on the labour market annually since 2009. The survey is conducted annually on around 20 per cent of enterprises with more than five employees. Although the questions are very broad, they offer a fair anticipation for sector employment and are highly correlated to the economic perspectives of the sector. According to the NEA forecast, employment in 2012 will evolve by sectors as presented in Table 4.

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25. The State of Labour Market in Moldova – 2008, Centre of Sociological, Political and Psychological Analysis and Investigations CIVIS, 2008.

26. The State of the Labour Market in Moldova – 2008, AmCham, 2008.

**Table 4: Anticipated change in employment by economic sectors in 2012**

Economic activity	Change
Finance	→
Agriculture	↑
Wholesale and retail trade	↓
Construction	→
Energy, gas and water	↓
Hotels and restaurants	↑
Manufacturing	↓
Health and social assistance	→
Services	→
Transport and communications	↓
Real estate	→

Source: NEA.

More or less, NEA forecasts for 2011 seemed to be trustworthy, where the changes in the employed population followed the businesses anticipations in most of the sectors. The construction sector might be considered an important exception, where the crisis is ongoing and employers do not anticipate a recovery for 2012.

For 2012, businesses anticipate the creation of more new jobs compared to 2011 in the following sectors: “agriculture”, “manufacturing”, “hotels and restaurants”. At the same time, jobs in “trade”, “transport and communications” and “energy” will mark a decline compared to 2011<sup>27</sup>.

**Table 5: The most needed specialists in 2012 by level of education**

Tertiary graduates	Post-secondary non-university graduates	Secondary vocational graduates
<ul style="list-style-type: none"> <li>• Law enforcement</li> <li>• Medicine</li> <li>• Foreign languages</li> <li>• Accounting</li> <li>• Dentistry</li> <li>• Preschool education</li> <li>• Mathematics</li> <li>• Information Technologies</li> <li>• Literature</li> <li>• Engineering and Management</li> </ul>	<ul style="list-style-type: none"> <li>• Medicine</li> <li>• Law</li> <li>• Pharmacy</li> <li>• Dentistry</li> <li>• Manufacturing-engineering</li> <li>• Machine-tools</li> <li>• Accounting</li> <li>• Mechanization of agriculture</li> <li>• Automation and informatics</li> <li>• Border officers</li> </ul>	<ul style="list-style-type: none"> <li>• Seamstresses (clothing industry)</li> <li>• Locksmith for automation and measurement control devices</li> <li>• Driver</li> <li>• Food salesmen</li> <li>• Engineer for repair and maintenance of electric equipment</li> <li>• Tractor driver</li> </ul>

Source: MLSPF.

27. Short-term forecast of the Labour Market 2012, NEA.

The MLSPF mid-term forecast complements the NEA survey with information on the type of skills needed. These are not complementary surveys and are conducted on different samples. The MLSPF mid-term forecast represents aggregated data collected from state institutions and provided by central and local public authorities. Thus, it mainly represents public sector needs, but also includes some data from the private sector collected and reported by local public authorities from companies within their district. Thus, the data is very useful and correlated to the vacancies reported, due to the fact that public institutions and companies report vacancies more regularly. For 2012 a higher demand for the specialists listed in the Table 5 is expected.

## 2.3 Skills Mismatch

### 2.3.1 Mismatch of Skills and Possible Causes

The data presented in Chapter 2.2 indicates the deficit of labour force in some sectors and, at the same time, a possible existent mismatch in other sectors. NEA statistics on vacancies and unemployment confirm the existence of a mismatch, as for some professions both the number of vacancies and the number of registered unemployed are quite high and persist over the years (Table 6).

**Table 6: Number of vacancies and registered unemployed in December 31, 2011**

Profession	Vacancies	Registered unemployed
Tailor ( in textile industry)	573	416
Tailor (clothes manufacture)	552	232
Assembler	166	41
Auxiliary worker	148	12,877
Food salesman	130	407
Specialized doctors	65	11
Cashier	59	105
Cook	57	713
Controller	56	106
Computer operator	51	168
Courier	47	138
Salesman of non-foodstuffs	43	237
Nurse	39	135
Inspector	37	42
Driver	35	1,342
Canvasser	30	14

Profession	Vacancies	Registered unemployed
Accountant	30	532
Attendant in production rooms	27	358
Watchman	27	992
Sweeper	25	33
Social assistant	24	51
Barman	23	42
Cable cutter	20	1
Insurance agent	19	5
Electric and gas installation fitters	19	283
Cleaning woman	19	531
Family doctor	19	6
Consultant	18	14
Repairman/mechanic	16	122
Tailor (leather and fur)	15	1
Tractor driver/operator	14	993
Nanny	12	259
Nurse	12	191
Engineer	12	298
Mechanic/Repairmen for gas equipment	11	12
Manager (in trade)	11	31
Postman	11	46
Specialist (public administration)	11	35
Baker	10	75
Conductor	10	1
Electrician	10	83
Extractor	10	1
Repairmen for equipment	10	8
Repairmen – plumber for sanitary equipment	10	68
Car washer	10	2
Carpenter	10	217
Economist	9	209
Vet	9	26
Secretary	9	123

Source: NEA.

While a possible explanation might be the territorial distribution of the vacancies and unemployed, the NEA mentions that it is not always the case. There seems to be a vicious circle here as, on one side, the productivity is low and does not satisfy the employers and, on the other side, the wages are low and do not satisfy the employees. Mismatch in the labour market is also caused by:

- ***Low quality of education.*** Most often employers complain about the inadequate education of the labour force, not the quantity. Even in the fields of study with a sufficient number of graduates (e.g. social sciences, business and law) there are often complaints about the practical skills and theoretical knowledge of the fresh graduates. This is explained by the current state of the educational system – low requirements of educational institutions in order to attract more students paying their tuition fees and thus financing the educational system. The participation of the business sector in training programmes is also limited, with few internships offered to students. In order to address this issue, a comprehensive reform of vocational and higher education is needed: with major changes in the curricula, where the employers would have a higher involvement, an independent agency for the accreditation of educational institutions, an increase of the capacities for R&D of the universities, more time dedicated to internships and so forth.
- ***Preferences for higher levels of education.*** This type of mismatch was addressed by the government most frequently. The fact that the business sector often mentions the necessity of a skilled labour force does not necessarily mean increasing the enrolment plans in VET schools is needed, to the detriment of tertiary education. Actually, most of the employers confirm that if the VET graduates had been trained adequately, there would be enough of them. Moreover, graduates of tertiary education find jobs more easily (the employment rate is higher and unemployment rate is lower within this population group). Thus, there might be a few explanations: (1) either there is really a higher demand for graduates with higher education than with vocational education (contrary to businesses complaints), or (2) with an excess of graduates with higher education, employers hire graduates of higher education for positions implying a lower level of skills and knowledge, or (3) the quality of vocational education is very low, discouraging employers from hiring these graduates. In order to make vocational education more attractive, it is needed in the first place to increase the quality of the vocational studies and to adapt them to real sector needs. Only by ensuring decent jobs for vocational education graduates is it feasible to attract students to vocational schools. Therefore, the participation of the business sector in the formulation of the curricula and even in the educational process should be the first step. Also, professional guidance should be offered to lower secondary education graduates, which is currently unavailable.
- ***Preferences for “easy” fields of studies.*** It is already common in Moldova to choose easy fields of studies. Currently about 73 per cent of annual graduates of higher education were enrolled in social sciences, business and law. The demand for technical and hard sciences is very low, whereas the need for specialists in these fields is higher, and also important for the development and competitiveness of the national economy. The VET system does not offer many professions in demand on the labour market. As the economic structure was changing many professions were closed during the last decade, but few new ones were opened in this period that



would respond to the new needs of the economy. In order to change this structure of demand, firstly, a good forecast of the labour market needs in the medium and long-term is needed and, secondly, an increase of the quality and requirements for all levels of education and fields of study. Nevertheless, a better performance of the Moldovan economy is needed for motivating students to choose certain fields of studies: not only are more jobs needed, but also better paid jobs.

- ***Functionally nonexistent career guidance services*** in lower secondary and general secondary educational institutions. This is reflected in the above mentioned preferences of the graduates.
- ***The underestimated role of life-long learning.*** The share of adults participating in training in Moldova is under 1 per cent. However, in a continuously changing economy, the need for skills' update is essential. Unfortunately, not all companies have the necessary financial resources for investment in trainings, which causes the obsolescence of the skills of old workers and the existent mismatch. Therefore, it is necessary both to educate and stimulate employers to invest in training their employees. Currently, many employers do not even know about the legal stipulations regarding the need to spend two per cent of the remuneration fund for the training of the employees. Also, it is necessary to develop a mechanism to validate informal knowledge. Currently there are many individuals with skills and competences acquired through experience in the country or abroad and who lack a certificate. The validation of this knowledge might stimulate the employers and employees to invest in their training.
- ***Expectations.*** This mainly refers to the wage expectations. Seeing as in Moldova there is still a need of low-skilled workers and there is a large share of the population with only a general secondary education degree, especially in rural areas, it is certainly not the case that there are no workers. However, many of them refuse to work for the wages offered. This is a very complex problem generated by a series of factors that cannot be eliminated in the short and even the medium-term. Only a real development of the Moldovan economy, with more intense business activity, more jobs and higher wages may ensure a change in this respect.

### 2.3.2 Measuring the Mismatch

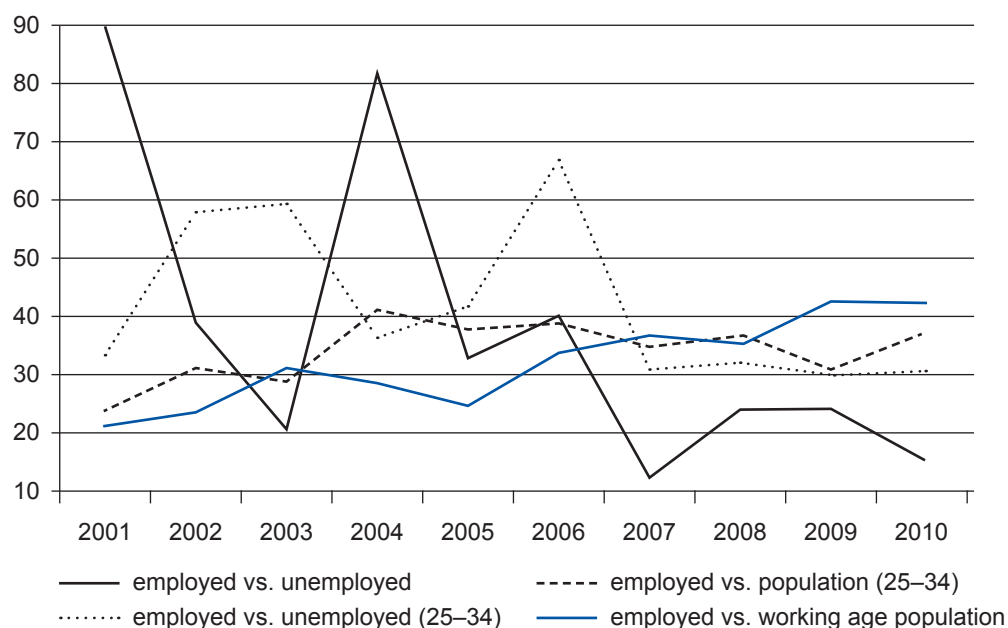
There are many methods used for identifying and calculating the mismatch of skills demand and supply (coefficient of variance, variance of the relative unemployment rate, Beveridge curve, workers' self-assessment, mismatch by occupation, returns to education). With the existent data, only some of them can be used and are appropriate for Moldova.

Firstly, the coefficient of variation<sup>28</sup> for employed versus working age population indicates that the mismatch has increased from 20.8 per cent in 2001 to 42.1 per cent in 2010,

28. Coefficient of variation compares the degree of variation from one data series to another; it is calculated as the ratio of the standard deviation to the mean, multiplied by 100 to be expressed as a percentage. In order to determine the mismatch on the labour market the employed population is compared with working age population and unemployed population and the coefficient of variation between the two data series is calculated based on educational attainment.

mainly because of the lower employability of lower educated individuals. The coefficient of variation is lower for the youngest population group (25–34). At the same time, the coefficient of variation of employed versus unemployed population indicates a higher mismatch for the youngest cohort. A disaggregated analysis also indicates a higher mismatch among the male population.

**Figure 5: Coefficient of variation for employed vs. working age population and employed vs. unemployed population, 2001–2010 (per cent)**



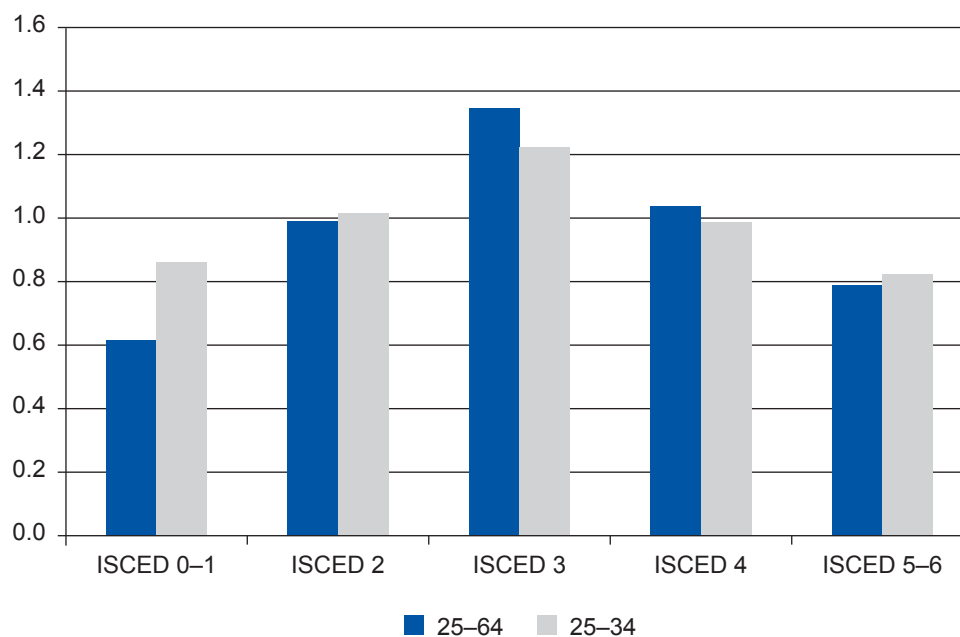
Note: The coefficient is calculated for population aged 25–64 that is supposed to have finished all levels of education.

Source: Authors' calculations based on LFS data.

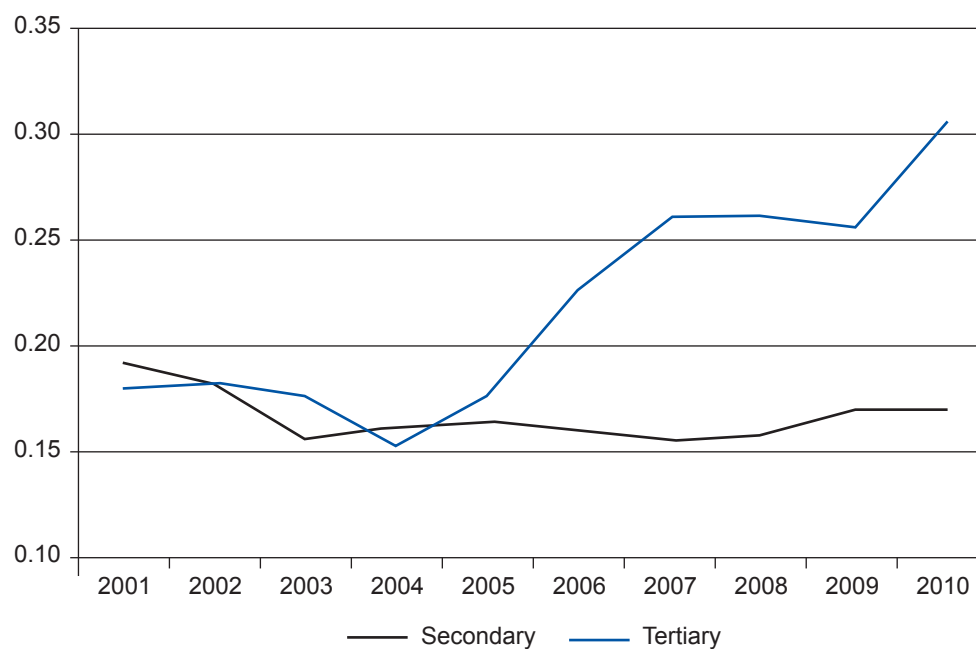
Further, as it is clear that there is a mismatch on the labour market, we can identify the most affected groups of the population. The proportion of unemployed to employed also points to a higher mismatch within secondary education graduates (ISCED 2 and ISCED 3), namely the urban, male population (Figure 6).

Another important assessment is the mismatch by occupation, based on internationally agreed practices<sup>29</sup>. This indicates a higher mismatch for the vocational education graduates (31 per cent of graduates of secondary education performing jobs requiring lower qualifications), but points to the existence of a mismatch for tertiary graduates, too – 17 per cent (Figure 7).

29. Mismatch for secondary level graduates is calculated as the ratio of workers not in education with ISCED 3–4 education, working at an ISCO 9 skill level to all workers not in education with ISCED 3–4 education; mismatch for tertiary level graduates is calculated as the ratio of workers not in education with ISCED 5–6 education degree, working at an ISCO 4–9 skill level to all workers not in education with tertiary education.

**Figure 6: Proportion of unemployed to proportion of employed, 2010**

Source: Author's calculations based on LFS data.

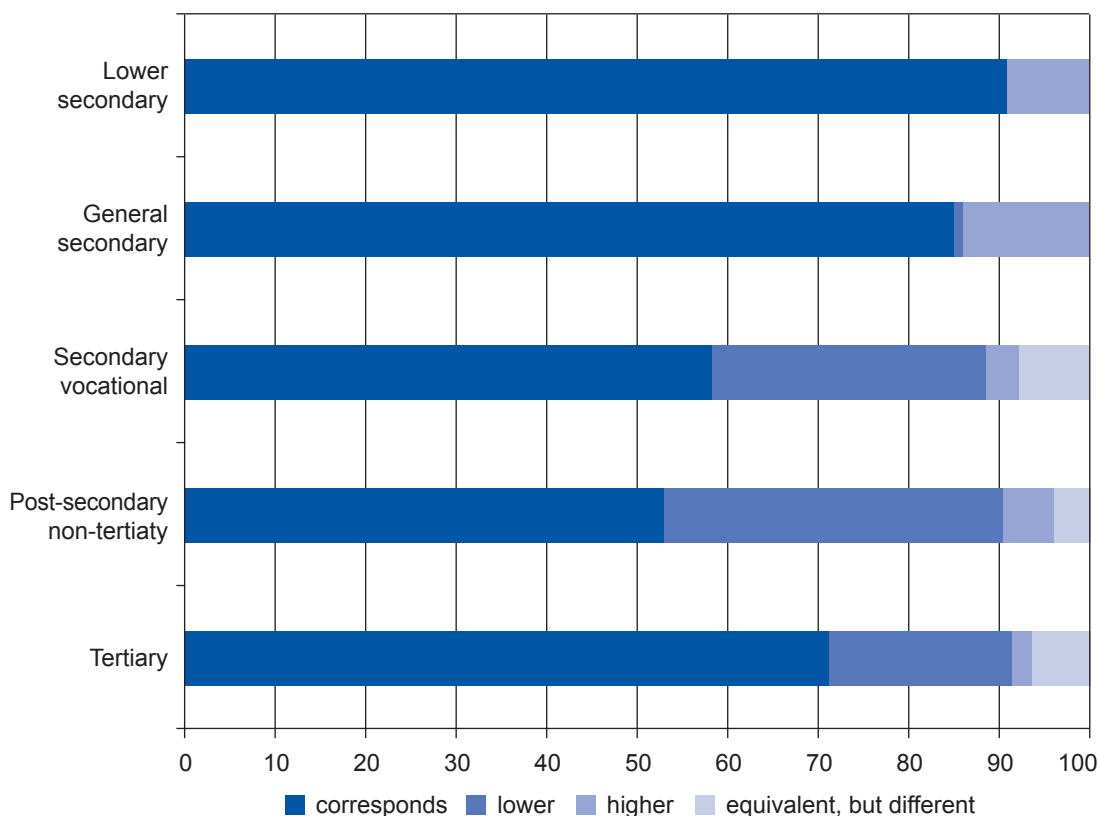
**Figure 7: Mismatch by occupation, 2001–2010 (per cent)**

Source: Author's calculations based on LFS data.

This is partially confirmed by LFS data, with 20 per cent of employees with tertiary education stating that the job performed requires lower qualifications than the ones they gained in education and 22 per cent of secondary education graduates stating this fact

(many employees stating that their qualifications are superior to the jobs performed) (Figure 8). At the same time, the share of those stating that the job performed is higher than the qualifications gained in the trainings is 20 per cent for tertiary education graduates and only eight per cent for secondary education graduates.

**Figure 8: Correspondence of job performed with the training, 2010 (per cent)**



Source: Author's calculations based on LFS data

The above listed indicators present an abstract of the quality of education. However, almost everybody agrees that vocational education faces the most serious quality problems and Moldova needs more properly educated graduates both with vocational and tertiary education.

## 2.4 Skills Needs in the Medium and Long-term

### 2.4.1 Main Challenges for Moldovan Labour Market in the Medium and Long-term

The last few years were dominated by the effects of the global economic crisis, coupled with the political instability in Moldova. These facts made the investors more cautious and undecided. This is true both for investments and for employment. Thus, currently in

Moldova few employers talk about certain plans or trustworthy forecasts for employment in their company.

