Transitions in the EU labour market before and after the crisis: The role of reforms

Corrado Macchiarelli[1],[2] Vassilis Monastiriotis[1]

Nikolitsa Lampropoulou[1]

Abstract

This paper provides an in-depth examination of labour market transitions in the EU over the period 2004-16, drawing on EU-Labour Force Survey (EU-LFS) data. Building on the earlier work of Ward-Warmedinger and Macchiarelli (2014), our analysis offers a detailed insight on how well European economies have recovered from the crisis and whether, and to what extent, their labour markets have returned to their pre-crisis path. In particular, we analyse labour market transitions across the three key labour market statuses of employment, unemployment and inactivity, providing aggregate break-downs by country, age-groups, gender and individual's level of education based on the EU-LFS. We subsequently use country-specific measures of transition rates and a synthetic index of mobility in order to draw comparisons across countries and over time, as well as examine how country-specific patterns relate to key institutional characteristics, both microeconomic (e.g., Employment Protection Legislation) and macro-political (e.g., welfare regimes). This offers a granular overview of labour market trends by country and for the EU as a whole, allowing us to draw conclusions about the functioning of labour markets in Europe with regard to their flexibility (speed/extent of transitions and extent of mobility) and how this evolved over time since the crisis.

Keywords: Transition probabilities, Labour market mobility, Structural reforms, EU countries, LFS data

1. Introduction

The paper provides an update on Labour Market Transitions in the EU since the financial crisis, offering an examination of EU-Labour Force Survey (EU-LFS). We compare for some indicators the results before the crisis, also building on the existing pre-crisis results in Ward-Warmedinger and Macchiarelli (2014), in order to get insights on how well European economies have recovered from the crisis and whether and to what extent their labour markets have reached their pre-crisis fluidity. In particular, we analyse year-on-year labour market transitions and their evolution over the years 2004-16, across three key labour market statuses (employment, unemployment and inactivity), providing aggregate break-downs by country, age-groups, gender and individual's level of education based on the EU-LFS. Following this, we use country-specific measures of

---

[1] London School of Economics and Political Science, European Institute, Houghton St, London WC2A 2AE, UK.

[2] Department of Economics, Finance and Accounting, Brunel University London, Middlesex, United Kingdom.

transition rates and a synthetic index of mobility (between three statuses: employment, unemployment, inactivity) in order to draw comparisons across countries and over time. For the discussion and further analysis of the results, we complement these data with qualitative and macro-quantitative information about the different countries of the EU, allowing us to split the countries into different groupings corresponding to different social systems, and we cross the information with structural indicators (Employment Protection Legislation - EPL, Product Market Regulation - PMR, use of part-time contracts, unemployment benefits, out-of-work maintenance schemes, and employment incentives). This allows us to analyse aggregate labour market changes (changes in participation, unemployment and inactivity rates) to offer an overview of labour market trends by country and for the EU as a whole, as well as to draw conclusions about the functioning of labour markets in Europe with regard to their flexibility (speed/extent of transitions and extent of mobility/churn) and how this evolved over time since the crisis.

We show that all EU countries, which we classify as Mediterranean, Continental, Central Eastern and Nordic, exhibit a high degree of employment persistence and persistence of inactivity (out of the labour force), which shows little cyclicality. The dynamics concerning unemployment duration, however, appear more varied. Our evidence shows that unemployment duration is by far lowest in the Nordic countries and highest, post-crisis, in the Mediterranean. Unemployment persistence increased with the crisis everywhere, and with the exception of the Central and Eastern European countries, it continued to rise also after 2012.

Overall, our results sketch a picture of significant country heterogeneity in the intensity and direction of the labour market transitions across the EU. As expected, the crisis did have an impact on labour market transitions and employment/unemployment persistence, but in most cases, the effect of the crisis was smaller than the size of country differences observed in any one period (pre-crisis, during the crisis and post-crisis). Countries known for their institutional rigidities in the labour market, such as those of the Mediterranean, have been found to have less favourable labour market flows and higher unemployment duration. At the same time, we found no evidence that this links directly to the degree of employment protection, the main labour market institution associated with labour market rigidity. Instead, part-time employment seems to have played a – rather marginally – positive role for containing unemployment persistence, while product market regulations appear as a much more significant influence on adverse labour market flexibility. In any case, and despite the relative recovery of the European economies post-crisis, we concluded that the degree of labour market flexibility has not fully recovered to their pre-crisis levels.

2. Relevant Literature

The contribution of flows into and out of unemployment to the cyclicality of unemployment has attracted a great deal of attention in the analysis of labour market dynamics since the crisis (Shimer, 2012). Recent articles have mainly found a relatively equal contribution of inflows and outflows to the unemployment stock (Elsby et al. 2009; Fujita and Ramey 2009). Elsby *et al.* (2009) questioned the validity of the assumption of the usual steady state decomposition for unemployment which forms the basis of a number of theoretical models. In particular, they calculated the relative contributions to unemployment using a neat decomposition based on the identity describing the dynamics of unemployment in which inflow and outflow rates are separable. In the same vein, Vanhala (2009) argued that European countries generally have low unemployment inflow and outflows rates

which contributed to high rates and unemployment persistence. Petrongolo and Pissarides (2008) identified the relative role of inflow and outflow rate from unemployment in explaining labour market dynamics and conclude that the relative contribution of each depends on labour market institutions. Finally, Brandolini *et al.* (2006) emphasised the need to acknowledge the group of non-participants (or *potentially* unemployed) when looking at labour market dynamics; accordingly the distinction provided for by the ILO definition of unemployment is only "artificial" and indeed non-participants and unemployed do not differ substantially in their job search activity.[3]

Fujita and Ramey (2009), as well as Fujita (2011), find evidence for differences in the timing of these effects, with the effect of the inflow rate being more prevalent during the early phase of a recession and the effect of the outflow rate being more important in the middle of a downturn. Yet, these studies have generally focussed on the US labour market and relied on aggregate data, thus neglecting potential composition effects, i.e. differences in the socio-demographic structure of the employed and unemployed.

An exception to this is the recent study by Daouli et al. (2015) for Greece, which has found that the cyclicality in the relative importance of inflows and outflows over the business cycle varies with individual-level heterogeneity. For example, although the unemployment inflows in Greece are a phenomenon that mostly interests female workers, in the post-2008 period the relative position of male workers has worsened. On the other hand, although the unemployment outflows are a phenomenon that concerns primarily male unemployed individuals, in the post-2008 period the relative position of females has improved. Moreover, younger workers face increased risk of moving from employment to unemployment both in the pre-crisis and the crisis periods, while the relative risk for younger (15-24) and older (45-54) workers has increased in the crisis years.

Regarding the effect of institutional factors on mobility, a number of papers have focused on establishing the persistence of unemployment and its duration using longitudinal data (Boeri and Garibaldi, 2009; Petrongolo and Pissarides, 2008; Brandolini *et al.,* 2006 for Europe; Vanhala, 2009; Elsby *et al.*, 2009 for OECD countries).[4] These papers document an overall increase in labour market mobility during the last two decades before the crisis, with differences in the extent of mobility across countries being attributed to institutional factors such as labour and product market regulation, active labour market policies, and union density.

Boeri and Garibaldi (2009) asked, for instance, why the decrease in unemployment does not show up as increased satisfaction in the labour market, attributed to the increased risk of job loss as the result of higher labour market turnovers (see also Green, 2010). The effect of Employment Protection Legislation (EPL) on labour market turnover, especially among young people is analysed in Gangl (2003), whereas, Nicoletti and Scarpetta (2000) look at the effect of EPL and Product Market Regulation (PMR) on employment at large. Boeri, Nicoletti and Scarpetta (2000), find, for instance, a "potentially" significant impact of EPL and PMR on labour market outcomes and structure. Nickell and Layard (1999), focusing on the link between labour market institutions and economic performance, equally conclude that policy should be focussed on encouraging product market competition, as a way to "eliminate the negative effects of unions". Other papers have analysed the

---

[3] While this is beyond the scope of this chapter, one could break down the inactivity further. For example by singling out the group of marginally attached workers (those willing to work, but not actively looking for a job). In general, this group is more attached to the labour market than others. This should be reflected in their transition rates. Some recent work on the issue using the Hornstein-Kudlyak-Lange Non-Employment Index is available in the Labour Market and Wage Developments in Europe Annual Report (LMWD, 2017). Source : https://publications.europa.eu/en/publication-detail/-/publication/2df2eaca-b3b0-11e7-837e-01aa75ed71a1/language-en.
[4] See, among other things, Fujita and Ramey (2006); Shimer (2005; 2011) for the US.

effect of institutions on EU labour market efficiency on the whole, as measured by employment (Kruppe, Rogowski and Schömann, 1998; see also Siebert, 1997) or, indirectly, through the effects of unemployment benefits and employment protection legislation in the provision of insurance against labour market risk (see Boeri, Conde-Ruiz and Galasso, 2003). The remaining literature has also focused on the effect of currency union on labour market reforms in Europe, within this framework, highlighting how structural reforms motives are strengthened by high unemployment (see Duval and Elmeskov, 2006).

Despite this broad literature, comprehensive analyses of labour market transitions across the EU member states are limited and thus also limited is the evidence-base concerning the cyclicality of these transitions (especially in relation to the recent crisis), their differentiation across types of workers, the possible differences in transition dynamics across countries and country groups and, ultimately, their link to labour market flexibility and their contribution to attaining high levels of employment and employment participation. In this study, we examine these issues through an extensive analysis of available data from the EU LFS and EU-SILC databases. Drawing on these, we perform a micro-data based analysis of the labour market transitions in a large number of European countries and investigate how these transitions have been affected by the recent financial and economic crisis, by providing an assessment of labour market transitions at the pre-crisis plateau (2004/08), during the crisis' early phase and in the crisis' peak (2009/13) and ensuing recovery (2014/16) (see Figure 1 in the next section).

A focus on the behaviour of labour market transitions around periods in which actual unemployment has risen or fallen sharply may inform on the factors behind shifting mobility flows, as well as other factors contributing to periods of prolonged economic slowdown and/or unemployment persistence (i.e. *hysteresis*). The results can also have implications for the active labour market policies' effectiveness, not least in the context of current economic conditions and the radical structural reforms taking place, particularly in some countries (see Ward-Warmedinger and Macchiarelli, 2014).

3. Data and Methods

In our exercise, we use the EU-LFS for the purpose of analysing trends in key labour market indicators and in the analysis of flows/transitions across the three key labour market statuses (employment, unemployment, inactivity). For these analyses, we use the annual files of the survey, relying on retrospective questions about each individual's labour market status one year ago. Our sample consists of individuals in their working age (aged 15 to 64).[5] For the discussion and further analysis of the results, we complement these data with qualitative and macro-quantitative information from the OECD about the different countries of the EU, allowing us to split the countries into different groupings corresponding to different social systems.

Data quality and availability issues necessitate that some countries are excluded from parts of the analysis: this is both for sample-size reasons (e.g., Luxemburg), data coverage issues (e.g., data for Malta become available from 2009 onwards), and data availability issues (e.g., some variables are not recorded for countries such as Germany, the UK and Ireland).

---

5 Evidently, this demographic includes people with very different intensities of labour market attachment. For example, people in the 55+ age group may have options for early retirement schemes; while those under 25 may withdraw from the labour market for educational reasons. We examine this issue of differentiation of transitions on the basis of age (as well as other individual characteristics such as gender and levels of education) later in this report.

In the light of these limitations, the UK, Germany (DE), and Ireland (IE) are excluded from the analysis owing to a lack of data.[6] The remaining countries are grouped as follows:

Central Eastern, including Bulgaria (BG), Czech Republic (CZ), Estonia (EE), Croatia (HR), Latvia (LV), Lithuania (LT), Hungary (HU), Poland (PL), Romania (RO), Slovakia (SK) and Slovenia (SI);

Nordics, including the Netherlands (NL), Finland (FI), Denmark (DK) and Sweden (SE);

Continental, including Belgium (BE), France (FR), Luxemburg (LU) and Austria (AT);

Mediterranean, including Greece (GR), Spain (ES), Italy (IT), Cyprus (CY), Portugal (PT), Malta (MT).

