Socio-economic transitions on the labour markets : a European benchmarking exercise

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Introduction

One of the characteristics of the great economic and financial crisis was its widely varying impact on levels of unemployment in the EU countries. Why does the unemployment rate rise ? Is it because of an increase in job losses, and hence a rise in the number of people becoming unemployed, or is it a deterioration in the prospects for people already seeking employment, who therefore remain unemployed for longer ?

In this article, we consider worker flows in order to improve our understanding of the dynamics of the unemployment rate and the variations in those dynamics between countries.

We quantify labour market transitions on the basis of individual data from harmonised labour force surveys. This source has the advantage of not being influenced either by national employment legislation or by the administrative management of unemployment and employment, which may vary from one country to another.

We examine these flows over the period from 1998 to 2014 for seven countries (Belgium, Denmark, France, Germany, Spain, Sweden and United Kingdom), chosen as typical of the European social models.

The article is structured as follows. Section 1 looks at the dynamics of employment for people aged between 25 and 49 years, the age group with the highest labour market participation. Section 2 discusses the rates of transition from employment to unemployment and back into employment on the basis of multivariate models estimated for each country. Finally, the conclusion sets out the main findings.

1. Unemployment rates and labour market dynamics

How can fluctuations in a country's unemployment rate be explained ? The number of unemployed people in an economy is never zero because, while firms are constantly developing new projects enabling them to offer jobs, the unemployed need time to find a job appropriate to their skills. On both sides of the market, information on opportunities is not available immediately or in full, and that is reflected in frictional unemployment.

When activity contracts, there is an ensuing deterioration in the labour market situation. For example, if firms encounter a demand shock, they have to adjust their production schedule and their costs. At the level of their workforce, that may take the form of a cut in the hours worked, non-renewal of temporary and fixed-term contracts, or even redundancies. The adjustment takes place almost exclusively in terms of quantity, not price, because individual wages are notoriously rigid (1). In the event of major shocks, wage adjustment may occur at macroeconomic level but that is due mainly to the pay conditions under new contracts (Orsini, 2014).

We illustrate the dynamics of the unemployment rate for various European countries, chosen as typical of the European social models. The Esping-Andersen typology

(*) The author is grateful to Eurostat for providing microdata from the labour force surveys, and to Anja Termote of the Directorate General Statistics (Belgium).

(1) For an empirical account, see Dickens *et al.* (2007) and the updates of that research in the Wage Dynamics Network of the European System of Central Banks.

(1999) is the one most frequently used; it identifies four ways of organising social protection. The continental model (Germany, Belgium, France, etc.) is based on insurance benefits for employees, financed mainly by social contributions. The social partners play a large role in the management of social security, notably because the negotiated collective agreements are general in scope. In the Nordic model, the level of social expenditure is substantial and – in principle – the cover is universal. The role of the social partners is essential in view of the importance of contractual sources in employment law and the management of unemployment insurance. Nordic society is fairly egalitarian, and wage dispersion is rather low. Active labour market policies are highly developed there. The Anglo-Saxon model (United Kingdom, Ireland) puts the emphasis on protecting the most vulnerable. Wage dispersion is relatively high. Finally, the Mediterranean model (Spain, Italy, Portugal, etc.) concentrates social expenditure on the pension system. Permanent contracts enjoy strong protection and the various branches of activity are likewise covered by collective agreements. Conversely, the informal economy is also fairly extensive.

This is merely a typology; specific national characteristics are apparent within each group. Finally, since the 1990s in the case of the Nordic countries and the 2000s for the others, major changes have had to be made to the social protection systems, notably because economies are more open than in the past, family structures are changing, and population ageing is placing a burden on the social accounts. While some nowadays refer to a hybridisation of the European social systems (Palier, 2011), the original typology still has its uses.

The contraction of activity is reflected in two ways in the level of unemployment. On the one hand, job losses mean a larger inflow into unemployment. Also, firms create fewer jobs, while occupational mobility also declines: resignations and changes of employer are less frequent in a worsening economic climate. That means fewer job opportunities for those seeking work, and hence longer periods of unemployment. The rise in the unemployment rate is the outcome of these two processes: the numbers becoming unemployed (the ins) increase while the numbers leaving unemployment (the outs) decline[1].

There are numerous empirical studies on the rates of unemployment inflows and outflows, most based on American data. We shall concentrate on two dimensions of cyclical behaviour. First, how are the inflow rate into unemployment and the outflow rate to employment correlated with the business cycle? Second, what are the respective contributions of the movements in these two rates to the overall variability of unemployment? If we know the contributions and timing, that permits a better understanding of the phenomenon.

The American studies are far from unanimous. However, according to the review of the literature by Yashiv (2007), certain facts have been established. The rate of access to employment is procyclical, while the job loss rate (transition from employment to unemployment) seems to be countercyclical. As regards their respective contributions to the rise in unemployment, the traditional view was that variations in job losses were the driving force, so that the main point was to understand the peaks in those losses and their volatility. However, Hall (2005) and Shimer (2012) obtain a different result: job losses in the United States appear to be relatively acyclical, so that the main reason for higher unemployment in an economic downturn is the greater difficulty that the unemployed experience in finding a job.

The importance of the data used and the assumptions made in order to state stylised facts is clear from the debate in the American studies. Here we use survey data collected by the statistical institutes of the Member States, surveys which are harmonised at European level, namely the EU labour force surveys. That source provides the longest and most internationally comparable time series for studying the labour market.

The link between the unemployment rate and rates of access to employment (*f*, for *job-finding rate*) and job losses (*s*, for *job separation rate*) is easy to establish if we assume a given active population *L* and if we work under the steady-state assumption, in other words if the stock of unemployed people *U* is constant over time. At equilibrium, the number becoming unemployed equals the number finding a job. Since the active population is given, we have just two states here: employment and unemployment.

Therefore, according to these assumptions:

$f\,U = s(L–U)$ and consequently the equilibrium unemployment rate U/L is equal to $s/(s+f)$. In other words, there is a one-to-one relationship between the steady-state value of the unemployment rate and the job separation rate, on the one hand, and the job-finding rate on the other. This dynamic relationship forms the basis of the models in terms of labour market flows. Macroeconomic models usually have homogenous job separation rates *s* and

(1) In addition, when the economic climate deteriorates, the activity rate sometimes increases: in this more uncertain context, the non-working partner in a couple may decide to participate in the labour market in order to make up for any loss of income for the household. The general rise in the participation of women in the labour market has made this "additional worker effect" less significant than previously.

job-finding rates *f*, which correspond to the average of those rates in the economy over the period considered.

Of course, we know that labour is actually a heterogeneous factor and that both the unemployment rate and the transition rates vary greatly according to the respective characteristics of the workers (such as their level of education, age or gender) and the employers (such as the branch of activity or firm size). Microdata make it possible to measure these variables in greater detail.

We would point out that the equation *f U=s (L–U)* excludes the state of inactivity. Here, we are dealing with a given active population and are not interested in those entering or returning to the labour market, such as young people who have completed their education and present themselves to an employer for the first time, nor are we interested in those leaving the active population, mainly when switching from employment to retirement. There are at least two good reasons for dealing with these transitions separately. First, the cyclical properties of rates of transition between employment and inactivity could be rather different from those considered here, namely transitions between employment and unemployment. Second, much use has been made of retirement and early retirement systems as a discretionary labour market management policy, so that the profile of these transitions is very closely linked to these policy choices, which have varied not only over time but also from one country to another. Demographic structures, the budgetary context, the generosity of the retirement and early retirement systems, and the degree of labour market flexibility are all parameters which account for the very widely varying use of these measures.

In this section, in order to analyse the data while staying close to the theoretical model of labour market flows, we compare the unemployment and transition rates of the 25-49 age group. In this prime-age group, the participation rate is highest and varies little, so that the assumption of a constant active population is a good approximation of reality.