Generally, employers link the future (mid-term and long-term) scenarios for the labour market to several possible developments:

- ***Finalization of central public administration reform.*** The reform was launched in 2005 and was initially planned to finish in 2008. However, it is still in process and one of the expected reform outcomes is a reduced number of employees in the central public administration, but also higher responsibilities for public servants.
- ***Launching the decentralization reform.*** The decentralization strategy was approved early on in 2012. For its successful implementation, specialists at local level will be required (first level of local governments: towns and villages). This includes specialists in European integration, international relations, law and translators. Further, its successful implementation may lead to a long-term revival of economic activities in rural areas and a gradual increase in skilled workforce in villages.
- ***Optimization of school network.*** It started in 2010 as a reaction to depopulation of villages and emptying schools, as well as the lack of teaching staff in some villages. According to the initial calculations the reform will cause a reduction of about 5,300 positions<sup>30</sup>.
- ***The European integration vector of Moldova*** will have the most significant impact on employment. The Deep and Comprehensive Free Trade Agreement (DCFTA) that is currently under negotiation and as a prior test – an FTA with Turkey – will certainly shape the economic structure, and consequently the need for an expanded workforce. The most important changes are expected in agricultural and food industry sectors, as shown by the experience of other countries that already went through this process<sup>31</sup>.
- ***Domestic policy*** is seen by business sector as the most important for the current development of businesses, with an immediate impact. The main policies identified important for employment during the research are:
  - Improvement of business climate – the so-called “Guillotine Reform” started in 2005 with no significant impact on the business sector by now. Despite the slight improvement in the Doing Business ranking, there are still some serious problems in Moldova related to the protection of investors.

30. Republic of Moldova: Second Reviews Under the Extended Arrangement and Under the Three-Year Arrangement Under the Extended Credit Facility, and Request for Waiver of Applicability of Performance Criteria, IMF, 2011.

31. Most of the studies on the impact of a DCFTA between Moldova and EU, but also the experience of other countries that went through this process, indicate a labour movement between sectors and out of the labour force due to the economic changes generated by the DCFTA. The highest impact is expected to be in the agricultural sector, where Moldova still has high import duties. For more information and data see: “Trade Sustainability Impact Assessment in Support of Negotiations of a DCFTA between the EU and Georgia and the Republic of Moldova” (draft version), ECORYS, CASE, 2012; “A Free Trade Area between the Republic of Moldova and the European Union: Feasibility, Perspectives and Potential Impact”, Expert-Grup, 2009; “Moldova and EU Liberalizing Trade: How Much for the Agro-industrial Sector to Suffer?”, Expert-Grup, 2011.

- Change in fiscal policy. This mainly refers to the IT sector, which has benefited since 2005 from incentives in terms of tax exemption. However, in January 2012 the government initially decided not to renew these facilities. After the indignation of the sector companies the fiscal facilities were re-introduced. But the initial decision made the IT companies re-think their strategies. Moreover, now there is no certainty that the issue will not reappear on the agenda in a few years from now.
- The agricultural subsidizing reform. Currently the agricultural sector is the most important for employment. The share of subsidies in agricultural production is around two per cent in Moldova, while in the EU it is over 30 per cent. Nevertheless, large agricultural companies are managing for the time being, but a DCFTA with EU and no increase in subsidies might be devastating for most of them.
- Liberalization of agricultural land sale to foreigners. In Moldova, foreigners are prohibited from buying agricultural land. Although there are strong pressures to liberalize the land sales, there are different opinions on the issue. Some, including employees, think that this might save the agriculture sector, while the employers do not foresee a necessarily positive impact.

Meanwhile, there is another threat to the labour market from the supply side, deriving from the demographic trends in Moldova, common to many countries in Europe. According to the demographic forecasts the population of the Republic in Moldova will decrease by 2050 by about 12 per cent to 27 per cent. The share of the working age population is expected to decline most dramatically, which will reduce the labour supply also in terms of quantity.

**Table 7: Anticipated population developments by 2050**

	Pessimistic scenario			Moderately pessimistic scenario			Optimistic scenario		
	0–14	15–59	60+	0–14	15–59	60+	0–14	15–59	60+
2010	589,847	2,465,351	508,460	590,186	2,465,236	508,414	590,879	2,468,791	512,950
	16.6	69.2	14.3	16.6	69.2	14.3	16.5	69.1	14.4
2015	567,936	2,39,5886	572,325	572,720	2,397,545	574,448	578,479	2,402,154	581,445
	16.1	67.8	16.2	16.2	67.6	16.2	16.2	67.4	16.3
2020	553,177	2,279,911	643,609	567,289	2,284,656	651,000	582,587	2,292,180	664,567
	15.9	65.6	18.5	16.2	65.2	18.6	16.5	64.8	18.8
2030	438,004	2,135,406	679,909	471,230	2,153,939	706,052	507,691	2,176,696	744,621
	13.5	65.6	20.9	14.1	64.7	21.2	14.8	63.5	21.7
2050	305,431	1,503,630	787,110	375,161	1,582,702	872,990	459,084	1,672,147	998,565
	11.8	57.9	30.3	13.3	55.9	30.8	14.7	53.4	31.9

Source: *Green Book of Population of Republic of Moldova*, UNFPA, 2009.

## 2.4.2 Forecast of Skills Needs in the Medium and Long-term

The latest mid-term forecast for the needs of workforce produced by the MLSPF<sup>32</sup> contains data on the mid-term need for specialists with different backgrounds and levels of education. The need for workforce by levels of education for mid-term period is presented in the tables below (Tables 8, 9 and 10).

**Table 8: Need for workforce with tertiary education, 2011–2016**

	2011	2012	2013	2014	2015	2016
<b>Total</b>	<b>6,117</b>	<b>5,641</b>	<b>5,282</b>	<b>5,267</b>	<b>5,299</b>	<b>5,237</b>
Science education	1,327	941	903	781	769	816
Arts	180	137	138	144	132	143
Humanities	292	277	172	169	177	127
Political science	52	34	38	34	35	39
Social sciences	44	24	19	18	24	23
Social assistance	61	45	36	40	43	43
Communication sciences	30	28	19	19	21	23
Economics	289	301	270	291	297	281
Law	657	651	636	650	656	647
Natural sciences	84	86	83	75	76	76
Exact sciences	89	87	86	80	79	76
Engineering	403	448	390	466	478	464
Oil and gas industry	3	1		1	1	1
Processing and manufacturing technologies	32	36	32	26	31	33
Chemical technology and biotechnologies	7	2		6	3	2
Architecture and constructions	195	182	167	173	170	174
Agricultural sciences	215	204	174	193	190	149
Veterinary medicine	45	44	40	41	42	32
Medicine	798	795	795	793	797	793
Pharmacy	115	115	116	115	115	116
Public services	22	23	26	26	27	31
Sports	8	4	1	1	1	1
Transport services	74	67	48	45	41	43
Environmental protection	25	27	21	21	22	21
Safety and security	900	926	902	909	925	917
Military	170	156	170	150	147	166

Source: MLSPF.

32. “The need for specialists with tertiary education/post-secondary non-university and secondary vocational education for 2011–2016 period.” The data were collected by ministries, central and local public authorities on the request of MLSPF, thus, including mostly public demand for specialists, but also some private demand collected at the request of the local authorities from companies in their district.

**Table 9: Need for workforce with post-secondary non-university education, 2011–2016**

	2011	2012	2013	2014	2015	2016
Medicine	1,160	1,166	1,164	1,165	1,163	1,164
Law	1,090	1,090	940	840	790	780
Pharmacy	160	160	160	160	160	160
Dentistry	120	120	120	120	120	120
Machine tools	100	100	100	100	150	150
Accounting	93	95	86	91	88	81
Agricultural mechanization	92	94	73	93	82	81
Agronomy	80	76	69	68	74	62
Rail transportation	60	45	45	81	85	80
Manufacturing engineering	57	107	109	109	109	112
Automation and informatics	51	51	51	51	51	53
Border officers	50	50	50	50	50	50
Infantry	45	45	45	45	45	45
Auto transportation	44	32	23	33	35	29
Veterinary medicine	41	42	35	38	39	33
Preschool pedagogy	36	27	27	25	25	29
Horticulture and viticulture	35	37	30	34	33	19
Electrification of agriculture	32	37	32	39	36	37
Artillery	30	30	30	30	30	30
Trade	27	22	19	23	22	22

Source: MLSPF.

**Table 10: Need for workforce with secondary vocational education, 2011–2016**

	2011	2012	2013	2014	2015	2016
<b>Total</b>	<b>2,964</b>	<b>2,601</b>	<b>2,528</b>	<b>2,507</b>	<b>2,558</b>	<b>2,602</b>
Services	444	394	347	369	362	384
Agriculture	267	228	243	253	279	293
Construction	335	244	204	213	224	237
Heavy industry	757	682	671	653	654	663
Cottage industry	11	7	4	4	4	4
Printing industry	3	1	0	1	1	1
Food industry	65	61	56	57	56	58
Wood-processing industry	10	6	6	3	5	3
Light industry	747	639	707	619	643	627
Transport	191	200	162	156	157	157
Telecommunications	134	139	128	179	173	175

Source: MLSPF.



Moreover, there are currently around 57 thousand employees over the retirement age, representing 5 per cent of total employment. As the retirement age is gender-differentiated in Moldova (57 for women and 62 for men), it is obvious that women represent the highest share of those in employment at post retirement age (70 per cent). The role of employees at retirement age should not be overestimated: 45 per cent are working in agricultural sector, mostly for their own consumption. Thus, their entrance into *de facto* retirement may not necessary result in a corresponding replacement demand. Another 8.6 per cent of them work in very low-skilled occupations (ISCO 9). However, there are still many high-skilled employees over the retirement age in the public sector (Table 11). Therefore, in case of their retirement in mid-term period, the replacement demand in the public sector will be the highest, followed by the service sector.

**Table 11: Employees over retirement age, 2010**

	ISCO 1–3 (high-skilled)	ISCO 4–8 (medium skilled)	ISCO 9 (low-skilled)
Agriculture	823*	8,404	16,827
Industry	1,366	1,129	773
Services	3,563	3,122	1,855
Public administration, education, health and social assistance	13,377	2,073	1,996

Note: \* Not representative, due to high error.

Source: Author's calculations based on NBS data.

In the medium and long-term, assuming that most pensioners will give up their jobs at the retirement age, we will witness a high reduction of employment in agricultural sector that will not necessary need replacement, due to the facts mentioned above and the natural shrinkage of the sector. The most important sectors for fuelling the replacement demand will be: public sector for high-skilled employees and service sector for medium-skilled employees. The estimated replacement demand by sectors and skills is presented in Table 12.

**Table 12: Replacement demand in medium and long-term**

	Medium-term: 2011–2015			Long-term: 2016–2020		
	ISCO 1–3 (high-skilled)	ISCO 4–8 (medium-skilled)	ISCO 9 (low-skilled)	ISCO 1–3 (high-skilled)	ISCO 4–8 (medium-skilled)	ISCO 9 (low-skilled)
Agriculture	2,231	10,525	22,262	2,175	16,834	30,268
Industry	4,026	7,117	2,882	4,718	9,514	4,349
Construction	848	2,109	672	1,783	3,527	1,061
Services	8,107	15,032	4,173	9,399	22,309	4,497
Public employment	17,619	6,134	6,562	23,712	7,460	7,666

Source: Author's calculations based on NBS data.

However, we should also take into consideration the possibility of equalization of retirement age for women and men, the overall increase in retirement age and the fact that not all pensioners are willing to retire at the legal retirement age due to the low pensions not covering the cost of living. While some of these issues are fiercely debated, no real actions have been undertaken recently due to the risks such radical reforms imply. However, in the context of the financial unsustainability of the pension system, these recommendations are often given by the World Bank and IMF to the Moldovan government. These facts may shrink significantly the replacement demand in the medium and long-term.

## **2.5 Skills Needs: A Sectoral Approach**

### **2.5.1 Skills Needs in Agricultural Sector**

The agricultural sector employs the largest share of population in Moldova – 27.5 per cent in 2011. Due to the seasonality of agricultural activity, the number of employees varies significantly during the year, the lowest being in the first and fourth quarters and the highest during the second and the third quarters, when it doubles. The specific of the agricultural sector in Moldova is high informality. While in the total economy, the informal employment is about 30 per cent, in agricultural sector informal employment is around 72 per cent. Most informal unemployment takes place in households producing for their own consumption (47 per cent) and informal sector enterprises (37 per cent). However, about 16 per cent of informal employees work in formal sector enterprises.

Due to high informality, the number of vacancies registered at NEA does not reflect the real situation. In 2011, only 7.4 per cent of registered vacancies were in the agricultural sector. There are very few jobs offered for specialists and many for auxiliary workers during the summer season. Web-sites hardly advertise any positions for agricultural workers as these are considered to be low-educated and not to use internet.

While the NEA short-term forecast indicates a possible increase in agricultural sector employment in 2012 compared to 2011 (based on the number of enterprises that plan to hire and fire workers), there is little chance this will be the case, as the sector is following a natural shrinking trend. The interviews with the agriculture syndicate and trade union reveal negative expectations in the agricultural sector employment for 2012, though not very significant in the short term.

Currently, the agricultural sector employs a mostly unskilled labour force. However, employers and farmers report difficulties in finding workers. The problem is not the real lack of unskilled workforce but the low wages that are not accepted by the population.

Recently, the demand for skilled qualified mechanic workers has increased. Despite the image of still less developed agriculture, there has been a slight progress in the last decade, and some degree of modernization has taken place. Most of the agricultural companies, and even farmers, have bought some kind of advanced equipment; however, few workers

can use it properly. Most farmers are old and mistrustful of new equipment. On the other hand, the young refuse to return to villages for a number of reasons besides low salaries.

The VET system does not answer the sector needs as it is not reformed and the equipment is old. Nevertheless, there are a few larger agricultural companies that are ready to offer the equipment to the vocational schools. However, they face difficulties due to the outdated curricula and bureaucratic procedures. Later, they find it difficult to keep workers in the village for reasons given above.

The general expectation is that in 2012 employment in the agricultural sector will continue its natural downward trend, with no major variations. A serious deviation from the trend might be caused only by unfavourable climatic conditions. The most needed workers are the following:

- Mechanic workers – general deficit in the country;
- Specialists (accountants and so forth) – mainly in the rural areas, where graduates refuse to return;
- Unqualified workforce – due to low wages offered.

As for the medium and long-term, generally, everybody agrees that employment in agricultural sector will continue to shrink as 27 per cent of population employed in agriculture is too much. Granted, most of them work in their own households, yet it is still a high share. The main decreasing category will be the non-qualified, manual workers. The agriculture is modernizing slowly, even in the current difficult circumstances. Employers consider that in the following three to four years the process of modernization will continue and much of the work will be performed automatically. From the mid-term forecast by the MLSPP (Tables 8–10), it is visible that there will be a decreasing need for workforce with tertiary and post-secondary non-tertiary education and a slightly increasing demand for professional education graduates.

Further, an FTA with Turkey and later a DCFTA with the EU will increase the requirements for manual workers, especially for fruit and table grape harvesting. So, the demand for qualified manual workers, that are currently almost missing, will grow. In this respect, in the long-term the number of unskilled workers will shrink significantly; the only sector that will employ unskilled workers will be the harvesting of grapes for wine production.

Further, in the long-run, the evolution of the sector and employment will depend on EU–Moldova relations. Moldova launched the DCFTA negotiations in December 2011. Meanwhile the Commission extended the Autonomous Trade preferences to Moldova up to 2015. Therefore, it is realistic to expect DCFTA to come into force by this time with a five to six year transition period for the agricultural sector. If by that time the agricultural companies do not get more funds, i.e. subsidies, they might face serious negative shocks. Large Moldovan agricultural companies hope that Moldova will get the candidate status by the time the DCFTA for agricultural goods enters into force. In a positive scenario, the need for a few professions will increase:

- specialists in irrigation,

- mechanics,
- skilled manual harvesters.

## 2.5.2 Skills Needs in the Construction Sector

The construction sector flourished in the period before the crisis in 2008. In the 2000–2008 period employment in the sector almost doubled (by 86 per cent). Even in this flourishing period, there was a labour force deficit estimated at 20–30 per cent of the employed population or 10,000–15,000 employees. This includes not only construction workers, but also economists, lawyers and so forth. In this period, due to the competitive salaries, some migrants were ready to return to Moldova. Even though the salary was 30–40 per cent lower in Moldova in some companies by compared to those received abroad, they were coming back due to other factors (free housing, family reasons).

As in the case of the agricultural sector the degree of informality is quite high – 66.3 per cent in 2011. Even in formal sector enterprises there is around 16 per cent of informal employment. Therefore, it is unsurprising that there are very few vacancies registered at the NEA in the sector. In 2011, only 6.6 per cent of total vacancies reported by the NEA came from the construction sector. In the beginning of 2012 the share was even lower, due to seasonal particularity. On March 15, they represented 1.9 per cent. Nevertheless, based on NEA data, we can conclude that over time there was a shift towards a demand for more complex professions. Thus, the demand for professions that are too narrow is decreasing, as the companies cannot offer these employees a full-time job for a whole year. Thus new complex professions that are in demand are: constructor – designer; quarry worker – builder; carpenters with various skills.

Some of these new professions were introduced in vocational schools by merging them with the old ones; however, they are still taught based on outdated curricula and using old equipment. Most of the time, employers prefer employees with no relevant studies, but with the necessary experience. This complicates the human resource divisions' task, as it is not easy to check the experience considering the lack of skills recognition legislation and occupational standards.

Also, the web-sites advertising jobs do not have many offers for workers in construction, as most of the workforce in the construction sector is not considered to be internet literate. Usually jobs are advertised through specialized newspapers and very rarely through other methods like job fairs or on the internet. Some companies mentioned that a few times they reported vacancies to the NEA, but the unemployed who came were not qualified enough and did not actually intend to work. Therefore, they do not report anymore, unless there are some regular inspections from the NEA.

After the economic crisis, employment in the sector fell significantly, currently being at 80 per cent from the 2008 level. Moreover, salaries also decreased, which made the deficit persist even if the need for labour is lower. Thus, people are moving abroad, if they have an opportunity, or to the informal sector, where they get higher remuneration.

As for migration, despite the reduction of workers, some companies benefited from this phenomenon and consider returned migrants to be better workers with better skills and/or work discipline.

For 2012 the situation in the construction sector is still uncertain. The recovery of the construction sector has been very slow after the global financial crisis. In 2011 most buildings that were started before the crisis were finalized, while there are few new orders. Other more successful companies base their projections for the demand of buildings based on remittances that are considered the main financial source for residential buildings. At the same time, the impossibility to increase wages makes it difficult to find and keep employees, especially during the fall, when more workers go abroad for seasonal work. Construction companies report a deficit of:

- qualified labour force (who left the country);
- unqualified labour force, unwilling to work due to low wages;
- other specialists (economists, lawyers and so on).

Currently, it is more difficult to find workers in the capital city compared to rural areas according to interviewed employers.

In the short-term forecast made by the NEA, the expectations of companies are slightly positive, with more companies intending to hire than to fire workers.

However, for the medium and long-term, everybody recognizes the dependence of the construction sector on the global economy especially in the EU and Russia which are the most important factor for the medium and long-term projections. Due to still uncertain perspectives regarding these economies, the construction companies are cautious to make any plans in the medium and long run.

One of the reported expected evolutions in the mid-term is the sale of apartments in residential buildings. Currently, these are being sold in the “grey” or “white” variant, the finishing and repair works left to the customer. Usually individual workers are hired for the job, most of the time without a contract. However, there is a rise in demand for skilled workers, working under a contract, so that the quality of works can be guaranteed.

Another possible source of employment in the construction sector may come from higher investments in infrastructure. Moldova needs serious investments in roads and water and sewage systems. Periodically, Moldova receives external grants for investments in infrastructure and this may continue. Currently, Moldovan companies consider they have a sufficient labour force for the works that might be financed in the mid-term. Actually, the impediment is the criteria imposed by international donors which cannot be fulfilled by local companies in order to participate in bids, thus they are involved in few current works financed from public funds. Nevertheless, even if foreign companies win the bid, local workers can be and are usually hired. For the time being and the mid-term they are considered to be enough. But once again, as external assistance may increase, there definitely will be a need to attract people back to the country and retrain them in these specific areas of construction.

### 2.5.3 Skills Needs in the Short-Term in the IT Sector

IT recently has become an important sector of the economy. With about 0.3 per cent of employment it produces 1.1 per cent of the GDP (in 2010). The sector grew rapidly since 2005, when significant fiscal facilities were given to IT companies, not comparable to any country in the region. From 2004 to 2010 the number of employers in companies with more than 19 employees increased 2.5 times (comparable to the advance of the overall employment in the sector according to LFS data – by 2.8 times). In the nine largest IT companies, members of ATIC (Moldovan Association of Private ICT Companies), employment increased 3.8 times.

Despite the generous fiscal facilities, there are still many companies operating in the shadow economy, as is the case of small IT companies that have clients from abroad and easily can hide foreign income. Currently, about 100 companies benefit from the fiscal facilities (full exemption from corporate income tax and partial exemptions from personal income tax and social contributions of the employees). Thus, the favourable taxation and the relatively qualified labour force were attractive incentives for many companies from abroad as well as local start-ups. Nevertheless, by now companies find it difficult to hire new good professionals in IT.

The opinion in the sector is that only 10 per cent to 20 per cent of graduates are employable and they also need some experience and training. Generally, companies intend to hire more people in 2012 as the fiscal facilities were maintained but they are unsure if they will succeed. All interviewed companies reported their intent to expand, some companies are actively looking for employees and want to expand, while for others this is an option if they find very good specialists. Only small companies working in the shadow economy listed other factors more important for their expansion, human capital often being in second place.