The grouping above clusters countries according to social policy models,[7] drawing on the definition of Boeri (2002), Sapir (2006) and Ward-Warmedinger and Macchiarelli (2014).[8]

Figure 1 – the Unemployment rate in the EU

Source: Eurostat data

Our analysis covers the period prior to the crisis (2004/2008) and up to 2016. For much of the analysis, we focus on three sub-periods, i.e. between 2004/08, 2009/13 and 2014/16. In doing so, we update the work of Ward-Warmedinger and Macchiarelli (2014), who analyse labour market transitions in the EU for the ten years preceding the Great Recession (1998-2008). Looking at 2004-2008 as a reference pre-crisis period is motivated by the idea that the slack in real economic activity affected the EU labour markets with some lag, with the worsening of unemployment figures starting mainly from 2009; this is the case since the impact on the labour market is typically perceived on average later than the shock in real activity (e.g., GDP; see NBER, 2008). The sub-periods we derive are consistent with the peak-trough dates (i.e. turning points) we obtain by using a simple dating procedure on the EU individual unemployment rates (Table 1A). In choosing the dates of business-cycle turning points, we follow standard procedures and chronologically identify the dates of peaks

---

[6] Due to missing data, some countries are also excluded when computing aggregated results. Based on the LFS, data are not available for Germany, the UK and Ireland on the overall sample, for France, Austria and Spain for the 2004-2005 period, for Sweden for the 2004-2006 period, for Bulgaria and Netherlands for the 2004-2007 period, for Malta for the 2004-2008 period respectively.
[7] Country weighting in each country grouping is based on the GDP share of each country over the total for each group.
[8] The latter definition differs from the one used in Ward-Warmedinger and Macchiarelli (2014) in that it does not classify countries according to euro area membership or not.

and troughs that frame economic recession or expansion. For instance, the period from a peak to a trough is a recession and the period from a trough to a peak is an expansion (see Figure 1).

From the EU-LFS, we construct raw probabilities of moving or remaining in any labour market status, together with an index of mobility (Shorrocks, 1987). Particularly, we consider nine possible transition probabilities across the statuses of employment, unemployment and out of the labour market (inactivity). The (*ex-post*) probability of remaining in any particular labour market status is defined on the basis of the number of individuals being in that particular status *A* in both years *(t)* and *(t+1)*, as a percentage of the number of individuals in the same status *A* in the year *(t)*. Conversely, the probability of moving from one labour market status to another is defined as the ratio of the probability of remaining in any labour market status *A*, as defined previously, over the probability of an individual in status *B* in period *(t)* turning to status *A* in the period *(t+1)*.

More formally, the probability of moving across *n = 3* labour market statuses between year *(t)* and year *(t+1)* is thus a (3 x 3) matrix in which each individual element (P_t^{AB}) records the transition probability, with *A, B =* employment (*E*), unemployment (*U*), or inactivity (*I*):

$$P_t^{AB} = Pr\{S_{t+1} = B \mid S_t = A\} = \frac{AB_{t,t+1}}{A_t} \tag{1}$$

In other words, the probability of a transition from an origin state *A* to a destination state *B* is given by the number of workers making that transition over a given period, divided by the stock of individuals in the origin state at the start of that period. For example, if we denote the number of employed workers *E* in a given year *(t)* who are unemployed *U* in the subsequent year *(t+1)* by EU_t, the associated transition rate equals:

$$P_t^{EU} = \frac{EU_{t,t+1}}{E_t} \tag{2}$$

Based on the decomposition outlined before, we finally construct, for each country (*j*), a measure of mobility using Shorrocks' (1987) mobility index, which is defined as:

$$M_{jt} = \frac{[n - trace(P_{jt}^{AB})]}{n-1} \tag{3}$$

where *n* is the number of states (in this case: employment, unemployment and inactivity) and trace is the trace of a 3-by-3 square transition matrix *P* defined to be the sum of the elements on the main diagonal. By definition, the mobility index is bounded between [0,1], where a value of zero implies no probability of leaving any labour market status and a value of one implies full mobility.

At this stage, it should be noted that flows from and into the labour market are very different between them. In fact, people moving from inactivity to unemployment are different from people moving from inactivity to employment, as the former re-enter the labour market but do not find a job immediately. In this vein, distinguishing between flows into and out of inactivity can be retained in the probability of *successfully* re-entering the labour market (Marston, 1976; Theeuwes *et al.*, 1990; Macchiarelli and Ward-Warmedinger, 2014). The latter is defined as:

$$SL_{jt} = \frac{P_{jt}^{IE}}{P_{jt}^{IE} + P_{jt}^{IU}} \tag{4}$$

which is the percentage of people *successfully* entering the labour market (P_{jt}^{IE}), i.e. flows from inactivity to employment, as a percentage of the number of people entering the labour market as a whole.

Analogously, we note how people leaving unemployment to get back into employment are different from those who, once separated from their job, stop searching for a new one (i.e. they move from unemployment into inactivity). Thus, *unsuccessful* labour market exits are computed as (see also Ward-Warmedinger and Macchiarelli, 2014):

$$FL_{jt} \; = \; \frac{P_{jt}^{UI}}{P_{jt}^{UI} + P_{jt}^{UE}} \qquad\qquad (5)$$

which is the percentage of people withdrawing from the labour market, as a percentage of people generally leaving unemployment (moving either back into employment or inactivity).[9]

The deriving country- and period-specific measures of mobility and/or labour market transitions are subsequently depicted visually with the use of graphs, and tables, allowing us to present in a comparative way both changes over time within countries and cross-country differences/heterogeneity in a static sense. Finally, we draw on the country distinctions described above to draw conclusions about how the observed patterns (both static and dynamic) may link to specific institutional or other characteristics on the national political economies of the EU28.

4. Empirical Results

4.1 Transition probabilities and labour market exits/entries

Table 1 provides a snapshot of average transition probabilities, over time and across countries, between the three core labour market statuses during the period 2004-2016 for all country groupings, and for the three sub-periods considered.

Starting with the information concerning stability (diagonal elements), the table shows that the (weighted) average probability of being employed in year t-1 and year t is quite high and broadly similar across country groups: 94% on average in Central Eastern countries; around 93% in Continental and Mediterranean countries; and around 89% in Nordic countries. Importantly, this probability seems to change little over time (e.g., during/after the crisis). While this is in part an issue of scale (even in deep crisis, most people remain in employment), it also clearly suggests that much of the unemployment movement during the crisis period had to do with other types of labour market flows, such as transitions from unemployment to employment (declining job-finding rates) and transitions from inactivity to unemployment (the so-called 'added worker effect'). As we shall explain later, this is only marginally explained by the use of part-time contracts.[10] In turn, the probability of remaining unemployed shows much more variation (and is of course lower): it is around 66% in Central

---

[9] It should be noted, however, that *unsuccessful* labour market outcomes may not represent labour market withdrawals *per sé*, as flows into inactivity also capture shifts into retirement or education.

[10] While it is tempting to interpret this as the probability of *remaining* employed in two consecutive periods, also looking at the role of part-time contracts and contract with no minimum hours guaranteed (the so-called "zero hour" contracts), we note that the data used here provide information only for the start and end of each annual period considered. As a result, while we know for an individual with EE status that they were employed at the time of the survey in year t and one year before in t-1, we do not know whether that individual was employed for this entire period. It is possible – especially in labour markets with high prevalence of seasonal employment and short term contracts – that an individual may switch labour market status (even several times) over a year.

Eastern European countries; around 62% in Continental countries; but sizeably lower at around 37% in the Nordic countries; and much higher in the Mediterranean countries (over 70% in the post-2009 years).[11] By comparison, the probability of remaining inactive is much higher across country groups – typically at between 94-95% in the Central Eastern, Continental and Mediterranean countries, and at slightly below 90% in the Nordic countries.

Concerning the transition dynamics (off-diagonal elements), we also observed some differences across groups. From Table 1, the probability of moving from unemployment to employment is lowest in the Mediterranean countries, especially during and after the crisis; it is around 25-30% in the Central Eastern European and Continental countries; and it is sizeably higher, at 35% post-crisis, in the Nordic countries. In the Central Eastern, Mediterranean and Continental countries this probability is much lower than the probability of remaining in unemployment, compared to Nordic countries. In the case of Nordic EU countries, the picture is consistent with relatively fast hiring and firing dynamics, compared to other EU social models. Inversely, the probability of transition from unemployment to inactivity is much higher in the Nordic countries (between 22% and 47% – compared to below 10% in all other groups).[12]

Comparisons of labour transition probabilities over time show that in the Central Eastern, Nordics and Mediterranean countries the number of people remaining in unemployment has increased between the crisis (2009-13) and the pre-crisis (2004-08) periods, whereas it has remained broadly stable in Continental countries (Table 1).[13] For Nordic countries, of those individuals unemployed in period t-1, the percentage remaining unemployed in period t increased from 32% to 36% between the pre-crisis and the crisis periods. For Central-Eastern countries, the same number increased instead from 62% to 70%.[14] The same number increased in Mediterranean countries, from 59% to 70%. By contrast, the probability of remaining inactive increased over the crisis period in Central Eastern, while it remained broadly stable in Mediterranean and Nordic countries. It decreased slightly in Continental countries.

---

[11] Those results are broadly consistent with Ward-Warmedinger and Macchiarelli (2014), where it is shown that the probability of remaining in unemployment is about 40% in both Denmark and Sweden.

[12] It is possible that these differences reflect institutional differences in the process of retirement. Examining these in detail is however beyond the scope of the present analysis.

[13] The probability of remaining in unemployment has increased in Czech Republic, Hungary, Poland, Romania and Slovakia over the last decade, but has fallen in the Baltic countries (Estonia, Latvia and Lithuania). In Latvia and Lithuania the fall in the probability of remaining in unemployment was accompanied by a higher probability of transiting from unemployment to inactivity over time, while for Estonia this probability remained roughly similar across time.

[14] Macchiarelli and Ward-Warmedinger discuss how changes in the institutional arrangements and labour market composition (also in the light of labour market migration to Western Europe stemming from the EU accession in 2004) have contributed to this high number pre-crisis.

Table 1: Transition probabilities

			Labour market status year t											
			Central Eastern			Nordics			Continental			Mediterranean		
Labour market status	year t-1	*2004-2008*	E	U	I	E	U	I	E	U	I	E	U	I
		E	**0.936**	0.028	0.036	**0.898**	0.016	0.086	**0.933**	0.033	0.034	**0.936**	0.032	0.032
		U	0.282	**0.624**	0.094	0.211	**0.318**	0.471	0.321	**0.597**	0.083	0.314	**0.588**	0.098
		I	0.045	0.021	**0.934**	0.102	0.020	**0.878**	0.038	0.013	**0.949**	0.035	0.025	**0.940**
		2009-2013	E	U	I	E	U	I	E	U	I	E	U	I
		E	0.927	0.037	0.036	**0.893**	0.027	0.081	**0.923**	0.041	0.035	**0.914**	0.054	0.031
		U	0.252	0.697	0.051	0.375	**0.356**	0.269	0.308	**0.594**	0.097	0.214	**0.704**	0.082
		I	0.032	0.017	0.952	0.094	0.028	**0.878**	0.044	0.021	**0.936**	0.024	0.031	**0.945**
		2014-2016	E	U	I	E	U	I	E	U	I	E	U	I
		E	**0.945**	0.024	0.031	**0.888**	0.032	0.079	**0.920**	0.043	0.037	**0.930**	0.044	0.026
		U	0.280	**0.666**	0.054	0.345	**0.430**	0.226	0.280	**0.639**	0.080	0.208	**0.712**	0.080
		I	0.031	0.014	**0.954**	0.109	0.037	**0.855**	0.040	0.020	**0.940**	0.021	0.031	**0.948**

Note: E=employed; U=unemployed; I=inactive so that EE = remains in employment between one year and the next; UU = remains in unemployment, II = remains in inactivity. Observations are weighted according to the GDP share in each country over the group aggregate. Elements showing a probability of remaining in the same labour market state (employment, unemployment and inactivity) are in bold.

Sources: EU-LFS microdata, authors' computations.

Finally, the probability of remaining in employment decreased – as would be expected – in all country groups. However, there are again differences in the scale of the decline: measured in terms of percentage points, the decline in the Mediterranean countries is twice as large as in the Central Eastern and Continental countries and four times as large as in the Nordic countries. In all cases, the size of the observed changes is lower than the observed rise in unemployment, reflecting the fact that – despite the existence of a significant number of layoffs – the main part of the unemployment increase is accounted for by a sharp reduction in hiring rates (rise in unemployment persistence) and secondarily from an increase in flows from inactivity into unemployment (added worker effect).