The labour market reacts to fluctuations in economic activity. Among the six European countries presented, chart 1 reveals significant variations, even though the economies are relatively close geographically and similar in terms of structure and development. During the observation period, we identify two episodes: the slowdown in activity from 2001 to 2003 and, in particular, the

CHART 1 UNEMPLOYMENT AND ACTIVITY IN VARIOUS EUROPEAN COUNTRIES

(in %)

Source: EC.

(1) Unemployment rate of persons aged from 25 to 49 years.

economic and financial crisis of 2008. We cannot ignore the historical context; we also need to draw attention to the situation of these countries right at the beginning of that period.

During the 2008 economic and financial crisis, Germany recorded only a small rise in the unemployment rate, whereas activity declined sharply in view of the importance of exports. Thereafter, unemployment continued to fall steadily. This good performance on the labour market during the recent period prompted some to refer to a "German model" (1). However, if we consider the period as a whole, the situation is less clear-cut, with mediocre performance and a deteriorating labour market during the ten-year period from 1995 to 2005. German reunification took place in 1990, and that had to be financed in order to create conditions favouring economic convergence for the former East Germany, with its antiquated production facilities. That also sparked a series of disturbances on the labour market, as the level of wages (and productivity) was much lower in the East. The effect of reunification was dissipated over time and there was also an impact on trading partners, as Germany focused more on its domestic market. The reunification (and subsequent anaemic growth) also led to a period of strict wage moderation which persisted until 2013.

The Nordic countries likewise underwent substantial adjustments. In the 1970s and 1980s, Sweden and Denmark experienced inflationary pressure, causing them to devalue their currencies in order to remain competitive. In the mid-1990s, the economic and banking crisis (when the property bubble burst) was all the deeper because of the accumulated macroeconomic imbalances. Finally, the dynamism of employment in Sweden during the 1980s originated largely from the growth of the public sector. This serious crisis, particularly in Sweden, triggered a rise in unemployment. The "Scandinavian model" notable for its universality (few conditions for gaining access to unemployment insurance and social security in general) and its generous replacement incomes also implies the citizens' willingness to adapt to structural changes. Both Sweden and Denmark had already developed active back-to-work policies in the 1970s. At first, the emphasis was on offering training, redeployment and support. With the crisis of the mid-1990s, the costs of this system greatly increased. It was necessary to initiate reforms, and in particular to reduce the universal coverage and generosity of unemployment insurance. In Sweden, unemployment protection now comprises basic insurance, corresponding to a fixed-rate replacement income, and voluntary standard insurance providing benefits proportionate to income. The basic insurance is intended for people who are not members of an insurance fund or who do not qualify for the standard benefits. This is a guaranteed minimum so that the system remains universal but offers reduced benefits.

Much the same happened in Denmark. The Danish "flexicurity" system is similar to that of the other Nordic countries, but is notable for the low employment protection. As a result of the high level of replacement incomes and the limited duration of unemployment spells (thanks in particular to active policies), it is career paths that are protected rather than specific employment contracts or situations.

In short, in both Germany and the Nordic countries, the severe shocks of the years from 1980 to 1990 created a window of opportunity for carrying out substantial reforms in the functioning of the labour market.

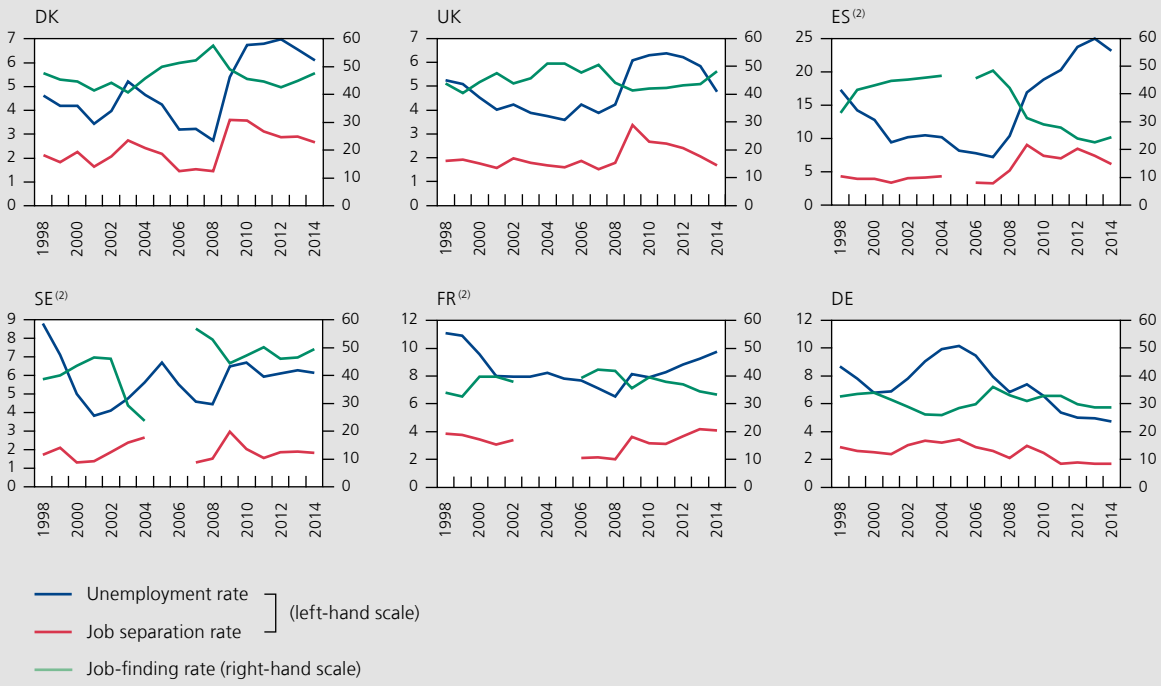
In Spain, the situation is totally different. From 1980 to 1990, it enjoyed a catch-up effect, but the job intensity of growth remained mediocre. During the 1990s, a large-scale reform was introduced, freeing up the use of fixed-term contracts while leaving the legislation applicable to permanent contracts largely unchanged. The asymmetrical character of the law made it more acceptable. With economic expansion, and particularly the very strong growth in construction and services, hundreds of thousands of jobs were created, primarily in the form of temporary contracts. The Spanish unemployment rate declined almost continuously up to 2007. That was totally reversed at the time of the economic and financial crisis, which thus highlighted the need to reduce this dualism on the Spanish labour market. The employment protection legislation was revised in depth in 2012, in particular with the redefinition of the grounds for economic redundancy. Firms forced to make permanent staff redundant were now able to do so with greater certainty than before in regard to times and costs. In addition, a new type of permanent contract was created, available only to firms with fewer than 50 employees. This contract comprises a one-year trial period. More generally, the 2012 reform aimed to make the collective bargaining system more flexible, notably via stricter limits on the automatic extension of sectoral wage agreements (OECD, 2013). These legislative changes have hardly any impact on the findings presented, as our observation window ends in 2014.

Chart 2 shows the rates of unemployment, job-finding and job separation. The aim is to determine which component played the biggest role in the movement in unemployment. As already mentioned, there are considerable differences between countries in the variability of

(1) See Dustmann *et al.* (2014).

CHART 2 LABOUR MARKET DYNAMICS[1] IN VARIOUS EUROPEAN COUNTRIES

(in %)



Source: EC.

(1) For persons aged from 25 to 49 years.

(2) For these three countries, labour market status one year earlier is lacking for certain years so that the transition rates cannot be calculated.

the unemployment rate. Over the observation period as a whole (1998-2014), by far the greatest variability was seen in Spain, and to a lesser extent in Germany and Denmark.