One of the largest IT companies in Moldova (> 200 employees) already announced in February 2012 its intent to employ 50 persons. There will be a higher than usual demand for QA Engineers and Network Operators. At the same time, the company intended to expand in the past few years and it has not succeeded yet.

Companies find it most difficult to employ good program managers and QA engineers. The jobs in the IT sector are actively advertised through web-sites. Some of the jobs are advertised on more web-sites simultaneously and may be kept more than one month, indicating the difficulty of finding specialists. Not every job advertised contains the salary offered. However, in most of the cases when this is disclosed in the advertisement, the salary is higher than the average in the sector.

Another widely used method to find personnel in the IT sector is through current employees and acquaintances. Some IT companies even have a remuneration plan for employees who bring good specialists into the company.

The intentions of the IT companies for the medium and long-term are to expand. Nevertheless, most of them plan for a three-year period, with the few exceptions being

very large companies. Currently, as the fiscal facilities have been extended, a few large companies are talking about extending their activity and employment by as much as twofold in the coming three years, if they find the specialists. They mostly talk about hiring: QA engineers, program managers and software engineers.

However, in case the fiscal facilities are cut then the plans might change. Thus, when in January 2012 the facilities were cancelled, the companies had to think of a new strategy. Large companies would have stayed in Moldova, but without expansion and recruitment. Many of the small companies would have turned to the informal economy, with no prospect of significant growth. Therefore, until the next attempt to cut the fiscal facilities, there is a high potential for growth, but unfortunately not enough highly qualified workers. Most of the foreign companies do not look for just good specialists in IT, they look for the best specialists, which makes the task difficult.





## CHAPTER 3

# Skills Needs and Vacancies in Ukraine

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### 3.1 Main Feature of the Labour Market in Ukraine

Since its independence, the Ukrainian labour market went through three different phases<sup>33</sup>:

- During phase one (1991–1994) the switch from a centralized to a market economy brought the creation 1.5–2.0 times more new jobs than the number of registered unemployed. As a result, during this period the level of official unemployment was almost nonexistent (0.1–0.3 per cent) and the load factor for each vacancy (0.42–0.60) was extremely low.
- The second phase (1995–2001) was characterized by severe restrictive monetary and fiscal policies aimed at fighting against inflation and stabilizing the financial system. But since such actions were not accompanied by structural reforms, they had a heavy impact on the labour market: the number of unemployed people exceeded the number of vacancies with an increased load factor for each vacancy of over 30. During this period, the number of registered unemployed people rose from 126,900 in 1995 to 1,174,500 in 1999. Employment declined in almost all sectors: construction, industry, transport, education, culture, art, science and scientific services.
- The third phase started in 2001 and was characterized by structural adjustments. The positive trend was affected by the global crisis that began in late 2008 and brought about a worsening of the labour market situation.

The economically active population (15–70) numbered 22.1 million in 2011, of which 20.3 million (or 91.4 per cent) were employed and the remaining 1.8 million were unemployed (ILO definition). Concerning the status in employment the proportion of employees decreased, while the number of self-employed workers increased (see Table 13).

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33. *Economy of Ukraine: Strategy and Policy for Long-term Development*. Edited by V.M. Geys, Academician of NAS of Ukraine. K.: Institute of Economic Forecasting, Phoenix, 2003. Sec. 3.

**Table 13: Status in employment, 2010–2011**

	First half of 2010			First half of 2011		
	Total	Urban	Rural	Total	Urban	Rural
<b>Total (thousands)</b>	<b>20,213,600</b>	<b>13,778,800</b>	<b>6,434,800</b>	<b>20,247,700</b>	<b>13,859,800</b>	<b>6,387,900</b>
out of which ( per cent)						
Employees	81,2	91,7	58,6	80,9	91,4	58,4
Self-employed (including contributing family workers)	18,8	8,3	41,4	19,1	8,6	41,6

Source: State Statistics Service of Ukraine.

The number of people working in the informal economy in 2011 was 4.6 million or 22.6 per cent of the total employment number. The majority of informal employment is in agriculture, followed by construction.

**Table 14: Employment in the informal economy by types of economic activity, 2011**

Sectors	Number	Share ( per cent)
<b>Total</b>	<b>4,574,200</b>	<b>100.0</b>
Rural sector	2,986,700	65.3
Construction	534,400	11.7
Sales, repairs, hotels and restaurants	624,800	13.7
Other types of economic activities	428,300	9.3

Source: State Statistics Service of Ukraine.

In the first half of 2011, compared with the same period in 2010, the number of unemployed people decreased by 58.600, or 3.1 per cent, and amounted to 1.81 million of people aged between 15–70 (of these 578,400 are registered in the State Employment Service). The unemployment rate in Ukraine (8.2 per cent) was lower than in many EU countries, such as France and Portugal (9.4 per cent), Hungary (9.6 per cent), Slovakia (11.1 per cent), Ireland (11.7 per cent) Estonia (13.2 per cent), Latvia (16.2 per cent) and Spain (17.7 per cent).

The highest unemployment rate was among young people from the 15–24 age group (16.4 per cent for women and 17.5 per cent for men).

Almost half of the registered unemployed (248,689) are young, out of which 74,100 were graduates of secondary general and vocational education institutions. From the Ukrainian employers' perspective, the main causes of youth unemployment are the lack consistent links of vocational training with the needs of the labour market, bad quality training and poor working conditions offered by employers. In particular, the imperfect functioning of professional training was caused by the lack of proper funding mechanisms, the

mechanisms of the annual state order for training and the lack of a system of independent certification. Other reasons include: weak links between schools, employers and local authorities, the unattractiveness of professional occupations for young people, low qualification adaptation of young workers to manufacturing processes.

To adapt the qualifications of the workforce to the changing needs of modern production, it would be necessary to invest in training, but employees are involved in training on average every 11 years, whereas in the European Union they train every five years.

To increase the competitiveness of jobseekers, the State Employment Service provides professional training (training, retraining, advanced training). During the first half of 2011, 130,700 unemployed people undertook trainings in educational institutions of all types, which is 19.0 per cent more than during the first half of 2010. Of the total number of trained people, 83.2 per cent aimed at improving their skills, 11.7 per cent were retrained for another profession, and the rest (5.1 per cent) got a professional education for the first time.

In 2011, the average monthly nominal wage amounted to 2,495 Hryvnia, which is 2.6 times more than the minimum wage (960 Hryvnia). The highest paid employees were those in air transport and financial institutions, and among heavy industry – mine-workers and those who produce coke and petroleum products. Workers in fisheries and fish farming, agriculture, hunting and related services, also those in hotels and restaurants, have significantly lower than average wages (less than 68 per cent).

## 3.2 Demand and Supply in the Labour Market

Labour demand is relatively low: at the end of June 2011, the number of vacancies amounted to 90,500 thousand, 13.6 per cent more than in the corresponding period in 2010. The growth took place in all sectors, except in finance. The greatest growth of workforce demand was in industry (+31.9 per cent).

**Table 15: Workforce demand by economic activity in the first half of 2011<sup>34</sup>**

	Total, persons	Qualified workers	Servants	Non-qualified workers
<b>Total</b>	<b>90.5</b>	<b>44.2</b>	<b>31.8</b>	<b>14.5</b>
Construction	5.3	3.8	1.0	0.5
Hotels and restaurants	1.6	1.1	0.2	0.3
Transport and telecom	6.9	4.0	2.0	0.9
Finance	1.9	0.1	1.8	0.0
Real estate, renting, engineering and services to individuals	7.0	2.7	2.1	2.2
Education	2.3	0.5	1.4	0.4
Health and social assistance	8.0	1.7	5.9	0.4

34. <http://www.ukrstat.gov.ua/>

There is still a significant number of vacancies for qualified craftsmen (21.7 per cent of the total number of vacancies), low-skilled workers in trade, services, industry, construction, transport and others (16.0 per cent), specialists in service, operation and control of process equipment, making of equipment and machinery (14.6 per cent)

**Table 16: Vacancies by economic activity in the first half of 2011**

	Vacancies (thousands)		Number of people per 10 vacancies	
	2010	2011	2010	2011
<b>Total</b>	<b>79.7</b>	<b>90.5</b>	<b>52</b>	<b>57</b>
Technicians in the field of applied sciences and technology	1.6	1.7	55	64
Information officer	1.0	1.0	133	177
Employers that provide personal and defence services	6.2	6.5	51	67
Workers that service industrial equipment	2.0	2.4	180	177
Basic sales and services sector professions	6.7	6.7	42	53
Basic mining, construction and transport industry professions	5.7	6.4	45	53

### 3.3 Main Actors in Determining Employment Policy

The main actors in the labour market that determine the employment policy in Ukraine are:

- **Cabinet of Ministers**

The Cabinet of Ministers is the supreme body of executive power. The main tasks of the Cabinet of Ministers in employment are as follows:

- to ensure ... policies in the areas of labour and employment, social protection (Article 2 of the Law of Ukraine “On the Cabinet of Ministers”);
- to provide a state employment policy, develop and implement relevant government programs, manage issues of career guidance, training and retraining, management of migration processes (Article 20 of the aforementioned Law).

- **Ministry of Social Policy**

According to the Ministry of Social Policy Regulation<sup>35</sup>, its main tasks are as follows:

- Development and implementation of the state labour market policies, management of labour migration processes, establishment of a legal, economic and organizational framework for employment and protection against unemployment;

35. Approved by the President of Ukraine, No. 389/2011 of 06.04.2011.

- Studies of economic activity and population trends in labour market processes;
- Preparation of labour market and employment estimates;
- Development of employment schemes and social protection of citizens against unemployment, vocational training, management of labour migration in Ukraine and other functions.

- **State Employment Service**

It was created for the direct implementation of employment policy and funded by the State Employment Fund which was created for financing public employment measures. Unemployment benefits, an information and counselling system, assistance in finding new jobs, training, retraining and advanced training of unemployed people are provided by means of the State Employment Fund.

The tasks of the State Employment Service are as follows:

- to provide labour market analysis, prognosis of market demands for labour, training of stakeholders in territorial employment programs;
- to register citizens applying for employment, to assist them in their search for employment;
- to provide vocational guidance and counselling services for citizens;
- to organize professional training and retraining of workers who have lost their jobs;
- to provide social protection of unemployed citizens within its competence.

- **Fund of Compulsory State Social Unemployment Insurance**

The Fund is an insurance fund that has the status of a non-profit self-governing organization, which aims to provide insured people with appropriate social services. The Fund was established to manage unemployment insurance, accumulate insurance premiums, control the use of funds, pay social benefits and provide citizens with social services.

The Fund management is the responsibility of the Board and Executive Director of the Fund formed on a parity basis by the state, representatives of insured people and employers.

- **Trade unions**

According to the Law of Ukraine “On Trade Unions, their Rights and Obligations” (1999), trade unions have some specific rights and obligations in the sphere of employment. Particularly, in accordance with their nature, unions have the universal right to protect the rights and interests of their members; and according to the second part of the mentioned law, unions represent interests of all workers independently from their membership in the unions when the collective interests are violated (Article 19). Article 22 pays specific attention to the rights of unions in the sphere of employment. Among other points, unions take part in the development of the State

policy on employment and conduct some negotiations with employers and their representatives. Some of the main instruments for such negotiations are collective bargaining and different sorts of consultations. There are also some specific provisions and procedures concerning the relations of unions and employers when the latter has intentions to dismiss employees.

- **Employers' organizations**

According to the Law of Ukraine “On Employers’ Organizations, their Associations, Rights and Guaranties of their Activity” (2012), employers’ associations also have some specific rights in the sphere of employment. Among their general goals of activity, there is a general statement that employers favour the balancing of supply and demand of the workforce, participate in the development of state economic policy, creation of new jobs, career guidance, training (part 2, Article 5).

Like the law on unions, this law gives employers organizations the right to participate in the development of state employment policy (Article 22).

### **3.4 Skills Needs in the Medium and Long-Term**

Looking at the mid-term – up to 2015 – the most required professions will be those related to the development of business services and those required by industrial production (skilled craftsmen). In terms of occupations major changes will occur among the groups of managers, employees providing services to businesses and individuals, experts in the food processing industry, skilled craftsmen, operators and assemblers of equipment and machines (their number will increase between 2.9 and 3.3 times). The structure of employees in the metallurgical industries will remain almost the same.

The trend of demand for less qualified jobs in key economic sectors (except construction) will be positive. However, tendencies of employment in the agricultural sector are a bit conflicting: the need for managers and certain professionals is increasing, while the demand for unskilled workers will be declining.

The skill forecast for 2020 shows that employment in the service sector will increase significantly, by 35.9 per cent; in transportation and communication it will be slightly reduced (3 per cent) and employment in agriculture will dramatically decrease by 51 per cent. The most significant reduction in demand by 2020 will be for teachers and other specialists in education, higher-level company managers, employees who work with machines and so on.

A consistent improvement is foreseen for elementary occupations (from 17 to 25 per cent) but also for managers (from 13.4 per cent to 44.25 per cent, more than 3.5 times), creating a polarization similar to that registered in the rest of Europe. The greatest decrease by 2020 is expected in the number of employees in customer service, those working with machines and assemblers of cars. The professions expected to be highly in demand are:

- Engineers and designers in the high-tech sector: IT-services (electronic, high-tech, support); specialists in the processing industry, pharmaceutical industry, development of technological solutions;
- Experts in biology, agronomy (new modern agricultural technologies, soil use and so on) and medicine;
- Municipal managers, food salesmen and grain food sales managers.

## 3.5 Education System and Skill Shortages and/or Oversupply

### 3.5.1 Higher Education

There are 854 educational institutions of higher education in Ukraine, including 197 universities, 62 academies, 109 institutes, 234 colleges, 130 vocational colleges<sup>36</sup>, 121 schools<sup>37</sup> and a conservatory. Concerning the ownership, 446 are state owned, 220 municipal and 188 are private.

The number of students in universities of accreditation levels I–IV is more than 2,400,000 people, including more than 48,000 foreign students. The number of students of institutions that provide accreditation levels I–II is 79 for every 10 thousand people, of higher education institutions that provide accreditation levels III–IV it is 465 people. In Ukraine, levels of accreditation certify what kind of graduates the provider can produce. So, the level I of accreditation means that a provider can only produce graduates with a “bachelor” (4<sup>th</sup> level of the EQF<sup>38</sup>) level; level II means that a provider can produce graduates with “bachelor” + “young specialist” (5<sup>th</sup> level of the EQF) levels; level III of accreditation means that a provider can produce graduates with “bachelor”, “young specialist” and “specialist” (6<sup>th</sup> level of the EQF) levels; and finally level IV of accreditation means “a university with a complete cycle of higher education”, that can produce “bachelor”, “young specialist” and “specialist” + “master” (7<sup>th</sup> level of the EQF).

Every year over 100 thousand people graduate from educational institutions with accreditation levels I–II and over 500 thousand people graduate from higher education institutions with accreditation levels III–IV<sup>39</sup>.

The state controls the quality and training level by means of quality inspections of education. Among the agencies that are subordinate to the Ministry of Education, Sports and Youth

36. A “vocational college” is an institution that can produce graduates with “bachelor” and “young specialist” levels, otherwise “colleges” produce graduates with a “bachelor” level.

37. “Schools” in higher education system exist in the military sphere, it is a traditional name, and these institutions can produce graduates with “bachelor” and “young specialist” levels.

38. European Qualification Framework.

39. According to the Ministry of Education, Youth and Sports of Ukraine (<http://mon.gov.ua/index.php/ua/diyalnist/osvita/vishcha>).

of Ukraine (MESYU) is the State Inspection for education providers of Ukraine, which ensures the implementation of state policy in education through state supervision (control) of the activities of education providers, regardless of their subordination and ownership.

### 3.5.2 Vocational Education

One of the main directions of the state policy of Ukraine is the formation of an efficient life-long vocational education and training system, which provides a quick response to labour market needs.

As of 1 January 2012, there are 991 different types<sup>40</sup> of public education institutions and more than one thousand departmental and private organizations providing licensed training of skilled workers. About 405<sup>41</sup> thousand students are enrolled and more than 57,000 teachers are employed in public schools.

The main group of students comes from secondary school graduates: 35 per cent of the total number of students gain professional education on the base of a complete secondary education, 65 per cent of students gain professional education together with complete secondary education. However, due to the demographic situation there is a reduction in a number of students. With a view to this, educational institutions expand the range of educational services by providing education for adults.

According to the state order<sup>42</sup> in 2011, 210 thousand people entered educational institutions (including 189,200 students of vocational schools); this is almost 23 thousand people (11 per cent) more than in the previous year; almost 196,000 skilled workers were trained for the labour market, half of them got professional and high school education at the same time. Compared to 2010, in 2011 the number of students of industry and agriculture increased by 10 per cent, of construction – by 6.5 per cent, of transport and communication – by 12.2 per cent.

An important point is the quality of vocational education. The Decree of the Ministry of Education and Science No. 55 of 2 February 2009 approved indicators of effectiveness of vocational training institutions and guidelines for their use. Those indicators are: employment, educational content and teaching resources, teaching effectiveness, teaching staff. In addition, guidelines for conducting monitoring of vocational schools graduates

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40. This figure includes 870 VET providers (that provide initial professional education and produce qualified workers of 3–4 levels of EQF) + 75 VET providers under State penitential institutions + 46 structural units of higher education providers.

41. For the school year 2010–2011.

42. A “State order”, particularly for education and training in Ukraine means stipulated budget funding given to educational providers with the purpose of teaching students free of charge. It was formed after a Cabinet of Ministers of Ukraine Resolution was passed on 26 February 1996, No. 266 “On the procedures of forming and placing of public orders for supply of production for state needs and monitoring its implementation”. Among the list of public needs there is “training of specialists, scientific, pedagogical and working staff”. It is formed on an annual basis (Resolution of CMU “On state order for training of scientific, pedagogical and working staff, raising their qualification, re-training, continuing (post-graduate) education for public needs in 2011”).



employment entered into force. According to these recommendations, the quality of educational services is being monitored.

### 3.5.3 Vocational Guidance

To solve problems mentioned above and overcome imbalances in the labour market, starting from 2007, the state system of vocational guidance (orientation) was restored in Ukraine<sup>43</sup>. A government resolution passed by the Cabinet of Ministers of Ukraine in January 2009 established the Council on Vocational Guidance.

As a result, about one million pupils of secondary schools and other educational institutions have been covered by services of vocational guidance each year.

The efficiency of vocational guidance in Ukraine is relatively low. This is explained by a number of factors, among which the most important are:

- Out-dated State policy (The National Concept for Vocational Guidance was adopted in 2008 and there have been no content updates since its adoption);
- The State body responsible for the realization of the vocational guidance at the national level has an advisory status and has no significant influence in the regions;
- Vocational guidance's state financing is dramatically low;
- There is little stimulus for employers to participate in vocational guidance in their enterprise.

To raise the prestige of working professions that become increasingly required each year, an annual Nationwide professional skills competition is held in vocational schools.

The Cabinet of Ministers Decree No. 223 as of 19 March, 2008 approved the list of professions and qualifications as for which employers can get state subsidies in order to ensure first job workplace (job placement) for youth. In 2010, 32 million Ukrainian Hryvnia were allocated for this purpose.

### 3.5.4 Skills Shortages and/or Oversupply

Despite the number of young people graduating from educational institutions every year, the internal labour market is unbalanced. Due to the underdeveloped system of vocational education, the number of pupils coming to the VET institutions is decreasing from year to year (2012 – 407,000 students; 2011 – 405,000; 2010 – 408,698; 2009 – 412,300), whereas the number of people enrolling in higher education institutions is slightly increasing<sup>44</sup>.

43. Bylaw of the Cabinet of Ministers of Ukraine “On Approval of a Plan Aimed at Developing Vocational Guidance (Orientation)” on 25 July 2007.

44. Official data of the Ministry of Education and Science, Youth and Sports of Ukraine (2009–2012, [www.mon.gov.ua](http://www.mon.gov.ua)) and State Statistic Service ([www.ukrstat.gov.ua](http://www.ukrstat.gov.ua)).

This situation causes a structural imbalance of the Ukrainian labour market where the ratio between people with higher education diplomas and vocational education diplomas is approximately 70:30, while the regular ratio in EU countries does not exceed 40:60 or even less<sup>45</sup>.

The situation of skill demand and supply and occupations on the Ukrainian labour market is clearly seen in Table 17.

**Table 17:** The number of vacancies, the number of unemployed people looking for work and the number of employed in a professional context<sup>46</sup>

Name of occupation	Number of occupations, units	Number of unemployed people seeking job, persons	Number of employed, persons	Number of vacancies at the end of the reporting period, units
Food items salesmen	30,071	45,034	16,583	19,109
Non-food items salesmen	19,351	26,264	9,418	11,278
Accounting manager	12,416	29,412	8,326	13,501
Sales manager	5,006	8,470	2,282	4,257
Plumber	3,966	3,741	1,286	866
Engineer	3,383	6,392	2,090	2,643
Economist	3,311	15,852	4,016	6,425
Mason	2,769	5,648	1,886	2,028
PC operator	1,902	8,256	1,861	3,688
Mechanic	1,573	2,890	1,088	1,096
Lawyer	1,157	4,731	980	1,871
Teacher at training and education institutions	1,125	5,631	1,190	2,767
IT-software engineer	843	1,180	334	496
Head of the production division	288	670	189	306
Head of the local post office	188	571	90	369

According to the data in this table we can make some conclusions concerning skills shortages and oversupply in the labour market of Ukraine.

As we can see, almost in all positions the number of unemployed people seeking jobs was significantly higher than the number of vacancies offered. This tendency could serve as an example of workforce oversupply due to an unbalanced system of forecasting of labour market developments.

