

Labour market mismatches

H. Zimmer⁽¹⁾

Introduction

Belgium has both a significant pool of unfilled job vacancies and persistent unemployment. This observation raises the question of how labour supply matches up with labour demand. The reasons for a mismatch between the two can be cyclical, frictional or structural, for example when the educational level of job-seekers does not correspond with the profiles sought on the labour market, or when there is a lack of geographic mobility. This article focuses on these structural reasons for labour market tension.

A macroeconomic-style approach using a mismatch index for Belgium and its Regions reveals imbalances between the structure of labour supply and demand broken down by educational level, meaning that job-seekers lack the qualifications that employers need. The lists of critical occupations drawn up by the Regions also help us discern the nature of the problem from a microeconomic angle: the diploma is not the only factor that determines one's chances of landing a job.

Matching labour supply with labour demand also has a spatial component, and it is worth asking whether increased mobility would partially solve companies' recruiting problems. An analysis of workers' commutes shows significant flows into Brussels from the two other Regions, but limited mobility between the North and the South of the country.

The article is split into three parts. The first catalogues the types of tension that can affect the labour market

and presents a Beveridge curve for Belgium showing the relationship between the unemployment rate and the job vacancy rate. The second is devoted to the qualification mismatch, which is measured using mismatch indices at the national, regional and European levels. Apart from education level, this section also looks at the structure of labour supply and demand by occupation. In addition, examining critical functions supplies more detailed information on occupations facing recruiting problems. Lastly, the third part looks at the question of geographic mismatches by analysing the dispersion of unemployment rates and trends in commuting between the various Belgian provinces.

1. Matching labour with jobs

1.1 Types of labour market tension

At any time, the number of hires depends on the matching between labour supply and demand. For a given level of supply and demand, when workers perfectly match the jobs being offered and there is perfect information available, the number of hires is equal to the minimum of the supply and demand, and the labour market functions efficiently (Cahuc and Zylberberg, 1996). However, in reality, jobs and workers are heterogeneous (due to differences in the experience, knowledge and skills demanded and supplied) and information never circulates flawlessly. As a result, some workers risk not finding employment even though certain companies have vacant positions.

Labour market tensions have various causes, which may be cyclical, frictional and structural. In periods of economic upturn, demand for labour increases and the matching difficulties are felt by employers. In periods of slowing growth

(1) The author would like to thank Eurostat and the DGSEI for providing the labour force survey microdata used in this article. Eurostat and DGSEI are not responsible for the findings and conclusions derived from these data.

or recession, the effects are felt more by job-seekers, which causes an increase in cyclical unemployment.

Frictional unemployment and frictional job vacancies are temporary in nature: it takes some time to match up labour supply and demand (even when they correspond perfectly), partly because information cannot be transmitted perfectly or immediately. The use of overinflated selection criteria relative to the requirements of the vacant position or criteria based on personal characteristics, such as age or length of unemployment, which serve to disqualify candidates more than they reveal real ability to perform the vacant job, can unnecessarily prolong the recruitment process (without guaranteeing an optimal match). The recruitment process can also be prolonged by an insufficient number of applicants or a weak rate of acceptance, influenced notably by the intensity of the job search, the reserve wage⁽¹⁾, and the replacement income.

Labour market mismatches can also be structural in nature, for example because the educational level of the unemployed does not correspond to the skills demanded by the labour market, or because of a lack of geographic mobility. These types of labour market mismatches constitute both a social problem, due to the unemployment or inactivity that results, and an economic problem for companies as well as the country (due to the lower economic growth potential). The analysis that follows focuses on structural mismatches.

These various types of tension may also influence each other. For example, a low educational level (structural tension) can also slow the job search (frictional tension)⁽²⁾, and cyclical recruiting difficulties can be exacerbated by problems of structural labour mismatches, which can give rise to problems of labour hoarding during periods of cyclical slowdown.

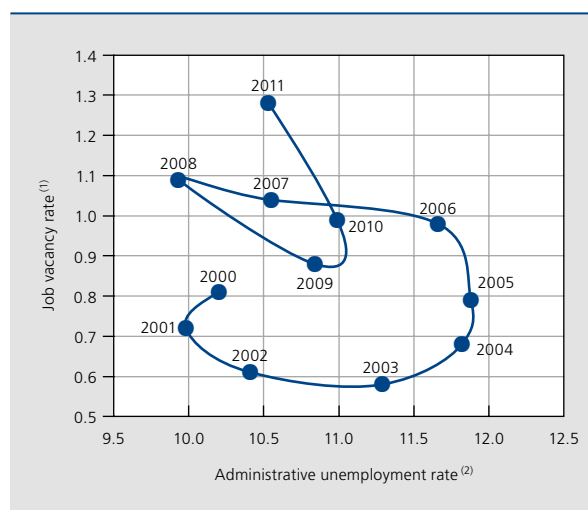
1.2 The Beveridge curve

The process of matching labour supply with demand and trends in the process can be shown by a Beveridge curve comparing the unemployment rate and the job vacancy rate. This establishes a negative relationship between the two variables, expressed as a percentage of the labour force. The underlying reasoning is intuitive: all else being equal, an increase in the number of job vacancies makes it easier for job-seekers to find a job, which lowers

unemployment, and vice versa. Whereas cyclical factors determine the possible combinations of job vacancy rates and unemployment rates, i.e. the points on the Beveridge curve, structural and frictional factors explain the shifts in the curve: towards the outside when the matching process becomes more difficult, towards the origin when the process improves.

In determining the relationship between the unemployment rate and the job vacancy rate in Belgium, we are limited to statistics on job vacancies provided by regional public employment services (PES), i.e. job offers made through these that remain open at the end of the month (those neither filled nor cancelled). In addition, to use a concept that is comparable among the Regions and to avoid breaks in the series, we relied only on the normal economic channel excluding the temporary work sector (which includes double counting). The PES statistics used for this article only represent a portion of the job offers in the economy, as there are numerous other recruiting channels: newspapers, websites, public spaces, training centres, and also informal channels, such as internal announcements and personal contacts. Employers' use of PES can fluctuate over time, and it notably varies depending upon the size of the company and the type of candidates sought. In 2005, it was also noted that there are significant differences in "market share" between the regional PES⁽³⁾.

CHART 1 BEVERIDGE CURVE IN BELGIUM
(in % of the labour force, yearly averages)



Sources: Actiris, FOREM, NAI, NEO, VDAB, NBB calculations.

(1) Job vacancies recorded by the regional public employment services, excluding job offers posted by temporary work agencies and those under subsidised programmes. Due to the lack of data available before April 2009 for Wallonia, the number of job vacancies at FOREM have been estimated based on flows for the period 2000-2009.

(2) Rate calculated using the number of unemployed job-seekers registered by the NEO.

(1) Level of wage below which the applicant will decline a job offer.

(2) Due to the potential weak wage perspective.