The series mentioned here were established independently of one another. In the literature, it is common to take as the basis the (observed) unemployment rate series,

TABLE 1 CONTRIBUTIONS OF JOB-FINDING AND JOB SEPARATION RATES TO THE UNEMPLOYMENT RATE[1]

(1998-2014)

	Coefficient of correlation with the unemployment rate		Unemployment rate (in %)	
	Job separation rate	Job-finding rate	Average	Standard deviation
Denmark	0.884	–0.505	4.8	1.4
Sweden	0.298	–0.188	5.8	1.2
United Kingdom	0.825	–0.762	4.8	1.0
France	0.785	–0.829	8.5	1.2
Spain	0.801	–0.981	14.5	6.0
Germany	0.937	–0.247	7.4	1.7
Belgium	0.514	–0.143	7.1	0.8

Sources: DGS, EC.

(1) For people aged from 25 to 49 years.

to construct the series for the flow into unemployment and, finally, to derive from that the third series (the job-finding rate) by using the steady-state unemployment rate formula. Here, we do not impose a structure linking the three series.

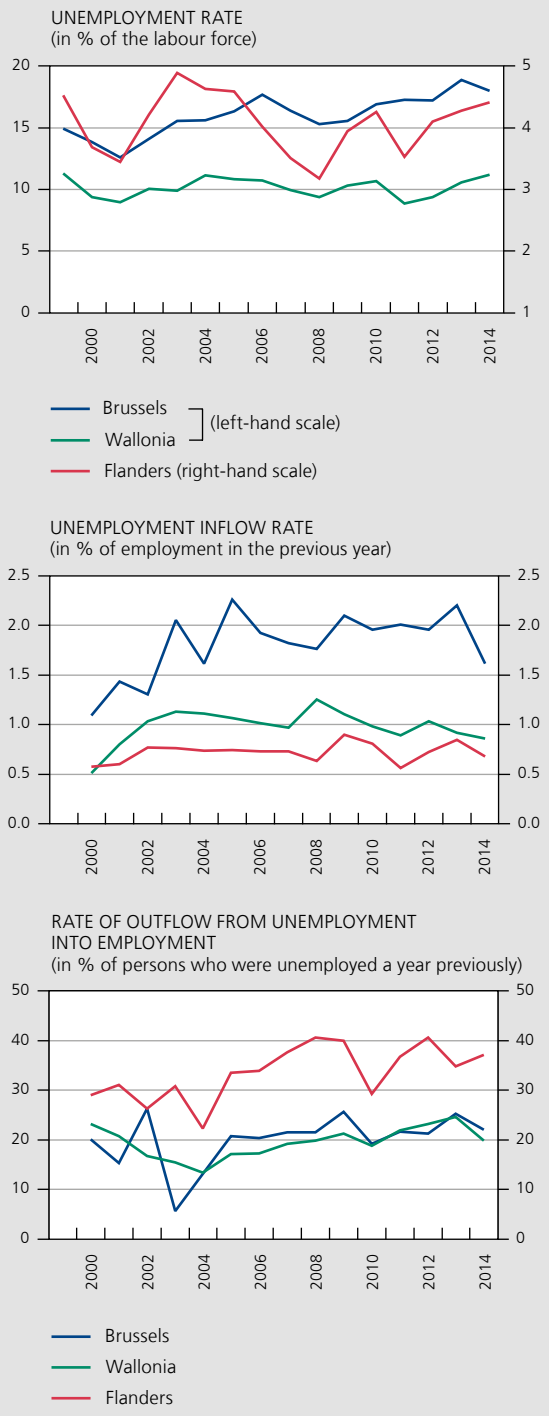
For all countries considered, the job separation rate (the "inflow") is essential to explain the movements in the unemployment rate. The job-finding or return-to-employment rate (the "outflow") also plays a major role in all the countries, but it is only in France and Spain that it is the driving force behind the unemployment rate cycle (see table 1 for the descriptive statistics). In those two countries, the rise in unemployment appears to be driven mainly by a reduction in the numbers returning to employment, and not just by the increase in the rate of job losses.

For Belgium, we have chosen to present those rates by Region. In this small, open economy where labour laws, unemployment insurance, collective wage bargaining and the institutional framework are common to the three Regions, we find that – among people in the prime-age group – the level of unemployment varies very widely between Regions. While the unemployment rate in Flanders hovers around 4 %, with marked fluctuations depending on the economic situation, in Wallonia the rate is 10 % for these adults in their prime. In the Brussels-Capital Region, it is higher still – averaging 16 % over the observation period – and appears to be following an upward trend.

To calculate the rates of inflow into unemployment, we base our figures on the number of people who have been looking for work for less than three months and who had a job before becoming unemployed. We thus exclude returnees – predominantly women – and, in general, anyone who was previously inactive, e.g. on health grounds. These annual averages are compared to the corresponding employment in the previous year. We thus obtain a measure of the probability that a person in work will lose the job and revert to being unemployed.

Unemployment inflow rates, in other words the job separation rates, are more volatile than the unemployment rate itself. During the most recent economic episode, namely the 2008 economic and financial crisis, extended by the sovereign debt crisis, there was a marked rise in the job separation rate in Wallonia from 2008, whereas that trend was only apparent from 2009 in Flanders and Brussels. On the Belgian labour market, the double-dip recession took the form of a new rise in the unemployment inflow rate from 2012 in Wallonia, and 2013 in Flanders and Brussels. This measure of job loss probability is at a relatively similar level in Flanders and Wallonia, even if the figures are systematically lower in Flanders (0.7 % on average over the period 2000-2014, compared to just under 1 % in Wallonia). Conversely, the unemployment inflow rate is much higher in the Brussels-Capital Region,

CHART 3 LABOUR MARKET DYNAMICS [1] IN BELGIUM, BY REGION



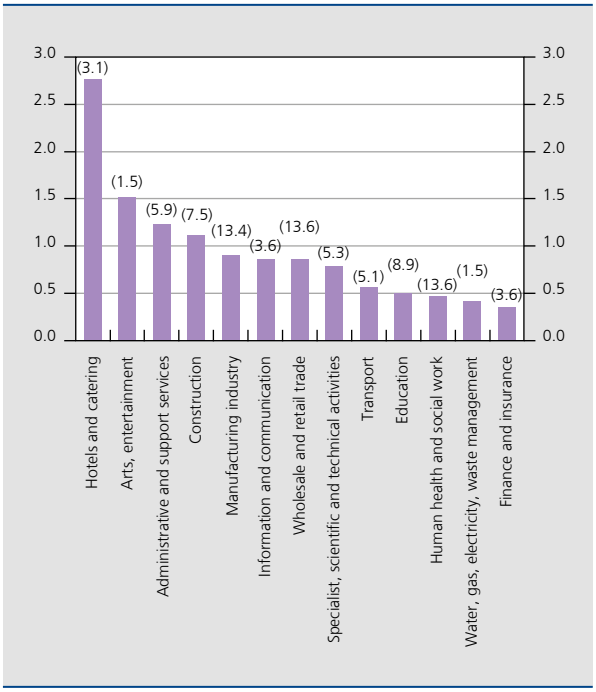
Source : DGS.
(1) For persons aged from 25 to 49 years.

at 1.8 %. In other words, the characteristics of residents of the Brussels Region and/or the branches or firms where they work or the types of contract used are such that their job security is lower than in the other Regions. Moreover, there is a fairly clear, growing trend over the observation period, indicating rising employment instability for Brussels residents over the past 15 years.

The rate of transition between unemployment and employment, measured here by the proportion of unemployed people who have found another job a year later, likewise exhibits very marked differences. The procyclicality of the job-finding rate is confirmed, but in the three Regions the cyclical fluctuations in that rate were greater at the beginning of the 2000s (when Belgium – like other advanced economies – recorded very modest growth which subsequently had an impact on the labour market from 2002) than they were during the 2008 economic and financial crisis, though the fall in activity then was more abrupt and more severe. As regards this transition, rates for Brussels and Wallonia were relatively similar during the observation period, whereas Flanders clearly differed with a 50 to 75 % higher job-finding rate. Out of ten persons in the 25-49 age group who were unemployed in Brussels or Wallonia, barely 20 % found a job in the following year, whereas that figure averaged around 35 % during the same period in Flanders. While the transition is procyclical in the three Regions, sensitivity to the cycle is more marked in Flanders.