45. According data of BUSINESSEUROPE, 2011.

46. Data provided by the State Employment Service, end of 2011. This table is organized by the principle of decreasing quantity.

Also there is one interesting observation we can easily make using this table – the most needed occupations in Ukraine, at least according to the official data, are working occupations that do not require higher level qualifications. Salesmen are most needed in Ukraine. Having this point in mind, it would be logical to suppose that other working professions are also needed in Ukraine in the same or similar measure. But the data indicates that the third most wanted position on the labour market is a very high level occupation – “accountant”, that is also one of the most popular professions in the higher education system together with “lawyer” and “economist”.

This last fact leads us to another conclusion about the skills mismatch which is quite typical of Ukraine – generally, the skills and knowledge with which graduates enter the labour market do not match employers’ expectations. Some of the typical examples of such mismatching are:

- Absence of practical skills after graduation from the educational institution;
- Lack of knowledge about modern and innovative ways of production or production organization processes;
- Poor language and communication skills;
- Quite abstract knowledge on green economy, responsible consumption, energy efficiency in practice and so on<sup>47</sup>.

### **3.6 Policies and Practices to Improve the Availability of Skills and Competencies of Employees**

Some elements of the National Qualifications Framework have been developed in Ukraine with the support of employers and their associations. After almost one year of work by an *ad-hoc* interdepartmental group the National Qualifications Framework was approved by the Cabinet of Ministers of Ukraine in November 2011.

With the assistance of employers and their associations, the Draft Law of Ukraine “On the System of Professional Qualifications”, which provides a general outline of professional qualifications (the national regulator, industry councils for professional standards, qualification centres) was drafted.

As a result of the joint project of the Confederation of Employers of Ukraine and System Capital Management (the largest employer in Ukraine), in January 2012, the first sector council for occupational standards in the metallurgic sector was established.

The guidelines for the development of competence-based occupational standards, using functional analysis have been almost completely developed.

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47. This will be described in more detail in Chapter 3.6.

### 3.7 Skills Needs in Selected Sectors

Economic growth creates conditions for increasing employment, income and productivity. Some industrial sectors and enterprises in the Ukrainian economy are slowly moving out of the financial crisis, but this process is uneven, creating distortions in the labour market. In addition, an often ineffective state policy on vocational training and development of modern professional qualifications led to a loss of jobs, low demand in terms of the quality of the workforce and an increasing number of jobs with hazardous working conditions. Such results are quite easily explained – old-fashioned qualifications designed in Soviet times were not aimed at employers who modernized their production chains; traditional education providers continuously supplied with not sufficiently qualified workers to a labour market where they could not find decent work. These two factors led to the decreasing of popularity of working professions in society, frustration of vocational education, low interest of employers in the development of professional trainings and close cooperation with education providers.

In some sectors, such as IT (in particular, software development), management, finance experts, sales manager and medical worker<sup>48</sup>, the workforce does not meet the requirements of employers in terms of “soft” and “hard” skills. The demand for advanced qualifications is growing, but the skill mismatch creates unemployment.

The occupational profiles selected for this research are included as “occupational characteristics” in the National Classifier of Occupations.

#### **Methodology of Interviewing of Employers**

Due to the Project goals, there were three sectors in which the skills match and mismatch were to be analysed – IT, tourism and recreation and construction.

In all those sectors All-Ukrainian employers’ associations have been established<sup>49</sup>. All these associations are members of the Confederation of Employers of Ukraine, a so-called “umbrella” association that unites other all-Ukrainian associations, not the enterprises themselves.

Due to the very close and fruitful relationship among its members, the Confederation addressed them with a special request by explaining the targets and objectives of the Project and asked them to identify possible occupations where returning migrants could find jobs, taking into consideration the skills, knowledge and experience they obtained abroad.

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48. According to labour market data “Ukrainian labour market barometer – 2011” made by *Head Hunter* magazine, <http://hh.ua/file/8037058.pdf>

49. The All-Ukrainian Association of Employers in Construction, Architecture and Design was registered in 2005 (State Certificate No. 2343); The All-Ukrainian association of Employers in IT and Telecommunication Spheres was registered in 2003 (State Certificate No. 2025); The All-Ukrainian Association of Employers in Tourism, Hospitality and Recreation was registered in 2008 (State Certificate No. 2842).

Having the results in mind and taking into account the data of the State Employment Service, a list of 15 occupations was composed and, according to their specific qualification characteristics, the local consultant created 15 specific questionnaires which were distributed among the members. All questionnaires were developed according one principle – choosing the most relevant variant among suggested ones.

There were 56 employers who participated in the Project – 17 in the IT sector, 22 in construction and 17 in the tourism and recreation spheres. There were no specific requirements for the size of companies.

### 3.7.1 IT Sector

In 2009, the sector employed 120,900 people, which represents 52.3 per cent of all employees in communications and the post service, 12.9 per cent of the transport and communications sector, or 1.1 per cent of the total number of persons with employment in Ukraine<sup>50</sup>.

Twenty-three per cent of respondents of the survey envisage continuity in the level of staff in the next five years. Only five per cent of respondents expect a reduction in staff, while 43 per cent expect its growth. Twenty-nine per cent of respondents could not answer this question.

Based upon the answers, “qualified workers” will be the most sought after. Filling vacancies is a problem mainly for large enterprises: 47.6 per cent of large enterprises and 23.5 per cent of small and medium enterprises experienced difficulties in hiring employees from time to time.

Major difficulties arise when hiring professionals, executives, managers and skilled workers due to lack of candidates with the necessary qualifications and experience. For low-skill occupations, the reason is the disparity between wages proposed by employers and the financial expectations of applicants.

The survey results indicate that companies in the communication sector often face discrepancies between required and actual skills. The lack of skills was indicated by 86 per cent of large enterprises and 63 per cent of small and medium enterprises.

Among employees of large enterprises, who need new skills to effectively perform their duties, the most cited skills are: management, communication, problem solving and teamwork. Other important skills in short supply are such as: customer relations, health and safety at work (for skilled workers, professionals and specialists of medium qualification levels), professional skills in IT (for medium qualification level experts and office workers) and literacy skills.

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50. According to the materials of the ETF project “Analysis of demand for labour in Ukraine in the context of professional qualification: a study of the IT sector”, May 2011.

The vast majority of large companies will require more advanced management skills in the coming years, especially among senior management (67 per cent of companies) and top professionals (33 per cent).

Most SMEs (68 per cent) will require more professional skills in IT in the next five years; this requirement will be more urgent regarding professionals (51 per cent of companies), specialists of mid-level skills and support staff (34 per cent) and managers (29 per cent). Half of SME representatives stated that problem-solving, general skills in IT, managerial and communications skills will become more important in the future for their companies.

According to respondents, one of the main reasons for the lack of competence is the introduction of new technologies. One third of both large enterprises and SMEs stated that due to the implementation of modern technologies the knowledge obtained by graduates is becoming out of date very quickly and that provokes a skills deficit among employees. Qualified mid-level professionals, support staff, skilled workers and business-related professions suffer the most from the lack of updated skills linked to innovations.

Schools train workers for all sectors, including the IT and communication sectors. In particular, almost 30 universities provide study courses on “Radio, Radio Aids and Communication”. Computer specialty courses are taught in more than 100 universities, management and administration specialty courses in 200 universities. Almost 100 vocational and technical schools offer training for qualifications related to the communication sector. However, despite a variety of specializations introduced by the education system, some companies still face a lack of appropriate professions or need advanced training for graduates. According to the survey, about 38 per cent of large enterprises and 16 per cent of SMEs stated that the education system does not provide the required skills and that, young graduates require additional training. Companies that hire graduates from vocational schools are satisfied with their level of skills and competence: 22 per cent of large enterprises and 10 per cent of small and medium enterprises are completely satisfied; 56 per cent of large enterprises and 63 per cent of small and medium enterprises are partially satisfied.

### ***Analysis of Selected Occupation Profiles in the IT Sector***

Considering the scope of the research in terms of analysis of employment opportunities for returning migrant workers, the following professions have been selected:

- Manager of mail services,
- Electrical supervisor of cable network tracks,
- Information officer,
- Telecommunication technician,
- Information security specialist.

It is necessary to mention that such occupations are not among the most popular on the labour market.

**Table 18:** The number of vacancies, the number of unemployed people looking for work and the number of employed in the IT sector<sup>51</sup>

Name of occupation	Number of occupations, units	Number of unemployed people seeking job, persons	Number of employed, persons	Number of vacancies at the end of the reporting period, units
Communications manager	9	38	8	22
Telecommunication technician	32	166	38	71
Network security specialist	1	15	4	7
Information officer	23	17	3	9
Electrician in charge of overseeing cable routes	5	21	10	4

While analysing the characteristics of these professions, together with the results of the survey, it should be noted that IT workers must know about regulations, organizations and processes, safety and fire safety regulations.

Concerning future skills needs, it is considered difficult to make long-term forecasts due to: (a) lack of appropriate tools, (b) economic uncertainty, (c) lack of long-term company development programs and staff development planning.

According to the results of the survey, employers' requirements for workers' skills are met in 75.4 per cent of cases; however, some additional skills are requested, such as:

- For occupations that do not require specific technical knowledge (manager of mail service, operator of information), basic computer skills (98.9 per cent) and communication skills (78.7 per cent);
- For technical specialists (electrical supervisory of cable network tracks, telecommunications technician, network security officer), drawing and reading of drawings, including electronic ones (88.9 per cent), ability to work on a computer and operate its software (74.6 per cent), knowledge of modern types of apparatus, equipment, radio and high-frequency equipment (63.49 per cent) are needed.

The level of autonomy of sector workers varies according to the position of the worker within the company. Employers have indicated the following knowledge and skills that workers should have:

- Communicational skills (78.7 per cent of employers for all occupations);
- Knowledge of fire safety and electrical safety regulations (86.5 per cent of employers for all occupations);
- Use of devices establishing geographic coordinates through GPS (88.6 per cent of employers for an electrical supervisory of cable networks tracks occupation);

51. Data provided by the State Employment Service, end of 2011.

- Knowledge of the rules of radio communication (88.8 per cent of employers for telecommunications technicians);
- Knowledge of content analysis (96.3 per cent of employers for information officers);
- Knowledge of technical aspects of information security devices (72.2 per cent of employers for specialists of information security).

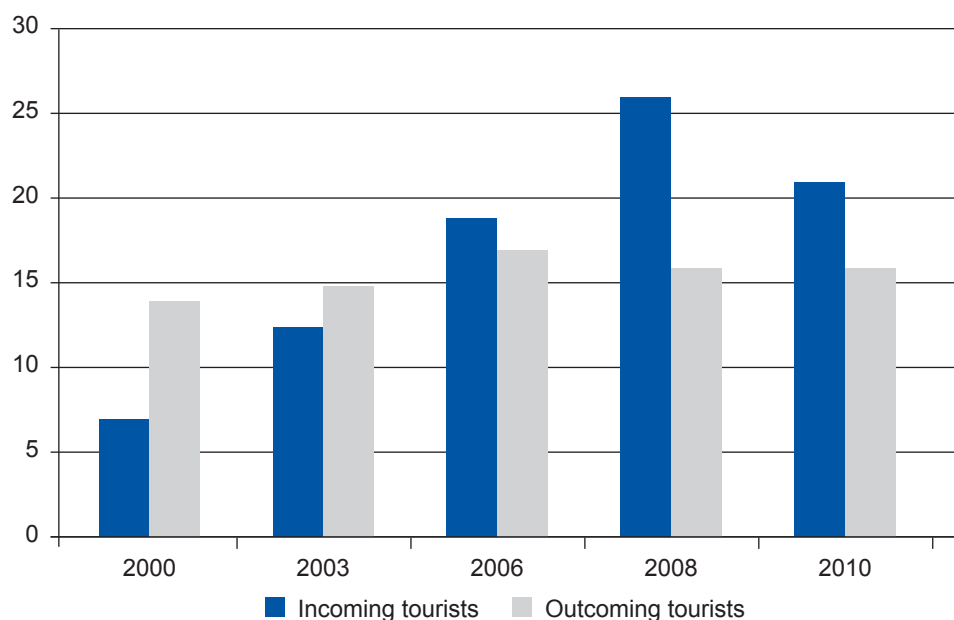
### 3.7.2 Tourism and Catering Sector

The number of visiting tourists in 2000–2008 increased far more rapidly – it grew four times from 6.46 million of persons in 2000 to more than 25 million in 2008. In 2009 the number of visiting tourists decreased by 20 per cent; however, the global outlook for the tourism industry for 2012 is expected to be positive.

Likewise, during 2000–2007 the number of Ukrainian citizens, travelling abroad, increased by 30 per cent – to more than 17 million persons per year.

However, in the crisis period, since 2008, the number of Ukrainian citizens travelling abroad started to decline. In 2008–2010 the number of such persons was two million or 11 per cent less than in the pre-crisis period. The number of outgoing tourists in 2008 was 11 per cent less than in 2007, in 2010 – 1.1 per cent less than in 2008 (Figure 9)<sup>52</sup>.

**Figure 9: Dynamics of foreign tourists flows in Ukraine (millions of persons)**



52. This data shows total people flows, including organized and private travel arrangements, according to the All-Ukrainian Association of Employers “All-Ukrainian Federation of Tourism”, 2011.



Although the tourism and catering sector is growing, it still makes up a small part of the economy as compared to other countries. In 2007, tourism accounted for 0.8 per cent of the GDP, while the rate of tourism in Spain was more than six percent, and in countries such as Austria and Croatia – about eight per cent.

The Ministry of Culture and Tourism is one of the leading institutions in the field of tourism; developing policies in the sector of hotels, restaurants and cafes is a part of its field of competence. The Ministry of Education, Youth and Sports and the Ministry of Social Policy are other ministries which also make significant inputs to the operating of hotels, restaurants and cafes, for example the Ministry of Social Policy by controlling the safety of work through the State Service for Labour Protection; the Ministry of Education, Youth and Sports by approving curricula, teaching plans and methodology of teaching in vocational and higher education providers.

The number of people working in hotels, restaurants and cafes in 2002–2009 was less than 1 per cent of the total number of employees in Ukraine, compared to four per cent of total employment in the EU-25 in 2008<sup>53</sup>.

The majority of respondents to the survey expect an increase of employees in the coming three years, while 25 per cent of respondents expect a decrease. The expected increase in staff quantity in the near future is probably partly associated with the impact of the UEFA Euro Cup – 2012. The occupations for which an increased demand is expected are: waiters, cook assistants, receptionists, travel agents.

Recruiting staff is difficult for 82.1 per cent of large enterprises and 49.5 per cent of SMEs. This is mainly due to the lack of necessary skills and experience, while for low-skilled workers there is a discrepancy between wages and working conditions offered by the employers and the expectations of candidates. The lack of certain skills was indicated as relevant by 17 per cent of large enterprises and 22 per cent of SMEs.

According to the results of the survey, the key factors taken on board for recruitment are: diplomas, working experience and recommendations.

By analysing the results of questionnaires on the missing skills of personnel in the tourism sector, it should be noted that enterprises do not face discrepancies between required and actual skills of personnel so often, especially in the case of low-skilled workers.

Skills that are in high demand in the sector are: management, communication, problem solving, handling customers and skills related to safety. According to respondents of the survey questionnaire, the main reasons for the lack of staff competencies are their scarce motivation and psychological problems in dealing with customers.

Considering the supply side, almost 90 per cent of all schools (higher and vocational education) train professionals for this sector.

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53. Eurostat, Labour Force Survey 2008, <http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/>

According to the survey, 24 per cent of large enterprises and 46 per cent of SMEs need specialists that, in their opinion, the education system does not provide: e.g. almost all respondents wanted tourism operators that know at least one foreign language at least at the level of holding a conversation (88 per cent); in the catering subsector – there is a need for sommeliers (74 per cent) which are not trained at all in the VET system.

### ***Analysis of Selected Occupation Profiles in the Tourism and Catering Sector***

Considering the scope of the research in terms of analysis of employment opportunities for returning migrant workers, the following professions have been selected:

- Travel agent,
- Cook,
- Waiter,
- Receptionist,
- Doorman.

**Table 19:** The number of vacancies, the number of unemployed people looking for work and the number of employed in the tourism and catering sector<sup>54</sup>

Name of occupation	Number of occupations, units	Number of unemployed people seeking job, persons	Number of employed, persons	Number of vacancies at the end of the reporting period, units
Cook	12,373	23,968	9,218	9,703
Waiter	5,032	5,742	2,307	2,109
Receptionist	2,784	4,228	1,246	1,931
Doorman	268	1,200	194	776
Travel Agent	80	219	49	86

As we can see from the table, this sector is more vibrant compared to the IT sector. It could be explained by the fact that there are some incentives for this sector, and, besides the EURO 2012 football championship that, of course, plays a significant role in the development of the sector in 2011–2012, we could mention a huge lack of infrastructure of house-keeping, hotels and restaurants, recreation sectors and so forth.

In general, the knowledge of graduates from relevant educational institutions matches employers' needs; however, for each profession employers put forward additional knowledge and skills that workers must have, such as management, economics and history and culture of the most popular tourist countries.

54. Data provided by the State Employment Service, end of 2011.

The theoretical knowledge in the tourism sector mainly focuses on knowledge of at least a basic level that is definitely missing.

As in the other sectors of the economy, it seems difficult to predict the skills needed in the long-term due to: (a) lack of appropriate tools, (b) economic uncertainty, (c) lack of long-term company development programs and staff development planning.

The qualifications required for the occupations under scrutiny are lower or higher secondary education qualifications, vocational education or professional training. For the so-called “non-technical” occupations (e.g. travel agents), the minimum qualification required is higher secondary education in the relevant field of study or vocational education, but 95 per cent of respondents prefer to hire individuals with higher education.

The following additional skills are considered necessary for workers in order to better perform their duties: for occupations not related to specific technical knowledge (travel agent, waiter, receptionists, doorman) – basic computer skills (95 per cent), communication skills (81.7 per cent), including the ability to make presentations (86 per cent), foreign languages (95 per cent), knowledge of cultural records and places of national cuisine (for travel agents, receptionists, doorman – over 87 per cent of respondents noted these as their preferences);

- Use of cooking recipes (87.9 per cent);
- Compliance with the terms and conditions of food storage (87.9 per cent);
- Use of high quality methods for food checking (93.4 per cent);
- Use of techniques, methods and sequence of thermal processing of products (93.4 per cent);
- Compliance with sanitary regulations for catering (100 per cent).

Among the general and specific knowledge and skills that will be required in the medium-term, interviewed employers listed:

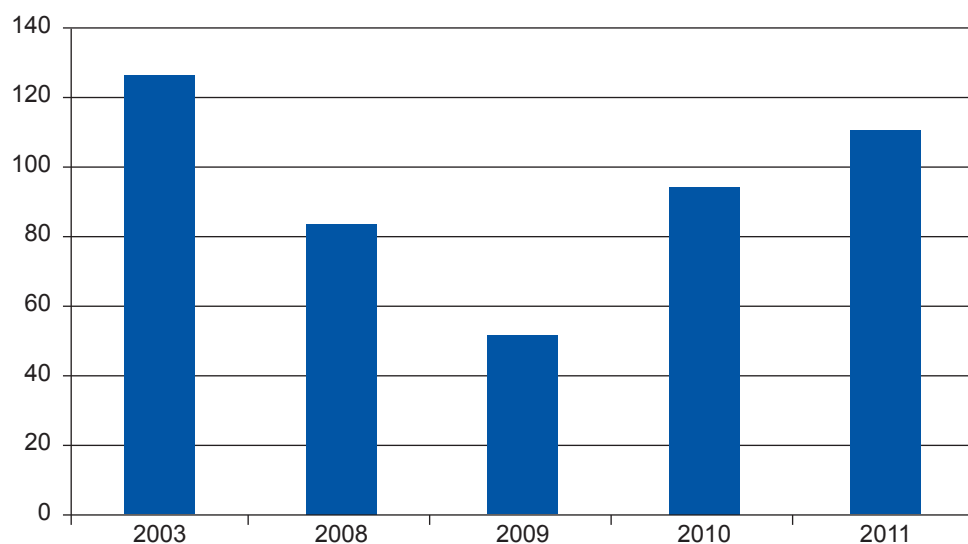
- Communication skills for tourism agent, waiter, receptionists, doorman (89 per cent);
- Knowledge of fire and electrical safety for cook and doorman (78 per cent);
- Knowledge of tourism routes and sites in Ukraine and other countries that not yet developed by travel agents (87.8 per cent of employers);
- Knowledge of organic combinations of products (80 per cent), knowledge of diet and dietary characteristics of products for cook and waiter (92.3 per cent);
- Developed communication skills for doorman and receptionists (100 per cent).

### 3.7.3 Construction Sector

After the severe crisis that started in 2008, the construction sector, a linchpin of the Ukrainian economy, is currently recovering.

In the period of January–March of 2011, construction enterprises completed works worth 7.8 billion Ukrainian Hryvnia; with an increase of 6.8 per cent compared with the same period in 2010.