Looking at the percentage of people entering successfully the labour market (*successful labour market entries*) – which are transitions from inactivity to employment as a share of the sum of transitions out of inactivity – we find that this percentage has decreased in Central Eastern countries (from 68% to 65%), the Nordics (from 83% to 77%), Continental and Mediterranean countries (from 74% to 68% and from 58% to 43%, respectively) over the crisis period. At the same time, however, the percentage of *unsuccessful labour market exits – i.e.* the percentage of people transitioning from unemployment to inactivity as a share of all transitions out of unemployment – has strongly decreased in Central Eastern countries (from 25% to 17%) as well as in the Nordic countries, whereas it has increased in all other countries, particularly in the Continental European countries (by about 3.5 p.p.), with the strongest increase recorded in Mediterranean countries (about 4 p.p.).

Table 2: Successful and unsuccessful labour market outcomes

	Central Eastern	Nordics	Continental	Mediterranean
	Successful labour market entries			
2004-2008	0.683	0.836	0.741	0.580
2009-2013	0.653	0.769	0.677	0.433
2014-2016	0.687	0.748	0.670	0.411
	Unsuccessful labour market exits			
2004-2008	0.250	0.691	0.205	0.237
2009-2013	0.168	0.418	0.240	0.275
2014-2016	0.162	0.395	0.223	0.278

Note: Following Theeuwes *et al.* (1990) a successful labour market entry is computed as the percentage of people *successfully* entering the labour market as a percentage of the total number of people entering the labour market. Analogously, an unsuccessful labour market exit is the percentage of people withdrawing from the labour market, as a percentage of people leaving unemployment (see also Ward-Warmedinger and Macchiarelli, 2014).

Sources: EU-LFS microdata, authors' computations.

4.2   Changes across periods

Turning to changes between the crisis period (2009-13) and the last part of the sample (2014-16), the transitions show lower unemployment persistence in Central Eastern EU countries. The remaining countries display higher unemployment persistence. Looking at the peak to trough transitions based on the results in Table 1A, we are able to identify some clear developments across the selected Mediterranean and Central Eastern countries, with much of the variation being evident in the probability to remain unemployed over time (see Figure 2). Those

countries have been selected on the basis of the largest peak-to-trough movements in unemployment persistence.[15]

Figure 2: Changes in the persistence of employment, unemployment and inactivity
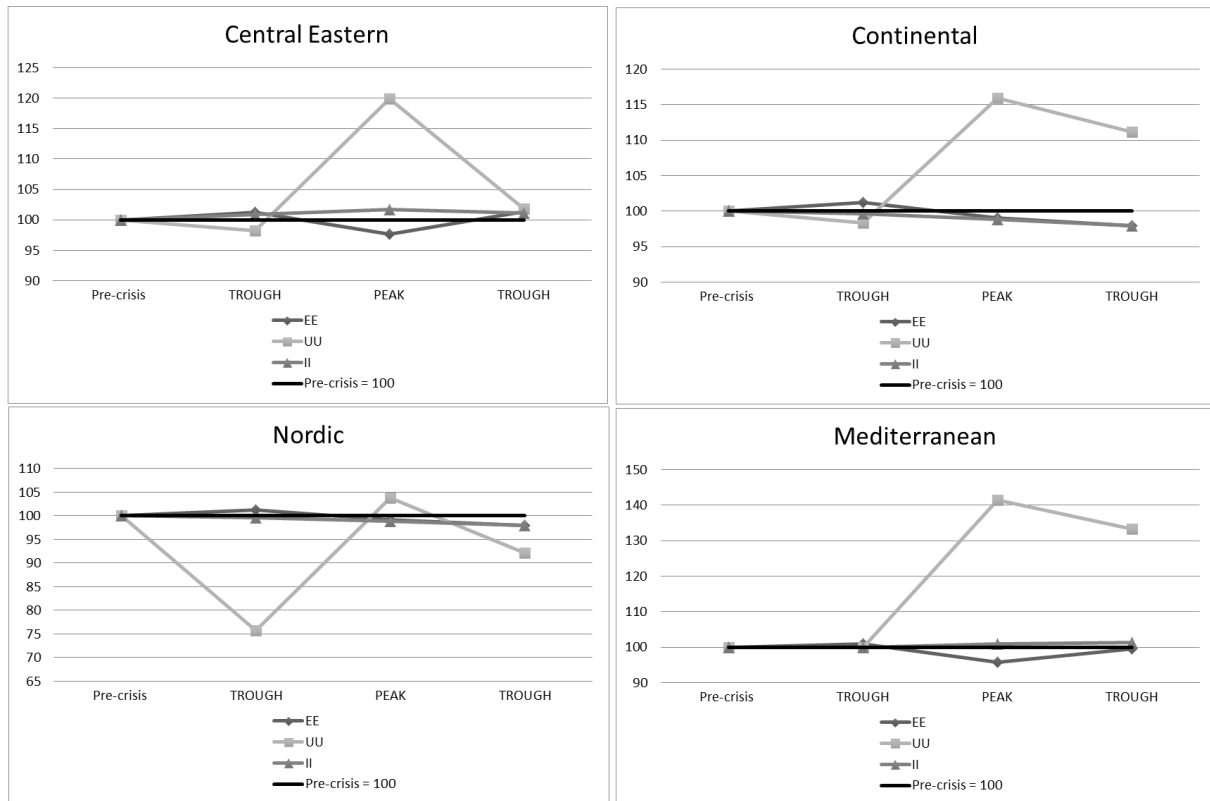
Sources: EU-LFS microdata, authors' computations. The changes in the persistence of employment, unemployment and inactivity in the picture are based on un-weighted country pooling.

During the period 2014-16, the probability to remain in inactivity has not changed significantly in any of the country groupings, apart from the Nordic countries. The probability to remain in employment has increased noticeably only in Central Eastern countries, and to a lesser extent in Mediterranean countries.

Turning to the transitions between different labour market statuses in Figure 3 (calculated as the difference between the weighted average transition for a country grouping/sub-period, compared to the previous sub-period), unemployment-to-employment flows have increased by about 15 percentage points over the crisis in Nordic European countries, while they declined by 3 p.p. in Central Eastern countries and more strongly in Mediterranean countries**.**[16] Flows in the opposite direction (i.e. employment to unemployment) have increased by 3 p.p. in Mediterranean countries, while it remained broadly stable in all remaining countries.

---

[15] The remainder of the results are available upon request from the authors.

[16] Country-specific results point to the fact that flows from employment to unemployment or inactivity do not vary much across countries, whereas movements from unemployment to employment or inactivity as well as transitions from inactivity to employment show more pronounced cross-country variation.

Figure 3: Changes in transition probabilities over time

a)   Crisis (2009-13) minus pre-crisis (2004-08)
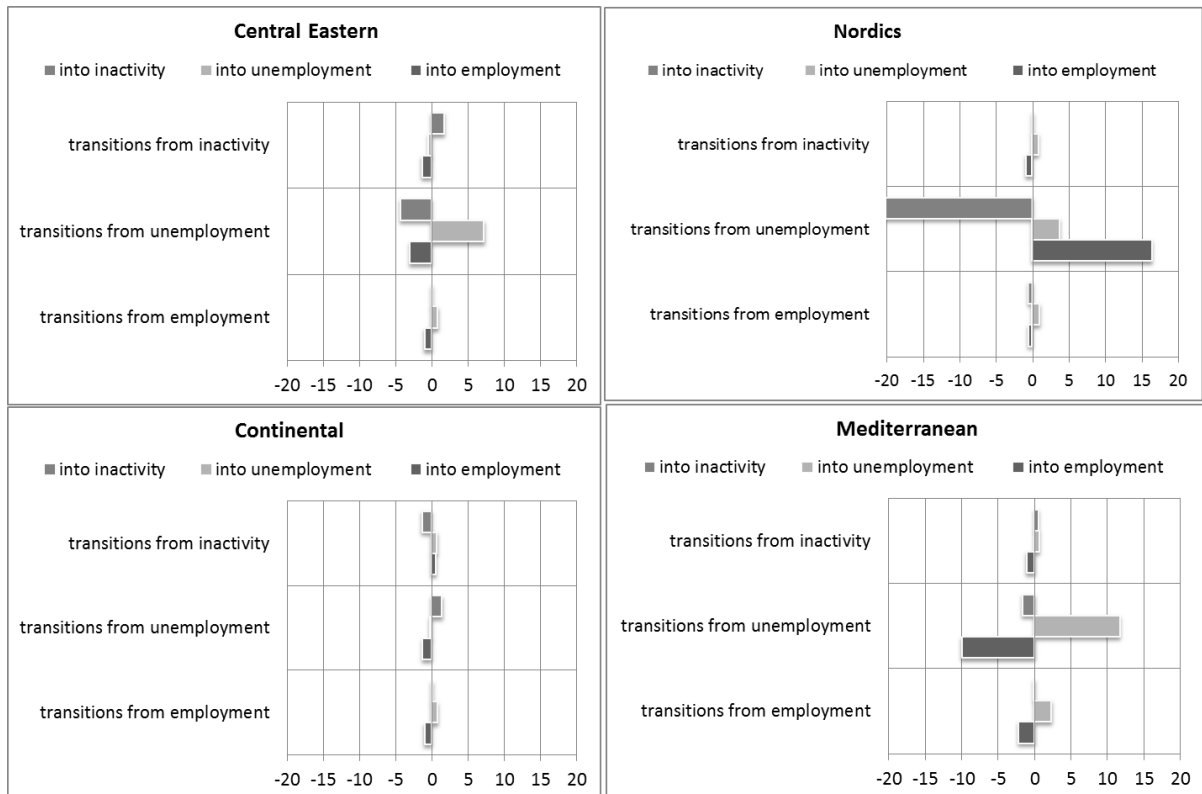
b)   Recovery (2014-16) minus crisis (2009-13)
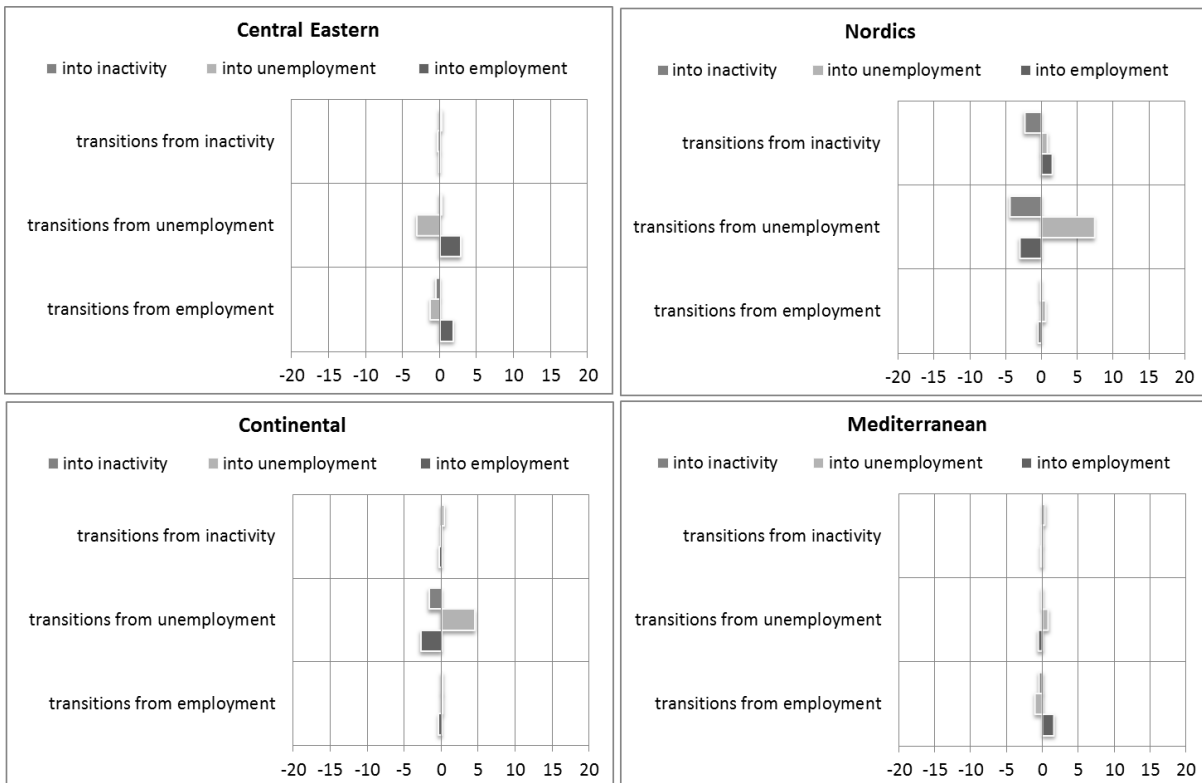
Sources: EU-LFS microdata, authors' computations.

