Is Flexicurity Good in Bad Times?
Evidence on workers security in Europe.

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Abstract

The aim of this paper is to empirically assess the effect of flexicurity on workers perceived security during the 2008-2010 economic downturn.

According to the 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. This means that, if a certain country wants to increase flexibility by lowering EPL strictness, it should increase security by increasing LMP expenditure.

The 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", shows that the so called "flexicurity" countries, namely Denmark and the Netherlands, are characterized by much higher levels of both job and employment security than the other EU-27 countries, particularly if compared with the Mediterranean and the Eastern ones. However, differently from the Netherlands and the Mediterranean countries (with the exception of Greece), during the economic crisis Denmark has experienced a significant decline of both indicators. This decline has been accompanied by a reduction of LMP expenditures, not accompanied by an increase of EPL, suggesting that the policy mix in Denmark has actually moved against the flexicurity principles during the economic crisis.

More in general, our results suggest that changes of the policy mix according to the flexicurity principles increase, ceteris paribus, both perceived job and employment security, and the effect is usually larger for the latter.

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

JEL Codes: J65, J68, I38

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1. Introduction

In the last decades increasing globalization has brought new challenges to firms in developed countries: adaptability and the capacity to respond rapidly to changes in demand and markets have become crucial for firms' survival, which have also made major changes to their organisation, management style and work practices.

From a labour market policy perspective, many OECD countries are still trying to find an optimal way to protect the interests of the parties involved – employers and workers – through an equal sharing of the increased risk due to the new economic environment. In spite of 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, as well as countering the increasing sense of job insecurity (OECD 2003; Schmidt 1999).

Flexicurity has been the European answer to the this problem.

The "flexicurity" thesis postulates that flexibility is not necessarily the opposite of security, and that they can both be increased through appropriate labour market policies and institutions (Madsen 2002; Wilthagen and Tros 2004). Flexicurity is then an integrated policy approach which aims at enhancing both the flexibility of labour markets (and work organisations and labour relations) and workers security (particularly with respect 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, can ensure that workers have employment opportunities throughout their lives. The flexicurity approach is then also characterized by a shift from job security (the same job all life long) to employment security (any job all life long), thus highlighting the central role of lifelong learning in matching workers' skills with firms' needs.

This model was first implemented in the mid Nineties in the Netherlands and Denmark and their good results in terms of declining unemployment rates and increasing perceived security prompted the European Commission to adopt the flexicurity strategy 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 four basic elements, namely: (i)

flexible and secure contractual arrangements and work organisations, from the perspective of both the employer and the employee, also thanks to modern labour laws and modern work organisation; (ii) active labour market policies, which help people to cope with rapid organizational changes, unemployment spells and transitions to new jobs; (iii) reliable and responsive lifelong learning systems, to ensure the adaptability and employability of all workers; (iv) modern social security systems, which should be able to provide adequate income support and facilitate labour market mobility.

These Common Principles of Flexicurity constitute since then the common framework for the implementation of integrated flexicurity strategies in the Member States.

However, the 2008-2010 severe economic and financial crisis has posed new challenges to the flexicurity strategy, particularly in terms of financial sustainability for public budget (generous unemployment benefits and a developed system of active labour market policies may be in fact very costly during recessions) and of the effectiveness of its basic components in fighting unemployment or workers insecurity.

In this perspective, empirical evidence shows that, on one side, 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 side, other countries could prevent massive unemployment by adopting policies, such as short-time working schemes[1], not officially included in the flexicurity model envisaged by the European Commission (Eurofound 2011).

Despite the recommendations by the Council of the European Union (2009) to manage the global crisis through application of flexicurity principles, little is known on whether the effects of the economic crisis (in terms, for example, of workers perceived security) differ with the flexicurity model adopted by the EU Member States or whether countries changing their labour market policies in light of the flexicuirty principles could mitigate such effects.

[1] Among the EU-27 Member States, working time reduction was particularly used in Germany, Belgium, Italy, France, the UK and Sweden. On the contrary, most of the net adjustment in working hours was mainly due to job losses in the Czech Republic, Slovakia, Bulgaria, Portugal, Slovenia, Hungary, Spain and Lithuania.

In light of these considerations, the main aim of this paper is to study the impact of the recent economic crisis on security and workers well being in the EU countries, testing whether such impact was influenced by the flexicurity model adopted.

The remaining 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 the main variables used in the empirical analysis, as well as the basic descriptive statistics; the main results are discussed in Section 5, while some robustness checks are reported in Section 6. The last Section concludes.