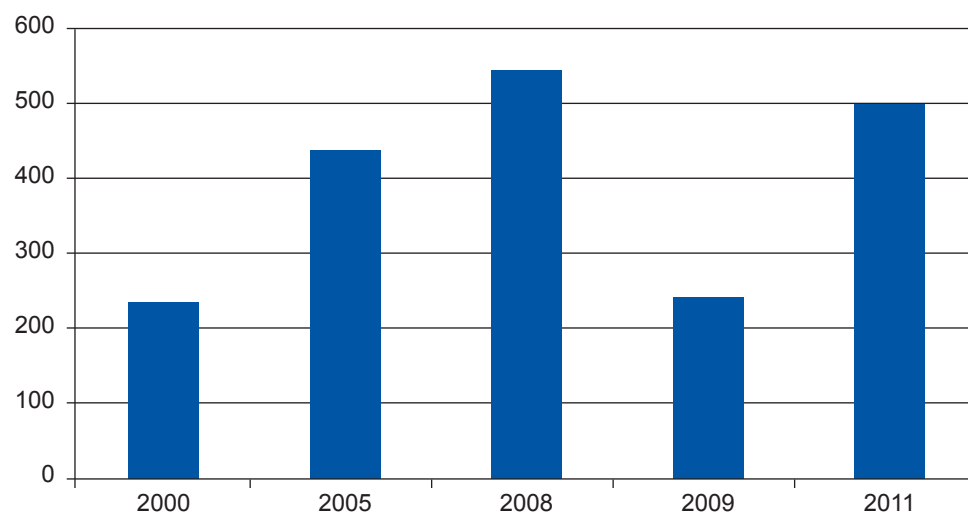
**Figure 10: Volume index of construction works**



Source: Data provided by the Ukrainian construction association.<sup>55</sup>

In 2011, there were 497,500 people employed in the construction sector (see Figure. 11).

**Figure 11: Number of people employed in the construction sector, thousands**



Source: Data provided by the Ukrainian construction association.

Concerning the number of employees in enterprises in the construction sector, 28 per cent of respondents of the interview think that it will remain stable in the coming five years;

55. <http://uabi.com.ua/uk/statti-ta-post-relizi/pro-perspektivi-vikhodu-budivelnogo-sektora-z-krizi-ta-rozvitku-rinku-nerukhomosti-ukrajni.html>

18 per cent expect a reduction and 49 per cent expect an increase in employment. The remaining five per cent could not answer the questions clearly.

The main occupations that will grow are those of qualified workers, for which workers will also be hard to find due to unattractive salaries, difficult working conditions and non-compliance with social guarantees.

In the majority of cases, large companies that hire graduates from vocational schools or other vocational institutions are fully satisfied with the level of skills and competences they possess: 57 per cent of large enterprises inquired are fully satisfied; 43 per cent – partially satisfied; 34 per cent of SMEs inquired are fully satisfied; 66 per cent – partially satisfied.

The key factors influencing the hiring of employees traditionally are experience and practical skills.

The skills that employees in the construction sector lack are those linked with modern building materials, technologies and tools.

SMEs consider problem-solving skills, management skills and health and safety at work practices as necessary.

The vast majority of large enterprises of the sector will require even more in the coming years advanced management skills, especially for senior management (78 per cent of companies).

From the supply side, there is a significant number of training institutions providing training in the field of building, engineering and architecture (430 higher education institutions, and 240 vocational and technical schools). Of these, 45 education institutions provide training in road construction and eight in underground works. However, as with the other two sectors analysed in this research, despite the variety of specialties provided by educational institutions, it seems that some companies still face difficulties in finding the appropriate employees for certain professions. This has been reported by 45 per cent of big enterprises and 36 per cent of SMEs with a particular focus on integrated profiles that combine many skills that are usually pertinent to such professions like painter, plasterer, bricklayer, fitter. In many cases, the enterprises in this field (43 per cent of large and 36 per cent of SMEs), state that in-house company training is still necessary for the recruited graduates.

### ***Analysis of Selected Occupation Profiles in the Construction Sector***

Considering the scope of the research in terms of analysis of employment opportunities for returning migrant workers, the following professions have been selected:

- Plasterer,
- Construction joiner,
- Drywaller,

- Concrete layer,
- Carpenter.

**Table 20:** The number of vacancies, the number of unemployed people looking for work and the number of employees in the construction sector<sup>56</sup>

Name of occupation	Number of occupations, units	Number of unemployed people seeking job, persons	Number of employed, persons	Number of vacancies at the end of the reporting period, units
Plasterer	1,895	3,254	984	1,248
Concrete layer	1,864	2,646	1,034	934
Construction joiner	1,540	2,024	733	732
Carpenter	230	1,046	329	360
Drywaller	91	214	50	89

As we can see from the table, the general tendency is the same as in other sectors – the number of vacancies is smaller than the number of people seeking a job, and the average number of employed people is in general smaller than the number of vacancies.

It is necessary to understand that not every unemployed person in Ukraine really and actively seeks a job. This could be partly explained by the informal economy where a great number of people are employed without legal work contracts.

The above profiles are characterized by traditional approaches and building methodologies, the construction sector being one of the most conservative areas.

As in the other two sectors analysed in this research, it is difficult to predict the skills needed in the long-term due to: (a) lack of appropriate tools, (b) economic uncertainty, (c) lack of long-term company development programs and staff development planning.

In general, the level of knowledge of graduates from educational institutions seems to satisfy employers' needs; however, for some professions, there is a need for additional knowledge and competences, e.g. drywallers.

Beside the theoretical preparation provided at school, work experience (at least one year, but it can be as long as five years for some profiles) is considered absolutely necessary.

As a result of the interviews carried out under this research, there are additional requirements for some professions, such as:

- for “traditional” professions – Plasterer, Carpenter, Construction Joiner, Concreter, knowledge about fire and electrical safety regulations is required (75 per cent), communication skills (76 per cent), basic computer skills (84 per cent), knowledge of health and safety legislation (87.8 per cent);

56. Data provided by the State Employment Service, end of 2011.

- for specialists of “new” specialties, such as the drywaller, knowledge of three-dimensional modelling (16.6 per cent), insulating materials (65 per cent) and construction fasteners (88 per cent) is required.

The level of autonomy of workers is different, but there is a trend confirmed by all inquired employers: workers of the highest category six have the highest degree of autonomy (e.g. laying of concrete in hydroelectric, thermal, nuclear power plants, bridges, subways, underground structures – for concrete layers, assembly and installation of bridges over 50 meters height – for carpenters and so forth).

Among the general and specific knowledge and skills of employees in construction required in the medium-term, employers indicated:

- Knowledge of fire and electrical safety regulations (on average, 67 per cent of employers identify it as a priority);
- Knowledge of essentials of modern mixtures and fluids (70 per cent);
- Rules of operation of manual and mechanical power tools (75 per cent).

Of the specific professional knowledge and skills that will be required in the medium-term, the most mentioned was:

- Knowledge of chemistry for plasterers (70 per cent of employers);
- Three-dimensional modelling (65 per cent of employers for construction joiners, 45 per cent of employers for drywallers);
- Features of laying concrete underwater (75 per cent of employers for concreter technicians);
- Installation of suspended ceilings in wooden frames (78.5 per cent of surveyed employers).





## Conclusions

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The aim of this study is to provide the stakeholders of Moldova and Ukraine with some inspirations for addressing issues that impact their national labour markets as well as labour migration.

The areas from which useful lessons can be learned are:

1. There is a need for early identification of skills needs in the medium to long term in a rapidly changing labour market. Due to evolving new technologies and production methods, occupational profiles now need to be frequently updated. There is a tendency for multi-skilling and the need for a new combination of skills within occupations. Once the new profiles have been designed, it takes a long time for them to get reflected in the educational and training institutions' curricula. This time lag often results in a mismatch between the skills supplied by the education system and the labour market requirements. In Moldova an analyses of skills in demand has been conducted by the National Employment Agency (ANOFM) offering a short term view of the needs of the labour market. Even with the extension to a three year forecast, as planned with the support of an international donor, this instrument will not be able to provide an estimation that complies with the time span of the education system. In Ukraine the skill forecast is a desk top exercise linked to the economic development plan issued by the Ministry of Economy. In both countries it appears necessary to have an in depth involvement of employers either through their organizations or directly through the trend setting companies in each sector. Two Sector Committees have been established in Moldova in Agriculture and Construction dealing with the Occupational Standards, but their role could also be important in the identification of future needs.
2. An important aspect linked to the skill forecast is how the results are translated into the education systems. The early identification of skills required in the labour market allows for the timely adaptation of planning and regulation of education and training supply. To achieve these results, a solid partnership between the different stakeholders in education is absolutely necessary, particularly with the business sector and employers' representatives to ensure that labour market information is taken into account when designing education and training programmes. Several countries have established sector committees, charged with different tasks in skill forecasting and

its translation into education and training provision and sometimes directly involved in the design of occupational standards and in curriculum development.

3. The adoption of NQFs focusing on learning outcomes allows many countries to acknowledge non-formal and informal learning (Flemish Community of Belgium, Czech Republic, Denmark, Germany, Greece, Spain, Latvia, Slovakia, Slovenia and Iceland). Recognition plays an important role in a number of countries by providing validation of competences to facilitate entry into further formal learning. This often involves exemption from certain coursework or parts of a formal study programme. In Germany, so as to address some of the problems which stem from informally acquired learning, the Federal Ministry of Education and Research launched the “ProfilPass” in 2006. This instrument helps to record and certify informal learning outcomes.
4. Another issue that needs to be addressed is the quantity of unfilled vacancies alongside a significant number of unemployed.

Matching demand and supply in the European labour market is not always easy. In line with the worldwide trend, a lack of experienced candidates is considered as the most common reason for difficulties in filling positions. It is followed closely by a lack of candidates with technical job skills and a lack of applicants.

More specifically, in Moldova there seems to be a vicious circle as, on one side, productivity is low and does not satisfy employers and, on the other side, the wages are low and do not satisfy the employees. The mismatch in the labour market is also caused by:

- ***Low quality of education.*** Most often employers complain about the inadequate education of the labour force, not its quantity. Apprenticeship schemes and appropriate career counselling services would contribute to reducing the mismatch.
- ***Preferences for higher levels of education.*** Once more, adequate career guidance services can contribute to choosing profiles offered by Vocational Training (secondary and post-secondary, non-university) which are in demand in the labour market.
- ***Preferences for “easy” fields of studies.*** Currently about 73 per cent of annual graduates of higher education are enrolled in social sciences, business and law. The number of students who want to study technical and exact sciences is very low, whereas the need for specialists in these fields is higher.
- ***Expectations.*** This mainly refers to the wage expectations. As in Moldova low-skilled workers are still required and there is a large share of the population with only general secondary education degrees, especially in rural areas, it is certainly not the case that there are no workers. However, many of them refuse to work for the wages offered. In many cases, especially in Moldova, the reservation wages are a side effect of remittances.

On the strategies envisaged to overcome the above-mentioned difficulties in filling vacancies, the European employers mentioned: (1) providing extra training and development of employees, (2) broadening the search outside the local region, (3) appointing unskilled people but with a potential to learn and grow and (4) changing recruitment or advertising strategies.



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## ANNEX 1

# CEDEFOP: Skills Supply and Demand in Europe

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The European Centre for the Development of Vocational Training (CEDEFOP<sup>57</sup>) carried out in 2007–08 a skill forecast for the period of 2006–15. The forecast has now been updated and extended up to 2020. It covers all EU Member States plus Norway and Switzerland and takes on board the impact of the financial crisis, and the subsequent global recession.

The study covers the entire economy: 41 sectors (NACE rev 1.1). The analysis is quite extensive in terms of skill needs by broad sectors, occupational groups and broad qualifications, but does not produce an in-depth skill analysis as skills are represented only by level of education: low, medium and high according to ISCED classification<sup>58</sup>.

Identifying trends is a complex and difficult exercise in periods of economic stability, but becomes almost impossible when confronted with a financial crisis, the heavy impact of which is still being felt and which is affecting the economy and the labour market as well. Therefore the CEDEFOP study envisages three possible scenarios based on the expected recovery trends from the crisis: (1) baseline scenario; (2) a more optimistic view of the speed with which the world economy will return to previous rates of growth, and (3) a pessimistic one that considers a more delayed and slower pace of recovery. All scenarios envisage a return to normal rates of economic growth by 2020.

Demographic projections confirm that in the next decade the number of 45–64 year-olds will increase and the labour force will decrease. Technologies or working practices changes require that workers already participating in the labour market update, upgrade and broaden their knowledge, skills and competences. But only 9.5 per cent of 25–64 year olds participated in learning in 2008, which is far below the European benchmark<sup>59</sup> of 12.5 per cent set for 2010 (it will be 15 per cent for 2020).

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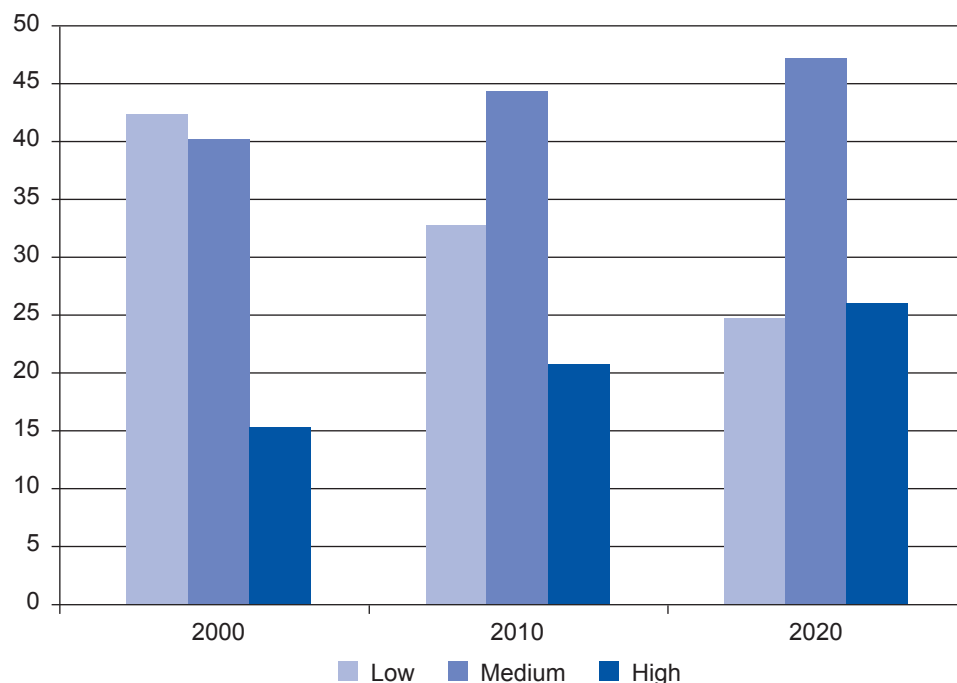
57. A European agency that helps promote and develop vocational education and training in the European Union.

58. Level of Qualification: Low (ISCED 0–2); Medium (ISCED 3–4); High (ISCED 5–6).

59. [http://ec.europa.eu/education/lifelong-learning-policy/doc2118\\_en.htm](http://ec.europa.eu/education/lifelong-learning-policy/doc2118_en.htm)

The expected qualification level of the labour force<sup>60</sup> reflects the overall change in the labour market. Therefore, the number of high-level qualifications will rise by almost 28 million and those with medium level qualifications by almost 20 million. This increase will be compensated by a decrease of about 33 million people holding low qualifications. The trends in percentages are clearer in Figure A1.1.

**Figure A1.1: Population qualification trends (15+), EU-27+**



Source: Authors' elaboration of CEDEFOP data.

Recession determines or accelerates sector change. However, the employment trends at sector levels, according to CEDEFOP projections (see Table A1.1), will be similar to those pre-crisis, with declining trends in primary and some manufacturing activities. In absolute figures, in the 2010–20 period, employment in agriculture will register a loss of around 2.5 million jobs, and around two million in manufacturing and production industries. Growth is projected in marketed services: business and other services are expected to grow by around seven million jobs. Distribution and transport jobs will have a significant increase. Increased projections are forecast for non-marketed services (e.g. in healthcare and education), but this provision might be affected by the budgetary constraints of public administration.

60. The labour force is defined as economically active people in employment or unemployed, but actively searching for work (ILO definition).

**Table A1.1: Employment trends by industry, EU 27+**

Industry	Levels 2010 (thousands)	Levels 2020 (thousands)	Growth 2010–2020 ( per cent)
Agriculture and utilities	14,704	11,923	–2.1
Manufacturing	36,526	34,338	–0.6
Construction	15,425	15,701	0.2
Distribution and transport	58,773	62,179	0.6
Business and other services	48,773	56,033	1.4
Non-marketed services	53,056	54,309	0.2
All industries	227,258	234,482	0.3

Source: CEDEFOP Skills supply and demand in Europe. Medium-term forecast up to 2020.

Projections by occupation analysed by CEDEFOP include 25 two-digit occupational groups, according to ISCO 88. The analysis confirms a possible risk of polarization due to an increased demand at the upper and lower ends of occupations. Demand for skilled agricultural workers, craft and clerical skills will decline. Expansion is expected for many service occupations (retail and distribution) and also for elementary occupations. Altogether, net employment will increase by seven million in the 2010–20 decade.

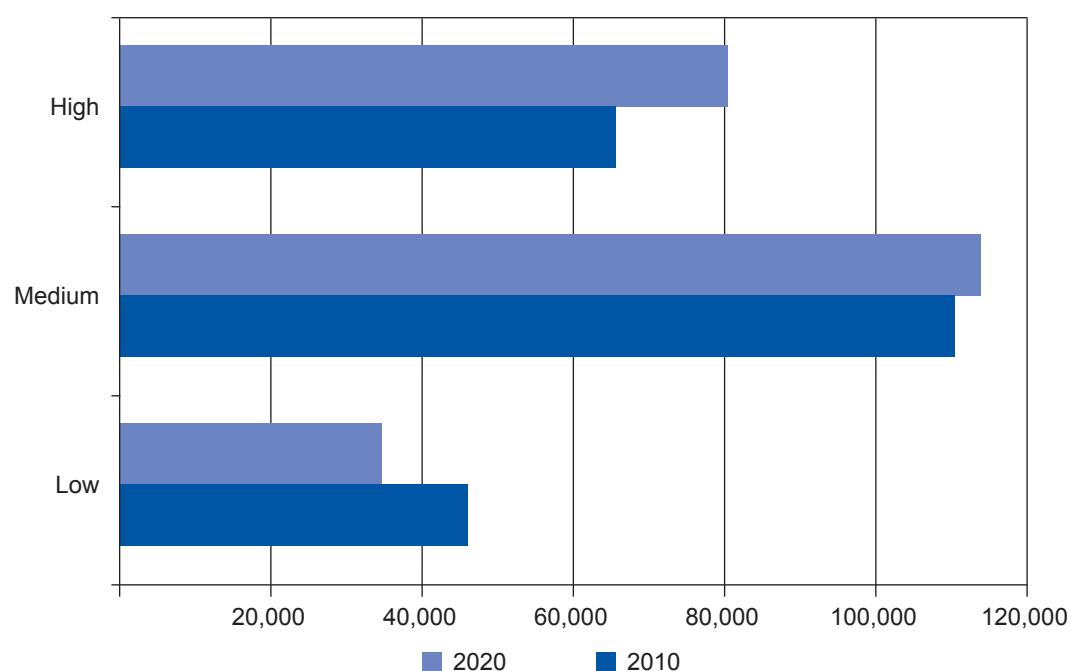
**Table A1.2: Employment trends by occupation, EU-27+, 2010–2020**

Occupation	Levels 2010 (thousands)	Levels 2020 (thousands)	Growth 2010–2020 ( per cent)
<b>Lawyers, senior officials and managers</b>	<b>19,134</b>	<b>20,574</b>	<b>0.8</b>
11 Lawyers and senior officials	576	746	2.6
12 Corporate managers	10,601	11,950	1.2
13 Managers of small enterprises	7,957	7,878	–0.1
<b>Professionals</b>	<b>32,400</b>	<b>35,075</b>	<b>0.8</b>
21 Physical, mathematical and engineering science professionals	7,873	8,717	1.0
22 Science and health professionals	3,998	4,086	0.2
23 Teaching professionals	8,903	8,307	–0.7
24 Other professionals	11,626	13,965	1.9
<b>Technicians and associate professionals</b>	<b>38,332</b>	<b>42,803</b>	<b>1.2</b>
31 Physical and engineering science associate professionals	8,689	9,440	0.8
32 Science and health associate professionals	6,048	6,036	0.0
33 Teaching associate professionals	3,101	3,543	1.3
34 Other associate professionals	20,494	23,784	1.5

Occupation	Levels 2010 (thousands)	Levels 2020 (thousands)	Growth 2010–2020 ( per cent)
<b>Clerks</b>	<b>23,936</b>	<b>22,743</b>	<b>–0.5</b>
41 Office clerks	19,414	17,564	–1.0
42 Customer service clerks	4,522	5,179	1.4
<b>Service workers and shop and market workers in sales</b>	<b>32,088</b>	<b>34,283</b>	<b>0.7</b>
51 Personal and protective services workers	20,713	22,208	0.7
52 Models, salespersons and demonstrators	11,375	12,075	0.6
<b>Skilled agricultural and fishery workers</b>	<b>9,710</b>	<b>7,674</b>	<b>–2.3</b>
<b>Crafts and related trades workers</b>	<b>28,672</b>	<b>26,529</b>	<b>–0.7</b>
71 Extraction and building trades workers	12,272	12,262	0.0
72 Metal, machinery and related trade workers	10,589	9,260	–1.3
73 Precision, handicraft, craft printing and related trade workers	1,369	1,190	–1.4
74 Other crafts and related trades workers	4,442	3,817	–1.5
<b>Plant and machine operators and assemblers</b>	<b>18,626</b>	<b>18,502</b>	<b>–0.1</b>
81 Stationary plant and related operators	2,217	2,325	0.5
82 Machine operators and assemblers	6,883	6,636	–0.4
83 Drivers and mobile plant operators	9,526	9,541	0.0
<b>Elementary occupations</b>	<b>23,115</b>	<b>25,106</b>	<b>0.9</b>
91 Sales and services elementary occupations	14,831	15,985	0.8
92 Agricultural, fishery and related labourers	1,692	1,585	–0.7
93 Labourers in mining, construction, manufacturing and transport	6,592	7,536	1.3
<b>All occupations</b>	<b>227,258</b>	<b>234,482</b>	<b>0.3</b>

Source: CEDEFOP Skills supply and demand in Europe. Medium-term forecast up to 2020.