(3) According to a study conducted by Idea Consult at the request of Federgon (2006), the rate of usage of PES agencies as a recruiting channel by employers differs significantly from one Region to the next: 48% in Brussels, 71% in Flanders and 46% in Wallonia. Source: Federgon-Idea Consult (2006), *Radiographie de la politique de recrutement et des flux de travailleurs*.

In order to link the concepts of labour supply and demand, the unemployment rate is measured using administrative data, i.e. the share in the labour force of the fully unemployed receiving benefits and other job-seekers registered compulsorily or voluntarily with the regional PES⁽¹⁾.

During the economic slowdown of the early 2000s, the drop in the job vacancy rate went hand in hand with an increase in the unemployment rate. The recovery was visible, as expected, in the two variables reversing direction. The next episode of a drop in the vacancy rate combined with an increase in the proportion of job-seekers was observed between 2008 and 2009, during the Great Recession. However, the economic recovery, marked by a swift increase in the job vacancy rate – which reached 1.3 positions for 100 active persons – resulted on average in 2011 in only a modest reduction, to 10.5%, of the administrative unemployment rate. As a result, the latter remained above its pre-crisis level. Here, we can speak of an outward movement of the Beveridge curve: for an unemployment rate identical to that of 2007, the corresponding job vacancy rate was higher.

When making historical comparisons, it is important to keep in mind the influence of regulatory changes which might have affected trends in the number of unemployed⁽²⁾. However, the same exercise performed with data from labour force surveys used for an alternative unemployment rate measurement – whose definition did not change between 2000 and 2010⁽³⁾ – paints a similar picture.

With this being the case, it raises the question of the presence of and trends in qualification mismatches in the Belgian labour market, to which we devote the next chapter. It is important to examine to what extent job-seekers' qualifications have adapted to changes in the structure of the Belgian economy, and thus to employers' needs.

2. Qualification mismatches

2.1 Macroeconomic approach: mismatch index

2.1.1 Methodology

The approach adopted to measure the extent of the qualification mismatch in the labour market is based on that of Estevão and Tsounta (2011)⁽⁴⁾. It consists in comparing the relative share of each type of qualification in the labour supply and in the demand for labour respectively – or in other words, the distance between the qualifications'

supply and demand – and aggregating the gaps to create a mismatch index. For the purposes of the above-mentioned study, the labour supply indicator corresponds to the distribution of the working age population according to educational level (low-, medium- and highly-skilled⁽⁵⁾), whereas the indicator for demand reflects the distribution of employment as a function of the educational level required. To create these indicators, the authors had to use various data sources. The calculation was performed for each state in the United States over the past 20 years⁽⁶⁾. The concept of labour supply is broad, as every individual of working age is considered a potential source of labour.

The formula used is as follows:

$$M_{it} = \sum_{j=1}^3 (S_{ijt} - D_{ijt})^2$$

where S_{ijt} is the percentage of the working age population with educational level j in region i at time t , and D_{ijt} is the percentage of employed persons with educational level j in region i at time t .

It is important to distinguish between qualification mismatches and skill mismatches (Desjardins and Rubenson, 2011). The former are easier to measure⁽⁷⁾, but they do not make it possible to take into account differences in the quality of diplomas of the same level, nor, more importantly, do they allow for the possibility that a worker's skills have improved or become obsolete since the diploma was obtained. Nevertheless, the level of education attained remains the principal signal of new labour market entrants' abilities.

(1) These registration and eligibility criteria are not among the characteristics of job-seekers that are counted in the harmonised labour force surveys at the European level: the harmonised unemployment rate only includes persons who were out of work during the reference week, were available to work, and were either actively looking for work during the previous four weeks, or had already found a job which will start within the next three months. On average in 2011, the harmonised unemployment rate was 7.2%, whereas the administrative unemployment rate was 10.5%.

(2) In particular, the progressive increase (since 2002) in the age above which older unemployed are no longer required to register as job-seekers from 50 to 58, which inflated the number of unemployed job-seekers from then on. The number of unemployed aged 50 and over rose from 33 000 in 2002 to 127 000 in 2011 (source: NEO).

(3) In Belgium, the wording of the survey question regarding the length of the job search was recently clarified, which affected the breakdown between job-seekers and inactive persons in 2011.

(4) Estevão, M. and E. Tsounta (2011), *Has the Great Recession raised U.S. structural unemployment?*, IMF Working Paper, May.

(5) Low-skilled workers did not finish secondary education, medium-skilled workers finished their secondary education but lack a diploma certifying higher education ("bachelor's degree" in the US, i.e. typically four years of higher education), and highly-skilled workers have at least a "bachelor's degree".

(6) The results indicate, on average, an increase in the mismatch index during the Great Recession, with divergences from one state to the next, notably depending on the characteristics of their economic activity.

(7) Certain large surveys, such as the Adult Literacy and Life Skills survey, or ALL, must limit their focus to literacy and numeracy skills, for example.

We have conducted a similar exercise for Belgium and each of its Regions. The harmonised labour force surveys contain the variables needed to calculate such an index at the provincial level⁽¹⁾ and allow avoiding the use of multiple data sources (for example, administrative data and surveys, whose covered populations and methodologies differ). Index calculations are based on the microdata of these surveys from 2000 to 2010⁽²⁾.

2.1.2 Structure of labour supply and demand

The distribution of the demand for labour may be approximated by the breakdown of the employment⁽³⁾ performed in Belgium in each of the Regions by the educational level of the workers. The education levels correspond to the 1997 International Standard Classification of Education (ISCED). The three groups used are: low-skilled (having completed at least pre-primary, primary or lower secondary education – levels 0-2), medium-skilled (upper secondary and post-secondary non-tertiary education – levels 3-4), and highly-skilled (tertiary education – levels 5-6).

This measurement presents certain limits. For one, employment status assumes that the employer was able to find the candidates needed and so did not run into a mismatch. In attempting to discern to what extent the supply can fill unmet demand, using the employment variable assumes that the current structure of employer demand is the same as in the past (i.e. that which has already been met). However, the qualification structure of recently created positions may be different, and employers' requirements for new labour market entrants may have changed. In particular, older workers are less educated than the youngest workers, based on the highest level of diploma obtained⁽⁴⁾. Furthermore, it implicitly assumes that companies have not hired any workers with qualifications that exceed their real needs. And yet, it is estimated that in 2010, 22 % of persons employed in Belgium were overqualified⁽⁵⁾.

In theory, the most reliable measure of employer demand would be that of job vacancies by level of qualification required. However, (administrative) data for Belgium are incomplete and give rise to interpretation problems, as numerous employers do not systematically indicate the level of diploma required for the job offered.

The labour force survey distinguishes the place of work (in Belgium or outside Belgium) from the respondent's place of residence (only in Belgium). In the case of Belgium – a small country with substantial internal commuting – the characteristic of the worker's place of work is more relevant for measuring gaps between employers' needs and the skills of locally available workers.

With respect to labour supply, it can be calculated in various ways depending on whether or not one considers employed and inactive persons as part of the supply. We have used a fairly restrictive approach limited to unemployed persons, who are in principle the most directly available to work. As in the case of employment, we have used the ILO definition of unemployment, i.e. persons who did not work during the reference week, were available to work, and who had either actively looked for work during the past four weeks or found a job that is done during the next three months.