2. Literature review

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

The earliest contributions on this issue were 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], verifying their relative importance in reducing unemployment and/or increasing social well being (Pissarides 2001; . Postel-Vinay and Saint Martin 2005; Boeri et al 2011). The main hypothesis behind these studies is that what matter is how different labour market institutions and macroeconomic environment interact among them.

Other studies have then looked at the relative impact of EPL and UI on perceived job security and they find that the latter is lower in countries with stricter EPL, higher in countries with generous UI (Clark and Postel-Vinay 2009). One explanation for these results may reside in 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 case they lose their jobs. On the contrary, in countries characterised by flexicurity (i.e. low EPL, high UI and active labour market policies), also temporary workers may feel secure and happy about their employment (even if not necessarily about their job).

[2] According to 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 periods) is set to maximise welfare of risk-adverse agents.

A more 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 workers security and well being. These studies also bring in the role of the flexicurity model to explain the fact that temporary workers are not necessarily less satisfied or feel less secure than permanent workers.

In this perspective, Origo and Pagani (2009) point out that temporary workers need not necessarily feel insecure and unhappy with their jobs if they are likely to be continuously employed and if, in case of unemployment, they can count on income stability thanks to generous unemployment benefits and are likely to find rapidly a new job. At the same time, permanent workers may feel insecure if they are likely to lose their job and the labour market is characterised by low flows out of unemployment (and, thus, high incidence of long term unemployment) due to strict EPL.

Some indirect evidence on this aspect is provided by Ferrer-i-Carbonell and van Praag (2006), who compare the effect of temporary employment on individual job satisfaction in Spain and the Netherlands and show that only in Spain temporary contracts are strongly negatively correlated with job satisfaction, while in the Netherlands there is no relationship between job satisfaction and fixed-term contracts lasting more than a year and casual contracts. One of the explanations provided by the authors for this result is the different level of uncertainty associated with temporary contracts in each country. Indeed, The Netherlands are considered, together with Denmark, the country where the flexicurity model has been so far successfully implemented.

In a similar way, Facchinetti and Origo (2010) show that on average temporary employment reduces individual perceived job security in Europe and this result does not vary significantly with workers' characteristics (especially by gender), but the negative effect is actually lower in countries characterized by higher levels of flexicurity. In the case of Denmark, which is considered a "best practice" in the implementation of flexicurity in Europe, no statistically significant relationship between temporary contracts and perceived job security is found, suggesting the existence of some effects of the (macro) flexicurity model at the individual (micro) level.

More direct evidence on the flexicurity mix at the individual level, proxied by the joint effect of the type of contract and perceived security (appraised through the likelihood of losing the job in a certain time) on job satisfaction is provided by Origo and Pagani

(2009). On the basis on the 2001 Special Eurobarometer survey, they show that what matters for job satisfaction is mainly perceived job security, which may be independent of the type of contract. The combination "temporary but secure job" seems preferable to the combination "permanent but insecure job", indicating that the length of the contract may be less important if the worker perceives that she is not at risk of becoming unemployed. This result holds regardless of the flexicurity model prevailing in the country where workers live.

Finally, few recent studies have investigated the actual "exportability" of the Danish flexicurity model and its resilience to macroeconomic shocks, such as the recent severe financial and economic crisis. More specifically, Algan and Cahuc (2009) showed that the Danish flexicurity model can be successfully adopted only in countries characterized by high civic attitude. Jørgensen (2011) has instead tried to verify whether and how the Danish flexicurity model was challenged by the 2008-2010 economic crisis. His comparative descriptive analysis shows that, because of high unemployment benefits and relatively high social assistance benefits, domestic demand was more stabilised in Denmark than in other EU countries and the effects on income and unemployment were then significantly mitigated. Furthermore, the Danish economy was characterized by high mobility rates (in terms of job-to-job mobility and job creation and destruction) also during the crisis. But these good results came at the expenses of a dramatic worsening of the public budget.

3. Empirical strategy

The aim of the empirical analysis is to test the effect of the flexicurity model on perceived workers security during an economic downturn.

A number of studies have already tried to classify the EU countries in a flexicurity perspective, according to their prevailing mix of labour market and social policies. One of the most popular classifications is the one proposed by the European Commission which, using the results of the principal component analysis carried out on the basis of four variables measuring the flexicurity principles outlined above[3], cluster the EU

[3] These variables are: the OECD index of 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

countries into five main groups, corresponding to different flexicurity models: English-speaking countries (UK and Ireland), characterised by 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 are characterized by very low levels of security combined with intermediate levels of flexibility[4]. These clusters are robust to the methodology and the definition of the variables used (Muffels and Luijkx 2005; Nicoletti et al. 2000).