CHART 4 JOB SEPARATION RATE BY BRANCH OF ACTIVITY (1)

(in % of the corresponding employment, 25-49 years, Belgium, 2014)



Source : DGS.

(1) The figures in brackets show the share of the branch in total employment (employees and self-employed).

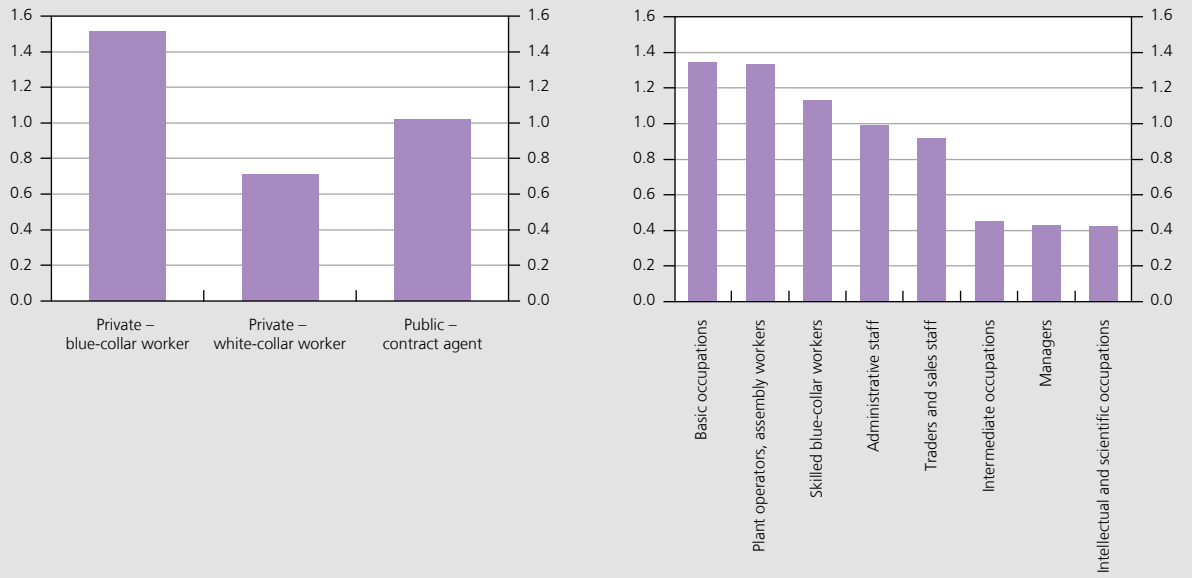
Given that, in the survey, people becoming unemployed have to supply certain information about their previous job, we can calculate a job separation rate per branch. The definition is similar to that used previously, namely the numbers becoming unemployed compared to the corresponding employment. As expected, the job separation rate varies widely from one branch to another. It is much higher in the hotel and catering branch, at 2.8 %, while the average for all branches together is 0.8 %, still in the 25-49 age group. The remaining branches can be divided into three main groups : the first comprises the arts and entertainment, and in particular administrative and support services, which include temporary employment agencies. The second group includes construction, manufacturing industry, IT, trade, specialist activities and transport. In this group, the highest job separation rate is found in construction and the lowest in transport. Finally, the last group covers education, human health and social work, financial services and the "utilities" branch, namely community services (energy, water, waste management, etc.). Activities here are similar to those in the public sector and generally feature very stable employment, according to the picture presented by the results for this particular year. The banking and insurance sector had undergone massive restructuring in the recent past, which partly explains the low job separation rate in 2014.

In the same way, we can calculate the job separation rates by status and occupation. From 2012 onwards, the rules on dismissing blue-collar workers were gradually aligned with those for white-collar workers, and since 1 January 2014, the status has been the same for everyone. Briefly, and in simple terms, the cost of dismissing blue-collar workers has risen for employers, whereas the cost of dismissing white-collar workers has fallen. According to the 2014 data, however, the job separation rate for blue-collar workers in the private sector is still twice that for white-collar workers in the private sector, as the new status only applies *pro rata temporis* to old contracts. The job separation rate for contract agents in the public sector is also considerably higher than for white-collar workers in the private sector.

The breakdown of job losses by occupation also reveals significant disparities. The lowest-skilled occupations have substantial job separation rates. Skilled blue-collar workers, administrative staff, and traders and sales staff also suffer above-average job losses, while employment is

CHART 5 JOB SEPARATION RATE BY STATUS AND OCCUPATION

(in % of the corresponding employment, 25-49 years, Belgium, 2014)



Source: DGS.

stable for the intermediate occupations[1], managers and intellectual, scientific and artistic occupations.

2. Determinants of job-finding rates and job separation rates

Various authors have used the survey data to conduct studies on socio-economic transitions in Europe. For instance, Erhel and Guergoat-Larivière (2013) use the statistics on incomes and living conditions in the European Union (EU-SILC) to estimate movements between the three states (employment, unemployment, inactivity) on the labour market between 2006 and 2007. They use a logit model to estimate the transition probability, first for all countries together (except Germany) and then per country, aggregating the states of unemployment and inactivity in a single non-employment category. The most favourable transitions, in other words those leading to employment, are correlated with the people's characteristics, such as their level of education, gender, age, and health and marital status. In particular, those with a low level of education, the older age groups and those reporting ill health are over-represented in the unfavourable transitions. The authors also highlight the wide variations between European countries. The Nordic countries do better than others in encouraging positive mobility. Moreover, the disparities in terms of mobility between socio-economic groups are much more marked in certain countries.

Ward-Warmedinger and Macchiarelli (2014) estimate the annual transition rates for two sub-periods: 1998-2003 and 2004-2008. They base their work on the data from the labour force surveys (LFS) conducted in 23 European Union countries, excluding the United Kingdom, Ireland and Germany. Compared to rates in the Nordic countries, rates of transition from unemployment and inactivity to employment are low in the former East European countries, the Mediterranean countries and the continental countries. For example, the probability of remaining unemployed is over 70 % in Belgium and Greece, and only slightly lower in Italy. That probability is almost twice the figure for Denmark, Sweden, the Netherlands and Spain[2], and almost three quarters of the figure for France, Austria and Portugal. The Dutch, Danish, Swedish and Spanish labour markets are the most dynamic. These findings are due mainly to the better performance in those countries by persons aged under 30 years, those with higher education qualifications, and women. Finally, the authors try to link mobility with the labour market

(1) Particularly technicians and intermediate jobs in the field of science, technology, health, finance, legal services, social services and the like, or certain information and communication occupations.

(2) Their observation period ends before the great economic and financial crisis of 2008.

institutions (employment protection legislation, income replacement rates for low wage earners, spending on active labour market policies, etc.). They fail to establish any stable empirical relationship between the institutions and performance, which suggests that the disparity between countries cannot be reduced to differences between market institutions as measured by the usual indicators.

Bachmann *et al.* (2015) estimate a multinomial logit model across all EU countries using EU-SILC data for 2008-2010. The great economic and financial crisis had a more severe impact on certain groups of workers, particularly men and young people. That specific impact is due to a sectoral effect : branches such as construction, which mainly employ young male workers, were more seriously affected. In the first phase of that crisis, job losses were the main reason for the rise in unemployment, rather than lengthening periods of unemployment.

Here, we make use of the labour force surveys. To examine the transitions between states, a retrospective element was introduced into the LFS in the form of a question about the socio-economic situation of the person a year before the survey. Consequently, our data enable us to record a maximum of one transition per year and per person, whereas a number of movements may have taken place during that period. In particular, if the person has reverted to the same activity situation as a year previously, no transition is recorded. These statistics therefore underestimate the actual mobility. The socio-economic situation a year before the survey is the situation reported by the person. That potentially leaves scope for differing interpretations depending on the individuals, an inherent feature of all survey data. Apart from the situation one year before the survey and the current status, we also know the person's gender, level of education, age and country of residence.

