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ricerca_meq@unibg.it

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Is Flexicurity Good in Bad Times? Evidence on worker security in Europe

Gabriele Mazzolini, Federica Origo,

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Evidence on worker security in Europe.

Gabriele Mazzolini, Università Cattolica di Milano*

Federica Origo, Università degli studi di Bergamo**

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Abstract

The aim of this paper is to assess the effect of flexicurity on different measures of workers' perceived security during the economic crisis.
According to flexicurity principles, if a country wants to increase flexibility by lowering employment protection, it should increase security by increasing expenditure on labour market policies to preserve worker wellbeing.
Our empirical analysis, based on five waves of the Flash Eurobarometer survey on "Monitoring the social impact of the crisis" matched with Eurostat data on expenditure on labour market policies and OECD indicators of employment protection legislation, confirms that, even during the crisis, changes in policy mix according to flexicurity principles increase - ceteris paribus - both perceived job and employment security and the effect is usually greater on the latter. However, the adoption of the flexicurity strategy seems only partly to have higher effects on workers with initial low values of either job or employment flexicurity.

Key words: flexicurity; economic crisis; job security; employment security; labour market policies

JEL Codes: J08, J65, I38

* Gabriele Mazzolini - Corresponding author. E-mail address: gabriele.mazzolini@unicatt.it - Università Cattolica del Sacro Cuore - Milano. Centro di ricerca per i problemi del lavoro e dell'impresa. Largo Gemelli 1, 20123 Milano, Italy - Tel: +39 O2 7234 2973; Fax. +39 02 7234 2781

** Federica Origo - E-mail address: federica.origo@unibg.it - Università degli studi di Bergamo. Via dei Caniana 2 - 24127 Bergamo (BG) - Italy

1. Introduction

Over the last decades increasing globalization has brought new challenges to firms in developed countries: the capacity to respond rapidly to changes in demand and markets has become crucial to firms' survival and has also led to major changes in their management style and work practices.

From a labour market policy perspective, many OECD countries are still trying to find an optimal way of protecting the interests of the parties involved – employers and workers – through a fair sharing of the increased risks involved in the new economic environment. Despite their economic and institutional differences, these countries share the same main problem: how to promote sustainable economic growth, which entails maintaining high competitiveness and flexibility, at the same time as countering the increasing sense of job insecurity (OECD 2003, Schmidt 1999).

Flexicurity is the European answer to this problem.

The 'flexicurity' thesis postulates that flexibility is not necessarily the antithesis of security and that both can be increased through appropriate labour market policies and institutions (Madsen 2002, Wilthagen and Tros 2004). Flexicurity is thus an integrated policy approach which aims at enhancing both the flexibility of labour markets and worker security (in relation to employment and income) in order to facilitate transitions and reduce labour market segmentation.

More numerical (external) flexibility is thus acceptable when appropriate labour market policies, such as generous unemployment benefits and effective active labour market policies, ensure that workers have employment opportunities throughout their lives. In this perspective, the flexicurity approach promotes a shift from job security (the same job lifelong) to employment security (any job lifelong).

This model, albeit with different nuances, was first implemented in the mid-nineties in the Netherlands and Denmark; the positive results obtained in terms of declining unemployment rates and increasing perceived security prompted the European Commission to adopt flexicurity strategies at the EU level, proposing a set of broad common principles of flexicurity and a series of model 'pathways' for their implementation (European Commission 2007). More specifically, any 'flexicurity model' should include the following basic elements: flexible and secure contractual arrangements and work organisations, thanks also to modern labour laws and modern work organisation; active labour market policies, with a special emphasis on lifelong learning, which help people to cope with rapid organisational changes,

spells of unemployment and transitions to new jobs; modern social security systems, which should be able to provide adequate income support and facilitate labour market mobility.

These Common Principles of Flexicurity have constituted a reference framework since then for the implementation of integrated flexicurity strategies among Member States.

However, the recent severe economic and financial crisis has posed new challenges to flexicurity strategies, particularly in terms of the financial sustainability of the public budget (generous unemployment benefits and a developed system of active labour market policies may be very costly during recessions) and the effectiveness of its basic components in combating unemployment or worker insecurity.

In this perspective, empirical evidence shows that, on one hand, in the so-called 'flexicurity' countries, particularly in Denmark, the negative effects of the economic downturn on income and unemployment were significantly mitigated, at least in the first years of the crisis (Jørgensen 2011). On the other hand, countries could prevent massive unemployment by adopting policies, such as short-time working schemes,[1] not officially encompassed by the flexicurity model envisaged by the European Commission (Eurofound 2011).

Despite the Council of the European Union recommended to tackle the global crisis by applying flexicurity principles, little is known about whether the effects of the economic crisis (in terms, for example, of workers' perceived security) vary according to the flexicurity model adopted by the various EU Member States or whether countries changing their labour market policies in light of the flexicurity principles are more successful in mitigating such effects.

The main aim of this paper is to study the impact of the recent economic crisis on workers' perceived security in EU countries and test whether this impact has been influenced by the actual flexicurity model adopted.

The remainder of the paper is structured as follows: in Section 2 we review the economic literature on flexicurity; in Section 3 we discuss the empirical strategy; in Section 4 we present the data and main variables used in our empirical analysis as well as some descriptive evidence; the main results are discussed in Section 5, while additional estimates are reported in Section 6. The last Section concludes.

[1] Of the EU-27 Member States, working time reduction has been used massively in Germany, Belgium, Italy, France, the UK and Sweden.

2. Literature review

Socio-economic research on flexicurity is rather recent and mainly at the macroeconomic level.

The earliest contributions on this issue focused on the Danish flexicurity model and its impact on economic and labour market performance (Madsen 2002).

Other macroeconomic studies have looked at the trade-off between employment protection legislation (EPL) and unemployment insurance (UI) in the flexicurity model,[2] assessing their relative importance in reducing unemployment and/or increasing social wellbeing (Pissarides 2001, Postel-Vinay and Saint Martin 2005, Boeri et al 2012). The main hypothesis behind these studies is that what matters is how different labour market institutions and macroeconomic environments interact between themselves.

Other studies have looked at the relative impact of EPL and UI on perceived job security, finding that the latter is lower in countries with stricter EPL and higher in countries with generous UI (Clark and Postel-Vinay 2009). One explanation for these results may be represented by the fact that, given the trade-off between EPL and UI, in countries with higher EPL, workers may be more insecure because they cannot count on the safety net provided by UI in the event that they lose their jobs. In this perspective, a recent strand of literature has investigated how flexibility and security (and the flexicurity mix) can be measured at the individual level and how they affect worker security and wellbeing. These studies also bring in the role of the flexicurity model to explain the fact that temporary workers are not necessarily less satisfied nor feel less secure than permanent workers.