The figures also show that changes from unemployment to inactivity have overall not changed as much since 2014 in Continental and Mediterranean countries, whereas they decreased in Central Eastern countries (by 4.5 p.p.) and in the Nordics (by almost 20 p.p.). Finally, the figure suggests that transitions from inactivity into employment have remained broadly constant in all countries. Turning to the 2014-16 period, the transitions from unemployment to inactivity have decreased in Nordic countries and, to a lesser extent, in Continental countries.

Over the 2014-16 period, the probability of successfully entering the labour market returned to crisis levels only in Central Eastern European Countries and in the Nordic countries (excluding the Netherlands). The same probability has remained broadly stable in Continental Europe, whereas it worsened further in the Mediterranean countries. Unsuccessful labour market exits have nevertheless decreased in the Nordic and Continental EU countries, whereas they remained broadly stable in the Central Eastern and Mediterranean countries. In Mediterranean countries, in particular, while the probability of leaving the labour market has not changed much since the crisis, the likelihood for a person from outside the labour market to join employment has decreased. All in all, the 2014-16 can hardly be dubbed "recovery" for some countries as those years have not necessarily yet determined an inversion of the crisis' trend, with countries being far away from the levels of successful and unsuccessful labour market outcomes observed before the crisis.

4.3   Labour mobility and worker heterogeneity

Figure 4 provides a summary measure (the Shorrocks' index explained earlier, equation 3) of labour market mobility. Importantly, the index summarizes the extent of the transitions between different economic activity statuses (employment, unemployment and inactivity).[17]

The mobility index reflects an increase in labour market churning over the crisis period in Nordic and Continental countries. On the contrary, the Shorrocks' summary index for the period 2009-13 reveals a decrease in labour market mobility compared to the pre-crisis both in the Mediterranean and the Central Eastern European countries. The drop in mobility since the crisis may suggest instead a less efficient matching of individuals with jobs, as evidenced by the increase in the probability to remain in unemployment.[18] For Mediterranean countries, a lower mobility over time analogously reflects an increase in the likelihood to remain unemployed over time. In the Nordic and Continental countries, mobility increased over the crisis period, essentially as the result of a fall in the probability of remaining in employment, unemployment and inactivity overall.[19]

Looking at the results in Figure 4, labour markets in Spain, the Netherlands, Estonia Luxembourg, together with Finland, Denmark and Sweden, are more flexible on average. For the latter mobility is twice as high relative to Greece, Bulgaria, the Slovak Republic, Poland, Latvia, Hungary, Croatia, Italy, Belgium, and Slovenia. A group

---

[17] As summarized before, the Shorrocks' index is a proxy index for mobility. For example, with respect to the results in Tables 2 and 3, the decrease in state persistence over time (i.e. the reduction of the elements on the main diagonal from 1998-2003 to 2004-2008) implies an increase in the mobility index across the two sub-periods.

[18] Mobility clearly depends on the level of unemployment. In country with high employment you would also expect low mobility between states (as those not in employment are probability really those with the least attractive characteristics). This interpretation is different for a country with low employment as it could point to rigidities or disincentives to work. Note also that high transitions should not necessary be good as in a highly segmented labour market dominated by short term contracts, this may mean that individuals regularly switch between employment and unemployment (e.g. Spain or France).

[19] In Figure 1A (Annex), we decompose the changes in the overall mobility index by country groupings through the contribution of mobility by individual characteristics.

of countries reporting intermediate mobility is represented instead by the Czech Republic, Lithuania, Austria, Finland, France, Cyprus and Portugal. Spain, Cyprus and Romania recorded the highest drops in mobility since the crisis.

Figure 4: Mobility index in the EU
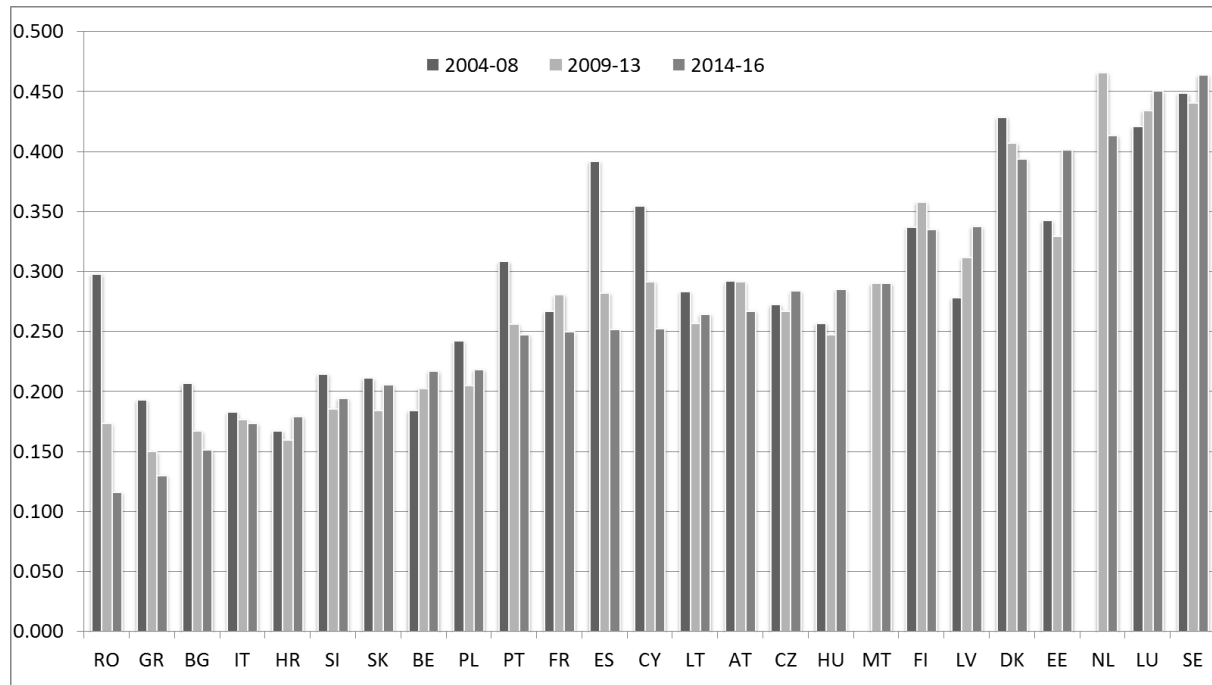
Sources: LFS microdata, authors' computations.

The mobility index also confirms that, in Continental countries, mobility was particularly high for people below 54 and highly educated people, and has overall increased over the crisis, as the result of a lower likelihood to remain in employment, unemployment and inactivity.

From Figure 5, in Nordic countries, people between the ages of 16-24 are the most mobile on average albeit their mobility has decreased over time, particularly during the crisis. Such behaviour is always driven by a lower probability of remaining in employment, unemployment and inactivity compared to Continental and Mediterranean countries (see Table 2A - Annex).

In Nordic countries, highly educated individuals generally display both a higher probability of remaining in employment and a lower probability of remaining in unemployment and inactivity over time, while female workers display a lower probability of remaining in both employment and unemployment over time[20] (Table 2A).

In Central Eastern European countries mobility is higher for females, highly educated people and workers between the ages of 25 and 29, though this pattern has overall decreased over time. In these countries, the higher mobility of women is driven by a lower probability of remaining in employment and unemployment

---

[20] It should be noted, however, that successful exits of females from unemployment into employment are typically lower than those of males. This is because females also have a higher probability of moving from unemployment into inactivity compared to males.

over time. Highly educated individuals in the Central Eastern EU countries are more mobile through a lower probability over time of remaining in inactivity and unemployment.

Figure 5: Mobility index by worker group
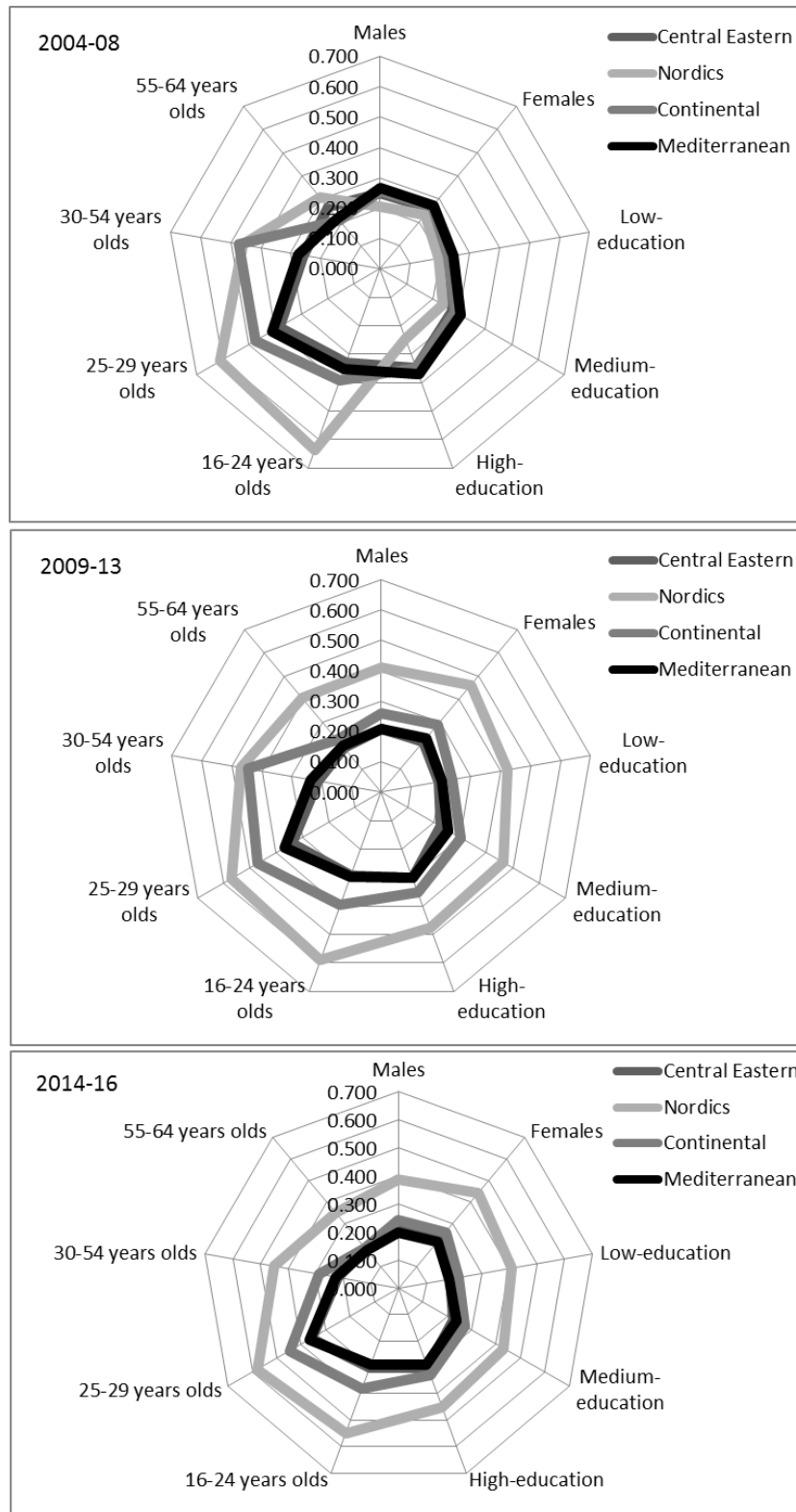
Sources: LFS microdata, authors' computations.

Figure 5 also shows that on average highly educated individuals and people between the ages of 25-29 are the most mobiles across labour market statuses. Moreover, while for Denmark, Sweden, the Continental and Mediterranean counties mobility of all worker groups has increased over the last decade (particularly for females), there is no clear pattern for the disaggregated Central Eastern European countries (Table 2A).