The above forecast provides two main indications: (1) concerning jobs (occupations) the tendency is to a certain “job polarization” due to the increasing demand for high-skilled non-manual occupations as well as elementary occupations; (2) concerning skills (qualifications), many jobs will require more highly-skilled/qualified people than in the past (Figure A1.2).

**Figure A1.2: Employment trends by qualification, EU-27+, 2010–2020**

Source: Authors' elaboration upon CEDEFOP data.

Even if primary and manufacturing sectors will be affected by a perceptible decline, they will remain a crucial component of the European economy, with an expected employment in 2020 of around 12 million people in the primary sector and more than 34 million in the manufacturing sector. Therefore, rather than an expansion of demand, the two sectors can offer a valuable source of employment through the need to replace workers leaving for various reasons (mainly due to retirement). Replacement demand (around 73 million jobs) is projected to be positive for all occupations. Consequently, the total number of job openings may result to be around 80 million over the next decade (see Table A1.3).

**Table A1.3: Total job openings (expansion and replacement demand) by qualification, EU-27+, 2010–2020**

Qualifications	Levels (thousands)			Change ( per cent)		
	Expansion demand	Replacement demand	Total job openings	Expansion demand	Replacement demand	Total job openings
Low	-12,054	18,132	6,078	-23.2	34.9	11.7
Medium	3,668	33,808	37,475	3.3	30.1	33.3
High	15,610	21,142	36,757	24.8	33.6	58.4
<b>Total</b>	<b>7,224</b>	<b>73,066</b>	<b>80,310</b>	<b>3.2</b>	<b>32.2</b>	<b>35.3</b>

Source: CEDEFOP Skills supply and demand in Europe. Medium-term forecast up to 2020.



## ANNEX 2

### EU Sector Studies

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Globalization and the impact of the current economic and financial crisis require the adoption of tools that allow the European market to detect trends and changes that harm its competitiveness. In this perspective, the European Commission has carried out 19 individual sector studies (listed below), together covering around 60 per cent of total EU employment.

1. Automotive
2. Building of ships and boats
3. Chemicals, pharmaceuticals, rubber and plastics
4. Computer, electronic and optical devices
5. Construction
6. Defence industry
7. Distribution and trade
8. Electricity, gas, water and waste
9. Electromechanical engineering
10. Financial services
11. Furniture
12. Health and social work
13. Hotels, restaurants and catering (Horeca)
14. Non-metallic materials
15. Other services, maintenance and cleaning
16. Post and telecommunications
17. Printing and publishing
18. Textiles, apparel and leather products
19. Transport and logistics

Sector studies constitute a major instrument for identification of skills needs in the future labour market. They consist in taking a detailed look at selected sectors of the economy and in examining all factors that may affect their development in the upcoming years.

A transversal analysis on the evolution of skills needs in 19 targeted sectors was conducted in 2010 by Oxford Research A/S, integrating the existing data with the impact analysis of the current crisis. As most of the sector analyses and scenarios were made before the financial crisis, Oxford Research carried out validating research of the newest reporting on the impact of the crisis on the sectors concerned. As a result, the most severe hit sectors seem to be:

- Automotive
- Finance
- Horeca (hotel, restaurant, catering)
- Textile
- Transport
- Construction

The less impacted sectors seem to be:

- Defence
- Electricity
- Health and social work
- Post and telecommunications

The forecasts up to 2020 on employment and skills needs were elaborated according to four different scenarios combining endogenous and exogenous drivers, certain and uncertain factors.

One of the findings of the transversal sector study seems to confirm the tendency towards the polarization of the labour market and skills needs, already identified by the CEDEFOP study, envisaging an increased distance between low-skilled (e.g. elementary occupations) and high-skilled jobs (e.g. professionals, managers and so forth) and a decline in skilled jobs (e.g. craftsmen and so forth)<sup>61</sup>.

The study confirms the increasing importance of the services sector in the coming 10–15 years for the European economy. European production goes towards specialization and excellence, requiring high-skilled jobs but also the up-skilling of traditional jobs.

The transversal study also analysed the impact of the different scenarios on skills needs and emerging competencies. Many new skills and competencies are mentioned in the sector studies; however, some of them seems to be common to all the sectors. These are

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61. “The disappearing middle”, *The Economist*, September 9, 2010



presented in Table A2.1. The most required emerging competencies seems to be within technical (hard) skills and social/cultural (soft) skills. Also, there seems to be a tendency towards multi-skilling and the need for new combinations of skills and competencies within many sectors.

**Table A2.1: Emerging competencies**

Social/cultural	Technical	Managerial
Intercultural skills	ICT and E-skills (both at user and expert level)	Intercultural management
Teamwork	Skills/knowledge related to new materials and new processes	International value chain management
Self-management	Health and green skills (related to health and climate and environmental solutions)	International financial management
Entrepreneurship and innovativeness		Green management (implementing and managing climate and environmental friendly policies and solutions)

Source: Oxford Research: Transversal Analysis on the Evolution of Skills Needs in 19 Economic Sectors.

New competences have been identified at occupational levels. The different approaches and definitions of competencies and occupations in the sector studies do not allow having a complete list of them; however, it is possible to identify emerging skills and competencies within management occupations and basic production and service occupations (see Table A2.2).

**Table A2.2: Emerging competencies at the occupation level**

Production and service occupations	Management
ICT and E-skills (user level)	Intercultural/diversity management
Intercultural skills	International supply chain management
Teamwork	International financial management
Multi-skilling (combining two sets of skills normally belonging to two different occupations in the organization)	Green management (implementing and managing climate and environmental friendly policies and solutions)
Self-management	Strategic knowledge about ICT and E-solutions
Knowledge about health and environmental sustainability	Entrepreneurship and innovativeness
Entrepreneurship and innovativeness	

Source: Oxford Research: Transversal Analysis on the Evolution of Skills Needs in 19 Economic Sectors.

Some new skills and competencies, e.g. ICT and E-skills, are relevant in all sectors; others appear to be sector specific. In service sectors soft/social competencies such as intercultural skills and conflict solution are more important, while within production emerging competencies are related to new processes and materials, and the internationalization of supply and values chains Table A2.3).

**Table A2.3: Emerging competencies within the service and production sectors**

In service sectors	All sectors	Production sectors
Intercultural skills	ICT and E-skills (both at user and expert level)	Skills/knowledge related to new materials
Conflict solution	Health and green skills (related to work)	Skills/knowledge related to new processes
Multiskilling	Multi-skilling (health and climate and environmental solutions)	International value chain management
	Entrepreneurship and innovativeness	
	Team processes	
	Self-management	
	New combinations of skills and competencies	

Source: Oxford Research: Transversal Analysis on the Evolution of Skills Needs in 19 Economic Sectors.

## ANNEX 3

# Skills Forecasts in Some EU Member States

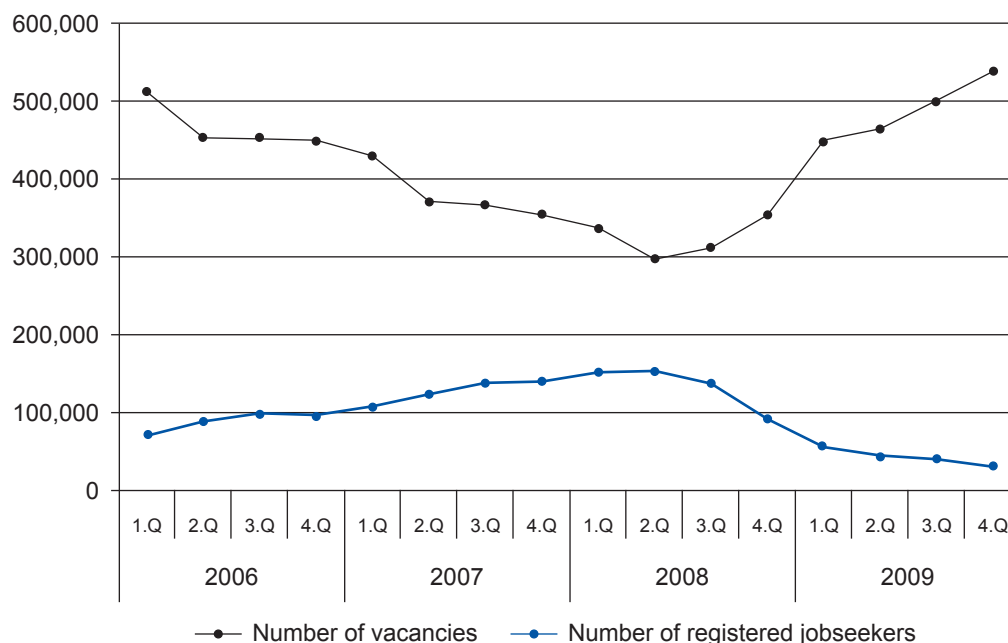
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## Czech Republic

Long-term forecasts combine employment-age structure information from the Labour Force Survey with education-system production data and with information on the skills structure of the short-term unemployed. The forecasting model has been developed by the Centre for Economic Research & Graduate Education – Economics Institute (CERGE–EI) applying the methodology designed by the Labour Market (ROA) of Maastricht University in the Netherlands.

In addition, three sector studies have been carried out by the National Observatory of Employment and Training in 2007 on **energy supply**, electrical engineering **and ICT services**. The studies explored how demand for skilled labour would develop over the period 2008–2018 in terms of the number, changes in knowledge and skills requirements and the identification of trends for the creation of new occupations for which the VET system is not yet prepared.

Over the past decade, the Czech Republic has benefitted from economic prosperity linked with the creation of tens of thousands of additional jobs. The positive trend reversed into negative in the last period of 2008 and over 2009. Figure A3.1 shows how the global crisis impacted the Czech labour market by reducing job demand and increasing the number of jobseekers.

**Figure A3.1: Number of unemployed and vacancies 2006–2009**


Source: Czech National Observatory of Employment and Training.

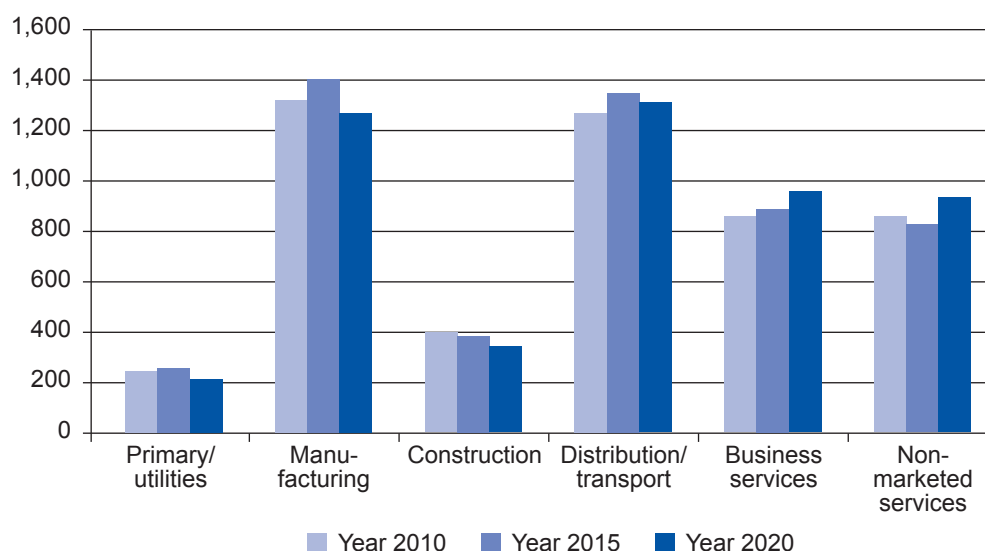
The most important factors that facilitated a significant growth in employment were:

- a system of investment incentives introduced in 2000 that increased the attractiveness for foreign investments;
- the quality of technical education and therefore the availability of a skilled workforce;
- comparative cost advantage in terms of wages, property and energy prices in comparison with developed countries in Western Europe.

Except for the quality of technical education these success factors can be seen as being of a short-term nature and the Czech economy will be fully exposed to global trends and changes.

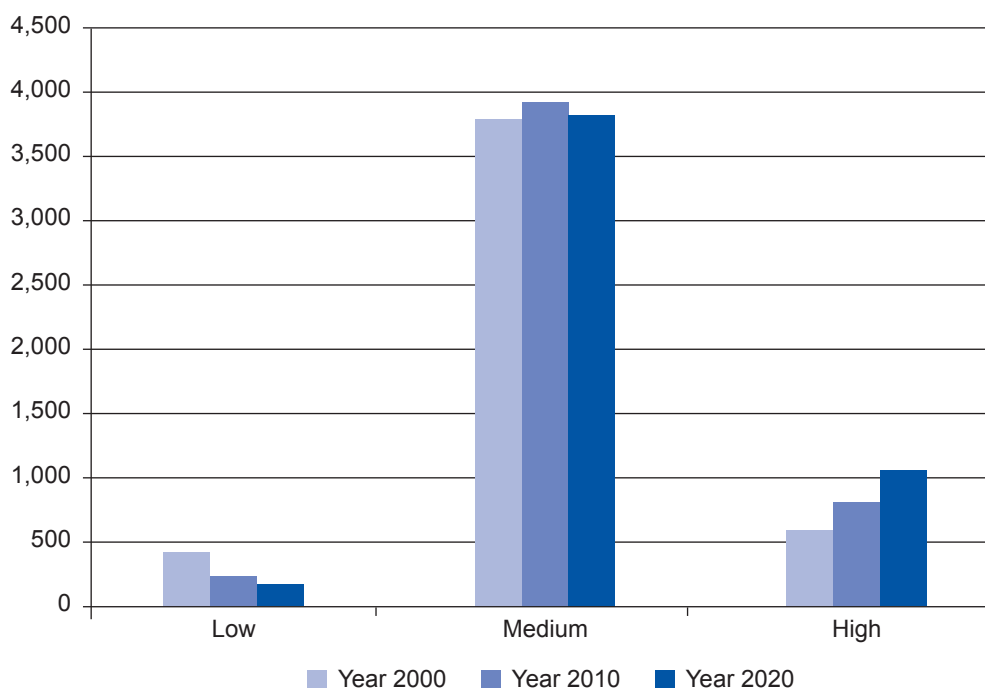
Comparing the CEDEFOP projections for 2015 and 2020 it is possible to see that the first were formulated before the global crisis started producing its heavy impact on European economies, therefore some positive trends in manufacturing and distribution will probably not materialise. The forecasts confirm a general trend in Europe of declining employment in agriculture, manufacturing and construction and increasing job opportunities in services.

Beginning with 4,940,000 jobs in the year 2000, the employment level was estimated to reach 5,106,000 units in 2010 and to achieve a level of 5,178,000 jobs in 2020. The increase, in terms of new jobs in the decade 2010–2020, would be of 72,000 in absolute figures or 1.4 per cent (0.1 per cent per annum). In line with the pan-European tendency, during the 2010–2020 decade at the sector level there will be an increase in distribution/transport jobs (+42,000), business service jobs (+102,000) and non-marketed service jobs (+70,000) and declining employment levels in primary (–40,000) manufacturing (–50,000) and construction (–52,000) sectors (see Figure A3.2).

**Figure A3.2: Changes in employment by broad sectors 2010–2020**

Source: CEDEFOP.

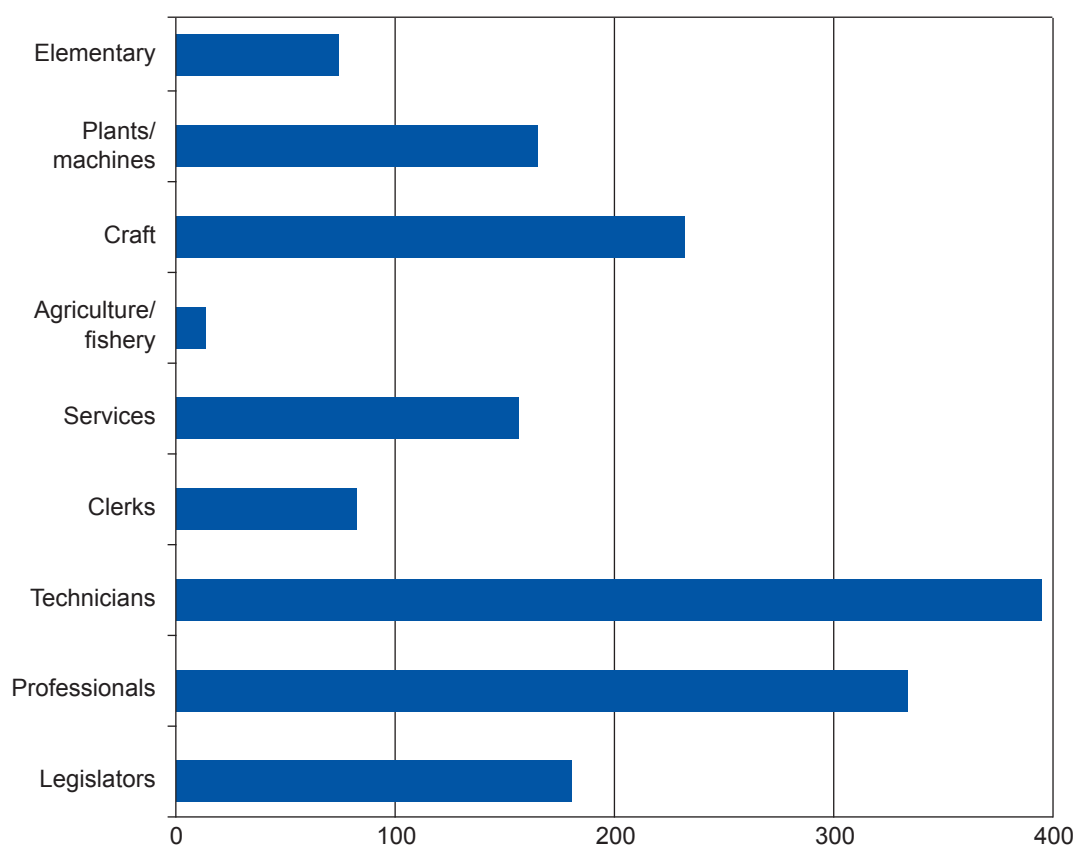
Considering the qualifications workers were required to have in the decade in question, Figure A3.3 shows that jobs will be available only for those with high-level qualifications (ISCED 5–6) with 252,000 new jobs, while the number of jobs requiring low (ISCED 0–2) and medium (ISCED 3–4) qualification levels will visibly decline, by 79,000 and 101,000 positions respectively.

**Figure A3.3: Changes in employment by qualification, 2010–2020**

Source: CEDEFOP.

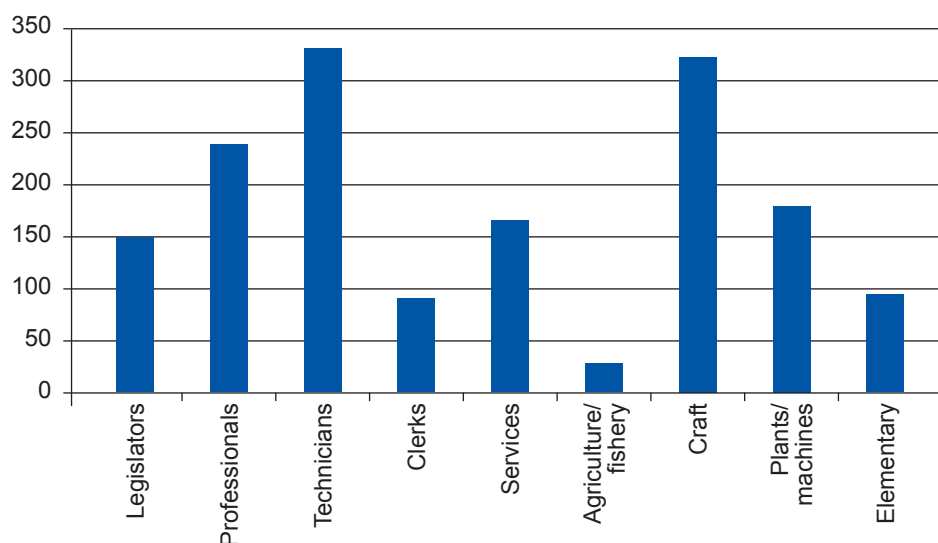
When considering employment trends by the broad professional categories, here, as in the rest of Europe, it is possible to detect a tendency to polarization with an increase for the occupation groups (1) Lawyers, senior officials and managers; (2) Professionals; (3) Technicians and associate professionals, but also for elementary occupations. All other groups present a declining trend (Figure A3.4).

**Figure A3.4: Employment trends by major occupation groups, 2010–20 (thousands)**



Source: CEDEFOP.

As the creation of new jobs appears very limited, and with the prospect of the impact of the financial crisis worsening, though unlikely, the most relevant source of employment will come from replacing current workers. The number of available posts expected in 2010 is 1,584,000 or 31 per cent of the total employment level. The replacement will affect all professions as shown in Figure A3.5.

**Figure A3.5: Replacement by major occupation groups, 2010–20 (thousands)**

Source: CEDEFOP.

## France

Skill forecasting in France is carried out at the national, sector and regional level.

*At the national level:* the main responsibility lies with the Centre for Strategic Analysis (CAS – “Centre d’analyse stratégique”). The CAS operates under the authority of the prime minister and has the role of coordinating the forecasting work of the various ministries.

*At the sector level:* based on an inter-sectoral agreement between social partners in November 2003, the Law on Vocational Training in May 2004 foresaw the creation of observatories in each sector for forecasting occupation and qualification demand. These observatories are jointly managed by employees’ and employers’ organizations. **A total of 126 conventionally created Observatories were identified in July 2010<sup>62</sup>.**

*At the regional level:* each of the 26 Regional Councils have established regional employment and training observatories (OREF – “observatoires régionaux de l’emploi et de la formation”) aimed at providing advice to decision makers in the field of employment, training and economic development perspectives.