Facchinetti and Origo (2010) show that on average temporary employment reduces individual perceived job security in Europe and this result does not vary significantly according to workers' characteristics (especially gender), but the negative effect is actually lower in countries with higher levels of flexicurity. In the case of Denmark no statistically significant relationship between temporary employment and perceived job security has been found, suggesting that some of the effects of the (macro) flexicurity model also apply at the individual (micro) level.

More direct evidence on the flexicurity mix at the individual level, proxied by the joint effect of type of contract and perceived security (assessed through the likelihood of losing one's job within a certain timeframe) on job satisfaction, has been provided by Origo and Pagani (2009

[2] According to the theoretical literature, both EPL and UI protect workers against uninsurable labour market risks and UI is not necessary if the EPL system (specifically severance payments and the notice period) is set to maximise the welfare of risk-adverse agents.

and 2012), who show that what matters for job satisfaction is mainly perceived job security, which may be independent of contract type. The 'temporary but secure job' combination would seem to be preferable to the 'permanent but insecure job' combination, indicating that the length of the contract may be less important if workers perceive that they are not at risk of unemployment. This result holds for all the groups of workers considered (by gender, age and education) and regardless of the (macro) flexicurity model prevailing in the country where the workers live.

Finally, recent studies have looked at the macroeconomic resilience of the Danish flexicurity model during the economic crisis. Jørgensen (2011) has shown that, because of high unemployment benefits and relatively high social assistance benefits, domestic demand was more stable in Denmark than in other EU countries and the effects on income and unemployment were therefore significantly mitigated. Furthermore, high mobility rates (in terms of job-to-job mobility and job creation and destruction) were also features of the Danish economy during the crisis. But these positive results came at the expense of a rising deficit in the public budget. As a consequence, in May 2010 the Danish government implemented a fiscal recovery plan, which encompassed a reform of the unemployment benefit system, consisting in a reduction in the duration of unemployment benefits from four to two years and tighter criteria for regaining access to benefits (Madsen, 2013).[3]

Andersen (2012) points out that Denmark did not experience a significant employment adjustment as compared to other OECD countries but, in contrast to other countries with stricter EPL, this adjustment happened mainly via the number of employees (extensive margin) rather than the number of working hours (intensive margin). Similar results have been found by Eriksson (2012), who underlines that since the early nineties the Danish flexicurity system has gone through a series of reforms involving significant reductions in the duration of unemployment benefits and stricter entitlement conditions, which have increased the cost of employee dismissals and may have contributed to slight reductions in the separation rates since the mid-nineties. Madsen (2013) has observed that, apart from the gradual decline in income protection guaranteed by the unemployment benefits system caused by past reforms and that of 2010 mentioned above, the crisis also put pressure on active labour market policies, given the falling share of unemployed individuals taking part in either

[3] This reform was to be implemented by mid-2012 but since unemployment rates have not substantially declined in the meantime, implementation has been postponed to the beginning of 2013.

counselling or training programs and the severe difficulties faced by job centres in meeting re-employment deadlines for the unemployed.[4]

Our contribution extends the literature on the effects of flexicurity on worker wellbeing in a number of ways. Firstly, we look at the effects of flexicurity during the economic crisis on a large set of EU countries. Secondly, we distinguish between job and employment security, with the aim to test whether the flexicurity model is more relevant to the latter than the former. Finally, we exploit both the longitudinal nature of the dataset used in the empirical analysis and variations in policies and institutions at the national level in order to better identify the causal effect of the flexicurity model on workers' perceived security.

3. Empirical strategy

The aim of this empirical analysis is to test the effect of the flexicurity model on perceived worker security during the recent economic downturn.

A number of studies have already tried to classify EU countries from a flexicurity perspective according to their prevailing mix of labour market and social policies. One of the most popular classifications is that proposed by the European Commission (2006) which, using the results of the principal component analysis carried out on the basis of four variables measuring the flexicurity principles outlined above,[5] clusters the EU countries into five main groups, corresponding to different flexicurity models: English-speaking countries (UK and Ireland) with high flexibility (low EPL) and low security (low spending on labour market policies); continental countries (Germany, Belgium, Austria and France) with intermediate-to-low flexibility and intermediate-to-high security; Mediterranean countries (Italy, Spain, Portugal and Greece) combining low flexibility and low security; Nordic countries (Denmark, Sweden and Finland) and the Netherlands with intermediate-to-high flexibility and high security. The Eastern European countries (Czech Republic, Hungary, Poland and Slovakia) lie somewhere between the Mediterranean and the English-speaking countries, since they have very low levels of security combined with intermediate levels of flexibility.

[4] In January 2010 only 58% of the unemployed started activation in time. The percentage is even lower (around 42% among the young unemployed (aged under 30)).

[5] These variables are: the OECD index of overall employment protection legislation (EPL) as a measure of numerical flexibility; expenditure on labour-market policies (LMP, both passive and active) as a percentage of GDP as a proxy for security; percentage of participants in lifelong training programmes as a measure of employability; and average tax-wedge as a measure of the distortions created by the tax system. For further details see European Commission (2006).

On the basis of this classification, we started by estimating the following model:

$$Y_{ict} = \mu_c + \tau_t + X_{ict}\beta + U_{ct}\delta + \varepsilon_{ict} \quad [1]$$

where Y is a measure of perceived security for worker i in country c at time t, μ_c is a fixed effect for country c, τ_t are common time fixed effects, X is a vector of individual control variables, U the unemployment rate in country c at time t and ε the usual error term. β and δ are parameters to be estimated.

The EC classification allows us to identify the so-called 'flexicurity' countries (i.e. those combining high flexibility and high security, namely Nordic countries and the Netherlands) and we can interpret estimates of the country fixed effects in light of this classification. More specifically, our main research hypothesis is that workers feel relatively less insecure in the so-called 'flexicurity' countries, while they feel relatively more insecure in Mediterranean and Eastern countries.

The main limitation of this identification strategy is that country fixed effects may capture other country-specific features which are not related to the flexicurity model. Furthermore, when the dependent variable, as in our case, is a subjective measure, average perception across countries may be systematically different because people in different countries perceive subjective questions differently and also because they have quite different historical, cultural or religious backgrounds. For example, statistics on happiness usually rank Nordic countries highest and Mediterranean nations lowest regardless of the aspect of life considered (work, health, family, overall life) and of objective conditions (Easterlin 2001; Layard 2005). In the case of job satisfaction, Kristensen and Johansson (2008) have shown that, once these systematic cross-country differences have been accounted for, Scandinavian countries rank lower than the Netherlands.