Decomposing the changes in the mobility index by worker groups (Figure 1A) finally suggests that labour markets have started to pick up again on average starting from 2013, with positive developments in mobility being largely evident across the board. The decomposition of the mobility index also makes clear the drop in mobility started in 2007 with some pattern evident in some countries. For instance, part of the drop in Continental and Mediterranean countries is explained by a fall in the mobility of the 55-64-year-olds (possibly also explained by retirement patterns). The role of reforms

The mobility index by worker groups suggests an overall increase of mobility in the Nordics since the crisis but not elsewhere (Figure 5). Although examining this in much depth is beyond the scope of this analysis, we can deduct from our previous analysis that this is probably related to the increase in flows from employment into unemployment as well as from inactivity into both unemployment and employment.

6. The role of reforms

Disaggregating the labour market patterns on the basis of individual and country characteristics revealed that individual heterogeneity plays a role: national labour markets have developed differently during the crisis, with countries such as Spain, Greece, Portugal and Italy still displaying high unemployment rates of up to 21 per cent, and countries such as Germany, Austria, Luxembourg and the Netherlands denoting substantially lower rates, below 5 per cent, based on the Eurostat.

There is a consensus that the aim of reducing unemployment and increasing employment in Europe could be achieved through structural reforms at the level of the nation-state i.e. reforms that contribute to removing barriers to the smooth and efficient functioning of product, capital and labour markets would help ensure the economic growth sustainability. Such reforms could also improve the efficiency and effectiveness of public finances' expenditure (Ilzkovitz and Dierx, 2011), as also extensively discussed by the European Governance literature on the 'need for bribes' hypothesis (Mabett and Shelkle, 2007). The functioning of a regulated labour market depends on various factors, such as the model of the welfare state, the structure of the economy, the culture of a society etc. the majority of which are idiosyncratic and which tend to differ greatly from one country to another. The flexibility of the labour market and mobility of labour (both across sectors and jobs) are decisive factors for an economically wealthy and stable European labour market – certainly not the only one.

In the economics literature (Boeri 2005, Biroli et al. 2010), the usual Product Market Regulation and Employment Protection Legislation indicators are used as measures of structural reforms in the product and labour markets. Based on these indicators amongst the countries in the Eurozone, product market regulation in 2008 was the strictest in Greece and Poland, while being relatively loose in Ireland and the UK. The process of product market liberalization between 2003 and 2008 was most rapid in new Member States such as Hungary and Poland, but also in Spain. On the other hand, in Belgium, Luxemburg, the Nordic countries, Slovakia and the UK, the pace of product market liberalization was relatively slow. Moreover, employment protection

legislation in 2008 was relatively strict in Southern euro area countries such as Spain, Portugal, France and Greece, while being looser in the UK, suggesting that, on average, the labour markets in countries with relatively strict product market regulation and employment protection legislation were relatively slower in recovering and returning to pre-crisis levels.

Looking at specific country cases, unveils yet more heterogeneity. Reforms in Germany led to a recalibration of the country's labour market model, with elements of both the Anglo-Saxon model (less generous benefit systems and lower levels of protection against dismissal) and the model of "flexicurity" (combining a fully developed social security system with labour market policies aimed at activating the unemployed and making the labour market more flexible). The so-called 'Hartz reforms' also included greater liberalisation of flexible working arrangements such as the 'atypical' jobs, temporary employment, self-employment, part-time work and fixed-term employment contracts in order to increase the capacity of the labour market (Eichhorst, 2013). In the course of the crisis, Greece also adopted significant labour market reforms aiming at reducing labour costs in order to boost its competitiveness and increasing the ability of firms to adjust to shocks. These reforms included measures that made the wage bargaining system more decentralized, reduced employment protection for permanent employees by lowering firing costs while the setting of the minimum wage was turned over to the government away from the social partners (Kosma et al., 2017). In the Spanish labour market, reforms have been oriented towards an increase in flexibility as well. Activation is the most recent instrument to be introduced into the Spanish labour market and seems to be following the European Employment Strategy, whereas passive policies have been progressively reduced. Empirical evidence shows that there is a strong tendency to increase the intensity of ALMP. Spain and the rest of Southern European countries show poor levels of ALMP expenditure, whereas Continental countries are leading the way (Ramon Ballester, 2005). Italy also undertook the 'Jobs Act' reform of the labour market in 2014-2015 in order to foster employment, simplify bureaucratic procedures for temporary contracts and turning Italian labour market institutions in the direction of flexicurity. It relaxed employment protection legislation for permanent contracts and reduced the use of atypical contracts which are characterised by weak employment protection and low social benefits. According to OECD indicators, Italy's employment protection legislation is less restrictive than in France and Germany. Moreover, it strengthened the active labour market policies with the aim of complementing to the reform of EPLs and passive policies. The focus of passive policies shifted from job to worker protection, which facilitates the reallocation of workers to more productive occupations, and unemployment insurance was made more generous and extended in coverage which creates a fairer system (Pinelli et al, 2017).

Milan et *al.* (2013) examined the impact of the employment protection legislation on hiring and firing decisions by the smallest firms (1-4 employees) for the EU-15 countries. They found that the strictness of EPL is negatively related to the probability that employers take on employees. On the other hand, they find that strict EPL lowers the number of job dismissals. In other words, although employees are better off in an environment of strict EPL (i.e. their rights are better protected), unemployed individuals may find it harder to find a job in such an environment as employers face higher rigidities, particularly whenever firms are forced to downsize due to external shocks. Although they cannot clearly conclude whether hiring or firing decisions dominate as a result of lower EPL, they conclude that lowering EPL is strongly linked with higher labour turnover among the smallest of firms. Equally, Noelke (2016) analyzed the effect of employment protection legislation on youth unemployment and employment rates in Western Europe for the period 1980-2008. In this case, EPL is

differentiated between job security provisions and regulations on temporary contracts. Their evidence shows that deregulating temporary contracts at high levels of job security provisions has significantly increased youth unemployment rates and decreased youth employment rates.

In what follows, we complement this information by looking at macroeconomic trends in mobility together with the evolution of structural indicators (EPL, product market regulation, etc.). Our objective is to understand whether part of the observed changes in mobility can be broadly explained by some "macro" explanatory factors (see also Macchiarelli *et al.*, 2018). This would also help explain what is behind such heterogeneity in mobility indexes and feeds the discussion of the policy implications stemming from our findings. The mobility observed in some countries can be linked to the use of time-limited contracts and part-time work, and vice-versa.

Figure 6: Cross plot of mobility index and selected structure indicators
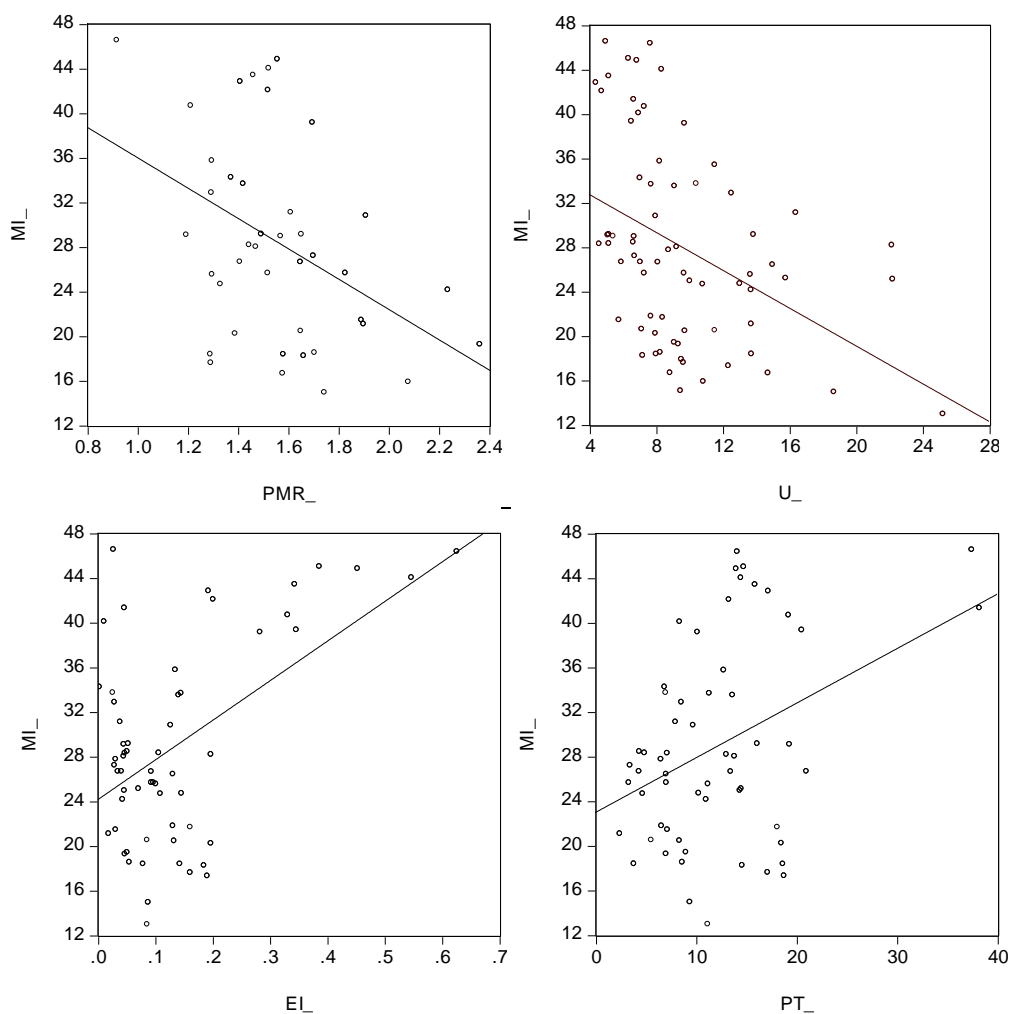
Sources: LFS microdata, authors' computations.

Note: Product Market Regulation (PMR); Unemployment (U); Employment Incentives (EI); Use of part-time contracts (PT)

Looking at the simple cross-sectional correlations in Table 3 and Figure 6, we show that, broadly speaking, those countries where mobility increased over time are also those where the percentage of part-time work increased. In addition, we find the usual negative relationship between the unemployment rate and mobility, with such a relationship remaining broadly stable with the crisis on average (b). This suggests the fact that a

high degree of labour market turnover is not necessarily benefiting labour markets, to the extent that those movements interact with shifts out of employment, and into unemployment and inactivity. Focusing on structure indicators Table 3 (c), mobility does not seem to be related with the strictness of Employment Protection Legislation, however, measured. We find evidence instead of Product Market Regulations (PMR) not being positively related to labour market turnovers (d), particularly pre-crisis.[21] Some active labour market policies did not interact with mobility either, with the exception of employment incentives, which positively correlate with mobility indices across countries (e); a relationship which has weakened with the crisis years.

A note of caution is due. The results presented here present general associations between pairs of indicators (as they are based on unconditional cross-plots among indicators) and thus they should not be taken as indicative of any causal links between, say, the structural indicators and the labour market transition measures. An analysis of the latter (causal links) would require econometric estimation of a structural model and a good identification strategy to unveil causality. Given a range of data limitations (short time-horizon, lack of sufficient variation in some institutional indicators, high degree of collinearity between indexes), we consider this to be beyond the scope of this paper. We note, however, that the patterns found in our correlation analysis generally survive in simple OLS regressions using sub-sets of the indicators considered here (results available upon request from the authors) and in any case they do reflect the general-equilibrium picture for the measures considered.

---

[21] PMR is a composite indicator produced by the OECD to measure the extent to which product market regulations (such as licensing) introduce rigidities to the economy (product market). There is wide evidence in the literature that often rigid product markets pose more constraints to economic adjustment and growth than rigidities observed in the labour market. Our results here are in line with this received wisdom.