The final index reveals nothing about the number of employed persons or those looking for employment, because it is based by definition on ratios (see the European comparison below). However, our starting point is the observation that Belgium has both a large number of job vacancies and a lot of unemployed job-seekers, and we endeavour to characterise labour supply and demand.

2.1.3 Mismatch index trends

As explained above, the index measures the distance between the distribution of supply and demand of qualifications, represented respectively by unemployment and employment. Currently, around 80 % of the employment carried out in Belgium requires medium- and highly-skilled workers, whereas the available supply of labour, composed of job-seekers, is 80 % low- or medium-skilled. The level of the index is attributable to the weakness of the relative share of highly-skilled job-seekers in the labour supply and, conversely, by the high proportion of job-seekers having not completed their secondary studies, whereas there is little demand for these types of candidates among employers.

Between 2003 and 2007, the index calculated for Belgium experienced a slight upward trend that was halted in 2008. The index fell in 2009 owing to the decline in the relative share of low-skilled workers among job-seekers (with an increase in the proportion of highly-skilled unemployed persons). The index's marked growth in 2010 more than offset the decline observed in the previous

(1) However, only the results obtained at regional level are given, owing to problems of representativeness of the data at a more detailed geographical level.

(2) The last complete available year for microdata supplied by Eurostat for the EU and by the DGSEI for Belgium and its Regions at the time this article was written.

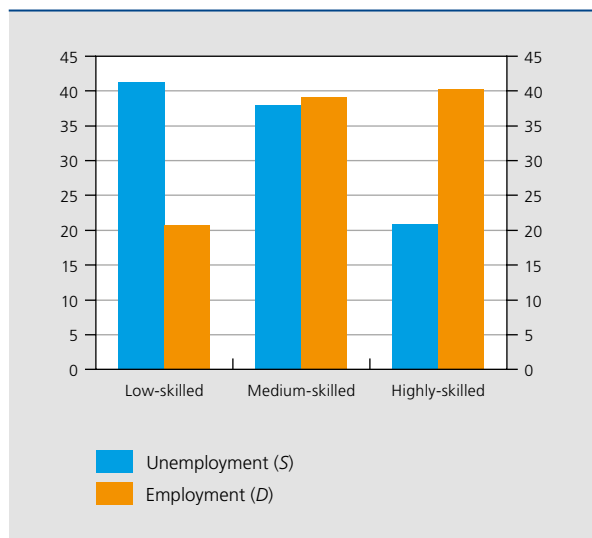
(3) People who worked at least one hour for wages during the reference week, or who did not work but normally have work from which they were temporarily absent due to illness, vacation, social conflict or training.

(4) This notion does not reflect the acquisition of new skills over the course of a professional career.

(5) Percentage of workers with a high level of education, i.e. those having completed tertiary education (ISCED 5 or 6), who occupy low- or medium-skilled positions (ISCO classifications 4 to 9, such as clerical support workers, agricultural workers, craft workers, etc.). Calculation based on data from the 2010 labour force surveys (EC).

CHART 2 BREAKDOWN OF EMPLOYMENT AND UNEMPLOYMENT BY EDUCATIONAL LEVEL IN BELGIUM IN 2010

(in % of total employment and unemployment of persons aged 15-64)



Source: DGSEI (LFS, microdata).

year. However, it is still too early to conclude that there was a worsening of the mismatch between labour supply and demand and, furthermore, changes in the index from one year to the next must be interpreted carefully due to survey data volatility.

The creation of a mismatch index for each Region makes it possible to analyse divergences that may exist within a given country. There is a considerable gap between the index level calculated for Brussels and those of the two other Regions: in 2010, the Brussels index was 3.5 times higher than that of Flanders and 2.5 times higher than that of Wallonia.

With their similar employment and unemployment structures, the levels of the Walloon and Flemish indices are fairly close. In these two Regions, the majority of jobs are held by medium-skilled persons (40% on average), followed by highly-skilled persons (37% on average). In both cases, the mismatch is caused by an over-representation of low-skilled job-seekers relative to the needs of employers and an under-representation of highly-skilled job-seekers. The labour force available in Wallonia, however, is even less able to meet the needs

(1) The unemployment ratio is expressed as a percentage of the corresponding total population, whereas the unemployment rate is typically expressed as a percentage of the corresponding labour force, i.e. a rate of 22.4% for youth in 2010, which is close to three times the average.

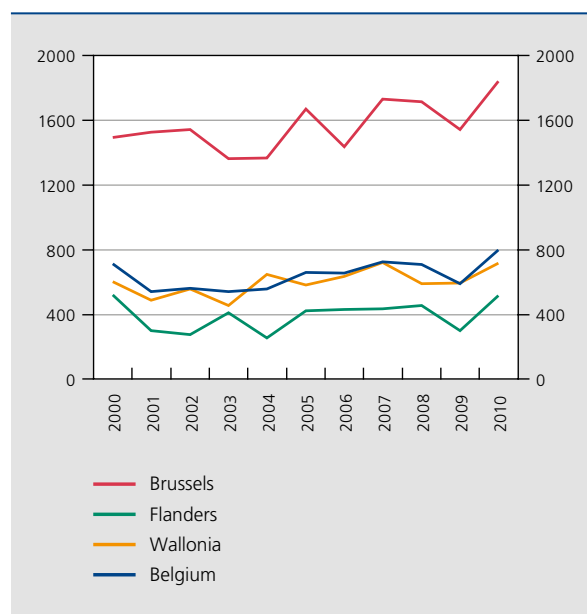
of employers due to the smaller weight of highly-skilled job-seekers in the labour pool compared with what is observed in Flanders.

In Brussels, a majority of jobs require highly-skilled workers – 55% in 2010 – whereas barely 17% of jobs call for low-skilled workers. Nearly half of job-seekers residing in the Brussels-Capital Region have not completed secondary studies, so the absolute level of the index is unsurprisingly much higher than those of the other two Regions.

As mentioned above, it is not possible to evaluate companies' new expectations by looking at the structure of total employment. To attempt to remedy this shortcoming, we can look solely at employment and unemployment among the young, for whom formal skill requirements have risen – and reflect the change in the structure of the economy – as indicators of labour supply and demand. The mismatch index calculated for ages 15-34 is higher than the broader index: the level of education for jobs performed by the young is generally above average, but there has not been enough improvement in job-seekers' education. This observation is not surprising considering the difficulty that young job-seekers are having finding work: the harmonised unemployment ratio⁽¹⁾ for persons aged 15 to 24, at 7.3% in 2010, is 1.3 times higher than the average.

CHART 3 MISMATCH INDEX FOR BELGIUM AND ITS REGIONS

(level)



Source: DGSEI (LFS, microdata).