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

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

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 to identify the so called "flexicurity" countries (i.e. those combining high flexibility and high security, namely the 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 the Mediterranean and Eastern countries.

The main limitation of this identification strategy is that country fixed effects may capture many other country-specific features different from the flexicurity model.

measure of employability; and average tax-wedge as a measure of the distortions created by the tax system. For more details see European Commission (2006).

[4] Italy is geographically part of the Mediterranean area and it is usually considered as having a rigid labour market. However, in recent years it has significantly deregulated the use of temporary contracts, yielding a reduction in its overall EPL indicator. Italy is thus characterized by a higher level of flexibility than the other Mediterranean countries and, according to the EC classification, from this point of view it is more similar to the Eastern European countries.

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, also because they have a quite different historical, cultural or religious background. For example, statistics on happiness usually place the Nordic countries in the highest rankings and the Mediterrenean ones in the lowest ones, 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) show that, once these systematic cross-country differences are accounted for, Scandinavian countries are ranked lower than workers from the Netherlands, suggesting that simple cross-country comparisons may lead to misleading conclusions if used to assess the effects of different welfare models.

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

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

where all the variables have the same meaning as above and identification of the effect of the flexicurity model is now based on the country-specific time fixed effects $\mu_c * \tau_t$, hence on changes of Y over time within each country[5]. With this specification, our research hypothesis is that, if flexicurity is effective in coping with the economic downturn, perceived security should have declined slower in the so-called "flexicurity" countries compared with the Mediterranean and Eastern ones.

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 further step of our identification strategy is to identify the effect of flexicurity on workers perceived security by using country-level data on labour market policies expenditure and EPL.

[5] This specification can be estimated also separately for each country, allowing also the βs estimates to vary across countries.

More specifically, we first estimate 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 the expenditure on labour market policies per unemployed in country c at time t and the other variables have the same meaning as above. In light of the flexicurity principles, given a certain level of flexibility (captured by the country fixed effects), increasing formal security (through increasing expenditure on either active LMP or passive LMP or both) should positively affect workers well being and their actual perception of security, implying that the estimate of α should be positive.

In order to better identify the role of changes in LMP in a flexicurity perspective, we then take explicitly into account also changes in EPL and estimate also the following specification:

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

where I is a dummy equals to 1 if country *c* has lowered EPL in a certain time span before *t* ($\Delta EPL<0$) and the other variables are the same as above. In this specification the effect of a change of the policy mix in a flexicurity perspective is measured by the parameter α_2, which captures the effect of a change in security (measured by changes in LMP expenditure) in countries which have increased flexibility (by reducing EPL). According to the flexicurity approach, an increase in security should be more effective on workers wellbeing when accompanied by increasing flexibility, implying that the estimated coefficient of α2 should be positive and the overall effect of an increase in LMP (given by $\alpha_2 + \alpha_1$) should be larger in countries which have also increased flexibility.

4. Data, definitions and descriptive analysis

The empirical analysis we present 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 to monitor public perceptions and the social impact of

the economic and financial crisis, including perceptions on the existence and extent of poverty in Europe, financial difficulties faced by the households[6], changes in healthcare and social-care affordability in the previous six months, how citizens feel about their future pension entitlements and concerns about financial stability after retirement[7].

The survey collected interviews – fixed-line, mobile phone and face-to-face – with nationally representative samples of EU citizens aged 15 and older in 27 Member States[8]. 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)[9]. Since our research is focused on workers perceived security, we excluded individuals younger than 15 years old or older than 64 years old and self-employed or not working interviewees. Our final dataset is composed of 48,849 observations[10].

Regarding workers security, one of the main advantages of this survey is that it provides information on both job and employment security. This distinction is crucial, because one of the main consequences of flexicurity is to shift from job security (same job for all working life), to employment security, that is having employment possibilities all life long (EMCO, 2006).

More specifically, as in previous studies (see, for example, Origo and Pagani 2009) in our analysis we use 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 in the next 12 months?"*. On the basis of the possible answers[11], we create a dummy variable

[6] Information are related either to financial difficulties of households at the moment of the interview and in the 12 months leading up to the survey.

[7] The Flash Eurobarometers surveys are *ad hoc* telephone interviews conducted at the request of any service of the European Commission on specific topics and issues (including European governance, politics, religion, socio-economic aspects, etc.), in order to quickly acquire a better knowledge of the public opinion on such issues.