The quality of the retrospective information is very good. In fact, for some countries, apart from the cross-sectional version, there is also an LFS panel version. It is therefore possible to compare the transition rates estimated on the basis of the retrospective question (as here) with those obtained on the basis of the panel in which the same individuals are followed up and questioned at different moments. Casado *et al.* (2015) conduct this exercise for the Spanish LFS data over the period from 2006 to 2012. The annual transition rates estimated by the two sources are virtually the same. The longitudinal version can also be used to calculate quarterly transitions. As expected, the number of transitions recorded is higher if we can observe movements within the year. Ultimately, the estimates based on an annual frequency represent a lower bound of the real dynamics of the labour market.

The socio-economic status at the time of the survey is based on the International Labour Office criteria. It does not depend on the type of benefits that the person receives. Thus, in Belgium, a person receiving a minimum subsistence allowance under the assistance scheme but remaining available for the labour market and actively seeking employment will be recorded as a job-seeker. The transitions from work to unemployment and from unemployment into work are analysed separately.

The estimates are produced for data grouped according to the socio-economic status in year *t* of people who were in a given socio-economic situation in *t–1*. We use a logit model, estimated via the minimum chi-square method, which makes it possible to use such data (Amemiya, 1981). By means of a multivariate analysis, the effect of a variable is measured by controlling all other available variables. For example, the effect of gender is not linked to the difference in the average level of education of women compared to men, nor to the potentially different male-female breakdown between countries in the sample, because the model also takes account of these specific effects. As our model's explanatory variables are exclusively dichotomous, the results are calculated for a reference individual. The estimates presented here were produced for each country to avoid imposing any common structure at the level of the economic cycle.

2.1 Determinants of job separation

We examine the empirical determinants of the job separation rate by comparing the estimates for the seven countries. The LFS tells us that a person had a job a year earlier (though we don't know how long the person had been in the job) and is now unemployed. The estimate takes account of the following factors : level of education, gender, marital status and age. Dummy variables for each year are used to control the time profile, namely both the effects of the business cycle and trend phenomena over the period. Since we are looking at transitions into unemployment, the job separation rate figure does not include resignations in this case. The cyclical profile of resignations is very different from the profile of job terminations, because it is easier to move from one employer to another when economic activity is buoyant, whereas in contrast the job separation rate seems to be countercyclical. In addition, job-to-job transitions are harder to count (Hobijn and Şahin, 2009) than transitions between different states, in this case from employment into unemployment.

The differences between countries are very considerable. In 2014, for our reference group – unmarried male workers aged between 35 and 39 years with an average level

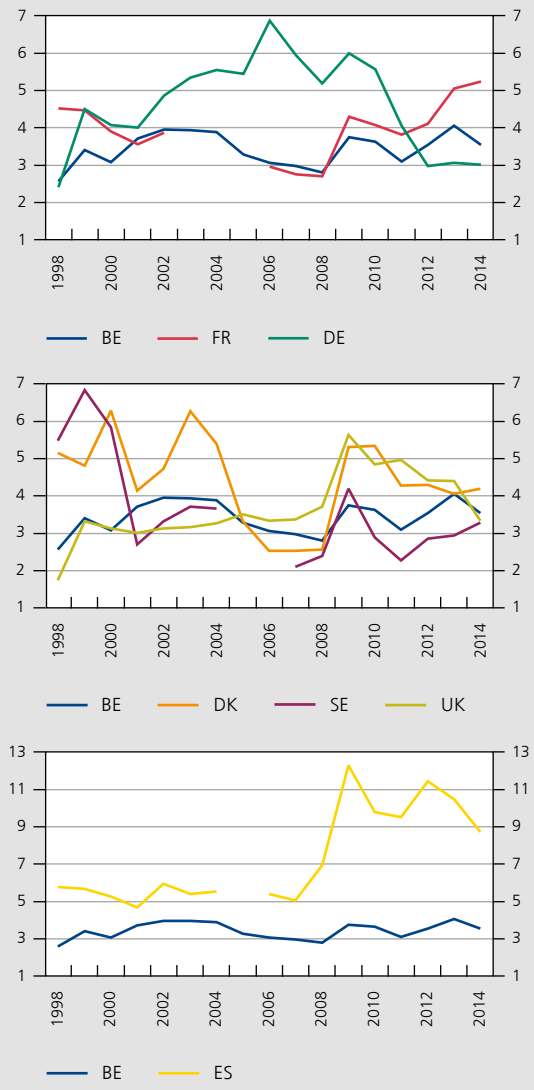
of education – the job loss rate was 3 % in Germany, 3.3 % in Sweden and the United Kingdom, and 3.5 % in Belgium, whereas it reached 4.2 % in Denmark, 5.2 % in France and 8.7 % in Spain. That ranking was not always the same over the observation period. At the time of the 2003 cyclical trough, Denmark topped the rankings for the inflow into unemployment, at 6.3 %, followed by Spain and Germany at 5.4 % each. The lowest rates of job losses were recorded by the United Kingdom and Belgium. Over the period as a whole, Belgium recorded the lowest and most stable separation rate, on average, indicating that workers here enjoy very stable employment.

A breakdown of the time profile into cyclical and trend components via a conventional Hodrick-Prescott filter method is not feasible in view of the short period from 1998 to 2014 and the annual frequency of the data. However, we can calculate some linear trends. Various studies have focused on the change in the stability of employment over time. According to some studies (based mainly on North American or French data), job stability has declined since the 1980s, notably as a result of changes in the labour market institutions (less restrictive employment protection legislation, increase in the proportion of flexible contracts (temporary agency work, fixed-term, etc.), development of new forms of working other than as salaried employees) combined with a greater number of transitions. The rise of the services sector also seems to imply a decline in job stability within the economy. Similarly, technological progress means that ever more routine tasks can be automated, which also implies more redeployment of labour, possibly to branches with lower job stability.

According to the estimated annual rates, there has been no increase in job instability in Germany, Denmark and Sweden. Conversely, that increase was very marked in Spain following the crisis. In the United Kingdom, France and Belgium, we find a moderate upward trend over those 16 years. Variability according to the business cycle is very high in Spain, but also in Sweden, Denmark, and the United Kingdom, possibly owing to such factors as weak employment protection (Denmark, United Kingdom) and/or the high proportion of various forms of temporary contracts, which are, by nature, short-term contracts (particularly Spain, but to a lesser extent Sweden and France, too). To smooth out fluctuations in economic activity, in the initial phase of the 2008 economic and financial crisis, some countries, such as Germany and Belgium, favoured adjustments via the intensive margin, i.e. they allowed firms to adjust the number of hours worked rather than the number of people employed. However, transitions between states take no account of these other mechanisms for adjustment in line with the economic cycle.

(1) Persons with no more than a lower secondary education diploma have a low level of education, while those with a secondary education diploma are averagely educated, and those with a tertiary education diploma are highly educated.

CHART 6 RATES OF TRANSITION [1] FROM EMPLOYMENT TO UNEMPLOYMENT



Source : EC.

(1) Transition rates estimated according to a multivariate model per country for the reference individual, namely an unmarried male aged between 35 and 39 years with an average level of education.

The multivariate model of the job separation rate estimated per country shows the crucial importance of the level of education and age. Compared to our reference group of semi-skilled persons [1], the job loss probability is higher for people with few qualifications and much lower for the most educated, whichever the country considered. This protective role of qualifications for job stability is most pronounced in Sweden, Denmark, Belgium and

Germany, where the rates recorded for those with an average level of education are only half as high as for the low-skilled. In Germany and Belgium, the difference is also very marked for the most highly-skilled: for that group, the job separation rate is barely a third as high as for the least-educated people.