One way to take into account such problems, when longitudinal data are available at the country level, is to look at within country variation over time:

$$Y_{ict} = \mu_c + \tau_t + \mu_c * \tau_t + X_{ict}\beta + U_{ct}\delta + \varepsilon_{ict} \quad [2]$$

where all the variables have the same meaning as the above and identification of the effect of the flexicurity model are now based on country-specific time fixed effects $\mu_c * \tau_t$ and hence on changes in Y over time within each country. With this specification, if flexicurity is effective in coping with the economic downturn, perceived security should have not declined

(or it should have declined more slowly) in the so-called 'flexicurity' countries as compared with Mediterranean and Eastern countries.

Even if this identification strategy takes into account cross-country differences influencing subjective measures, other confounding factors – different from the flexicurity model and business conditions as captured by the unemployment rate – may influence country-specific time trends.

In light of this limitation, the alternative approach of our estimation strategy is to identify the effect of flexicurity on workers' perceived security by using country-level data on labour market policy expenditure and EPL.

More specifically, we first estimated the following model:

$$Y_{ict} = LMP_{ct}\alpha + \mu_c + \tau_t + X_{ict}\beta + U_{ct}\delta + \varepsilon_{ict} \qquad [3]$$

where LMP is an indicator of expenditure on labour market policies in country *c* at time *t* and the other variables have the same meaning as the above. According to flexicurity principles, given a certain level of flexibility (captured by the country fixed effects), increasing formal security (by increasing expenditure on either active or passive LMPs or both) should positively affect workers wellbeing and their actual perception of security, implying that the estimate of α should be positive.

Finally, to better identify the role of changes in expenditure on LMPs from a flexicurity perspective, we take explicit account of changes in flexibility (as captured by changes in EPL) and estimate the following specification:

$$Y_{ict} = I_c[\Delta EPL < 0]LMP_{ct}\alpha_1 + I_c[\Delta EPL \geq 0]LMP_{ct}\alpha_2 + \mu_c + \tau_t + X_{ict}\beta + U_{ct}\delta + \varepsilon_{ict} \qquad [4]$$

where we identify as "flexicurity countries" those combining increasing flexibility (through a reduction of EPL) with increasing security (through increasing expenditure on LMPs per capita). The effect of changes in the policy mix in a flexicurity perspective is then measured by α_1. In this specification α_2 identifies the effect of variations in LMP expenditure in the remaining countries. According to the flexicurity approach, an increase in security should have greater impact on worker wellbeing when it is accompanied by increasing flexibility, implying that the estimated coefficient of α_1 should be greater than the estimated coefficient of α_2.

4. Data, definitions and descriptive evidence

This empirical analysis is based on micro-data from five waves of the Flash Eurobarometer, a repeated cross-sectional survey conducted from July 2009 to October 2010 in EU-27 Member States.[6] The purpose of the survey was to monitor public perceptions and the social impact of the economic and financial crisis. Since our research is on workers' perceived security, we excluded individuals under 15 years of age or over 64 and those not working or self-employed. Our final sample is made up of employees aged 15-64 and contains 48,849 observations.

This survey is particularly suitable for a study on the effects of flexicurity on perceived individual security because is one of the few surveys providing information on both job and employment security. This distinction is crucial, because one of the main consequences of flexicurity is the shift from job security to employment security, that is lifelong employment possibilities.

As in previous studies (see, for example, Origo and Pagani, 2009), we have used the following question to identify the degree of perceived job security: *"How confident would you say you are in your ability to keep your job over the next 12 months?"*. Possible answers are: very confident, fairly confident, not very confident, not at all confident. On the basis of the possible answers, we created a dummy variable ($d_{keeping\_job}$) which is 1 if workers state that they are very or fairly confident of keeping their jobs and 0 otherwise. According to this indicator, on average perceived job security has increased over the time span considered from 76.7 per cent of workers confident or fairly confident about job security in July 2009 to 79.7 per cent in October 2010.

In contrast to previous studies, we also investigated employment security using the following question: *"If you were to be laid-off, how would you rate, on a scale from 1 to 10, the likelihood of you finding a job in the next six months?".* We created a dummy variable ($d_{finding\_job}$) of 1 if the worker's answer is 6 or higher, 0 otherwise. According to this measure, perceived employment security is much lower than perceived job security (only 45.7 per cent of workers believe they would find a job in the next six months) and has slightly declined over time (from 46.1 per cent in July 2009 to 45.6 per cent in October 2010).[7]

[6] Our dataset is built on all the available waves of the Flash Eurobarometer survey monitoring the social impact of the economic crisis, namely number 276 (July 2009), number 286 (November-December 2009), number 288 (March 2010), number 289 (May 2010) and number 311 (October 2010). On average 25,5000 individuals are interviewed in each wave.

[7] See Appendix for detailed descriptive statistics.

In order to capture the flexicurity model, we used the OECD indicators on EPL strictness as proxies for flexibility and the Eurostat data on expenditure on LMP intervention as proxies for security.

More specifically, exploiting the Eurostat Labour Marker Policies (LMP) dataset and assuming that LMP expenditure may be potentially addressed to any individual who can potentially work (depending on the type of intervention considered), we computed per capita expenditure on LMP measures (active labour market policies) and LMP supports (passive labour market policies)[8] using the working age population as denominator.[9] According to these indicators, expenditure on LMP measures is around 230 Euros per head, while spending on LMP supports is more than 475 Euros (see Table A3 in the Appendix for statistics by country). On average, expenditure on LMP measures per capita has increased over time (from 205 Euros in July 2009 to almost 250 Euros in October 2010) while expenditure on LMP support per capita has remained approximately stable.

Figure 1 shows the positive relationship between total expenditure on LMP intervention per capita and both perceived job and employment security, which is driven by Nordic and most continental EU countries. Much heterogeneity emerges among low spending countries: whilst their levels of expenditure are broadly similar, their levels of security are quite different, with relatively low levels of job security reported in some Eastern (Slovakia and Poland) and Southern countries (Greece and Spain), while relatively low levels of employment security are registered in all the so called PIIGS countries (Portugal, Ireland, Italy, Greece and Spain). Among low spending countries, the UK stands out with very high levels of both job and employment security, comparable to that of countries, such as France and Belgium, with much higher expenditure on LMPs.

[Insert figure 1 here]

To capture changes in flexibility, we considered reforms in employment protection legislation as measured by changes in the OECD indexes on EPL strictness. Since such reforms are rather uncommon and usually take some time to be implemented, we created a dummy equal

[8] LMP measures include training, job rotation and job sharing, employment incentives, supported employment and rehabilitation, direct job creation, and start-up incentives. LMP supports include out-of-work income maintenance and support (i.e. unemployment benefits) and early retirement schemes.