The last forecasting exercise at the national level was carried out jointly by the Ministry of Education and the Ministry of Labour in 2007 with a forecast up to 2015. The conducted analysis dealt with the economic and employment development perspectives in 18 sectors with the following main findings:

62. <http://blog.univ-provence.fr/blog/coordination-regionale-paca/observatoire/2011/12/14/126-observatoires-prospectifs-des-m-tiers-et-des-qualifications-ont-t-recens-s>

- Continuing declining employment trends in agriculture and light industries (textile, leather, wood, graphics). The same perspective applies to mechanics, metal work, processing industries and management, administration;
- Projections for electricity, electronics, banking and insurance, maintenance and construction/public works pointed to either a continued loss or the creation of few jobs;
- Positive employment trends are expected in communication, information, entertainment, studies and research and Horeca sectors;
- Positive job creation trends were also identified for industrial engineers and executives, civil service and legal professions, teaching, training, and tourism and transport;

The sectors with a high possibility to produce new jobs are: personal services (family jobs, security and so on), healthcare, social work, culture and sports, business and ITC.

**Table A3.1: Changes in employment 2002–2015**

Sectors	Levels 2002 (thousands)	Levels 2015 (thousands)	Growth 2002–2015 (per cent)
Agriculture, marine, fishing, forestry	1,055	791	–2.2
Construction, public works	1,595	1,627	0.2
Electricity, electronics	279	247	–0.9
Mechanics, metal work	1,276	1,150	–0.8
Processing industries	1,113	1,025	–0.6
Light industries (wood, graphics)	468	337	–2.5
Maintenance	619	628	0.1
Industrial engineers and executives	154	202	2.1
Tourism and transport	1,807	1,886	0.3
Crafts	104	101	–0.2
Management, administration	2,685	2,643	–0.1
ITC	448	592	2.2
Studies and research	267	351	2.1
Civil service and legal professions	1,603	1,661	0.3
Banking and insurance	580	568	–0.2
Business	2,308	2,566	0.8
Food and hospitality management	979	1,071	0.7
Personal services (family jobs, security)	2,983	3,578	1.4
Communication, information, entertainment	364	451	1.7
Healthcare, social work, culture and sports	1,934	2,325	1.4
Teaching, training	1,284	1,391	0.6
<b>Total</b>	<b>23,905</b>	<b>25,191</b>	<b>0.4</b>

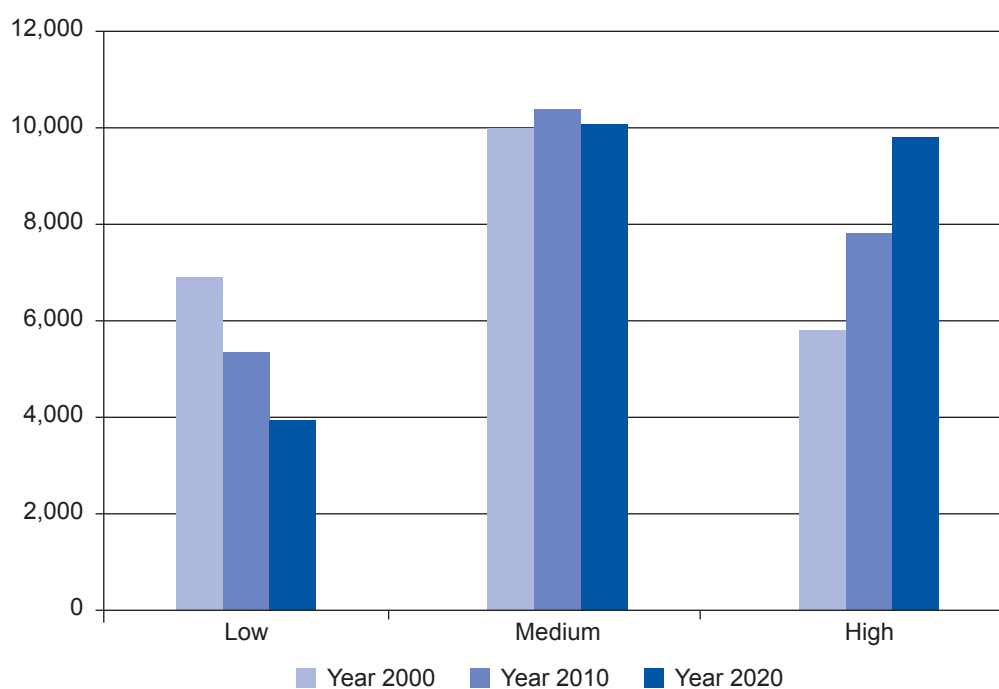
Source: C. Sauvageot: Employment-Training Prospects at the Horizon of 2015.



The CEDEFOP employment projections for 2015 were more optimistic envisaging an increase of 0.7 per cent per annum, but with the prospect of the impact of the crisis a revision was made to 0.2 per year for the decade 2010–2020.

With reference to the level of qualifications, trends are declining for low level (ISCED 0–2), almost stable for medium level (ISCED 3–4) and rising for high level (ISCED 5–6).

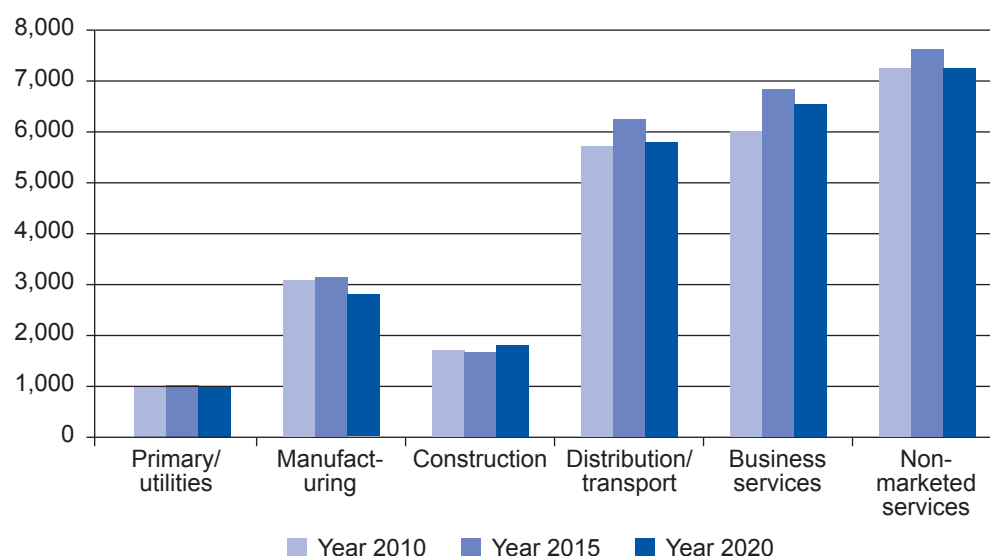
**Figure A3.6: Employment trends by qualification in France, 2000–20 (thousands)**



Source: CEDEFOP 2010.

All projections show a tendency towards a tertiary division of the economy with a declining trend in primary and manufacturing sectors and a growing share of marketed and non-marketed services. For the latter, the forecast might be too optimistic, being formulated in periods when the European countries still had not adopted anti-crisis measures including cuts in the public budget for education, health and welfare.

According to the forecast made by the French researchers, the tendency towards the tertiary division of the economy will continue up to 2015, with an increasing trend of employment in services sectors: aid services to individuals (400,000), health and social activities (308,000), transport and logistics (225,000), administrative professions (197,000), business and sales (194,000). This trend is confirmed by the CEDEFOP projections for 2015 and 2020.

**Figure A3.7: Employment trends by broad sector (thousands)**


Source: CEDEFOP 2010.

According to the French skill forecast study, job creation at the horizon of 2015 would be very dynamic and with the tendency to a certain polarization: especially for managers (+14 per cent) and professions requiring low level qualifications (+15). At the same time, it appears evident there will be an increased requirement in terms of know-how, communication skills and the ability to assume responsibilities in most job categories.

**Table A3.2: Recruitment for each professional field based on the level of qualifications for the 2002–2015 period ( per cent)**

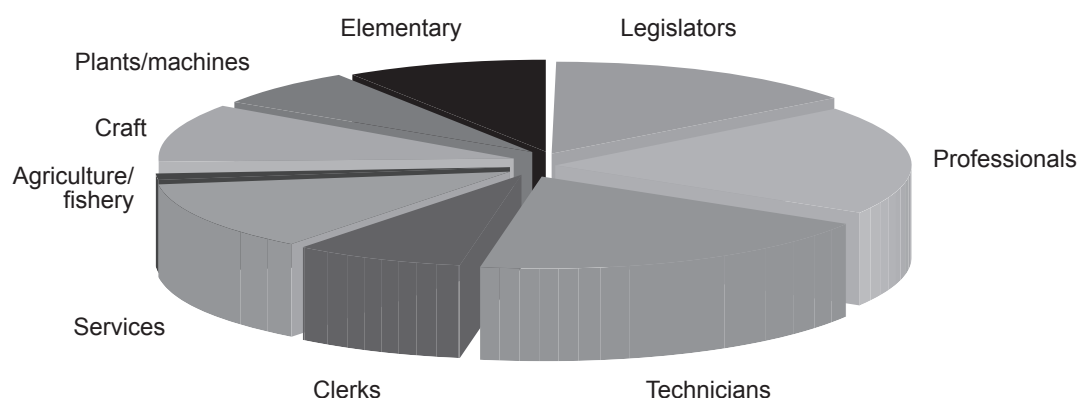
Sectors	ISCED 5A and 6	ISCED 5B	ISCED 3A and 3B	ISCED 3C	ISCED 2
Agriculture, marine, fishing, forestry	6	10	33	28	6
Construction, public works	6	17	20	24	33
Mechanics, metal work	3	20	26	24	27
Process industries	8	25	36	15	16
Management, administration	30	33	35	1	1
IT	74	17	8	1	0
Studies and research	92	7	1	0	0
Civil service and legal professions	50	22	26	1	1
Banking and insurance	43	31	24	1	1
Business	18	24	39	8	12
Food and hospitality management	7	7	26	25	35
Personal services (family employment, security)	8	11	33	25	23

Sectors	ISCED 5A and 6	ISCED 5B	ISCED 3A and 3B	ISCED 3C	ISCED 2
Communication, information, entertainment	62	22	13	1	2
Health, social work, culture and sport	34	37	20	5	4
Teaching, training	96	3	1	0	0
Others	20	26	27	12	15
<b>Total</b>	<b>26</b>	<b>20</b>	<b>27</b>	<b>13</b>	<b>14</b>

Source: BIPE.<sup>63</sup>

The demand for skilled workers is foreseen to still be significant. The tertiary division of the economy does not imply that there will be no further need for manual workers, especially in the field of car maintenance, construction and mechanics. In the industrial sectors, the employment level will be declining, but the level of expertise will be increasing.

**Figure A3.8: Employment projection by occupations in France, 2020**



Source: CEDEFOP.

As at the overall European Union level, the most important source of employment may come from the replacement of the current workforce. The estimation made for the 2002–2015 period, envisaged 6.6 million retirements assuming an average retirement age of 59 in 2015. The recent decisions adopted by the French government to raise the retirement level by two years, up to 62 years, may have an impact on the figure above.

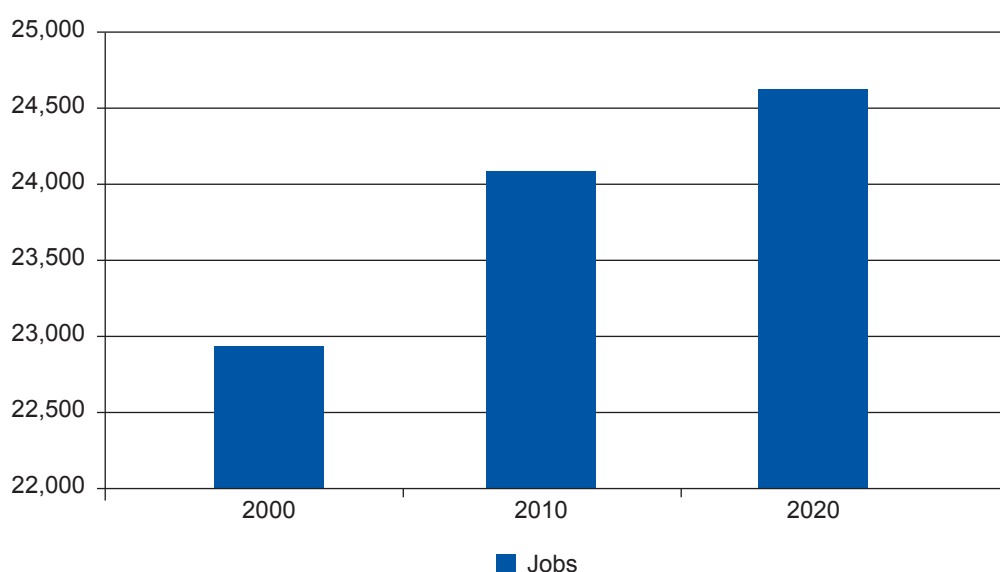
63. BIPE is a research centre for economic studies and strategic advice. <http://www.bipe.fr>

## Italy

The impact of the global crisis on the Italian labour market can be measured by the discrepancy between the CEDEFOP projections up to 2015, which envisaged an increase of 1.6 million jobs and the estimates from the same agency up to 2020, where the increase has been limited to “only” 541,000 jobs.

As shown in Figure A3.9, the job increase in the decade 2000–10 was almost 10 per cent, while in the following decade it will be only 2.2 per cent, equivalent to a modest 0.2 per cent per annum.

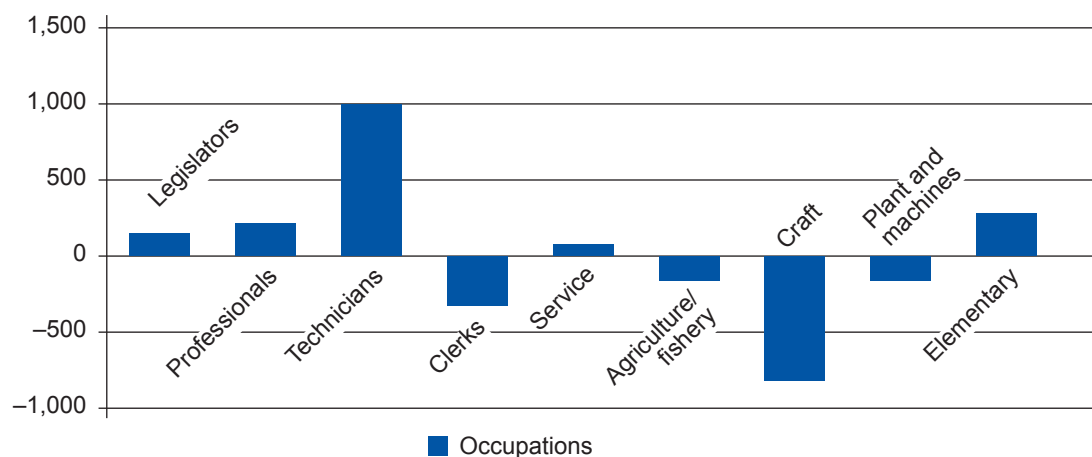
**Figure A3.9: Employment trends in Italy, 2000–2020**



Source: CEDEFOP 2010.

Employment trends in the 2010–2020 period will be negative for the primary sector and utilities (–309,000), Manufacturing (–109,000) and construction (–119,000) but there will be a robust positive development for services (+1,034,000) and a modest, but positive trend for the other broad sectors. At the occupation level, the tendency to polarization appears evident in Italy as well, with a significant increase of demand for technicians and associate professionals, lawyers, senior officials and managers, professionals, but also for elementary occupations (see Figure A3.10).

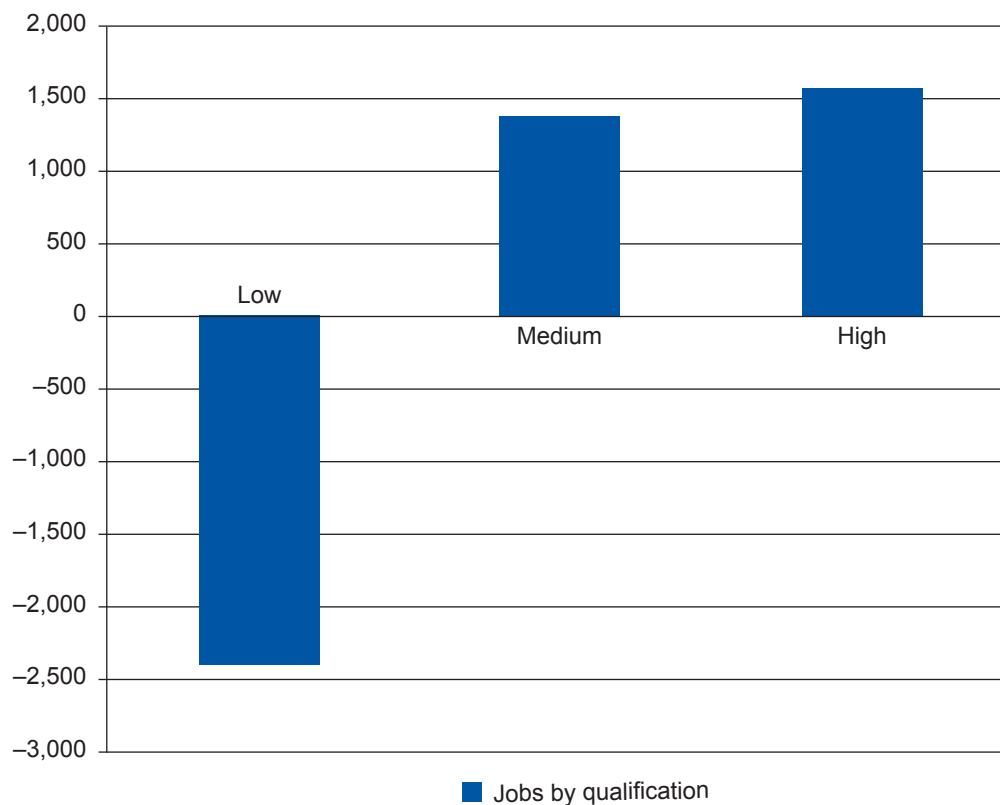
**Figure A3.10:** Employment changes in Italy by major occupation groups, 2010–2020 (thousands)



Source: CEDEFOP 2010.

In contrast to the above mentioned polarization is the tendency towards an increased requirement in terms of skills and competencies: low qualifications (ISCED 0–2) – 2,392,000; medium level (ISCED 3–4) 1,376,000; and high (ISCED 5–6) 1,558,000. But the contradiction is understandable as it signals an increase of requirements for tasks that in the past did not require medium or high level qualifications.

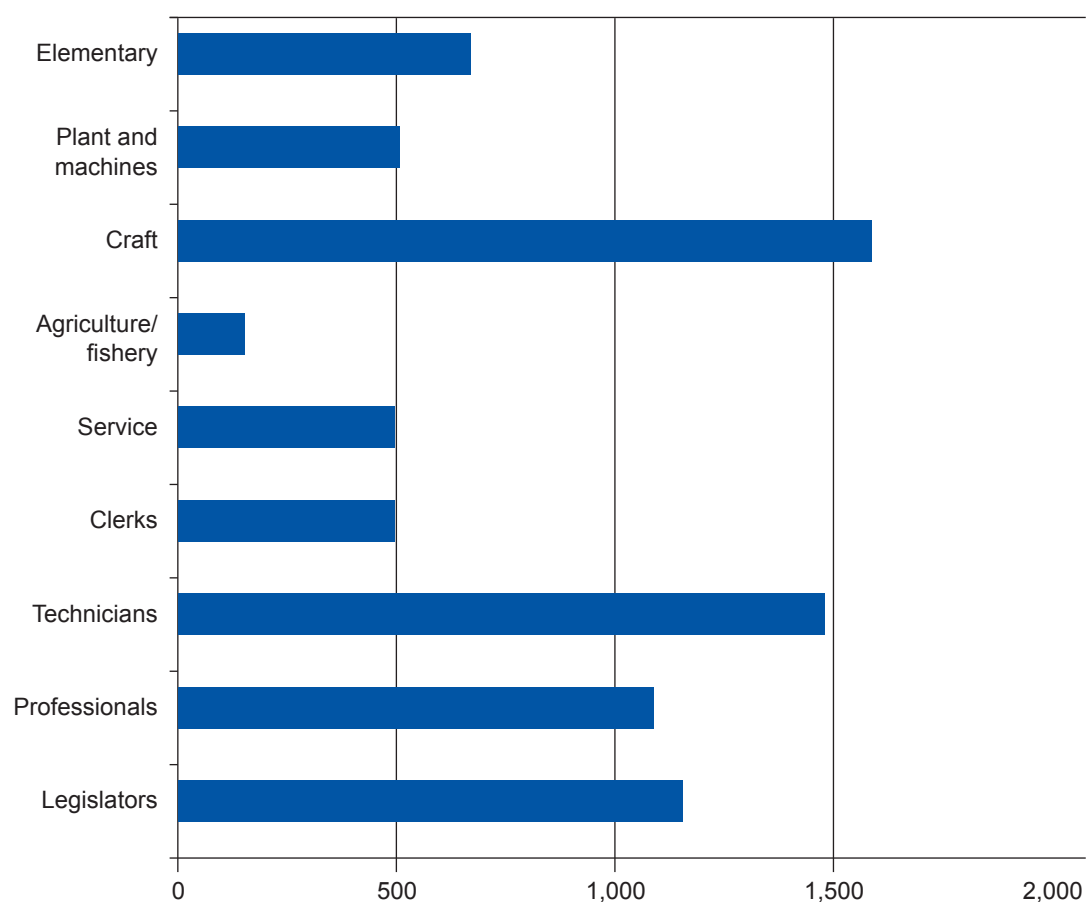
**Figure A3.11:** Total job openings in Italy by qualifications, 2010–20 (thousands)



Source: CEDEFOP 2010.