Age is the other essential factor accounting for the level of the job separation rate. For all countries, the probability of employment being terminated declines with age. That is due to the strong correlation between the age of the workers and the number of years' experience that they have built up on the labour market, or their length of service with the same employer. Given the information asymmetries between workers and employers, especially at the time of recruitment, some new employment relationships are soon dissolved; the probability of that declines subsequently as the information asymmetries are reduced. Furthermore, a higher proportion of young workers are employed under temporary contracts. The estimated profile is therefore in line with the theory's predictions. However, that profile according to age is less clear in Germany, Denmark, Sweden and the United Kingdom. For those countries, there are instead two age groups, namely those under 30, for whom the job separation rate is very high, and those aged 30 and over, for whom the probability is low. In contrast, in France, Spain and Belgium, the estimated profile shows a virtually monotonic declining relationship. That differentiation, which continues beyond the age of 40 years, could indicate the existence of a selection process: the characteristics of people with very long careers may be better, on average, than those of workers who have had to change their employer or retire early from the labour market. The effect of seniority on remuneration combined with the impact of employment protection legislation also makes it more expensive to dismiss those workers.

The model also controls for the effects of gender and marital status. Gender has very little impact compared to the other variables. In Denmark and Spain, the effect is virtually zero. In the United Kingdom, Germany and Sweden, the job loss rate is lower for women than for men. Conversely, in France and Belgium, it is slightly higher. This variable in fact captures largely sectoral effects. In the countries where women are over-represented in the civil service (such as Sweden) and/or less active in branches with low job stability (hotels and catering, temporary agency work, etc.), the probability of redundancy or termination of employment is lower for women. Conversely, in Belgium and France, women are over-represented in local services and personal care in the broad sense, and sometimes have greater job instability owing to their contract or status.

TABLE 2 ECONOMETRIC RESULTS FOR THE JOB SEPARATION RATE, 1998-2014

(in %)

	Probability[1] (unemployment | employment one year earlier)						
	BE	DE	FR	DK	SE	UK	ES
Reference[2]	3.5	3.0	5.2	4.2	3.3	3.3	8.7
Low level of education	7.0	6.0	8.9	8.7	7.0	5.7	10.6
Highly-educated	2.6	2.1	3.7	4.1	3.1	3.0	5.6
Female	4.0	2.5	5.9	4.3	2.8	2.5	9.2
Married	2.5	2.0	3.7	2.6	2.7	2.0	6.6
20-24 years	7.4	3.6	12.0	4.7	6.7	6.2	14.9
25-29 years	5.7	3.5	8.3	4.4	4.5	4.2	12.0
30-34 years	4.2	3.2	6.4	4.7	3.9	3.7	10.2
40-44 years	2.9	2.5	4.4	4.9	3.0	2.8	8.4
45-49 years	2.8	2.5	3.6	4.7	3.0	2.9	7.1
50-54 years	2.5	2.4	3.1	4.7	2.3	3.0	6.7
55-64 years	1.9	2.8	2.7	3.2	2.6	2.8	4.8

Source: EC.

(1) The probabilities shown in the table are not additive. The presentation used is of the *ceteris paribus* type: only one characteristic at a time is changed compared to the reference individual. For instance, the female whose probability of transition is shown in the table differs from the reference individual only in her gender; her other characteristics (such as level of education, marital status, age, year of transition, etc.) are the same as those of the reference individual.

(2) Male, unmarried, aged between 35 and 39 years, with an average level of education, 2014.

Marital status has a much more marked impact than gender. This variable, which is very often available in data banks concerning individuals, generally has a very significant effect in empirical questions on labour economics, notably those concerning remuneration (see Becker (1973) and Dougherty (2006)). For our estimates of the rate of transition from employment to unemployment, the effect is significant and on a similar scale in the seven countries examined: unmarried people always have a higher job separation rate than those who are married. There are various possible explanations. According to some researchers (following the seminal work of Becker), there is a causal difference in terms of productivity between couples and singles. In the case of couples, the partners can be more specialised in their work and domestic tasks, so that married people are actually more productive and more attached to the labour market; that is reflected in higher remuneration and – as shown by the results here – greater job stability. Other authors tend instead to favour a selection or signalling phenomenon. On average, married people present more favourable characteristics than singles, and that has a positive impact both on their productivity at work and on their probability of being married. For the employer, if a worker is married that could therefore indirectly indicate that the person has these favourable characteristics (not observed in questionnaires), although we cannot say that there is any causal connection between the fact of being married and the level of productivity.

2.2 Determinants of the job-finding rate

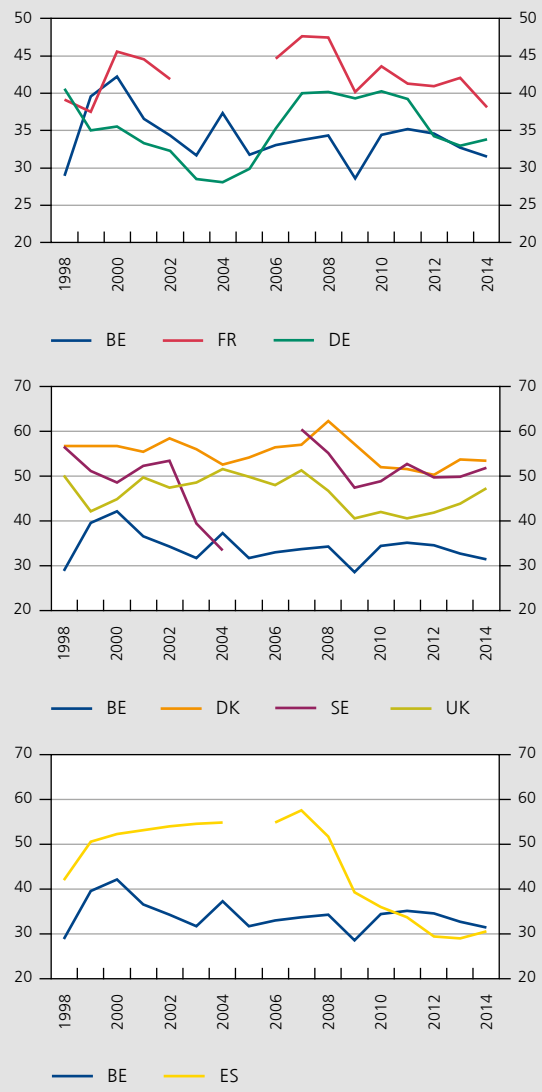
The rate of transition from unemployment to employment is largely determined by the business cycle. In an expansion period, more jobs are created and they represent new opportunities for people seeking work. Given the great diversity of candidates and jobs and the information asymmetries between the two parties, the matching process takes some time. Government employment services act as intermediaries here in the same way as private employment agencies. Moreover, the technology matching workers to jobs may have become more efficient in recent years: the IT revolution, modernisation of the infrastructure of employment agencies and firms in general, and households' better access to the internet help to boost the efficiency of interaction.

Apart from the business cycle and structural factors, a key factor in the return to employment concerns the way in which unemployment insurance is designed and how it works in practice. All the countries studied have a system for insuring employees against the risk of unemployment. The advantage of such a system is that it allows income to be smoothed over time and it acts as an automatic stabiliser at macroeconomic level. Its cost is due primarily to moral hazard, i.e. the phenomenon whereby insured people may change their behaviour because they are insured. Unemployment insurance means that individuals can make less effort to find or keep a job. Periods of unemployment are therefore longer (or, conversely, the rate of transition to employment is lower) than in the hypothetical situation where that insurance does not exist. The incidence of unemployment could also be higher, as employers find it easier to impose redundancies since their workers are assured of an income funded by social security. There are various techniques for minimising the costs of moral hazard, and they are used in unemployment insurance. First, full insurance is never provided: the replacement income is always lower than the wage previously received; second, there is generally a time limit on the payment of benefits; third, eligibility conditions are strictly defined according to the past employment record; fourth and finally, the system often includes arrangements for monitoring efforts to find work.