Table 3: Unconditional correlations between mobility index and structure indicators

		Direct-job creation	Empl. incentives	EPL (individual dismissals)	EPL (temporary contracts)	Mobility index	Out-of-work maintenance schemes	PMR	Part-time contracts	Unempl.
2004-08	Direct-job creation	1.000	-0.025	-0.270	0.568	0.000	0.406	-0.123	0.033	-0.030
	Employment incentives	-0.025	1.000	-0.083	0.173	**0.638 (e)**	0.478	-0.337	0.482	-0.239
	EPL (individual dismissals)	-0.270	-0.083	1.000	0.075	-0.021 (c)	-0.114	0.228	-0.236	-0.070
	EPL (temporary contracts)	0.569	0.173	0.075	1.000	0.115 (c)	0.384	0.053	0.316	-0.083
	Mobility index	0.000	**0.638**	-0.021	0.115	1.000	0.290	**-0.561**	0.263	**-0.416**
	Out-of-work maintenance	0.406	0.478	-0.114	0.384	0.290	1.000	-0.403	0.684	-0.219
	PMR	-0.123	-0.337	0.228	0.053	**-0.561 (d)**	-0.403	1.000	-0.445	0.631
	Part-time contracts	0.033	0.482	-0.236	0.316	0.263	0.684	-0.445	1.000	-0.381
	Unemployment	-0.030	-0.239	-0.070	-0.083	**-0.416 (b)**	-0.219	0.631	-0.381	1.000
2009-13	Direct-job creation	1.000	-0.151	-0.264	0.061	0.067	0.030	-0.045	-0.077	-0.091
	Employment incentives	-0.151	1.000	-0.130	0.034	**0.457 (e)**	0.055	0.104	0.145	-0.159
	EPL (individual dismissals)	-0.264	-0.130	1.000	-0.182	0.020 (c)	0.047	-0.056	0.110	0.009
	EPL (temporary contracts)	0.061	0.034	-0.182	1.000	-0.162 (c)	0.336	0.272	-0.051	0.151
	Mobility index	0.067	**0.457**	0.020	-0.162	1.000	0.159	**-0.455**	**0.551**	**-0.415**
	Out-of-work maintenance	0.030	0.055	0.047	0.336	0.159	1.000	-0.310	0.493	0.215
	PMR	-0.045	0.104	-0.056	0.272	**-0.455 (d)**	-0.310	1.000	-0.614	0.404
	Part-time contracts	-0.077	0.145	0.110	-0.051	**0.551 (a)**	0.493	-0.614	1.000	-0.443
	Unemployment	-0.091	-0.159	0.009	0.151	**-0.415 (b)**	0.215	0.404	-0.443	1.000

Sources: LFS microdata, authors' computations.

Note: The panel is based on period averages which, based on the available data, includes AT BE CZ DK EE FI FR GR HU IT LV LU NL PL PT SK SI ES SE BG HR CY LT MT RO. Data after 2014 are not consistently available for all the indicators.

7. Conclusions

The frequencies at which individuals change their labour market status – and, inversely, the persistence of specific labour market outcomes at the individual level – give an indication of the flexibility of their labour market. Using individual-level micro-data from the EU-LFS, this study analysed aggregate labour market transitions across the countries of the EU over 2004-2016, covering the period from before the eruption of the global financial crisis to the economic recovery past the Eurozone crisis. By comparing transition dynamics both across countries and country groups and over time, we were able to identify country differences in this degree of flexibility and to examine how the crisis episodes, associated to the global financial crisis and the Eurozone crisis, impacted on the European labour markets.

Our analysis showed that all EU countries, across country groups, exhibit a high degree of employment persistence and persistence of inactivity, which shows little cyclicality. The dynamics concerning unemployment persistence, however, as well as transitions from and into unemployment, appear more varied. Concerning unemployment persistence, our evidence shows that this is by far the lowest in the Nordic countries and highest, post-crisis, in the Mediterranean. Unemployment persistence increased with the crisis everywhere, and with the exception of the Central and Eastern European countries, it continued to rise also post-crisis. Transitions from employment to unemployment also increased with the crisis everywhere, with the trend recovering after the crisis in Central and Eastern Europe and the Mediterranean but continuing to rise elsewhere. In turn, successful labour market entries (defined as moves from inactivity into employment) and successful employment transitions (defined as moves from unemployment into employment) are highest in the Nordics and least favourable in the Mediterranean. Particularly for the latter group of countries, the 2014-16 can hardly be dubbed "recovery" as those years have not necessarily yet determined an inversion of the crisis' trend, with countries being far away from the levels of successful and unsuccessful labour market outcomes observed before the crisis.

Disaggregating these patterns on the basis of individual characteristics, revealed that individual heterogeneity plays a role, with male and highly educated workers experiencing more favourable transitions from unemployment into employment on the whole (including during the crisis period), although this was stronger in some groups (e.g., Nordics) than others (e.g., the Mediterranean). Amongst all groups and periods, age seemed to be the main factor accounting for the largest differences in labour market transitions. Concerning the case of unemployment persistence, for example, this was found to be higher for young individuals (16-24 and 25-29 years old) in the Nordics, well above any other category; more mature workers in the Continental countries (30-54 years old); the 25-29 year olds in the Mediterranean and in Central and Eastern Europe. Inversely, overall mobility was found to be higher – and increasing with the crisis – for people below 54 and for highly educated people in Continental countries; by younger individuals and again for the highly educated in Central and Eastern Europe and the Mediterranean; and highest for the 16-24 year olds – but not for the highly educated – in the Nordics.

The descriptive analysis concentrated in turn on the relationship between labour market mobility and various labour markets institutions, such as part-time contracts, product market regulation, employment protection

legislation, and employment incentives. We found that mobility is on the whole inversely related to the degree of product market regulation, positively related to the prevalence of part-time contracts and employment incentives schemes, but has no relation with the degree of employment protection in the labour market.

Overall, our results sketch a picture of significant country heterogeneity in the intensity and direction of the labour market transitions across the EU. As expected, the crisis did have an impact on labour market transitions and employment/unemployment persistence, but in most cases, the effect of the crisis was smaller than the size of country differences observed in any one period (pre-crisis, during the crisis and post-crisis). Countries known for their institutional rigidities in the labour market, such as those of the Mediterranean, have been found to have less favourable labour market transitions and higher unemployment persistence. At the same time, we found no evidence that this links directly to the degree of employment protection, the main labour market institution associated with labour market rigidity. Instead, part-time employment seems to have played a – rather marginally – positive role for containing unemployment persistence, while product market regulations appear as a much more significant influence on adverse labour market transitions (and lower labour market mobility in particular). In any case, and despite the relative recovery of the European economies post-crisis, the degree of labour market flexibility (and the rates of labour market transitions) has not fully recovered to their pre-crisis

Drawing on these results, it appears that the policy message emanating from this chapter is that efforts to increase labour market "fluidity" should continue: unemployment persistence remains high in much of the EU post-crisis, while labour market transitions are not equally satisfactory in all countries or for all groups of workers. Enhancing this fluidity in the labour market, however, and especially facilitating convergence across countries in their extent of unemployment persistence, labour market churn or transitions into employment, does not seem to be conditioned on raising labour market flexibility in the traditional sense (namely, reducing employment protection). Rather, policy should aim at more nuanced and country/context-specific measures, including ones that fall outside the labour market.

References

Ballester, R. (2005). European Employment Strategy and Spanish Labour Market Policies. *Documents de Treball del Departament d'Economia*, Universitat de Girona, (14), 1-31.

Biroli, P., Mourre, G., & Turrini, A. (2010). Adjustment in the euro area and regulation of product and labour markets: An empirical assessment, *CEPR Discussion Paper Series*, No. 8010, September.

Boeri, T. (2005), Reforming labor and product markets: Some lessons from two decades of experiments in Europe, IMF WP/05/97, May.

Boeri, T. (2005). Reforming Labor and Product Markets; Some lessons from two decades of experiments in Europe (No. 05/97). International Monetary Fund.

Boeri N., S. Scarpetta and G. Nicoletti (2000), Regulation and Labour Market Performance, in «Regulatory Reform and Competitiveness in Europe: Horizontal issues» (edited by G. Galli, J. Pelkmans), Edward Elgar Publishing, UK.

Boeri, Tito and Conde-Ruiz, J. Ignacio and Galasso, Vincenzo, Protecting Against Labour Market Risk: Employment Protection or Unemployment Benefits? (July 2003). CEPR Discussion Paper No. 3990. Available at SSRN: https://ssrn.com/abstract=443067

Boeri, T., & Garibaldi, P. (2009). Beyond Eurosclerosis. *Economic Policy*, *24*(59), 409-461.

Brandolini, A., Cipollone, P., & Viviano, E. (2006). Does the ILO definition capture all unemployment? *Journal of the European Economic Association*, *4*(1), 153-179.

Daouli, J., Demoussis, M., Giannakopoulos, N., & Lampropoulou, N. (2015). The ins and outs of unemployment in the current Greek economic crisis. *South-Eastern Europe Journal of Economics*, *13*(2).

Duval, Romain and Elmeskov, Jörgen, The Effects of Emu on Structural Reforms in Labour and Product Markets (March 2006). ECB Working Paper No. 596. Available at SSRN: https://ssrn.com/abstract=887083

Eichhorst, W. (2013). The European Labour market. Success Through Flexibility and Mobility. *Konrad-Adenauer-Stiftung*, Berlin.

Elsby, M. W., Michaels, R., & Solon, G. (2009). The ins and outs of cyclical unemployment. *American Economic Journal: Macroeconomics*, *1*(1), 84-110.

Fujita, S. (2011). Dynamics of worker flows and vacancies: evidence from the sign restriction approach. *Journal of Applied Econometrics*, *26*(1), 89-121.

Fujita, S., & Ramey, G. (2006), *The cyclicality of job loss and hiring* (No. 06-17). Federal Reserve Bank of Philadelphia, Working Paper, (No. 06-17).

Fujita, S., & Ramey, G. (2009), The cyclicality of separation and job finding rates. *International Economic Review*, *50*(2), 415-430.

Gangl M. (2003). The Only Way is Up?: Employment Protection and Job Mobility among Recent Entrants to European Labour Markets, European Sociological Review, Volume 19, Issue 5, 1 December 2003, Pages 429–449.

Green F., (2010), Well-being, job satisfaction and labour mobility, *Labour Economics*, Volume 17, Issue 6, December 2010, Pages 897-903.

Ilzkovitz, F., & Dierx, A. (2011). Structural reforms: A European perspective. Reflets et perspectives de la vie économique, 50(3), 13-26

Kilponen, J., & Vanhala, J. (2009), Productivity and job flows: heterogeneity of new hires and continuing jobs in the business cycle, Research Discussion Paper (No. 15/2009). Bank of Finland.

Kruppe, T., R. Rogowski, K. Schömann (1998), Labour Market Efficiency in the European Union: Employment Protection and Fixed-Term Contracts, Routledge Studies in the European Economy

Kosma, T., E. Papapetrou, G. Pavlou, C. Tsochatzi and P. Zioutou (2017), Labour market adjustment and labour market reforms in Greece during the crisis: microeconomic evidence from the third wave of the wage dynamics survey», Bank of Greece

Leulescu A., M. Agafitei and J-L Mercy (2013), Statistical matching: a case study on EU-SILC and LFS, Eurostat, European Commission, Luxembourg.

Mabbett, D., Schelkle, W. (2007), Bringing macroeconomics back in to the political economy of reform: The Lisbon Agenda and the 'fiscal philosophy' of EMU, *Journal of Common Market Studies*, 45 (1). pp. 81-103.

Macchiarelli C., V. Monastiriotis and N. Lampropoulou (2018), "Transitions in the EU labour market: Structure, crisis and recovery", Report - DG-EMPL, European Commission, forthcoming.

Millán, A., Millán, J. M., Román, C., & van Stel, A. (2013). How does employment protection legislation influence hiring and firing decisions by the smallest firms?. Economics Letters, 121(3), 444-448

NBER (2008), Business Cycle Dating Committee, National Bureau of Economic Research http://www.nber.org/cycles/jan08bcdc_memo.pdf

Noelke, C. (2015). Employment protection legislation and the youth labour market. European Sociological Review, 32(4), 471-485.

Petrongolo, B., & Pissarides, C. A. (2008). The ins and outs of European unemployment. *American economic review*, *98*(2), 256-62.

Pinelli, D., R. Torre, L. Pace, L. Cassio and A. Arpaia. (2017). The Recent Reform of the Labour Market in Italy: A Review (No. 072). Directorate General Economic and Financial Affairs (DG ECFIN), European Commission.

Sapir, A. (2006). Globalization and the reform of European social models. JCMS: Journal of Common Market Studies, 44(2), 369-390.

Shimer, R. (2005). The cyclical behavior of equilibrium unemployment and vacancies. *American economic review*, *95*(1), 25-49

Shimer, R. (2012). Reassessing the ins and outs of unemployment. *Review of Economic Dynamics*, *15*(2), 127-148.