2.1.4 European comparison

It is possible to calculate mismatch indices for each EU country. Belgium has the highest index, followed closely by Sweden, where there is also a wide gap between the relative proportion of low-skilled jobs and the proportion of low-skilled job-seekers. Southern European countries still have an employment structure in which there is a high proportion of low-skilled workers (one-third in Greece and Italy, close to two-thirds in Portugal), and the distribution of unemployment is not fundamentally different from that structure. As the index does not give an indication of the volume of labour in question, the ranking by country can give a false idea of the relative ease of matching labour supply with demand: for example, whereas the Spanish mismatch index is lower than that of Belgium or Sweden, the harmonised unemployment rate there was 20.1% in 2010, compared with respectively 8.3% and 8.4% in Belgium and Sweden, both of which were below the European average.

2.1.5 Supply and demand by occupation

The criteria of the highest level of education attained masks very different profiles (profession, experience,

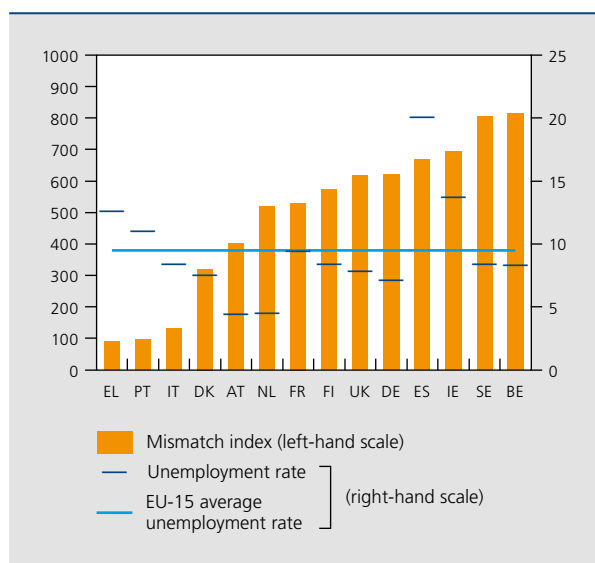
course of study, etc.). Based on labour force surveys, it is possible to contrast the structure of demand (approximated by employment), according to occupation, with the structure of supply (approximated by unemployed persons), according to the most recent occupation⁽¹⁾: this implies that persons coming out of the school system or university who are looking for their first job⁽²⁾ – i.e. mostly young persons – are not included in the breakdown. Despite this limit, it is interesting to examine the relative weight of professional profiles among job-seekers compared with the requirements demanded by the labour market.

Some salient facts emerge from this approach. The proportion of professionals in employment is the greatest; it is substantially higher than the proportion of these profiles in unemployment, i.e. 23% compared with 11% in 2010. This group includes a wide variety of occupations, such as physician, university professor, engineer and lawyer, to give just a few examples. We find sizeable, but smaller gaps for other occupations requiring a high level of education – such as managers – and medium-level skills – such as technicians and associate professionals (various technicians, certain healthcare professions, teachers, etc.). The mismatch between labour supply and demand is at first sight limited with respect to clerical support workers (secretaries, office workers, cashiers, etc.). The proportional representation within employment and unemployment of service and sales workers diverges significantly, to respectively 12% and 21% in 2010, making this group of occupations the most prevalent among job-seekers. The relative supply of labour exceeds the relative demand in many other low- or medium-skilled professions: craft and related trades workers, plant and machine operators, assemblers, and elementary occupations.

A comparison over time between two years characterised by different economic conditions requires a prudent approach, as certain occupational categories are more sensitive to fluctuations in growth than others. Nevertheless, the sign of the gap between relative supply and demand for the various groups of occupations considered remained the same between 2000 and 2010, and the size of the gap did not fundamentally change (except in the case of elementary occupations, where it narrowed considerably⁽³⁾). The breakdown of employment, however, reveals an increased need for qualification: managers and professionals together accounted for 34%

CHART 4 MISMATCH INDICES FOR THE EU-15 COUNTRIES AND HARMONISED UNEMPLOYMENT RATES IN 2010⁽¹⁾

(level and percentage of the corresponding labour force, respectively⁽²⁾)



Source: EC (LFS, microdata and Eurostat).

(1) Luxembourg was excluded because results for job-seekers were not representative. The Belgian index is a bit higher than in the previous chart because in this case, total employment was considered, including cross-border commuters, as it was for the other countries shown.

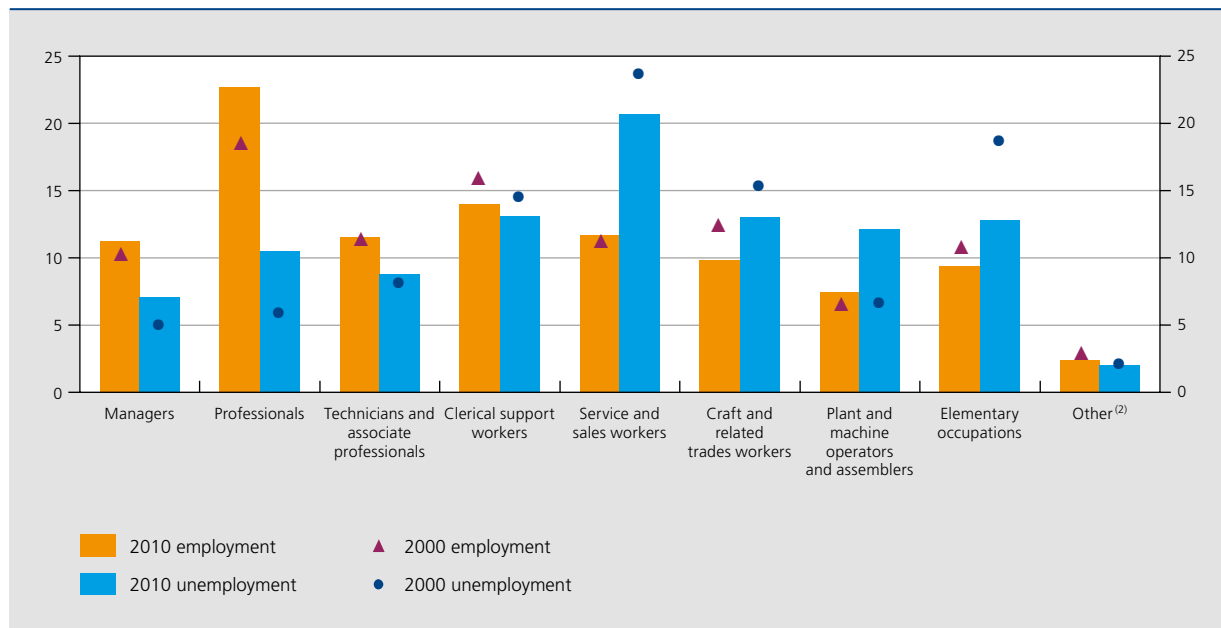
(2) Persons aged 15 and over.

(1) According to the ISCO88 classification.

(2) In the survey, student jobs were not taken into account in the occupational classification. Furthermore, if the previous job was held more than eight years prior, the occupational question was not asked.

(3) The gap for plant and machine operators and assemblers widened, but is volatile from one year to the next due to the small size of the group in question.