As the number of new job openings appears to be limited, an important employment factor will be the replacement of current workers. The total estimation amounts to 7,762,000 in the decade, which corresponds to 31.5 per cent of workforce in 2020, this is an important indicator of the ageing population trend. The replacement appears positive throughout all occupations (see Figure A3.12). In this context a caveat is necessary in order to avoid being too optimistic: the recent policies approved by the Italian government to combat the financial crisis may have a long-lasting effect on retirement age and therefore on the reduction, in the considered period, of the replacement rate.

**Figure A3.12: Replacement by occupations in Italy 2010–2020**



Source: CEDEFOP 2010.

Besides the pan-European studies on skills forecasts conducted by CEDEFOP, Italian stakeholders can rely upon other instruments: (1) periodic surveys on labour market forecasting conducted by social partners especially through bilateral entities (e.g. in agriculture and construction sectors); (2) estimates from an econometric model, run by the ISFOL<sup>64</sup>, on the forecasting of employment flows by sector and profession in the medium-term (five years), and (3) the short-term labour market forecast made available by the Excelsior Information System (see Box A3.1).

64. “Istituto per lo Sviluppo della Formazione professionale dei Lavoratori”, an Agency of the Italian Ministry of Labour

The skill forecast up to 2015 made by ISFOL provides a detailed analysis of the employment perspectives for each job (4-digit ISCO 88), through a multilevel approach at national, regional and sector levels.

### BOX A3.1

#### The Excelsior Survey

Established in 1997, the Excelsior Information System is one of the main Italian sources of information on labour market forecast. Managed by Unioncamere (Italian Association of the Chambers of Commerce) it benefits from the support of the Italian Ministry of Labour and the European Union.

The Excelsior Information System provides detailed and reliable information about the demand for labor expressed by Italian enterprises both in the short and in the long-terms, as well as its distribution over the territory and across the various economic sectors. Its scope is to support the policies concerning the labor market and the education and training system, and facilitate job matching. It also provides information about specific characteristics of the profiles required by the enterprises, such as age, educational level, type of contract, work experience, difficulty in recruiting specific profiles, need for further training, and so on.

The Excelsior Information System is based on data collected through an annual sample survey conducted in over 100,000 Italian enterprises, corresponding to about eight per cent of the total of Italian enterprises having at least one employee.

The observation field of the survey covers the universe of active private enterprises operating in agriculture, industry and services, that are registered in the Business Register and have at least one employee, except for:

- Public administration's operative units;
- Public enterprises in the health sector;
- Public educational units in primary and secondary schools;
- Public University units;
- Other no-profit organizations.

The survey is carried out between February and the first half of May according to two different methods: (1) for enterprises with up to 250 employees, is based on telephone interviews (following the CATI – Computer Assisted Telephone Interview – methodology). It covers a sample of around 95,000 enterprises, previously selected in accordance with the statistical requirements of the sample design; (2) for enterprises with more than 250 employees, it is based on direct interviews or filling-in of the questionnaire (aided by the statistical offices of the Chambers of Commerce). This method is used to interview the entire population of enterprises of this size operating in Italy.

**BOX A 3.1** *(continued)*

The questionnaire proposed to the enterprises aims at collecting a wide range of information and is organised into different sections. The main data collected refers to:

- enterprises' stock of employees as at the end of the previous year and expected changes (in-flows and out-flows) during the year of reference. The information collected also covers the expected recruitment of seasonal workers;
- characteristics of the job profiles the enterprise expects to employ during the year (including territorial breakdown for multi-localised enterprises with over 100 employees interviewed with the CATI method) and, for those enterprises that do not intend to recruit employees, reasons for this behaviour;
- staff engaged under "atypical" contracts (not employees);
- the training activity provided by the enterprise during the previous year. This information is available for the firm as a whole and disaggregated by occupation (managers, clerks and workers) and gender. The survey also provides information on the type of training activity – internal and external courses, on the job, self-learning and, for a subset of firms, the average duration of training – average number of days of training per trained employee – and the cost of training activities.

Excelsior uses the following classifications:

- classification of economic activities: ATECO 2002, which is the Italian version of the NACE;
- classification of occupations: both ISTAT CP 2001 (Italian classification) and ISCO 88;
- classification of education: ISTAT 2003 (Italian classification), which is comparable to the ISCED;
- classification of territories: ISTAT, which fully corresponds to the NUTS.



## ANNEX 4

# Vacancies at the European Level

**Table A4.1: Type of jobs and occupational groups**

Share of all job vacancies (per cent)	Job type	Occupational group (ISCO1)	Share of all job vacancies (per cent)
24	Skilled non-manual	1. Lawyers, senior officials and managers	3.5
		2. Professionals	6.3
		3. Technicians and associate professionals	13.9
35	Low-skilled non-manual	4. Clerks	14.2
		Service and shop and market sales workers	20.9
22	Skilled manual	6. Skilled agricultural and fishery workers	0.4
		7. Craft and related trades workers	12.6
		8. Plant and machine operators and assemblers	8.9
19	Elementary (untrained, mainly manual)	9. Elementary occupations (this category is comprised of simple and routine tasks in sales and services, agriculture, fishery, mining, construction, manufacturing and transport)	19.3

Source: EURES database. Data not available for Liechtenstein and Norway.

At the same date (31 August 2011) the most requested profiles were:

**1) Finance and sales associate professionals**

Germany 29,800 job vacancies

France 3,500 job vacancies

Belgium 2,800 job vacancies

**2) Shop salespersons and demonstrators**

Germany 11,300 job vacancies

Belgium 5,600 job vacancies

Austria 2,600 job vacancies

- 3) **Personal care and related workers**  
 UK 23,600 job vacancies  
 Germany 11,300 job vacancies  
 France 1,800 job vacancies
- 4) **Modern health associate professionals**  
 UK 24,500 job vacancies  
 Germany 9,900 job vacancies  
 Belgium 3,400 job vacancies
- 5) **Electrical and electronic equipment mechanics and fitters**  
 Germany 26,600 job vacancies  
 UK 9,200 job vacancies  
 Belgium 1,600 job vacancies

The other best employment opportunities were:

6. Housekeeping and restaurant services workers (39,600)
7. Machinery mechanics and fitters (34,900)
8. Administrative associate professionals (33,900)
9. Building finishers and related trades workers (30,500)
10. Manufacturing labourers (29,100).

**Table A4.2: Split by country, the top five vacancies**

Czech Republic		France	
1.	Housekeeping and restaurant services workers (1,400)	1.	Housekeeping and restaurant services workers (4,000)
2.	Finance and sales associate professionals (1,200)	2.	Production and operation department managers** (3,600)
3.	Physical and engineering science technicians (1,100)	3.	Finance and sales associate professionals (3,500)
4.	Blacksmiths, tool-makers and related trades workers (1,000)	4.	Other specialist managers (2,600)
5.	Motor-vehicle drivers (990)	5.	Domestic and helpers, cleaners and launderers (2,300)

Italy		Poland	
1.	Housekeeping and restaurant services workers (200)	1.	Building frame and related trades workers (2,500)
2.	Finance and sales associate professionals (180)	2.	Motor-vehicle drivers (2,000)
3.	Physical and engineering science technicians (140)	3.	Building finishers and related trades workers (1,800)
4.	Administrative associate professionals (100)	4.	Shop salespersons and demonstrators (1,600)
5.	Other office clerks (80)	5.	Mining and construction labourers (1,600)

Portugal	Germany
1. Housekeeping and restaurant services workers (300)	1. Finance and sales associate professionals (29,800)
2. Other personal service workers (90)	2. Electrical and electronic equipment mechanics and fitters (26,600)
3. Metal moulders, welders, sheet-metal workers (90)	3. Machinery mechanics and fitters (22,700)
4. Finance and sales associate professionals (70)	4. Architects, engineers and related professionals (20,700)
5. Blacksmith, tool-makers and related trades workers (70)	5. Building finishers and related trades workers (19,700)

Source: EURES.

The occupations most in demand do not correspond entirely to those that the employers find hardest to fill: according to the 2011 Talent Shortage Survey conducted by the Manpower Group for Europe, Middle East and Africa (EMEA)<sup>65</sup> the top ten in this field are:

1. Skilled trades workers
2. Technicians
3. Engineers
4. Sales representatives
5. Management/executives
6. Drivers
7. Secretaries, personal assistants, administrative assistants and office support staff
8. Production operators
9. Labourers
10. Mechanics

65. Survey of around 40,000 employers in 39 countries. Telephone interviews with employers in the Europe, Middle East and Africa region included 18,137 employers in Austria, Belgium, Bulgaria, Czech Republic, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Norway, Poland, Romania, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey and United Kingdom

**Table A4.3: In some specific EU countries, vacancies that employers are having difficulty filling**

Czech Republic	Italy
1. Skilled trades workers	1. Skilled trades workers
2. Drivers	2. Technicians
3. Cleaners & domestic staff	3. Secretaries, PAs, administrative assistants & office support staff
4. Designers	4. Restaurant & hotel staff
5. Doctors and other non-nursing health professionals	5. Labourers
6. IT managers/project managers	6. Sales managers
7. IT staff	7. IT staff
8. Sales representatives	8. Sales representatives
9. Teachers	9. Accounting & finance staff
10. Technicians	10. Engineers

France	Germany
1. Skilled trades workers	1. Skilled trades workers
2. Drivers	2. Engineers
3. Sales representatives	3. Technicians
4. Chefs/cooks	4. IT staff
5. Secretaries, PAs, administrative assistants & office support staff	5. Secretaries, PAs, administrative assistants & office support staff
6. Technicians	6. Sales representatives
7. Engineers	7. Managers/executives (management/corporate)
8. Machinists/machine operators	8. Chefs/cooks
9. Mechanics	9. Doctors and other non-nursing health professionals
10. Restaurant & hotel staff	10. Sales managers

Source: Manpower (2011) Talent shortage survey results.

In terms of effective mobility, it is interesting to see how many workers have found a job matching the offered vacancies. According to the European Vacancy Monitoring (No. 5 – January 2012), the job-finders in lower skilled occupations account for the largest share of job-finders in the European labour market, underlining the continuing importance of these groups in providing employment opportunities. However, demand for higher skilled occupations increased significantly compared to previous quarters. The number of (high-skilled) job-finders in the “professionals” group has grown by +34 per cent and the number of jobseekers who found jobs as “lawyers, senior officials and managers” has grown by +25 per cent. Both groups appear to have benefited from an overall increase in labour

demand across different sectors (and so spreading the risk of job loss), which confirms that there is widespread demand for high-skilled labour. However, lower-skilled labour also benefited from the general increase in labour demand, which explains the strong year-on-year growth in the number job-finders as “clerks” (+31 per cent) and “elementary occupations” (+22 per cent).

**Table A4.4: Change in the number of job-finders in the EU by occupational group (ISCO)**

Job type	Occupational group (ISCO1)	Number of job finders
Skilled non-manual	1. Lawyers, senior officials and managers	183,000
	2. Professionals	740,000
	3. Technicians and associate professionals	1,167,000
Low-skilled non-manual	4. Clerks	925,000
	5. Service and shop and market sales workers	1,918,000
Skilled manual	6. Skilled agricultural and fishery workers	232,000
	7. Craft and related trades workers	1,334,000
	8. Plant and machine operators and assemblers	890,000
Elementary (untrained, mainly manual)	9. Elementary occupations (this category comprises simple and routine tasks in sales and services, agriculture, fishery, mining, construction, manufacturing and transport)	1,738,000
<b>Total</b>		<b>9,257,000</b>

Source: EU LFS data (23 countries).

In terms of job-finders by occupation, the top 25 (Table A4.5) shows that a large majority comes from the occupational groups: “elementary occupations”, “service and sales workers” and “clerical support workers”. However a large number of job-finders in the second quarter may reflect a higher turnover of staff in these groups. There is also a clear seasonal demand for labour as, for example,, the growth of “market gardeners and crop growers” with an impressive growth of 102 per cent in comparison to the first quarter of 2011. The same applies to the growing number of “agricultural, forestry and fishery workers”. Considering that some occupations in the construction sector did not register an increase in employment in the second quarter of 2011, the growth might be explained by the high job turnover in this sector.

**Table A4.5: Top 25 number of job-finders in EU by occupation (ISCO 08)**

Occupation	2011 Q1	2011 Q2
Shop salespersons	591,000	673,000
Domestic, hotel and office cleaners and helpers	527,000	608,000
Building frame and related trades workers	256,000	411,000
Waiters and bartenders	296,000	394,000
Manufacturing labourers	282,000	295,000
Personal care workers in health services	285,000	290,000
Agricultural, forestry and fishery labourers	226,000	268,000
Transport and storage labourers	207,000	243,000
Mining and construction labourers	190,000	239,000
General office clerks	216,000	217,000
Heavy truck and bus drivers	144,000	195,000
Building finishers and related trades workers	132,000	190,000
Client information workers	152,000	176,000
Car, van and motorcycle drivers	165,000	174,000
Cooks	138,000	170,000
Sales and purchasing agents and brokers	152,000	161,000
Machinery mechanics and repairers	131,000	160,000
Other clerical support workers	151,000	158,000
Physical and engineering science technicians	161,000	158,000
Food preparation assistants	114,000	157,000
Material-recording and transport clerks	150,000	155,000
Market gardeners and crop growers	74,000	149,000
Child care workers and teachers' aides	138,000	139,000
Nursing and midwifery associate professionals	122,000	137,000
Mobile plant operator	105,000	134,000

Source: EU LFS data (22 countries).

Looking at the education level of the job-finders, those with higher level qualifications present the most significant growth: those with post secondary education registered an increase of +40 per cent; those with tertiary education, +37 per cent. This is in line with the increasing demand for highly qualified jobseekers, which seems to be set to continue in the future. Even during the crisis, high-skilled occupations have a positive development compared to low-skilled occupations: e.g. since 2008, the number of employed “plant and machine operators and assemblers” decreased by –10.1 per cent and the number of employed in “elementary occupations” decreased by –7.3 per cent. In contrast, the number of employed “technicians and associate professionals” has increased in the same period by 3.0 per cent.

**Table A4.6:** Change in the number of job-finders in EU by educational level (ISCED) Q2 2010–Q2 2011

Educational level	Number of job-finders	Share ( per cent)
Primary education	828,000	6.8
Lower secondary	2,760,000	22.6
Formal upper secondary	6,547,000	53.7
Upper secondary short courses	190,000	1.6
Post-secondary non-tertiary	450,000	3.7
Tertiary	3,108,000	25.5
<b>Total</b>	<b>12,190,000</b>	<b>100.0</b>

Source: EU LFS data (26 countries).

Matching demand and supply in the European labour market is not always easy. The Talent Shortage Survey 2011 conducted by Manpower, asked for the opinion of interviewed employers in the EMEA region on the reasons for the lack of matching between demand and supply of skills (see Table A4.7). In line with the worldwide trend, the lack of experienced candidates is considered as the most common reason they are having difficulty filling positions. It is followed closely by a lack of candidates with technical job skills and a lack of applicants.

**Table A4.7:** Reasons for difficulty in filling jobs in EMEA

Reasons	per cent
Lack of experience	28
Lack of “hard” job skills or technical skills	27
Lack of available applicants/no applicants	26
Lack of knowledge of business/academic disciplines/industry or formal qualifications	18
Lack of “soft” skills or interpersonal/communication skills	9
Looking for more pay than is offered	8
Do not possess right values or mindset	7
Do not possess the right personality and intelligence	4

Source: Manpower 2011 Talent Shortage Survey.

On the strategies envisaged to overcome the above-mentioned difficulties in filling vacancies, the interviewed employers mentioned: (1) providing extra training and development for existing employees (19 per cent), (2) broadening the search outside the local region (13 per cent), (3) appointing unskilled people but with a potential to learn and grow (13 per cent) and, (4) changing recruitment or advertising strategies (13 per cent).

A good indicator of labour market trends is the Monster Employment Index<sup>66</sup>. Based on a real-time review of employer job opportunities, the Monster Employment Index presents a snapshot of employer online recruitment activity nationwide.

Comparing the Index of the last 18 months (July 2010–December 2011), it shows a significant increase from 115 to 136. The change year-over-year (December 2010–November 2011) registered an increase of 11 per cent from 122 to 139.

Employment growth registered in December 2011 year-over-year was not uniform: in some sectors there was a visible increase (Engineering +28 per cent; Transport, post and logistics +27 per cent; Production, manufacturing, maintenance and repair +24 per cent; Telecommunication +24 per cent. Other sectors show a consistent decline: Public sector, defence, community – 14 per cent; Legal –5 per cent and Management and consulting –5 per cent.

Analysed by occupations, the Monster Index shows a positive trend for all professions but managers (see Table A4.8).

**Table A4.8: Monster Employment Index by occupation, 2010–2011**

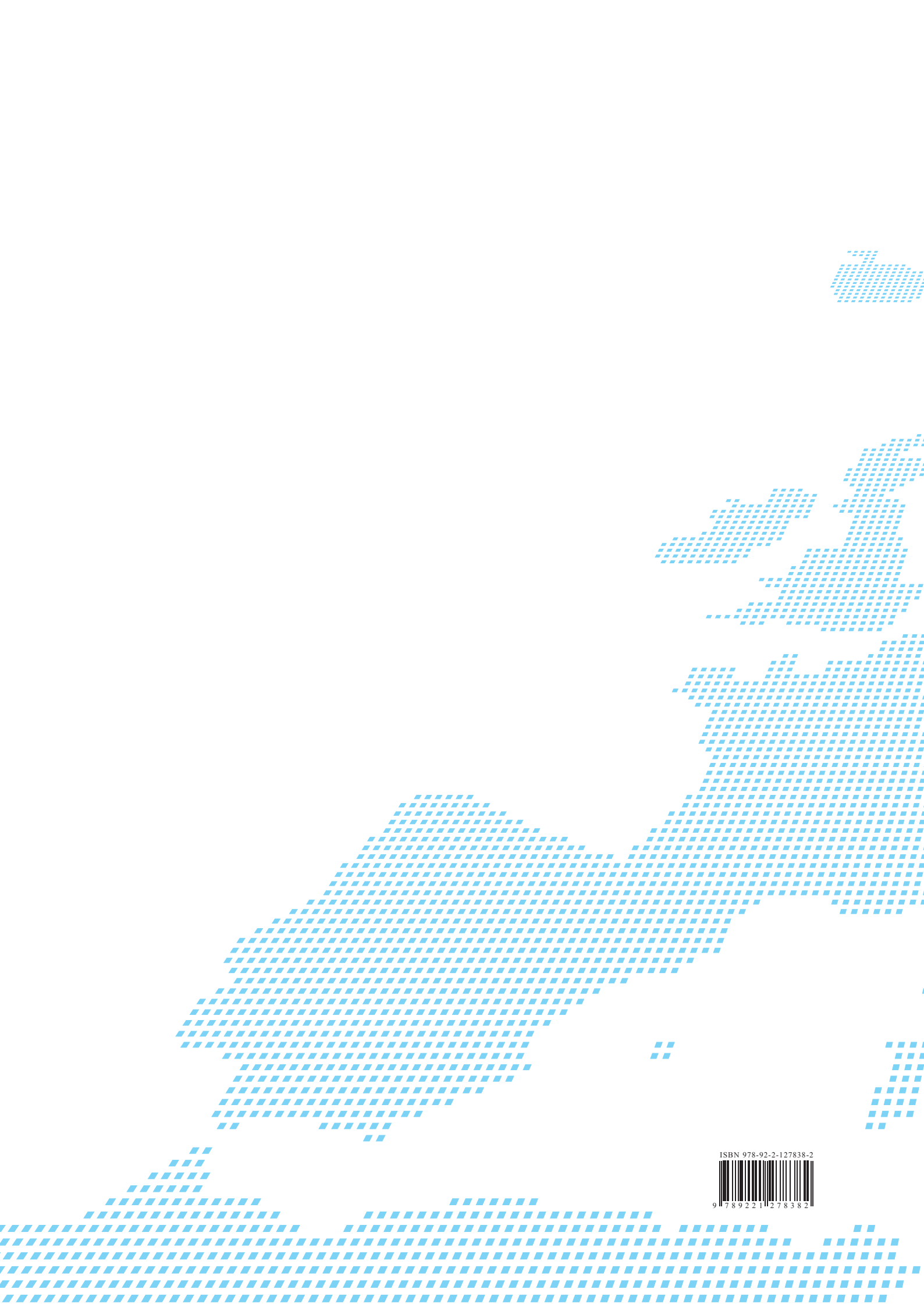
Occupation	Index December 2010	Index November 2011	Y-o-y growth (per cent)
Managers	114	108	–2
Professionals	122	136	9
Technicians and associate professionals	113	127	11
Clerical support workers	127	144	13
Service and sales workers	260	304	11
Skilled agricultural, forestry and fishery workers	153	191	20
Craft and related workers	180	247	32
Plant and machine operators, and assemblers	108	113	7
Elementary occupations	166	196	10

Source: Monster Employment Index Europe.

66. The Monthly findings for the European Employment Index are based on online job opportunities monitored across 24 European countries. The European Monster Employment Index also provides country-specific data measuring online job demand in Belgium, France, Germany, Italy, Netherlands, Sweden and United Kingdom. <http://about-monster.com/employment/index/17/45>







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