Shorrocks, A. F. (1978). The measurement of mobility. *Econometrica: Journal of the Econometric Society*, 46(5): 1013-1024

Siebert, Horst. 1997. "Labor Market Rigidities: At the Root of Unemployment in Europe." *Journal of Economic Perspectives*, 11 (3): 37-54

Theeuwes, J., Kerkhofs, M., & Lindeboom, M. (1990). Transition intensities in the Dutch labour market 1980–85. *Applied Economics*, *22*(8), 1043-1061.

Ward-Warmedinger, M., & Macchiarelli, C. (2014). Transitions in labour market status in EU labour markets. *IZA Journal of European Labor Studies*, *3*(1), 17.

Appendix

Table 1A: Peaks and troughs in unemployment for selected EU countries

Pre-crisis PEAK	Pre-crisis TROUGH	Crisis PEAK 1	Crisis PEAK 2	Post-crisis TROUGH
AT=2004	AT=2008	AT=2009	AT=2011	AT=2016
BE=2005	BE=2008	BE=2010	BE=2011	BE=2014
BG=2004	BG=2008	BG=2013	-	BG=2016
CY=2005	CY=2008	CY=2014	-	CY=2016
CZ=2005	CZ=2008	CZ=2010	-	CZ=2016
DE=2005	DE=2008	DE=2009	-	DE=2016
DK=2004	DK=2008	DK=2011	-	DK=2015
EE=2004	EE=2007	EE=2010	-	EE=2015
ES=2004	ES=2007	ES=2013	-	ES=2016
FI=2004	FI=2008	FI=2010	FI=2012	FI=2015
FR=2004	FR=2008	FR=2009	FR=2010	FR=2015
GR=2004	GR=2008	GR=2013	-	GR=2016
HR=2004	HR=2008	HR=2014	-	HR=2016
HU=2005	HU=2007	HU=2010	-	HU=2016
IE=2004	IE=2007	IE=2012	-	IE=2016
IT=2004	IT=2007	IT=2014	-	IT=2016
LT=2004	LT=2007	LT=2010	-	LT=2016
LU=2004	LU=2007	LU=2009	LU=2010	LU=2015
LV=2004	LV=2007	LV=2010	-	LV=2016
-	-	MT=2009	-	MT=2016
NL=2005	NL=2008	NL=2014	-	NL=2016
PL=2004	PL=2008	PL=2013	-	PL=2016
PT=2005	PT=2008	PT=2013	-	PT=2016
RO=2004	RO=2008	RO=2011	-	RO=2015
SE=2005	SE=2007	SE=2010	-	SE=2016
SI=2005	SI=2008	SI=2013	-	SI=2016
SK=2004	SK=2008	SK=2010	-	SK=2016
UK=2006	UK=2007	UK=2011	-	UK=2016

Sources: Eurostat data, authors' computations.

Table 2A: Transition probabilities by worker group

			Central Eastern			Nordics			Continental			Mediterranean		
			Labour market status year t											
Males			E	U	I	E	U	I	E	U	I	E	U	I
2004-2008	E		**0.947**	0.029	0.025	**0.929**	0.016	0.056	**0.941**	0.030	0.029	**0.945**	0.029	0.026
	U		0.300	**0.625**	0.074	0.213	**0.485**	0.302	0.337	**0.600**	0.063	0.340	**0.586**	0.074
	I		0.048	0.022	**0.930**	0.093	0.019	**0.888**	0.039	0.012	**0.949**	0.039	0.024	**0.937**
2009-2012	E		**0.934**	0.039	**0.027**	**0.908**	0.029	0.063	**0.930**	0.041	0.029	**0.917**	0.057	0.027
	U		0.263	**0.698**	0.039	0.390	**0.378**	0.233	0.310	**0.615**	0.075	0.223	**0.724**	0.053
	I		0.032	0.019	**0.949**	0.081	0.029	**0.890**	0.043	0.021	**0.936**	0.026	0.030	**0.944**
2013-2016	E		**0.953**	0.024	0.023	**0.903**	0.031	0.065	**0.925**	0.045	0.030	**0.933**	0.044	0.023
	U		0.291	**0.670**	0.039	0.355	**0.460**	0.185	0.286	**0.652**	0.062	0.220	**0.727**	0.053
	I		0.031	0.016	**0.953**	0.101	0.036	**0.863**	0.042	0.020	**0.938**	0.024	0.030	**0.947**
Females			E	U	I	E	U	I	E	U	I	E	U	I
2004-2008	E		**0.923**	0.028	0.049	**0.858**	0.017	0.125	**0.923**	0.037	0.040	**0.922**	0.035	0.042
	U		0.263	**0.623**	0.114	0.209	**0.257**	0.534	0.306	**0.593**	0.102	0.292	**0.589**	0.119
	I		0.043	0.020	**0.937**	0.109	0.021	**0.870**	0.037	0.014	**0.949**	0.032	0.026	**0.941**
2009-2012	E		**0.918**	0.035	0.047	**0.873**	0.024	0.103	**0.915**	0.042	0.043	**0.911**	0.052	0.038
	U		0.240	**0.695**	0.065	0.366	**0.338**	0.296	0.307	**0.573**	0.120	0.205	**0.683**	0.112
	I		0.031	0.016	**0.953**	0.105	0.027	**0.867**	0.044	0.021	**0.935**	0.023	0.032	**0.945**
2013-2016	E		**0.935**	0.024	0.041	**0.871**	0.033	0.096	**0.914**	0.041	0.045	**0.925**	0.044	0.031
	U		0.267	**0.661**	0.072	0.337	**0.401**	0.261	0.275	**0.625**	0.101	0.195	**0.695**	0.110
	I		0.031	0.013	**0.955**	0.116	0.037	**0.847**	0.039	0.020	**0.941**	0.020	0.031	**0.949**
Low education			E	U	I	E	U	I	E	U	I	E	U	I
2004-2008	E		**0.881**	0.049	0.070	**0.851**	0.026	0.123	**0.904**	0.046	0.049	**0.919**	0.039	0.042
	U		0.186	**0.699**	0.115	0.170	**0.310**	0.520	0.242	**0.666**	0.092	0.269	**0.623**	0.109
	I		0.021	0.007	**0.972**	0.042	0.013	**0.945**	0.017	0.009	**0.974**	0.017	0.016	**0.968**
2009-2012	E		**0.853**	0.075	0.072	**0.836**	0.039	0.124	**0.889**	0.060	0.051	**0.886**	0.071	0.043
	U		0.160	**0.782**	0.059	0.302	**0.376**	0.322	0.223	**0.670**	0.108	0.177	**0.738**	0.085
	I		0.012	0.006	**0.982**	0.039	0.019	**0.943**	0.019	0.013	**0.967**	0.011	0.018	**0.972**
2013-2016	E		**0.884**	0.054	0.062	**0.823**	0.047	0.130	**0.880**	0.063	0.056	**0.905**	0.057	0.037
	U		0.188	**0.756**	0.056	0.270	**0.435**	0.294	0.193	**0.714**	0.093	0.165	**0.749**	0.086
	I		0.010	0.007	**0.983**	0.051	0.024	**0.925**	0.015	0.012	**0.974**	0.008	0.015	**0.977**
Medium education			E	U	I	E	U	I	E	U	I	E	U	I
2004-2008	E		**0.939**	0.030	0.031	**0.895**	0.016	0.089	**0.934**	0.034	0.032	**0.943**	0.031	0.027
	U		0.313	**0.600**	0.086	0.218	**0.373**	0.409	0.357	**0.569**	0.073	0.350	**0.559**	0.090
	I		0.058	0.033	**0.909**	0.134	0.026	**0.840**	0.053	0.019	**0.927**	0.069	0.044	**0.886**
2009-2012	E		**0.928**	0.040	0.032	**0.891**	0.029	0.081	**0.922**	0.044	0.034	**0.921**	0.054	0.025
	U		0.270	**0.682**	0.048	0.409	**0.330**	0.261	0.346	**0.562**	0.092	0.244	**0.680**	0.076
	I		0.036	0.023	**0.941**	0.117	0.035	**0.848**	0.057	0.028	**0.915**	0.047	0.061	**0.893**
2013-2016	E		**0.946**	0.026	0.028	**0.884**	0.035	0.081	**0.914**	0.049	0.038	**0.934**	0.045	0.021

(Left margin label, rotated: Labour market status year t-1)

	U	0.291	**0.656**	0.053	0.339	**0.420**	0.241	0.305	**0.620**	0.076	0.235	**0.694**	0.071
	I	0.034	0.018	**0.948**	0.122	0.042	**0.836**	0.047	0.026	**0.927**	0.041	0.059	**0.900**
High education		E	U	I	E	U	I	E	U	I	E	U	I
2004-2008	E	**0.961**	0.012	0.027	**0.930**	0.010	0.060	**0.953**	0.022	0.025	**0.960**	0.020	0.021
	U	0.413	**0.512**	0.074	0.251	**0.341**	0.407	0.432	**0.490**	0.078	0.414	**0.506**	0.080
	I	0.125	0.043	**0.832**	0.205	0.026	**0.770**	0.114	0.025	**0.861**	0.130	0.081	**0.789**
2009-2012	E	**0.956**	0.018	0.027	**0.927**	0.017	0.056	**0.946**	0.027	0.027	**0.946**	0.033	0.021
	U	0.376	**0.579**	0.045	0.429	**0.346**	0.225	0.419	**0.497**	0.084	0.303	**0.621**	0.076
	I	0.094	0.039	**0.867**	0.188	0.037	**0.775**	0.115	0.035	**0.850**	0.086	0.083	**0.831**
2013-2016	E	**0.963**	0.013	0.024	**0.920**	0.023	0.056	**0.944**	0.028	0.028	**0.954**	0.028	0.018
	U	0.399	**0.551**	0.050	0.432	**0.434**	0.133	0.390	**0.543**	0.067	0.296	**0.630**	0.074
	I	0.091	0.029	**0.881**	0.203	0.055	**0.742**	0.109	0.035	**0.855**	0.079	0.081	**0.840**
15-24 year olds		E	U	I	E	U	I	E	U	I	E	U	I
2004-2008	E	**0.886**	0.062	0.052	**0.729**	0.034	0.236	**0.856**	0.085	0.059	**0.885**	0.074	0.041
	U	0.345	**0.557**	0.098	0.281	**0.155**	0.564	0.419	**0.509**	0.072	0.370	**0.556**	0.073
	I	0.063	0.039	**0.898**				0.114	0.037	**0.849**	0.088	0.060	**0.852**
2009-2012	E	**0.861**	0.084	0.055	**0.692**	0.053	0.255	**0.828**	0.104	0.068	**0.830**	0.130	0.040
	U	0.299	**0.640**	0.061	0.417	**0.288**	0.296	0.384	**0.528**	0.088	0.227	**0.707**	0.066
	I	0.049	0.037	**0.914**	0.115	0.040	**0.845**	0.103	0.045	**0.853**	0.049	0.079	**0.872**
2013-2016	E	**0.898**	0.053	0.050	**0.671**	0.055	0.274	**0.827**	0.111	0.062	**0.842**	0.116	0.042
	U	0.361	**0.588**	0.051	0.258	**0.397**	0.345	0.364	**0.552**	0.084	0.241	**0.697**	0.062
	I	0.055	0.033	**0.912**	0.115	0.050	**0.835**	0.096	0.042	**0.862**	0.045	0.077	**0.878**
25-29 year olds		E	U	I	E	U	I	E	U	I	E	U	I
2004-2008	E	**0.958**	0.025	0.016	**0.901**	0.021	0.078	**0.921**	0.053	0.026	**0.926**	0.049	0.026
	U	0.266	**0.655**	0.080	0.259	**0.169**	0.572	0.444	**0.495**	0.061	0.392	**0.539**	0.069
	I	0.086	0.041	**0.872**	0.323	0.045	**0.632**	0.277	0.092	**0.631**	0.177	0.115	**0.709**
2009-2012	E	**0.949**	0.033	0.018	**0.881**	0.034	0.085	**0.902**	0.067	0.030	**0.886**	0.090	0.024
	U	0.244	**0.720**	0.037	0.475	**0.363**	0.162	0.396	**0.519**	0.085	0.272	**0.672**	0.056
	I	0.062	0.031	**0.906**	0.308	0.075	**0.617**	0.248	0.117	**0.636**	0.132	0.158	**0.710**
2013-2016	E	**0.963**	0.022	0.015	**0.872**	0.044	0.084	**0.894**	0.075	0.031	**0.898**	0.081	0.021
	U	0.271	**0.689**	0.040	0.444	**0.390**	0.166	0.373	**0.559**	0.068	0.278	**0.668**	0.054
	I	0.066	0.029	**0.904**	0.311	0.111	**0.578**	0.241	0.105	**0.654**	0.143	0.157	**0.700**
30-54 year olds		E	U	I	E	U	I	E	U	I	E	U	I
2004-2008	E	**0.958**	0.025	0.016	**0.933**	0.014	0.053	**0.959**	0.027	0.014	**0.954**	0.028	0.018
	U	0.266	**0.655**	0.080	0.231	**0.567**	0.202	0.333	**0.610**	0.057	0.301	**0.605**	0.094
	I	0.086	0.041	**0.872**	0.186	0.043	**0.772**	0.100	0.046	**0.854**	0.060	0.050	**0.889**
2009-2012	E	**0.949**	0.033	0.018	**0.936**	0.024	0.040	**0.950**	0.035	0.015	**0.934**	0.051	0.015
	U	0.244	**0.720**	0.037	0.395	**0.366**	0.239	0.323	**0.606**	0.071	0.215	**0.713**	0.072
	I	0.062	0.031	**0.906**	0.185	0.060	**0.755**	0.103	0.063	**0.834**	0.053	0.069	**0.878**
2013-2016	E	**0.963**	0.022	0.015	**0.934**	0.030	0.037	**0.947**	0.037	0.016	**0.947**	0.041	0.012
	U	0.271	**0.689**	0.040	0.388	**0.445**	0.166	0.286	**0.652**	0.062	0.211	**0.722**	0.067