[9] As compared to other indicators (such as LMP expenditure as a share of GDP or LMP expenditure per unemployed person) changes in this indicator over the business cycle are mainly due to changes in the numerator (given that the working age population is fairly stable) and hence they are easier to interpret. Note that, during a crisis, LMP expenditure as a share of GDP may increase even when LMP expenditure (the numerator) decreases, if this decrease is smaller than that of the GDP (the denominator).

to 1 if a specific country had reduced EPL strictness in the five years before the survey (between 2005 and 2009 or 2010) and 0 otherwise.[10] We distinguished between overall changes in flexibility, which are related to either individual and collective dismissals or temporary contracts, and changes in EPL only for permanent contracts assuming that the latter are more relevant to workers' perceived security. According to the first measure, countries which have increased flexibility are the Netherlands, Sweden, France, Ireland, Spain, Portugal and the Czech Republic (see Table A3 in Appendix). Of these, countries which have reduced EPL for permanent contracts are the Netherlands, France, Ireland, Portugal and the Czech Republic.

Table 1 presents average job and employment security over time comparing countries which have increased flexibility with the others. The flexibility dummy was created on the basis of changes in the two EPL indexes discussed above. Figures in the first panel of the table show that increased flexibility does not affect job security, but it reduces employment security. We find similar results if we restrict the sample of the "flexible countries" to those which have reduced EPL for permanent contracts.

[Insert table 1 here]

5. Results

Following the empirical strategy discussed in Section 3, we first estimated equation [1] and proxied the effect of the flexicurity model on workers' perceived security through estimated country/region fixed effects. The corresponding marginal effects from probit estimates for job and employment security are shown in Figure 2, where Denmark is the reference country. In the table we report estimated differences by group of countries using the Nordic countries (including the Netherlands) as our reference group. To control for composition effects, in all specifications, we also included a set of control variables for demographic characteristics (gender, age, education and nature – either rural or urban – of the area of residence) and job attributes (occupation).[11]

[10] We used the new EPL series published by the OECD in July 2013 and experimented with different time spans (i.e., three, five and ten years before the survey) to measure EPL changes. Note that this indicator is available only for the EU-OECD countries. Hence, this empirical analysis is based on a sub-sample of 18 EU countries.

[11] See Table A1 in the Appendix for a complete list of the variables used in our analysis and their means and descriptive statistics. Table A2 reports the corresponding means for job and employment security. The full set of probit estimates is available upon request.

[Insert figure 2 here]

This table shows that, *ceteris paribus*, workers in Mediterranean and Eastern countries display the lowest level of perceived job security as compared to Nordic countries (-20 and -25 per cent, respectively). Job security is significantly lower (by almost 10 per cent) also in the UK and Ireland. Similar results emerge for employment security. Workers in Nordic countries are those with the greatest confidence that they will find a new job over the next six months as compared to workers in Mediterranean countries (-32.1 per cent), Eastern countries (-25.2 per cent), the UK and Ireland (-22.6 per cent) and continental countries (-12.4 per cent). Estimates of specific country fixed effects show that, compared to Denmark, the largest negative differences in both job and employment security are to be found for Greece and some former Soviet republics (Estonia, Latvia, Lithuania and Bulgaria). Some countries (such as Germany, Ireland and Italy) have much greater differences in terms of employment security compared to job security. This confirms that, from a flexicurity perspective, job and employment security may be quite different and hence information on the likelihood of keeping a job is not always a good proxy for the likelihood of finding a new job in the event of unemployment.

As discussed in previous sections, such cross-country differences may be influenced by how people in different countries interpret subjective questions and the scales used to answer them. To control for these cross-country systematic differences, we estimated equation [2] by including in our initial specification a set of country-specific time fixed effects and focused our attention on the ways in which job and employment security vary over time within each country/flexicurity model. Figure 3 reports estimated trends in perceived job security and perceived employment security by cluster of countries based on their flexicurity model. Job security has been increasing in Nordic, continental and Eastern countries. In Mediterranean countries decreases in job security are mainly driven by Greece, while there are no statistically significant changes in Italy, Spain and Portugal.

Employment security has been increasing in the UK and Ireland, continental Europe and Nordic countries. On the contrary, Mediterranean and Eastern countries have been experiencing decreasing employment security. The estimated decline in employment security in Mediterranean countries is also in this case mainly determined by Greece.

[Insert figure 3 here]

However, the mean trends for the Nordic cluster conceal substantial differences in the evolution of both job and employment security for the two countries which are usually put forward as two different examples of the flexicurity model: Denmark and the Netherlands. The lower part of Figure 3 shows that, while the latter has actually registered a continuous increase in job security and no statistically significant change in employment security, Denmark has experienced a significant decline in both perceived job (-4 percentage points from July 2009 to October 2010) and employment security (-7 percentage points over the same period with a much larger drop in March 2010).[12] Such a decline cannot be explained by different business conditions, since the economy recovered in 2010 compared to the previous year in both countries.[13] Hence, these results cast some doubts on the effectiveness of the flexicurity approach, at least of the Danish version, during an economic downturn.

However, over the period considered the two countries registered quite different changes also in terms of labour market policies and institutions. In the Netherlands, following a reduction of EPL which increased flexibility, between 2009 and 2010 expenditure on both LMP measures and LMP supports – and hence security during unemployment - has been increasing, but the entity of the positive change has been much greater for the latter. In contrast, Denmark has registered a significant increase in expenditure on LMP measures but a significant decline in expenditure on LMP supports (i.e., lower income security during unemployment), not accompanied by reforms of EPL aimed at reducing flexibility (see Table A3 in Appendix).

Furthermore, perceived security in Denmark could have been negatively affected by the unemployment benefit system reforms announced in May 2010 (see Section 2). Even if these were not immediately implemented, the announcement alone could have influenced workers' perceptions, particularly in a period of great uncertainty and given the fact that similar reforms in previous decades had in fact been implemented and gradually reduced unemployment benefit replacement rates.

In light of this descriptive evidence, in what follows we have tested whether changes in the policy mix according to flexicurity principles, which should entail increasing flexibility (through a reduction of EPL) accompanied by increasing security (through increasing expenditure on LMPs), positively influence job and/or employment security.

[12] Estimates of all the country-specific trends are available upon request.