The transition rate is constructed here on the basis of the situation of all people unemployed a year previously compared to their current situation. Some of them have found a new job; that proportion is an estimate of the annual rate of transition from unemployment to employment for a given population (i.e. depending on the country, year, level of education, gender, etc.). One drawback of these data is that we do not know the length of time that these people were unemployed. The population of unemployed people comprises both those recently made redundant or having reached the end of a temporary contract and the longer-term unemployed. Job-finding levels vary greatly between countries. Moreover, for this particular transition, the ranking of the countries changed little during the observation period, with the exception of Spain. For a male job-seeker, aged between 35 and 39 years, and averagely educated, the rate of outflow from unemployment over one year is 55 % in Denmark, 51 % in Sweden and 46 % in the United Kingdom. In Spain, the job-finding rate averages 45 % during that period, but was higher in the first part of the period before falling sharply from 2008, i.e. the time of the economic and financial crisis. The rate of transition from unemployment to employment is 42 % in France and only 35 % in Germany; in the latter country, it was in fact very low between 1998 and 2005. Belgium is notable for an even lower rate averaging barely 34 % during that period. The dispersion of the estimated rates over time is modest for Denmark, France and the United Kingdom, and – as expected – is highest for Spain.

The multivariate model, estimated per country, shows the crucial role of the level of education in the transition to employment. The gap between the job-finding

CHART 7 RATES OF TRANSITION [1] FROM UNEMPLOYMENT TO EMPLOYMENT



Source: EC.

(1) Transition rates estimated according to a multivariate model per country for the reference individual, namely an unmarried male aged between 35 and 39 years with an average level of education.

rate for those with an average level of education and those with a low level of education exceeds 10 points in the United Kingdom, whereas it is around 8 points in Germany, Sweden and Belgium. It is smaller in Denmark (6 points) and Spain (5 points). The highly educated have the highest job-finding rate, particularly in Belgium and Germany (around 14 points higher than for the averagely educated group) and in the United Kingdom (12 points). That gap is 10 points in France, 9 points in Denmark and 8 points in Sweden, while it is below 5 points in Spain.

On average, the estimated duration of unemployment is slightly longer for women than for men, but that is primarily true in Spain and Belgium, while the differences are very small or non-existent in Sweden, Germany and Denmark. In the United Kingdom, the job-finding rate actually appears to be slightly higher for women than for men. The estimates also illustrate the minimal effect of marital status on the job-finding rate. The effect is no more marked than in France and Germany. In contrast, the effect is substantial in the United Kingdom, where single people remain unemployed for a significantly longer period.

Once again, age has a noticeable effect on the transition. For the seven countries considered, a certain gradient is apparent, with higher job-finding rates among the young which then decline steadily for the older age groups. In Belgium, Germany, Spain and – to a lesser extent – France, this gradient is steep, whereas in the United Kingdom, Denmark and Sweden, the profile is different: variations between age groups are not so marked except in the case of the 55-64 group for whom the likelihood of finding work falls rapidly compared to all the younger age groups.

The age gradient is due partly to the correlation between age and the duration of unemployment: there are more long-term unemployed (12 months or more) among the older age groups than among the young, and the job-finding rate declines the longer the duration of unemployment. This negative duration dependence is due either to the gradual depreciation of the human capital of the unemployed or to a "discouragement effect" leading to a less active search; finally, it may also be the outcome of a selection process over time: the characteristics of people remaining unemployed for longer could be less favourable, on average, in terms of employability than those of people who quickly find another job. These explanations are not mutually exclusive.

However, age does not capture the whole of the dependence in relation to the duration of unemployment. As already mentioned, the LFS data do not reveal how long people were unemployed before finding another job. That has a considerable influence on the international comparison since the transition rates are lower for countries where, on average, the unemployed have already been out of work for a considerable time. The Belgian unemployment insurance system is unusual in that there is no time limit unless the job-seeker is subject to sanctions. Compared to the other countries in the sample, Belgium has a hybrid system combining unemployment insurance with an unemployment assistance scheme [1]. In other

(1) Without the "means-tested" aspect which is generally a feature of assistance schemes.

words, the proportion of long-term unemployed is institutionally higher in Belgium than in the other countries examined because the latter have a separate system for the very long-term unemployed. This implies that, since it is not possible to control for the elapsed unemployment duration, the international comparison of rates of transition from unemployment to employment is always very unfavourable to Belgium.

Since wages increase with experience in all countries, older job-seekers often received higher pay than young ones before losing their job. That drives up their reservation wage, so that they consider fewer offers and remain unemployed for longer. Under all unemployment systems, the replacement income depends on the previous wage. In the initial phase, older people are therefore entitled to higher benefits. In addition, some countries have adopted rules reinforcing that generosity, e.g. via a flat-rate supplement for the 50+ age group [1] or extension of the benefit period. According to the job search theory and numerous empirical studies (for a recent account, see Schmieder and von Wachter (2016)), these more favourable conditions are reflected, on average, in a lower job-finding rate [2].

Alongside the unemployment insurance parameters, other institutional characteristics also influence the job-finding rate of older people. Thus, in the past, at a time when there was sustained growth of the population of working age combined with a sluggish economy, it was common to encourage early retirement, either by introducing a specific scheme (such as the "pre-pension" scheme in Belgium) or by adapting the existing schemes (unemployment or sickness insurance), e.g. by abolishing the job search condition while granting these people the same benefits as the unemployed. Such measures existed in seven countries, but were gradually tightened up (increase in the qualifying ages, etc.) before being abolished altogether in most cases by the end of the observation period. For older workers who had lost their job, the prospect of qualifying for an early retirement scheme in the relatively near future meant that most of them did not look for work, even though they stated in the survey that they were unemployed (and not inactive).

Other factors relating to the labour supply, institutions and policies encouraging retirement, and demand for experienced workers likewise play a role. It can be expensive for firms to recruit older workers, particularly in countries such as Belgium, Austria (which was not included in the sample) and Spain, where seniority is a key factor in wage progression, even taking account of productivity (Lallemand and Rycx, 2009). Some of the experience built up during the career is specific and will not necessarily be of value to a new employer. The retirement horizon may also be an inhibiting factor for the new employer because the period for gaining a return on his investment is (potentially) shorter than in the case of a young worker. The fixed costs associated with recruitment [3] militate in favour of taking on workers for whom retirement from the labour market is a more distant prospect.

Finally, we cannot rule out the possibility that recruiters may discriminate on age grounds. A recent Belgian experiment (Baert *et al.*, 2015) based on CVs in which the only difference was the age of the candidates [4] showed a higher response rate for younger applicants; that result is similar to findings in other countries. Other controlled experiments have shown that the age difference between recruiter and applicant also seems to exert an influence.

The effects of the generally higher recruitment and wage costs for older workers may be reinforced by employment protection legislation. For instance, France introduced a levy in 1987 on the dismissal of workers over the age of 55 years, payable by the employer and proportionate to the wage of the person dismissed. The aim of this measure was to make the employer bear the social cost of such dismissals, since these older people remained unemployed for longer. The rules have been adjusted on several occasions (age limit reduced to 50 years, etc.). According to econometric research (see Behaghel *et al.*, 2008), the main effect of this additional protection for older workers has been to inhibit their recruitment. Conversely, its effect on dismissals – in principle, more direct – has been small. This levy was abolished altogether in 2008.

(1) In Belgium, in particular, such a system existed in the form of "seniority supplements". From 2012, the qualifying age was raised from 50 to 55 years. The supplements were abolished on 1 January 2015.

(2) The longer period of unemployment observed when compensation conditions are more favourable is not only due to moral hazard (job search less active or postponed). Some people who lose their job have little if any savings and cannot readily obtain credit. Without benefits, they would be forced to find paid work as quickly as possible. The extension of the period of unemployment is therefore also explained by the removal of these liquidity constraints (Chetty, 2008). That study and the subsequent research analysed the differences in the effect of benefits according to whether the household was financially constrained or not, and the specific cases in which the total amount of the benefits was paid at one go, on termination of the contract. In this last configuration, moral hazard is not a factor because there is no financial incentive to remain unemployed. Nonetheless, an increase in the duration of unemployment is still observed.