CHART 5 BREAKDOWN OF EMPLOYMENT AND UNEMPLOYMENT BY OCCUPATION IN 2000 AND 2010⁽¹⁾
(in % of total employment and unemployment of persons aged 15-64)



Source: EC (LFS, microdata).

(1) Most recent occupation held by the unemployed person.

(2) Military occupations, and skilled agricultural, forestry and fishery workers.

of employment in 2010, compared with 29% a decade earlier. In the meantime, craft and related trades workers, clerical support workers and elementary occupations fell from 39% to 33%. The make-up of the unemployed followed the same trend, with the proportion of job-seekers having most recently had a highly-skilled occupation rising between 2000 and 2010; the proportion of job-seekers having previously worked in an industrial, clerical or elementary occupation, on the other hand, was smaller in 2010 than it was in 2000.

While we cannot make a direct connection between the various occupational categories and the level of education required, this trend confirms the increase over time of the educational attainment of available workers. In 2000, half of the unemployed were low-skilled, a proportion that fell to 41% in 2010.

2.2 Microeconomic approach: critical occupations

The measurement of mismatches was based principally on the degree of qualification certified by a diploma, regardless of the area of study or when it was obtained. However, job-seekers have other characteristics that play a role in their chances of finding employment, and even

if the requirements stated in job ads are expressed in terms of level of education or field of study, companies' actual expectations go beyond these criteria, which are often designed to perform an initial sorting of applicants. Analysis of critical occupations, carried out annually by the regional public employment services (PES), underlines the recruitment difficulties encountered by certain employers.

With respect to critical occupations, the job-filling rate is lower and the vacancy lasts longer than for the total of job offers. In addition to this statistical analysis, testimony by PES counsellors and employers helps to confirm or disprove an occupation's "criticality" (and, if need be, to add new ones).

Job offers for critical occupations take longer to fill than the average. Employers have a harder time finding workers due to the scarcity of applicants, difficult working conditions, qualitative aspects (diploma required, experience needed, languages spoken) or a lack of mobility. Job offers for these functions are likely to remain open for several months in a row.

As indicated in table 1, critical occupations can be found in a variety of fields and do not refer exclusively to skilled positions. To simplify matters, the various problematic

TABLE 1 NUMBER OF JOB OFFERS RECEIVED BY THE PES FOR CRITICAL OCCUPATIONS BY CATEGORY IN 2011⁽¹⁾

	Flanders	Wallonia	Brussels
Management and communications	11 221	3 313	502
Teaching staff	9 510	– ⁽²⁾	2 774
Medical and social sector	17 053	2 592	523
Administrative jobs	11 156	–	1 615
Commercial jobs	29 298	8 594	1 372
IT jobs	8 822	2 100	867
Technical jobs	25 199	15 393	763
Construction	13 328	4 940	96
Transport and logistics	9 579	–	75
Horeca and tourism	10 378	3 450	409
Small-scale/craft industry	2 882	881	52
Cleaning staff	24 189	4 870	–
Horticulture	896	–	–
Other	3 238	349	–
Total	176 749	46 482	9 048

Sources: Actiris, FOREM, VDAB.

(1) Occupational categories are based on those defined by Actiris in its analysis of critical occupations.

(2) A French Community government decree lists the functions affected by staff shortages for school year 2010–2011. Among the most sought-after candidates are pre-school and elementary school teachers and teachers in languages, maths, science, French and technical and vocational courses.

occupations have been regrouped into more general categories. This does not mean that all of the occupations that fit into these categories can be considered critical.

Even though not all of the job offers in a critical category are hard to fill, we note that in Flanders, it is the commercial and technical jobs (for example, maintenance mechanics, electricians) that have the largest volume of offers. In Wallonia, it is principally the technical jobs, and in Brussels, teaching occupations. Most of the time, there are multiple reasons why an occupation is considered critical (quantitative and qualitative aspects, working conditions). The fact that many occupations remain on the regional critical lists year after year confirms the structural nature of the recruitment problems employers face.

(1) At the NUTS2 level, which in Belgium corresponds to the provinces.

(2) Regional employment (source: NAI) and population census for 2010 (source: DGSEI).

3. Geographic mismatches

3.1 Dispersion of the unemployment rate

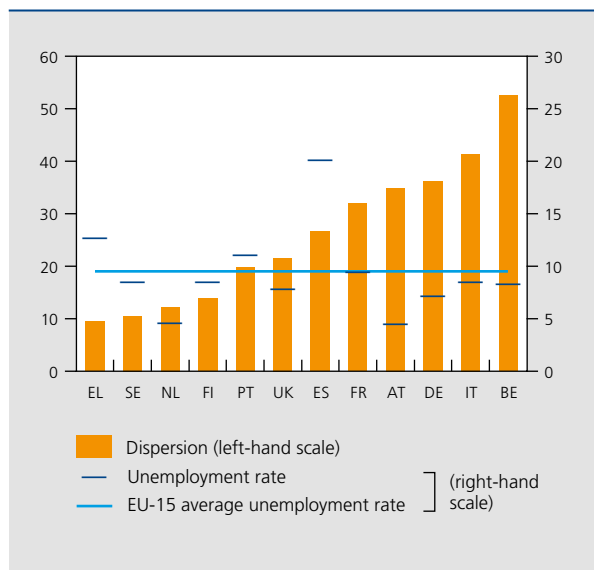
The indicator typically used to describe geographic mismatches in a country's labour market is the dispersion of regional unemployment rates. As we have seen, labour market conditions vary considerably from one Region to another, but also from one province to another. According to the results of labour force surveys, in 2010 Belgium had the highest unemployment rate dispersion⁽¹⁾ of any country in the EU. At the extremes, the harmonised unemployment rate was 17.3% in Brussels compared with 3.8% in West Flanders. This wide dispersion may indicate that jobs are not being offered in areas where job-seekers reside. But, based on this indicator, we do not know if the persons seeking employment (in Brussels, for example) have the skills needed to qualify for the jobs being offered (in Flanders, for example). If they do not, the mismatch between supply and demand is not a problem of geographic mobility. That said, given the noted dispersion in unemployment rates, it appears useful to perform an analysis of labour mobility (see below).

Brussels is the Region where, compared with the working-age population, the supply of jobs is the most abundant, at nearly one position for each resident of Brussels⁽²⁾. The labour market is thus unbalanced: many jobs, but high unemployment. This paradox is partly attributable to the fact that in Brussels, a large proportion of jobs are linked either directly (civil servants working for various levels of government) or indirectly (staff of companies with their headquarters in the capital or near central offices) to the city's status as a regional, national and European capital. These functions are filled mainly by highly-skilled workers, whereas much of the Region's population is low- or medium-skilled. In addition to the skill-level problem, there is a large foreign-born population in Brussels; these people may not meet the nationality or language skill criteria for vacant positions, and they may face greater discrimination in the recruitment process. These factors combine to make the mismatch between labour supply and demand in Brussels particularly acute (the Brussels mismatch index, which is higher than those of the other Regions, confirms this picture).