[13] In 2010, the yearly percentage change in the GDP was 4.1 per cent in Denmark (compared to 0.8 per cent in 2009) and 0.8 per cent in the Netherland (compared to 0.1 per cent in 2009)

We then first enriched our model specification [1] by including information on public expenditure on LMPs. The estimated coefficients for the new variables allowed us to test whether, within country, an increase in LMP expenditure affects workers perceived security. The results are shown in Table 2. The specifications differ in the dependent variables and in the measure of public expenditure on LMP intervention used: column (I) reports the estimated effect of total expenditure on LMP intervention per capita on job security; in column (II) we replicate the same analysis but focus on employment security; in column (III) and (IV) we consider expenditure on LMP measures (active LMPs) and LMP supports (unemployment benefits) separately.

[Insert table 2 here]

The results highlight that total expenditure on LMPs has a positive but not statistically significant effect on both job and employment security. However, estimates in the last two columns of the table show that expenditure on LMP supports has positive and statistically significant effects on both measures of perceived security, particularly on employment security. An increase in expenditure of 100 Euros per capita on LMP supports increases workers' perceived job security by 2.4 per cent and employment security by 3.3 per cent.

As the final step in our analysis, we investigated whether the estimated effect of LMP expenditure on job and employment security differs in countries which have increased flexibility by reducing EPL (the so-called 'flexicurity countries') compared to the remaining countries. From a flexicurity perspective, an increase in LMP expenditure should be perceived as more valuable – and hence be more effective in terms of increasing job and employment security – in countries which also have increased flexibility since the first should compensate for the negative effects on employment security of the latter. We then estimated equation [4], in which we allowed the effect of the expenditure on LMPs to be different between the so-called 'flexicurity countries' and the others. The main results are presented in Table 3a, where specifications differ in the dependent variables and the way in which increasing flexibility is identified (i.e., for all workers or only for permanent employees). Columns (I) and (II) report the estimated effects using the EPL indicator for overall workers in the case of job and employment security as dependent variable, respectively; column (III) and (IV) show the corresponding results using the EPL indicator only for permanent workers.[14] Results in Table

[14] All specifications include country fixed effects, time fixed effects and all other available controls.

3a confirm that the positive impact of expenditure on LMPs is statistically significant only in flexicurity countries. In the latter an increase in expenditure of 100 Euros per capita on LMPs increases workers' perceived job security by 2.2 per cent and employment security by 3.2 per cent. We find similar results also when we restrict the group of flexicurity countries to those which have reduced EPL only for permanent workers.

[Insert table 3 here]

In Table 3b we replicated the estimates presented in Table 3a distinguishing between expenditure on LMP measures and LMP supports. Considering an overall reduction of EPL, both LMP measures and LMP supports have positive effects on perceived job security (2.6 and 1.9 per cent respectively) and, in particular, on perceived employment security (3.8 and 2.6 per cent respectively). When we restricted the group of flexicurity countries to those which have reduced EPL favouring individual and collective dismissals, only expenditure on LMP supports contributed to significantly increased perceived security (2.9and 3.0 per cent, respectively, on job and employment security).

6. Further estimates

In this section we estimate the effects of adopting flexicurity principles for different groups of workers. This analysis is motivated by the European Commission's idea that flexicurity should be particularly positive for 'outsiders' (i.e., those unemployed or employed on short-term or irregular contracts), many of whom are women and young (European Commission 2007). From our point of view, these individuals are also more likely to feel insecure about their jobs and/or future employment prospects. Hence, the adoption of the flexicurity strategy should particularly affect workers who are less confident of keeping their current jobs and/or finding new ones if they lose them.

The descriptive statistics by gender, age and occupation reported in Table A2 in the Appendix show that women's job and particularly employment security are lower than men's and they increase with workers' skill levels. As expected, civil servants have the highest job security levels, but they display the second lowest level of employment security (much lower than that registered for private office workers and managers), probably because they negatively evaluate their chances of finding a new job in the public sector in a period of declining public

spending and shrinking public employment. Statistics by age show that, also due to the different institutional context encountered by different cohorts when they enter the labour market, job security monotonically increases with age, but the youngest feel much more confident than prime-age and particularly older workers of finding a new job in the event of unemployment.

In Table 4 we present the main econometric estimates of equation [4] by gender, age and occupation.[15]

Our results only partly support the European Commission's idea that flexicurity is likely to be more effective for marginal workers.

According to our estimates, the adoption of the flexicurity strategy has a positive effect on women's job security, but no statistically significant effect on their employment security. By contrast, positive and statistically significant effects have been reported on men's employment security.

Results by age show that a change in the policy mix in the flexicurity perspective significantly increases job security for all the age groups considered, but the size of the effect is larger and statistically more robust for the young than for other workers. By contrast, we do not find statistically significant effects in the case of employment security for both younger and older workers, while we report a positive and statistically significant effect in the case of prime-age workers.

Estimates by occupation highlight that the effect of flexicurity on perceived security is much greater for office workers than for either managers or manual workers. For the former, a 100 Euro increase in LMP expenditure following a reduction of EPL increases both perceived job and employment security by around 3.5 percentage points. Estimates for civil servants are quite interesting, since we found a positive and statistically significant flexicurity effect only on employment security. This suggests that the prevalence of permanent contracts in the public sector is a sufficient guarantee of job security (as confirmed by the highest level of job security registered for this group), but flexicurity may play a crucial role if these workers lose their jobs and have to find a new one, especially if they have to move from the public to the private sector.

On the whole, our estimates point out that flexicurity may also play a role in increasing perceived security for 'outsiders', particularly women and the young, but in contrast to the envisaged change of perspective from job to employment security, this effect is still more

[15] The table reports only the coefficients of interest; the full set of estimates is available from the authors upon request.

visible in terms of job security. Flexicurity seems to impact significantly on employment security mainly in the case of prime-age workers and in the public sector, where job security is already guaranteed to a greater extent by prevailing forms of contract.

[Insert table 4 here]

7. Concluding remarks

The aim of this paper is to empirically assess the effect of flexicurity on workers' perceived security including during a severe economic downturn.

According to flexicurity principles, in order to preserve workers' wellbeing, more flexibility is acceptable when appropriate labour market policies - such as generous unemployment benefits and effective active labour market policies - can ensure that workers have employment opportunities throughout their lives. However, the recent economic and financial crisis has posed new challenges for the flexicurity strategy, particularly in terms of financial sustainability for the public budget and of the effectiveness of its basic components in combating unemployment or worker insecurity.