(3) A higher fixed recruitment cost makes employers more sensitive to the time remaining before the applicant reaches retirement (see Challe *et al.*, 2016). For example, in the case of call centre workers, the generic skill of managing calls may have been acquired elsewhere but specific training in the use of the call centre platform and a minimum initiation into the products/services sold by the firm is still essential before they can start work. According to empirical studies, sectors of this type exhibit greater sensitivity to the time remaining before retirement than sectors where recruits do not require training.

(4) The authors used identical CVs for two age pairs: 38-44 years and 44-50 years. The CVs differed only in the way in which the additional years at work had been spent (job comparable to the advertised post, job unrelated to that post, or inactivity). The response rate for "old" was only similar to that for "young" if the previous job had been comparable to the one offered by the employer.

TABLE 3 ECONOMETRIC RESULTS FOR THE JOB-FINDING RATE, 1998-2014
(in %)

	Probability[1] (employment | unemployment one year earlier)						
	BE	DE	FR	DK	SE	UK	ES
Reference[2]	31.5	33.8	38.1	53.5	51.9	47.3	30.5
Low level of education	24.0	25.5	27.9	47.6	44.3	36.4	25.3
Highly educated	45.2	47.4	48.4	62.4	59.8	59.5	35.0
Female	26.4	33.0	34.6	49.9	52.0	52.7	22.9
Married	30.3	37.4	41.8	53.5	50.9	58.3	31.6
20-24 years	43.2	44.6	45.3	57.7	51.3	52.5	38.5
25-29 years	36.8	39.4	42.5	57.7	55.9	51.2	36.2
30-34 years	33.0	35.4	39.6	54.4	51.6	48.8	32.4
40-44 years	30.7	30.5	36.4	53.2	51.2	46.8	28.5
45-49 years	27.5	27.8	33.6	52.4	50.0	44.7	26.7
50-54 years	18.6	23.5	30.0	48.8	46.8	43.4	21.9
55-64 years	8.9	13.4	13.4	34.0	36.3	32.1	13.8

Source: EC.

(1) The probabilities shown in the table are not additive. The presentation used is of the *ceteris paribus* type: only one characteristic at a time is changed compared to the reference individual. For instance, the female whose probability of transition is shown in the table differs from the reference individual only in her gender; her other characteristics (such as level of education, marital status, age, year of transition, etc.) are the same as those of the reference individual.

(2) Male, unmarried, aged between 35 and 39 years, average level of education, 2014.

Conclusion

This article describes the rates of job separation and job-finding during the period 1998-2014 for seven countries (Belgium, Denmark, France, Germany, Spain, Sweden and United Kingdom). These rates are estimated on the basis of the harmonised labour force surveys (LFS) using the same procedure and assumptions in order to ensure the best possible comparability.

The transitions measure changes in socio-economic status (employed, unemployed, inactive), in other words, changes in the extensive margin. Other mechanisms for adjustment to the business cycle, such as variations in hours worked, do not give rise to transitions.

That partly explains the substantial differences between countries. For example, in the initial phase of the great crisis of 2008, the job separation rate hardly increased in Belgium and Germany compared to the other countries studied. By contrast, in the second phase of the crisis or at the time of the cyclical trough in the early 2000s, there was an increase in the job separation rate in each country.

The dynamics of the unemployment rate can be seen as the outcome of the rate of inflow into unemployment (i.e. the job separation rate) and the rate of outflow from unemployment (i.e. the job-finding rate). In order to exclude flows relating to inactivity, these rates are calculated for persons aged between 25 and 49 years, the age group whose labour market participation rate is at its maximum and varies little. Differences in national policies concerning the transition of young people from education to the labour market or the management of the end of working life therefore did not distort the comparison. In all these countries, the job separation rate largely explains the variability in the unemployment rate. The job-finding rate also contributes to that variability but is not the driving force except in France and Spain.

For Belgium, these aggregate measures are presented by Region. Rates of inflow into unemployment are similar in Flanders and Wallonia, but much higher in the Brussels-Capital Region. In other words, the characteristics of residents of the Brussels Region and/or the branches or firms where they work or the types of contract used are such that their job security is lower than in the other Regions. The rate of transition from unemployment to employment also features very marked differences. It has been systematically higher in Flanders than in the other two Regions. The transition to employment is procyclical everywhere, but that sensitivity to the cycle seems to be more pronounced in Flanders.

Job separation and job-finding rates are then analysed using a multivariate model to estimate the relative importance of the observed characteristics. These estimates were produced per country for the whole population of working age (20 to 64 years).

As had already been established on the basis of the aggregate measures, differences between countries are substantial. In 2014, for workers aged between 35 and 39 years, the estimated job separation rate was 3 % in Germany, 3.3 % in Sweden and the United Kingdom, and 3.5 % in Belgium, whereas in Denmark the rate reached 4.2 %, in France 5.2 % and in Spain 8.7 %. That ranking has not always been the same over the years. On average over the period, the job separation rate is lower and more stable in Belgium. In the case of the United Kingdom, France and Belgium, there is a moderate upward trend in the instability of employment over the period, and that is much more marked for Spain.

The multivariate model highlights the importance of education for job stability. Age (or seniority) is also a key variable, with high job separation rates for young people and very low rates for older workers. In France, Spain and Belgium, there is a virtually monotonic declining relationship, with a differentiation that continues beyond the age of 40 years, while for the other countries the distinction tends to be between people under 30 and other workers. Marital status likewise plays a role : singles have significantly higher job separation rates than married people.

The job-finding rate also displays wide variations between countries, not explained by the observed characteristics. In 2014, for the reference individual, that rate is over 50 % in Denmark and Sweden, but barely 30 % in Belgium and Spain. The job-finding rate is procyclical because the business cycle is a decisive factor. The model also shows the importance of education for a rapid return to employment, true for all seven countries. It is easy for the young to find work again, but that becomes increasingly difficult for the older age groups. In the United Kingdom, Denmark and Sweden the differences between age groups are less marked, except in the case of the 55 to 64 age group where the probability of finding work declines sharply. Various factors account for these difficulties in finding work among older people, including some institutional and political factors which have gradually been corrected in recent years. Conversely, gender and marital status have less influence on the differences in the level of job-finding rates.

In theory, apart from the business cycle and structural factors, a fundamental determinant of the job-finding rate is the way unemployment insurance is designed and how it works in practice. All the empirical studies show a negative dependence between the job-finding rate and the duration of unemployment, possibly due to depreciation of the human capital or a process of selection over time, as the individuals with more favourable characteristics find work more quickly.

In the case of people finding another job, the retrospective elements in the LFS data do not contain information on the length of time that those people were previously unemployed. That has important implications for the international comparison, because in countries where the unemployed have already been without work for a long time, on average, the transition rates are lower. The Belgian unemployment insurance system is unusual in that there is no time limit unless the job-seeker is subject to sanctions. Compared to the other countries in the sample, Belgium has a hybrid system combining unemployment insurance with an unemployment assistance scheme. In other words, the proportion of long-term unemployed is institutionally higher in Belgium than in the other countries examined because the latter have a separate system for the very long-term unemployed. Since it is not possible to control for the elapsed unemployment duration, the international comparison of rates of transition from unemployment to employment is therefore bound to be unfavourable for Belgium.

To sum up, the European benchmarking shows that job stability is high in Belgium. It also reveals the low job-finding rate in Belgium, although that is due partly to a statistical phenomenon. In an increasingly fast-changing world, it is vital to boost that rate. Apart from establishing the conditions for sustainable economic growth, we need to take action on the possible levers, such as education or the (age-correlated) weight of seniority, notably in decisions on recruitment and dismissal (and in remuneration). It is also crucial to improve the readability of the incentive aspects of the Belgian unemployment insurance system (time profile of benefits, etc.) so that the rights and responsibilities are clear for benefit recipients, in order to get them back into work faster.

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