However, a smaller dispersion does not necessarily imply that labour market conditions are more favourable in general. Whereas Belgium stands out for the sizeable differences in unemployment rates between its provinces, the country's average unemployment rate is lower than that of many countries which have a more balanced dispersion of domestic unemployment rates. For example,

CHART 6 DISPERSION⁽¹⁾ AND AVERAGE⁽²⁾ OF EU-15 UNEMPLOYMENT RATES IN 2010

(in%, persons aged 15 and over)



Source: EC (LFS, Eurostat)

- (1) The dispersion indicator, expressed as a percentage, corresponds to the ratio between the square root of the variance (weighted by the share, by region, of the labour force in the total labour force) of harmonised regional unemployment rates at the NUTS2 aggregation level (which in Belgium corresponds to the provinces) and the total unemployment rate. Thus, it indicates the extent to which the unemployment rate varies between the administrative subdivisions of a given country. Data are lacking for Denmark, Ireland and Luxembourg.
- (2) Unemployed persons (ILO definition) as a percentage of the labour force.

in 2010, Belgium's dispersion was 5.5 times higher than that of Greece, where the unemployment rate of 12.6% was significantly higher than the 8.3% rate in Belgium: Greek unemployment was high in every Region, whereas Belgium had areas of high unemployment close to areas of relatively low unemployment. These relative positions already prevailed – although to a less dramatic extent – in 2007, before the Great Recession.

3.2 Geographic labour mobility

Geographic mobility means physically travelling from one's residence to one's place of work. It can refer to daily, or at least regular, trips (commuting), or moving to a residence that is closer to the place of work. This section looks principally at workers' daily travels; these can help mitigate location and skill mismatches between labour supply and demand by offsetting shortages in one location with an excess in another.

(1) Weighted by labour force.

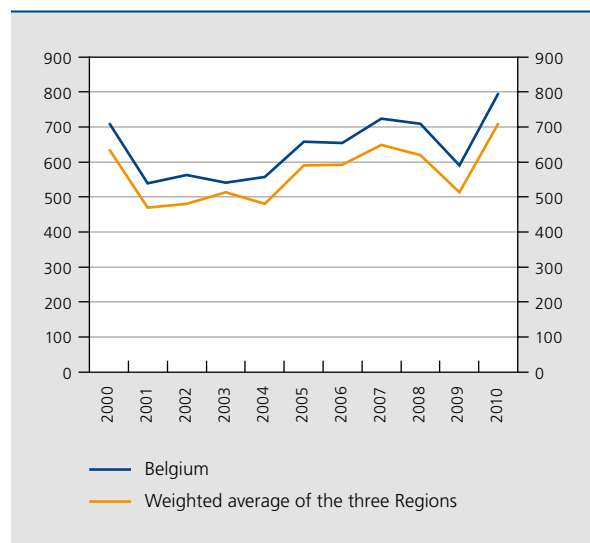
(2) For example, in a simplified context in which there are two regions, r1 and r2, and two types of qualification, q1 and q2, if both regions have an excess of q1 labour relative to demand, a rebalancing (by mobility within the country) is impossible at the national level.

3.2.1 Mobility as a solution to recruitment difficulties

One manner of assessing whether a labour market mismatch stems more from a qualification problem or from labour pool mobility problem is to compare the country's total mismatch index with the weighted average⁽¹⁾ of its regional indices (ECB, 2012). The two indices thus calculated refer to the same level of aggregation (Belgium), but the first compares differences in the aggregated distribution of qualifications, whereas the second reflects disaggregated distributions of qualifications. If the mismatches are similar among the Regions (same types of imbalance), the two indices will give the same result⁽²⁾. But if there is a shortage of certain qualifications in certain Regions that is offset by an excess in others, the Belgian index will be lower than the weighted index. Whereas, in this theoretical case, the national index would show a limited mismatch, because the aggregate distribution of qualifications would mask the disparity, the weighted index would be higher because the mismatches are added together. This is why the gap between the two indices can be interpreted as the extent of the mismatch between supply and demand that results from a mobility problem.

The total Belgian index is at roughly the same level as the weighted index: the Flemish and Walloon mismatches are similar, and it is the weight (in terms of labour force) of these two Regions that influences the national average most. The similarity of the structure of employment and unemployment in the two Regions suggests that mobility

CHART 7 TOTAL AND WEIGHTED MISMATCH INDICES⁽¹⁾ (levels)



Source: DGSEI (LFS, microdata).

(1) Overall Belgian index and weighted average (by labour force) of the regional indices.

(or greater mobility) is not the only solution to recruitment problems. This observation is reinforced by the fact that the lists of critical occupations in the North and in the South of the country are similar from one year to the next.

The same cannot be said of the Brussels-Capital Region, which is notable for its idiosyncrasy. Remember that the Brussels mismatch index is the highest of the three Regions, indicating that the local workforce lacks the formal skills to meet employers' needs. To see how this "deficit" is overcome, it is possible to use labour force surveys to measure the relative share of jobs performed in each province by residents and commuters, and to pinpoint the geographic origin of the latter.

3.2.2 Commuting

An initial observation based on table 2 comparing place of residence with place of work is that the share of jobs performed by residents in Brussels is much lower than in the other two Regions. On average, in 2010, 97 % of workers employed in Flanders lived there, and in Wallonia the figure was 96 %. By contrast, barely half of the jobs in Brussels were performed by residents: indeed, the capital

attracts a large number of workers from the other two Regions.

The majority of incoming workers – around two-thirds, or 239 000 – were from Flanders, particularly the neighbouring province of Flemish Brabant, followed by East Flanders. The remaining workers – 19 %, or 132 000 in 2010 – reside in Wallonia, principally the provinces of Hainaut and Walloon Brabant.

Workers commuting into Flanders – relatively few in number (83 000 persons) – came half from Brussels and half from Wallonia. At the provincial level, Flemish Brabant is the exception: around 13 % of jobs there are performed by workers from Brussels or Wallonia, making it the Flemish province with the lowest proportion of resident workers.