Our empirical analysis, based on five waves (from July 2009 to October 2010) of the Flash Eurobarometer survey on "Monitoring the social impact of the crisis: public perceptions in the European Union", has shown that the so-called 'flexicurity' countries, namely Denmark and the Netherlands, have much higher levels of both job and employment security than the other EU-27 countries, particularly if compared with Mediterranean and Eastern nations. However, in contrast to the Netherlands, during the economic crisis Denmark experienced a significant decline in both indicators, particularly in 2010, when most of the other countries registered a significant increase. Labour market policy data shows that, between 2009 and 2010, the Netherlands increased public expenditure on both active and passive labour market policies, while Denmark significantly increased the former but reduced the latter, also as a consequence of a series of reforms that have progressively reduced the replacement rate over the last few decades. Furthermore, perceived security in Denmark may have been negatively affected by the announcement in May 2010 of a new reform of the unemployment benefit system which aimed at halving its duration and tightening re-entitlement conditions. This decrease was not accompanied by increased employment protection, suggesting that the policy mix in Denmark partly moved away from flexicurity principles during the economic crisis.

From a policy perspective, our analysis would seem to confirm that flexicurity positively affects worker wellbeing also during an economic downturn. More specifically, our results suggest that changes in the policy mix according to flexicurity principles increase, all else being equal, both perceived job and employment security, but the effect is usually greater for the latter. Furthermore, the adoption of the flexicurity strategy seems only partly to be more effective for workers with initially low job and/or employment flexicurity values, such as women and the young. For both of these groups, positive effects were found mainly in terms of job security, while significant effects on employment security were found in the case of prime age workers and those employed in the public sector.

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Figure 1: LMP expenditure and worker security

a) Job security **b) Employment security**

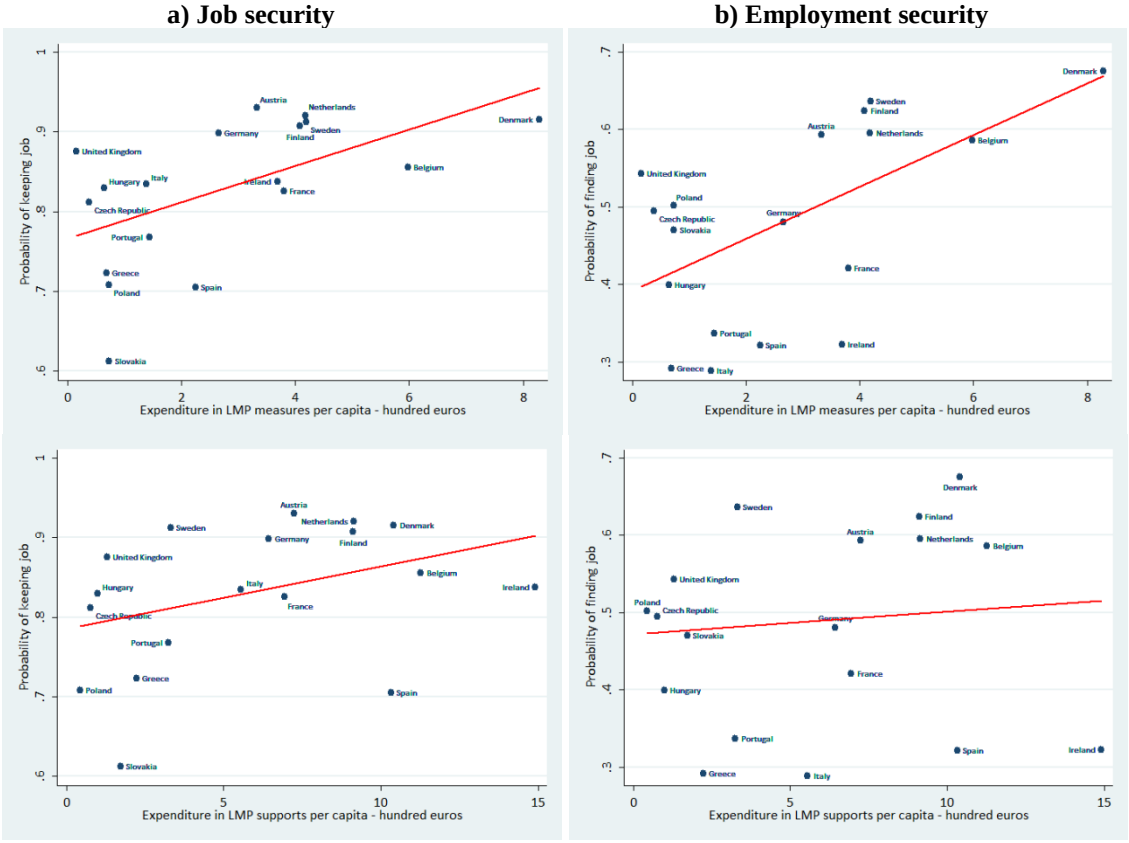
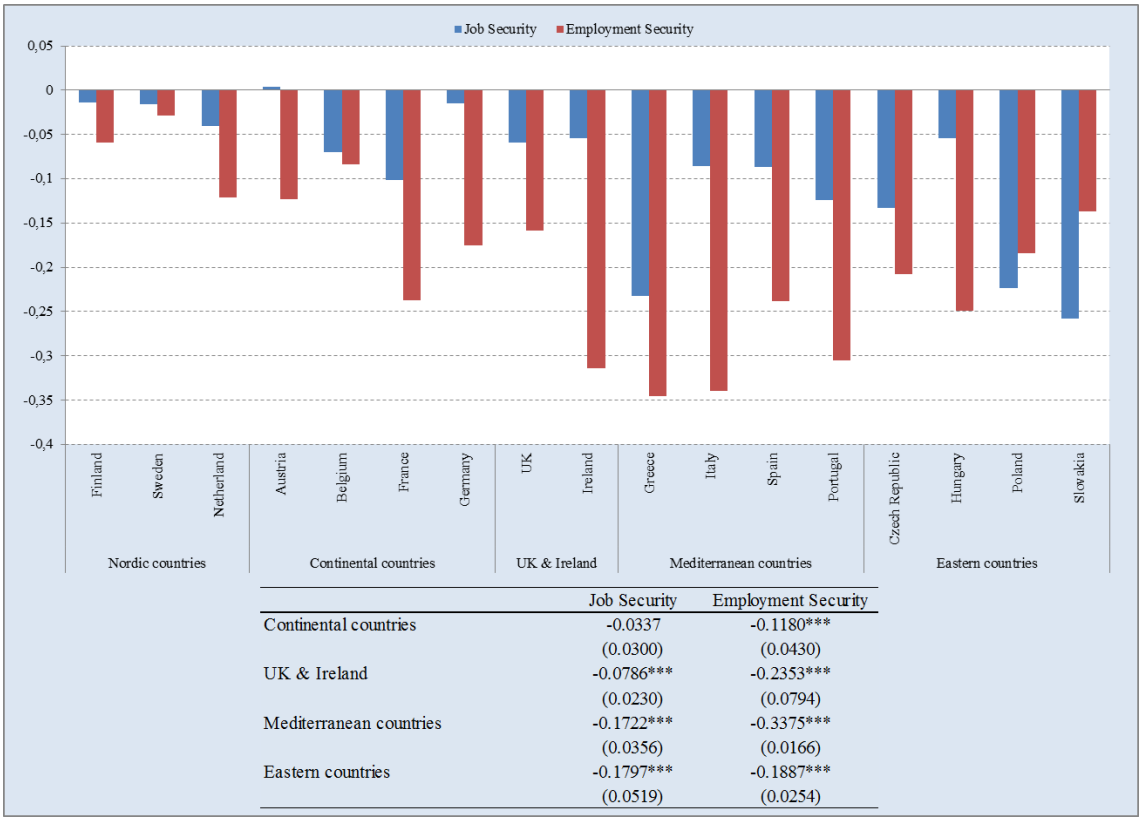