55-64 year olds		E	U	I	E	U	I	E	U	I	E	U	I
	I	0.066	0.029	**0.904**	0.200	0.080	**0.720**	0.090	0.059	**0.851**	0.047	0.074	**0.879**
2004-2008	E	**0.865**	0.017	0.118	**0.884**	0.016	0.099	**0.849**	0.022	0.128	**0.905**	0.017	0.078
	U	0.144	**0.635**	0.221	0.133	**0.407**	0.461	0.075	**0.742**	0.184	0.141	**0.676**	0.183
	I	0.025	0.005	**0.970**	0.048	0.006	**0.946**	0.005	0.003	**0.992**	0.008	0.010	**0.982**
2009-2012	E	**0.877**	0.029	0.094	**0.890**	0.024	0.087	**0.864**	0.027	0.109	**0.896**	0.032	0.071
	U	0.134	**0.758**	0.108	0.321	**0.364**	0.315	0.104	**0.701**	0.195	0.110	**0.729**	0.161
	I	0.015	0.003	**0.982**	0.051	0.014	**0.935**	0.010	0.006	**0.984**	0.012	0.010	**0.978**
2013-2016	E	**0.908**	0.021	0.071	**0.892**	0.032	0.076	**0.876**	0.027	0.096	**0.920**	0.028	0.052
	U	0.146	**0.750**	0.104	0.255	**0.499**	0.246	0.105	**0.767**	0.128	0.103	**0.746**	0.151
	I	0.013	0.005	**0.982**	0.074	0.019	**0.908**	0.009	0.007	**0.984**	0.011	0.012	**0.977**

Note: E=employed; U=unemployed; I=inactive so that EE = remains in employment between one year and the next; UU = remains in unemployment, II = remains in inactivity. Observations are weighted according to the GDPin each country over the group aggregate. Elements showing a probability of remaining in the same labour market state (employment, unemployment and inactivity) are in bold.

Sources: LFS microdata, authors' computations.

Table 3A: Mobility index across country and worker group

		CEE EU countries											Nordics				Continental				Mediterranean					
		BG	CZ	EE	LV	LT	HU	PL	RO	SK	SI	HR	NL	FI	DK	SE	BE	FR	LU	AT	GR	ES	IT	CY	PT	MT
Total	2004-08	0.207	0.273	0.343	0.278	0.283	0.257	0.242	0.298	0.212	0.215	0.168	0.000	0.337	0.429	0.449	0.184	0.267	0.421	0.292	0.193	0.392	0.183	0.355	0.309	0.000
	2009-12	0.167	0.267	0.329	0.312	0.257	0.247	0.205	0.174	0.184	0.186	0.160	0.466	0.358	0.407	0.441	0.203	0.281	0.435	0.291	0.150	0.282	0.177	0.292	0.256	0.290
	2013-16	0.151	0.284	0.401	0.338	0.265	0.285	0.219	0.116	0.206	0.195	0.180	0.414	0.336	0.394	0.464	0.217	0.250	0.451	0.267	0.130	0.252	0.174	0.253	0.248	0.291
Males	2004-08	0.218	0.265	0.315	0.262	0.287	0.240	0.241	0.299	0.203	0.203	0.176	0.000	0.303	0.414	0.427	0.189	0.261	0.417	0.271	0.218	0.380	0.183	0.350	0.304	0.000
	2009-12	0.166	0.263	0.311	0.297	0.268	0.232	0.207	0.172	0.173	0.182	0.159	0.433	0.332	0.399	0.423	0.207	0.266	0.403	0.265	0.158	0.265	0.168	0.285	0.252	0.264
	2013-16	0.151	0.290	0.383	0.307	0.268	0.270	0.210	0.117	0.192	0.196	0.179	0.377	0.313	0.376	0.449	0.216	0.244	0.428	0.242	0.132	0.243	0.163	0.244	0.251	0.269
Females	2004-08	0.197	0.285	0.379	0.299	0.281	0.276	0.246	0.296	0.222	0.229	0.163	0.000	0.372	0.443	0.471	0.182	0.273	0.427	0.319	0.183	0.405	0.186	0.360	0.315	0.000
	2009-12	0.169	0.275	0.354	0.329	0.247	0.264	0.205	0.179	0.197	0.192	0.162	0.496	0.388	0.417	0.460	0.200	0.295	0.467	0.325	0.146	0.300	0.189	0.298	0.260	0.355
	2013-16	0.151	0.279	0.424	0.375	0.265	0.300	0.229	0.116	0.221	0.195	0.181	0.449	0.359	0.412	0.482	0.220	0.257	0.474	0.300	0.130	0.261	0.188	0.261	0.245	0.331
Low-education	2004-08	0.185	0.211	0.331	0.266	0.278	0.224	0.204	0.310	0.136	0.236	0.174	0.000	0.291	0.436	0.386	0.167	0.228	0.404	0.278	0.176	0.371	0.157	0.327	0.295	0.000
	2009-12	0.167	0.228	0.297	0.309	0.240	0.237	0.169	0.192	0.134	0.186	0.167	0.477	0.320	0.401	0.387	0.191	0.237	0.419	0.269	0.147	0.269	0.156	0.280	0.249	0.263
	2013-16	0.142	0.213	0.401	0.319	0.210	0.290	0.177	0.135	0.134	0.196	0.153	0.442	0.286	0.396	0.417	0.206	0.210	0.451	0.232	0.128	0.230	0.150	0.233	0.242	0.256
Medium-education	2004-08	0.248	0.310	0.366	0.294	0.310	0.295	0.261	0.302	0.255	0.223	0.180	0.000	0.389	0.435	0.497	0.211	0.292	0.416	0.311	0.202	0.441	0.220	0.364	0.330	0.000
	2009-12	0.187	0.291	0.361	0.320	0.282	0.271	0.215	0.171	0.202	0.195	0.165	0.487	0.400	0.436	0.477	0.229	0.311	0.443	0.306	0.158	0.329	0.206	0.296	0.296	0.385
	2013-16	0.165	0.311	0.427	0.336	0.277	0.293	0.221	0.115	0.224	0.199	0.190	0.416	0.376	0.417	0.490	0.239	0.270	0.451	0.279	0.137	0.289	0.202	0.243	0.289	0.392
High-education	2004-08	0.259	0.378	0.394	0.362	0.337	0.367	0.363	0.325	0.391	0.311	0.214	0.000	0.388	0.485	0.503	0.281	0.361	0.499	0.321	0.276	0.479	0.300	0.469	0.437	0.000
	2009-12	0.212	0.375	0.379	0.388	0.353	0.317	0.314	0.186	0.372	0.270	0.227	0.496	0.397	0.449	0.496	0.260	0.369	0.487	0.353	0.202	0.359	0.269	0.374	0.334	0.458
	2013-16	0.206	0.408	0.445	0.445	0.382	0.334	0.325	0.121	0.371	0.256	0.268	0.443	0.369	0.434	0.518	0.271	0.337	0.493	0.326	0.166	0.330	0.266	0.353	0.324	0.466
16-24 years olds	2004-08	0.230	0.376	0.439	0.385	0.386	0.311	0.333	0.295	0.291	0.450	0.298	0.000	0.587	0.722	0.610	0.335	0.392	0.506	0.457	0.270	0.510	0.242	0.446	0.418	0.000
	2009-12	0.205	0.362	0.459	0.397	0.377	0.327	0.303	0.179	0.256	0.404	0.263	0.546	0.568	0.702	0.607	0.343	0.400	0.504	0.417	0.235	0.383	0.231	0.412	0.373	0.397
	2013-16	0.196	0.398	0.524	0.467	0.402	0.376	0.301	0.131	0.290	0.458	0.307	0.456	0.525	0.700	0.637	0.334	0.380	0.562	0.408	0.235	0.360	0.236	0.391	0.376	0.472
25-29 years olds	2004-08	0.313	0.384	0.456	0.398	0.456	0.366	0.400	0.390	0.357	0.444	0.277	0.000	0.549	0.637	0.623	0.388	0.504	0.475	0.400	0.310	0.595	0.288	0.534	0.472	0.000
	2009-12	0.235	0.418	0.437	0.449	0.462	0.358	0.358	0.215	0.342	0.394	0.315	0.537	0.552	0.600	0.622	0.388	0.493	0.616	0.416	0.281	0.491	0.281	0.479	0.423	0.338
	2013-16	0.223	0.504	0.580	0.511	0.494	0.409	0.361	0.151	0.401	0.425	0.398	0.548	0.540	0.591	0.652	0.379	0.458	0.700	0.415	0.296	0.462	0.295	0.471	0.446	0.426
30-54 years olds	2004-08	0.246	0.270	0.354	0.288	0.321	0.261	0.229	0.364	0.207	0.159	0.115	0.000	0.404	0.447	0.498	0.188	0.304	0.425	0.288	0.169	0.415	0.187	0.345	0.307	0.000
	2009-12	0.181	0.256	0.357	0.321	0.286	0.268	0.198	0.187	0.185	0.149	0.126	0.484	0.441	0.415	0.498	0.223	0.317	0.451	0.304	0.138	0.320	0.193	0.271	0.246	0.255
	2013-16	0.161	0.255	0.429	0.338	0.287	0.316	0.231	0.119	0.214	0.170	0.147	0.429	0.433	0.389	0.533	0.240	0.276	0.493	0.285	0.127	0.282	0.197	0.231	0.232	0.248
55-64 years olds	2004-08	0.204	0.279	0.344	0.217	0.249	0.267	0.258	0.345	0.236	0.241	0.134	0.000	0.237	0.315	0.340	0.124	0.215	0.303	0.254	0.167	0.318	0.155	0.249	0.208	0.000
	2009-12	0.164	0.279	0.328	0.298	0.251	0.218	0.148	0.187	0.180	0.224	0.137	0.506	0.276	0.317	0.339	0.116	0.237	0.400	0.258	0.157	0.256	0.162	0.198	0.209	0.324
	2013-16	0.140	0.239	0.378	0.282	0.228	0.225	0.171	0.106	0.177	0.187	0.132	0.392	0.255	0.287	0.360	0.126	0.187	0.419	0.220	0.105	0.227	0.149	0.181	0.198	0.291

Notes: Measures are based on the Shorrocks' mobility index. The table refers to 25 EU countries: Bulgaria (BG), Czech Republic (CZ), Estonia (EE), Latvia (LV), Lithuania (LT), Hungary (HU), Poland (PL), Romania (RO), Slovakia (SK), Slovenia (SI), Croatia (HR), the Netherlands (NL), Finland (FI), Denmark (DK), Sweden (SE), Belgium (BE), France (FR), Luxemburg (LU), Austria (AT), Greece (GR), Spain (ES), Italy (IT), Cyprus (CY),Portugal (PT), Malta (MT).

Sources: LFS microdata, authors' computations.