We note a certain intra-regional mobility within Flanders. For example, the provinces of Antwerp and Flemish Brabant both attracted workers from neighbouring provinces in 2010: in Antwerp, more than 9 % of workers came from East Flanders and Flemish Brabant; in Flemish Brabant, 19 % of workers lived in the provinces of

TABLE 2 BREAKDOWN OF EMPLOYMENT PERFORMED IN EACH OF THE PROVINCES BY PROVINCE OF RESIDENCE IN 2010
(in % of total employment performed in each of the provinces, unless otherwise mentioned)

Place of work	Brussels	Flanders					Wallonia					Abroad
		Antwerp	Limburg	East Flanders	Flemish Brabant	West Flanders	Walloon Brabant	Hainaut	Liège	Luxembourg	Namur	
Place of residence												
Brussels	47.7	0.8	n.r.	n.r.	8.2	n.r.	8.5	1.0	n.r.	n.r.	n.r.	6.3
Flanders												
Antwerp	4.3	86.1	3.2	2.3	8.4	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	13.4
Limburg	1.2	2.6	91.1	n.r.	3.7	n.r.	n.r.	n.r.	1.2 ⁽¹⁾	n.r.	n.r.	18.3
East Flanders	8.4	5.0	n.r.	88.9	6.8	4.8	n.r.	0.7 ⁽¹⁾	n.r.	n.r.	n.r.	3.5 ⁽¹⁾
Flemish Brabant	18.1	4.4	3.4	2.5	67.4	n.r.	5.1	n.r.	n.r.	n.r.	n.r.	3.0 ⁽¹⁾
West Flanders	1.7	0.6 ⁽¹⁾	n.r.	4.8	0.7 ⁽¹⁾	93.4	n.r.	1.1	n.r.	n.r.	n.r.	3.1 ⁽¹⁾
Wallonia												
Walloon Brabant	6.8	n.r.	n.r.	n.r.	2.2	n.r.	59.0	1.6	n.r.	n.r.	2.5	n.r.
Hainaut	7.2	n.r.	n.r.	n.r.	1.6	1.3	15.6	89.2	0.9 ⁽¹⁾	n.r.	7.3	8.3
Liège	2.3	n.r.	n.r.	n.r.	0.6 ⁽¹⁾	n.r.	2.9 ⁽¹⁾	0.7 ⁽¹⁾	93.7	3.8 ⁽¹⁾	6.1	14.6
Luxembourg	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.	1.4	86.8	3.0	25.5
Namur	2.1	n.r.	n.r.	n.r.	n.r.	n.r.	6.9	4.8	1.5	7.3	79.8	n.r.
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>p.m. Absolute number in thousands</i>	709	743	325	545	410	480	139	387	363	80	160	109

Source: EC (LFS, microdata).
(1) Unreliable data.

Antwerp, Limburg and East Flanders. Conversely, Limburg and East Flanders had only a modest number of incoming commuters.

In Wallonia, which attracted 45 000 commuters in 2010, the non-representativeness of the data that emerges when breaking down extra-regional commuters by province again speaks to the labour force's insufficient mobility. At the level of the Walloon provinces, however, we do see some differences: 59 % of those working in Walloon Brabant live there; the rest reside principally in Hainaut and Brussels. In the province of Namur, 80 % of jobs are performed by residents and the remainder are held by residents of neighbouring provinces, principally Hainaut. Elsewhere, between 87 % and 94 % of jobs are performed by residents of the province, with commuters rather spread out.

In conclusion, we can say that whereas many workers travel to Brussels, so far there is little mobility between the North and South of the country. Commuters from Brussels typically work in Flemish and Walloon Brabant. However, the stock of job vacancies remains high, particularly in Flanders, which would benefit from an inflow of labour from the other two Belgian Regions.

To encourage inter-regional mobility among job-seekers, a multilateral cooperation agreement in 2005 was signed with the three Regions, the Flemish Community, the German-speaking Community and the French Community Commission. This agreement contains several commitments, for instance to exchange information on labour supply and demand, promote language courses and organise transregional training. Since June 2006, job offers for critical occupations and job offers that are generally difficult to fill are automatically and reciprocally transferred by the PES. Given the structural labour shortage in numerous occupations in Flanders, the VDAB also

searches for qualified personnel in the other Regions. This promotion of inter-regional mobility among job-seekers has taken the form of partnerships between the VDAB and its counterparts, the FOREM and Actiris⁽¹⁾, aimed at sharing, in addition to the automatic exchange, specific job offers and drawing the attention of job-seekers in Wallonia and Brussels to them.

3.2.3 Profile of commuters

The breakdown of commuters by educational level indicates that, as expected, low-skilled workers are less likely to travel from one Region to another to work owing to the relative cost of working far away from their home (because of transport or child care costs, for example) compared with the financial gain they stand to make.

In Brussels, a majority (59 %) of commuters from Flanders and Wallonia had higher education diplomas, in 2010. Much fewer low-skilled workers commuted to the capital; they represented 11 % of Flemish commuters and 12 % of Walloon commuters.

In Flanders, the breakdown of extra-regional commuters by educational level is more balanced: 43 % of those coming from Brussels in 2010 were highly-skilled, with the remainder split between those with a secondary school diploma and low-skilled workers. Of all the workers residing in Wallonia who travel to the North to work, 41 % are highly-skilled; one-third are medium-skilled and one-fourth lack a secondary school diploma. Several factors influence this different breakdown, including the structure of economic activity, less concentrated in services compared to the capital.

(1) "Job weeks", "job fairs" and "job dating" are other tools used to promote inter-regional mobility.

TABLE 3 BREAKDOWN OF WORKERS BY EDUCATIONAL LEVEL ACCORDING TO REGION OF WORK AND OF RESIDENCE IN 2010
(in % of the total corresponding number of commuters by Region of residence)

Place of residence	Brussels			Flanders			Wallonia		
	Low-skilled	Medium-skilled	Highly-skilled	Low-skilled	Medium-skilled	Highly-skilled	Low-skilled	Medium-skilled	Highly-skilled
Brussels	22.4	26.9	50.7	29.3	28.2	42.6	13.5	25.5	61.0
Flanders	11.3	29.4	59.4	20.3	42.6	37.1	21.8	35.0	43.2
Wallonia	11.9	29.3	58.9	25.1	33.6	41.3	23.9	39.2	37.0

Source: EC (LFS, microdata).

In Wallonia, non-resident workers are principally highly-skilled, regardless of their Region of origin. More than 60 % of those living in Brussels who travel to the South of the country are highly-skilled, and around one-fourth are medium-skilled. The corresponding proportions of Flemish commuters are respectively 43 % and 35 %. These distributions differ starkly from the structure of residents' employment, which is much more balanced among education levels.

3.2.4 Factors that influence commuting

A multitude of factors can influence the decision to commute. As there is little literature and few statistics on the subject, our analysis must by default be limited to describing their potential influence.

The prevalence of commuting depends upon the level of economic activity and labour market situation in the Region of residence and in the Region of potential employment. The proof is that the majority of commuters go to work in Brussels, where there is a considerable number of jobs for both Dutch and French speakers. The same reasoning, given that economic conditions are relatively more favourable in Flanders than in Wallonia, probably explains why there is more commuting from Wallonia to Flanders than vice versa.

There is a negative relationship between the number of commuters and the distance between home and the workplace. This hypothesis is confirmed by the data available for Belgium, which show, for example, that a large proportion of workers commuting into Brussels live in Flemish Brabant, a neighbouring province. Infrastructure and the prices of the various transport options play an important role in workers' decisions to look for or accept a job in another Region.

All else being equal, the ability to earn a higher salary motivates workers to switch jobs. In this respect, differences in compensation between the Belgian Regions (wages being higher where economic conditions are more favourable) may increase geographic mobility⁽¹⁾.