Figure 2: Job and employment security differences by group of countries and by country

Marginal effects from probit models



	Job Security	Employment Security
Continental countries	-0.0337	-0.1180***
	(0.0300)	(0.0430)
UK & Ireland	-0.0786***	-0.2353***
	(0.0230)	(0.0794)
Mediterranean countries	-0.1722***	-0.3375***
	(0.0356)	(0.0166)
Eastern countries	-0.1797***	-0.1887***
	(0.0519)	(0.0254)

Robust standard clustered errors in parentheses. Reference group: Denmark in the Figure, Nordic countries (including the Netherlands) in the Table. *** p<0.00, ** p<0.05, * p<0.10. Estimates include controls for demographic characteristics (gender, age, education and region) and job attributes (occupation).

Figure 3: Estimated country-specific time fixed effects

Marginal effects from probit models

Estimates include controls for demographic characteristics (gender, age, education and region) and job attributes (occupation).

Table 1: Changes in Employment Protection Legislation (EPL) and mean job and employment security

Reducing EPL for overall workers

	Job security		Employment security	
Reducing EPL:	No	Yes	No	Yes
July 2009	0.830	0.818	0.520	0.443***
Nov.-Dec. 2009	0.839	0.824*	0.513	0.453***
March 2010	0.835	0.837	0.507	0.471***
May 2010	0.830	0,842	0.512	0.464***
October 2010	0.830	0.847*	0.494	0.474*
All waves	0.833	0.834	0.509	0.461***

Reducing EPLs only for permanent workers

	Job security		Employment security	
Reducing EPL:	No	Yes	No	Yes
July 2009	0.825	0.825	0.510	0.436***
Nov.-Dec. 2009	0.833	0.833	0.506	0.448***
March 2010	0.838	0.831	0.514	0.435***
May 2010	0.833	0.840	0.514	0.434***
October 2010	0.828	0.858***	0.498	0.453***
All waves	0.831	0.837	0.508	0.441***

Stars refer to a t-test on the difference of means between countries which have reduced EPL and the others.
*** p<0.00, ** p<0.05, * p<0.10.

Table 2: Effects of public expenditure on labour market policies (LMPs) on job and employment security

Marginal effects from probit models

	Job security (I)	Employment security (II)	Job security (III)	Employment security (IV)
Total expenditure on LMPs	0.012	0.013		
	(0.014)	(0.019)		
Expenditure on LMP measures			0.002	0.017
			(0.184)	(0.209)
Expenditure on LMP supports			0.024**	0.334***
			(0.010)	(0.102)
Control Variables				
Country fixed effects	YES	YES	YES	YES
Unemployment rate	YES	YES	YES	YES
Time fixed effects	YES	YES	YES	YES
Demographic characteristics	YES	YES	YES	YES
Job attributes	YES	YES	YES	YES
Observations	32,929	32,483	32,929	32,483
Log Likelihood	-13564	-20145	-13561	-20142

Robust clustered standard errors in parentheses. *** p<0.00, ** p<0.05, * p<0.10.
Estimates include controls for demographic characteristics (gender, age, education and area) and job attributes (occupation).

Table 3: Effects of flexicurity on job and employment security

Marginal effects from probit models

a) Total expenditure on LMPs

	Job security	Employment security	Job security	Employment security
Expenditure on LMP:				
No Flexicurity	-0.012	-0.018	-0.013	-0.019
	(0.018)	(0.018)	(0.020)	(0.023)
Flexicurity (all workers)	0.022***	0.032***		
	(0.008)	(0.006)		
Flexicurity (only permanent workers)			0.022***	0.031***
			(0.007)	(0.006)
Control Variables				
Country fixed effects	YES	YES	YES	YES
Unemployment rate	YES	YES	YES	YES
Time fixed effects	YES	YES	YES	YES
Demographic characteristics	YES	YES	YES	YES
Job attributes	YES	YES	YES	YES
Observations	32,929	32,483	32,929	32,483
Log Likelihood	-13559	-20139	-13561	-20142

b) Expenditure on LMP measures and LMP supports

	Job security	Employment security	Job security	Employment security
Expenditure on LMP measures:				
No Flexicurity	-0.013	-0.018	-0.018	-0.018
	(0.016)	(0.015)	(0.019)	(0.021)
Flexicurity (all workers)	0.026***	0.038***		
	(0.010)	(0.007)		
Flexicurity (only permanent workers)			-0.002	0.033
			(0.021)	(0.021)
Expenditure on LMP supports:				
No Flexicurity	0.008	0.007	0.006	0.017
	(0.031)	(0.027)	(0.023)	(0.024)
Flexicurity (all workers)	0.019***	0.026***		
	(0.010)	(0.009)		
Flexicurity (only permanent workers)			0.029**	0.030***
			(0.011)	(0.010)
Control Variables				
Country fixed effects	YES	YES	YES	YES
Unemployment rate	YES	YES	YES	YES
Time fixed effects	YES	YES	YES	YES
Demographic characteristics	YES	YES	YES	YES
Job attributes	YES	YES	YES	YES
Observations	32,929	32,483	32,929	32,483
Log Likelihood	-13558	-20138	-13561	-20142

Robust clustered standard errors in brackets. *** p<0.00, ** p<0.05, * p<0.10.

Estimates include controls for demographic characteristics and job attributes. Flexicurity identifies the effect of expenditure on LMPs in countries which have increased flexibility by reducing EPL. No flexicurity identifies the effect of expenditure on LMPs in the remaining countries.