Because mobility has a cost, for the commute to be financially appealing, there must be a sufficient difference in pay, but the salary must also be higher than social payments (this is the employment trap problem, which is especially significant for low-skilled persons). This

(1) In Belgium, collective bargaining is still, to a large extent, centralised and done at the sector-level, which limits regional wage disparities. That said, there are differences in wages between the Regions. This is not entirely due to the fact that the Regions specialise in different sectors: available data reveal wage differences between Flanders and Wallonia within the same sector of activity. These differences are notably attributable to the fact that wage increases may also be granted at the level of the companies themselves (CSE, 2006).

calculation must take into account the costs of the commute in terms of transport, childcare, etc.

As we have noted, apart from commuting into Brussels, most travel is between provinces within a given Region. The number of Flanders residents who work in Wallonia, and vice versa, is thus relatively small, which indicates that language is still a barrier to commuting within our country. In fact, knowledge of the second national language is generally limited (CSE, 2008).

Lastly, property prices are another factor that can influence commuting. A person who wants to live in an area where economic growth is stronger and/or unemployment is lower to increase his chances of finding employment will probably face, among other things, additional housing costs. This may be an argument in favour of not moving to the Region, but choosing to commute instead.

Some of these factors may weigh more strongly than others on the decision to work elsewhere, notably depending on the skill level of job-seekers and workers, as we showed in the section devoted to commuters' profiles.

Conclusions

Problems of matching between labour supply and demand in Belgium are visible from the Beveridge curve, which shows the relationship between the unemployment rate and the job vacancy rate. Despite a partial measurement of labour demand, it appears that, for the same unemployment rate as in the past, the corresponding job vacancy rate is higher today. Obstacles to matching supply with demand can be structural in nature, due to problems with the labour force's educational level or location.

By using a macroeconomic-style approach involving the creation of a mismatch index – as Estevão and Tsounta (2011) have done – we can evaluate the size of the qualification mismatch in Belgium and its Regions, as well as at the European level. This involves comparing the distribution of unemployment (labour supply) and employment (demand) by educational level – i.e. the highest level of education obtained by job-seekers and workers. This approach has its limits, but given the lack of complete and harmonised data on employers' needs, it is a good alternative and a jumping-off point for discerning long-term trends and training needs (initial and continuing).

The level of the index is attributable to the "shortfall" in the relative share of highly-skilled job-seekers in the labour supply and, conversely, the high relative share of job-seekers without a secondary school diploma, given

that companies' demand for these kinds of applicants is rather weak. At the country level, the index is highest in Brussels: employment there is concentrated in the services sector and requires primarily workers with a high educational level or specific skills due to the presence of public administrations and international institutions, whereas, for the most part, the job-seekers residing in the Region are low-skilled. From a European perspective, Belgium has the highest index of the EU-15 countries. However, a high index does not necessarily mean an above-average unemployment rate, as witnessed by the position of our country compared to the European average.

However, considerable mismatches do pose a problem, because they can cause job-seekers to lapse into long-term unemployment or inactivity, thus aggravating the problem. This can act as a drag on companies' growth. Low-skilled persons are a risk group among different categories of the population⁽¹⁾. Employers are increasingly looking for medium-and highly-skilled candidates. This is also apparent from the breakdown of employment and unemployment by the (last) occupation held. Professionals represent the biggest share of employment – jobs to which most unemployed workers cannot aspire, at least without additional training. This does not mean there are no vacancies for job-seekers without higher education. Critical occupations comprise a wide variety of profiles, not all of which call for a specific diploma. Lack of experience, broadly applicable skills and foreign languages are some of the qualitative factors that can act as an obstacle to landing a job.

In general, a mobile labour force is assumed to reduce geographic mismatches in the labour market, because local vacancies can be filled by persons who have the needed skills but live elsewhere. The dispersion of unemployment rates at the regional level is high in Belgium compared with other European countries; unemployment rate in one province can be up to four times as high as in another province. So, are Belgians mobile? Whereas Brussels has roughly one position for every resident, jobs are held most of the time by residents of the other Regions. Conversely, jobs in Flanders and Wallonia are overwhelmingly performed by their own residents; commuting between the North and South of the country is relatively rare, as is commuting by Brussels residents to the other Regions, with the exception of the Brabant provinces. The characteristics of (potential) workers play a role in how likely they are to commute, as witnessed by the small proportion of low-skilled workers among commuters. In addition, there are other obstacles, such as the language barrier, difficulty getting to the place of work and the costs of performing an occupation.

However, employers' recruiting difficulties on both sides of the language barrier, with analogous critical occupations, and the similarity of the mismatch indices calculated for Flanders and Wallonia show that the Belgian labour market's challenges stem not only from location mismatches, but also – and especially – from qualification and skill mismatches. This calls for structural solutions that can improve the job prospects of groups that are at risk.

(1) In Belgium in 2010, their rate of unemployment was close to five times higher than that of highly-skilled persons.

Bibliography

- Actiris (2011), *Analyse des fonctions critiques en Région de Bruxelles-Capitale en 2010*, Bruxelles.
- Actiris (2012), *Liste des fonctions critiques en Région de Bruxelles-Capitale en 2011*, Bruxelles, June.
- Blanchard O. (1989), "Les courbes de Beveridge et de Phillips comme outils d'analyse du chômage", *L'actualité économique*, 65 (3), 396–422, September.
- Cahuc P. and A. Zylberberg (1996), *Économie du travail: la formation des salaires et les déterminants du chômage*, Paris, Bruxelles, De Boeck Université (ed).
- CCE (2003), *Lettre mensuelle socio-économique*, January.
- CCE (2009), *Note documentaire: la mobilité géographique de la main-d'œuvre*, October.
- CSE (2006), *Rapport annuel 2006*.
- CSE (2008), *Rapport annuel 2008*.
- Desjardins R. and K. Rubenson (2011), *An analysis of skill mismatch using direct measures of skills*, OECD, Working Paper 63.
- ECB (2012), "Euro area labour market and the crisis", *Structural Issues Report*, September.
- Estevão M. and E. Tsounta (2011), *Has the Great Recession raised U.S. structural unemployment?*, IMF, Working Paper 105, May.
- FOREM (2012), *Détection des métiers et fonctions critiques en 2011*, Marché de l'emploi - Analyse, June.
- NBB (2002), *2001 Annual Report*.
- Scarpetta S. et al. (2012), "Challenges facing European labour markets: Is a skill upgrade the appropriate instrument?", *Intereconomics*, 47, (1), January/February.
- Sneessens H. (1995), "Persistance du chômage, répartition des revenus et qualifications", *Économie et statistique*, 287 (1), 17–25.
- Synerjob (2010), *Rapport annuel 2010*, Bruxelles.
- Van Haeperen B. (1998), *La courbe de Beveridge, Belgique, 1970-1993*, August.
- Van Haeperen B. (2001), *Pénuries de main-d'œuvre et autres tensions sur le marché du travail: quelques balises théoriques*, Service des études et de la statistique, Ministère de la Région wallonne, Discussion Paper 0104, November.
- VDAB (2012), *Analyse vacatures 2011: Knelpuntberoepen*, Brussels.