Table 4: Effects of flexicurity on job and employment security by gender, age and occupation

Marginal effects from probit models

a) by gender

Expenditure on LMP:	Males		Females	
	Job security	Employment security	Job security	Employment security
No Flexicurity	-0.015	-0.021	-0.011	-0.014
	(0.015)	(0.017)	(0.024)	(0.031)
Flexicurity	0.002	0.050***	0.038***	0.017
	(0.008)	(0.014)	(0.011)	(0.011)
Observations	14,790	14,603	18,139	17,880
Log Likelihood	-5897	-9084	-7627	-10984

b) by age

	Young (15-29 years old)		Adults (30-54 years old)		Old (55 years old and over)	
	Job security	Employment security	Job security	Employment security	Job security	Employment security
No Flexicurity	0.054	-0.006	-0.019	-0.019	-0.018	-0.018
	(0.039)	(0.018)	(0.017)	(0.022)	(0.012)	(0.019)
Flexicurity	0.056***	-0.001	0.017*	0.049***	0.017*	0.001
	(0.039)	(0.032)	(0.009)	(0.009)	(0.009)	(0.021)
Observations	3,722	3,726	22,487	22,265	5,783	5,564
Log Likelihood	-1786	-2304	-9300	-14217	-2123	-3233

c) by occupation

	Manual workers		Office workers		Civil Servants		Managers	
	Job security	Employment security	Job security	Employment security	Job security	Employment security	Job security	Employment security
No Flexicurity	-0.016	0.010	-0.001	-0.025	0.002	-0.010	-0.001	-0.017
	(0.024)	(0.025)	(0.019)	(0.029)	(0.036)	(0.035)	(0.026)	(0.011)
Flexicurity	-0.026	0.023	0.033***	0.035***	0.028	0.065***	0.008	0.019*
	(0.031)	(0.033)	(0.009)	(0.013)	(0.019)	(0.019)	(0.012)	(0.011)
Observations	5,327	4,816	15,339	15,198	5,067	4,892	7,196	7,091
Log Likelihood	-2690	-3014	-7012	-7012	-7012	-7012	-2376	-4343

See Table 3 note

Appendix

Table A1: Data description

	N.Obs	Mean	Std.Dev.	Min	Max
d_keeping_job	34014	0.833	0.373	0	1
d_finding_job	33569	0.489	0.500	0	1
Personal characteristics					
Male	34848	0.449	0.497	0	1
Age class					
15-24	34848	0.041	0.198	0	1
25-39	34848	0.312	0.464	0	1
40-54	34848	0.467	0.499	0	1
55+	34848	0.180	0.384	0	1
Years in education					
Never in education	34848	0.010	0.101	0	1
1-15 years	34848	0.082	0.275	0	1
16-20 years	34848	0.487	0.500	0	1
20+ years	34848	0.407	0.491	0	1
Still in education	34848	0.008	0.089	0	1
Refuse to answer	34848	0.006	0.075	0	1
Area of residence					
Rural area	34848	0.207	0.406	0	1
Metropolitan area	34848	0.438	0.496	0	1
Urban area	34848	0.438	0.496	0	1
Job attributes					
Professional employee	34848	0.109	0.312	0	1
Top management	34848	0.031	0.172	0	1
Middle management	34848	0.084	0.277	0	1
Civil servant	34848	0.149	0.356	0	1
Office clerk	34848	0.140	0.349	0	1
Salesperson, nurse, etc.	34848	0.207	0.405	0	1
Other employee	34848	0.119	0.324	0	1
Supervisor / manual work foreman	34848	0.015	0.122	0	1
Manual worker	34848	0.109	0.311	0	1
Unskilled manual worker	34848	0.023	0.159	0	1
Other worker	34848	0.015	0.122	0	1

Table A2: Descriptive statistics

	Job security	Employment security
Nordic countries		
Denmark	0.915	0.676
Finland	0.907	0.624
Sweden	0.912	0.637
Netherlands	0.921	0.596
Continental countries		
Austria	0.930	0.593
Belgium	0.855	0.586
France	0.826	0.421
Germany	0.899	0.481
UK & Ireland		
United Kingdom	0.876	0.543
Ireland	0.838	0.322
Mediterranean countries		
Greece	0.723	0.292
Italy	0.835	0.288
Spain	0.705	0.321
Portugal	0.768	0.336
Eastern countries		
Czech Republic	0.812	0.495
Hungary	0.830	0.399
Poland	0.708	0.502
Slovakia	0.612	0.470
Wave		
July 2009	0.825	0.490
Nov-Dec 2009	0.833	0.489
March 2010	0.836	0.491
May 2010	0.835	0.491
October 2010	0.837	0.486
Gender		
Female	0.827	0.460
Male	0.841	0.525
Age		
15-29	0.790	0.589
30-54	0.834	0.525
55+	0.856	0.303
Years in education		
Never in education	0.849	0.529
1-15 years	0.745	0.318
16-20 years	0.807	0.456
20+ years	0.883	0.562
Still in education	0.788	0.535
Refuse to answer	0.789	0.442
Area of residence		
Rural area	0.828	0.482
Metropolitan area	0.858	0.544
Urban area	0.826	0.470
Occupation groups		
Manual workers	0.716	0.405
Office workers	0.822	0.491
Civil servants	0.901	0.432
Managers	0.889	0.578

Table A3: Public expenditures on LMPs and changes in EPL by country

	LMP measures		LMP supports		Reduction of EPL strictness 2005-2010	
	Mean* 2009-2010	% change 2009-2010	Mean* 2009-2010	% change 2009-2010	All workers	Only permanent workers
Nordic countries & Netherlands						
Denmark	828.04	20.78	1041.45	-3.95	No	No
Finland	408.33	16.88	910.61	-1.58	No	No
Sweden	418.62	30.42	331.94	-5.82	Yes	No
Netherlands	418.41	0.32	914.49	5.59	Yes	Yes
Continental countries						
Austria	333.35	2.51	723.14	-2.4	No	No
Belgium	597.39	9.49	1127.17	-1.08	No	No
France	379.77	13.84	694.57	3.56	Yes	Yes
Germany	265.46	-4.85	643.46	-9.62	No	No
UK & Ireland						
United Kingdom	15.75	---	128.64	1.98	No	No
Ireland	368.49	10.03	1491.11	11.11	Yes	Yes
Mediterranean countries						
Greece	68.92	-0.19	223.34	-0.23	No	No
Italy	138.14	-1.37	555.12	6.33	No	No
Spain	224.56	4.05	1032.05	5.21	Yes	No
Portugal	143.9	-5.66	325.52	8.5	Yes	Yes
Eastern countries						
Czech Republic	38.89	29.78	77.01	-9.48	Yes	Yes
Hungary	64.69	33.94	98.96	9.74	No	No
Poland	72.51	22.89	43.11	13.04	No	No
Slovakia	73.37	33.03	171.81	13.25	No	No

* Public expenditure per head (working age population), Euros