[8] The target sample size in most countries was 1,000 interviews.

[9] Specifically, Gallup's network of fieldwork organisations conducted over 25,000 interviews for the Flash Eurobarometer 276 (from July 8 to July 12, 2009), 25,630 interviews for the Flash Eurobarometer 286 (from November 30 to December 4, 2009), 25,570 interviews for the Flash Eurobarometer 288 (from May 18 to May 22, 2010) , 25,570 interviews for the Flash Eurobarometer 288 (from May 18 to May 22, 2010) and 25,776 interviews for the Flash Eurobarometer 311 (from October 6 to October 10, 2010). Statistical results were weighted to correct for known demographic discrepancies

[10] See Appendix for details by survey wave and country.

[11] Possible answers were: very confident, fairly confident, not very confident, not at all confident.

($d\_keeping\_job$) which is equal to 1 if the workers state that they are fairly or very confident to keep their jobs and 0 otherwise.

Perceived job security[12] has overall increased over time, with 76.7 per cent of workers being confident or fairly confident about their job security in July 2009 versus 79.7 per cent in October 2010.

Differently from previous studies, we also investigate 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 create a dummy variable ($d\_finding\_job$) equals to 1 if the worker's answer is equal to 6 or higher, 0 otherwise. Perceived employment security[13] is much lower than perceived job security, since only 45.7 per cent of workers believes she would be likely to find a job in the following six months. Perceived employment security is rather stable over time (46.1 per cent in July 2009, 45.6 per cent in October 2010)[14].

The survey provides also information on workers' demographic characteristics and job attributes[15]. Demographic characteristics of the respondents include gender, age, education and type of residence. To proxy for job attributes, we use information on the respondent's occupation[16].

Finally, in order to identify changes in the policy mix in a flexicurity perspective, we use Eurostat data on total expenditure on LMP interventions per unemployed, as the sum of expenditures on LMP measures and on LMP supports per unemployed. LMP measures include active measures for the unemployed and other target groups including the categories of training, job rotation and job sharing, employment incentives, supported employment and rehabilitation, direct job creation, and start-up incentives. LMP supports cover financial assistance that aims to compensate individuals for loss of wage or salary (out-of-work income maintenance and support, i.e. mostly unemployment benefits) or which facilitates early retirement. Expenditures on LMP

[12] From now on we imply job security as the perceived confidence of workers of keeping their jobs.

[13] From now on we imply employment security as the perceived confidence of workers of finding a new job in the following six months.

[14] See the Appendix for detailed descriptive statistics.

[15] See the Appendix for the complete list of the variables used in our analysis and their means and descriptive statistics, including their correlation with the dependent variables.

[16] The available occupations are: professional (employed doctor, lawyer, accountant, architect), general manager, director or top manager, middle manager, civil servant, office clerk, other employees (salesman, nurse, etc...), supervisor / foreman (team manager, etc...) of manual workers, general manual worker, unskilled manual worker and other manual worker.

measures and on LMP supports per unemployed are estimated on average, respectively, as € 4,433.22 and € 8,652.64. Differences between waves and countries are shown in Appendix. The main difference between these two indicators consist in expenditures on LMP measures per unemployed generally increasing over time, on average, from € 3,931.37 in July 2009 to € 5,019.64 in October 2010; while expenditures on LMP support per unemployed are almost constant over time.

In order to measure changes in the EPL legislation according to the flexicurity principles, we use data on the OECD indexes on EPL strictness and create a dummy variable equal to 1 if a specific country has reduced EPL strictness in the five years before the survey (between 2005 and 2009 or 2010) and 0 otherwise. We also distinguish between changes in the overall Index (related to both permanent and temporary workers) and changes in EPL of permanent contracts, assuming that the latter are more relevant for workers perceived security.

Figure 1 show the positive relationship between total expenditure on LMP interventions per unemployed and perceived job security. This is particularly true in Nordic countries and in the majority of Continental countries where, in consideration of the total expenditures on LMP interventions exceeding ten thousand euros per unemployed, the confidence of interviewees of keeping their jobs is higher than ninety per cent.

Figure 2 describes the relationship between total expenditures on LMP interventions per unemployed and perceived employment security. Also in this case, the relationship between perceived employment security and public expenditures for LMP measures and LMP supports per unemployed is positive. Indeed, in countries where the total expenditures on LMP interventions exceed twenty thousand euros per unemployed, such as Nordic countries and the majority of Continental countries, the percentage of people perceiving sufficiently employment security is generally higher than fifty per cent.

Figure 1: LMP expenditure and job security

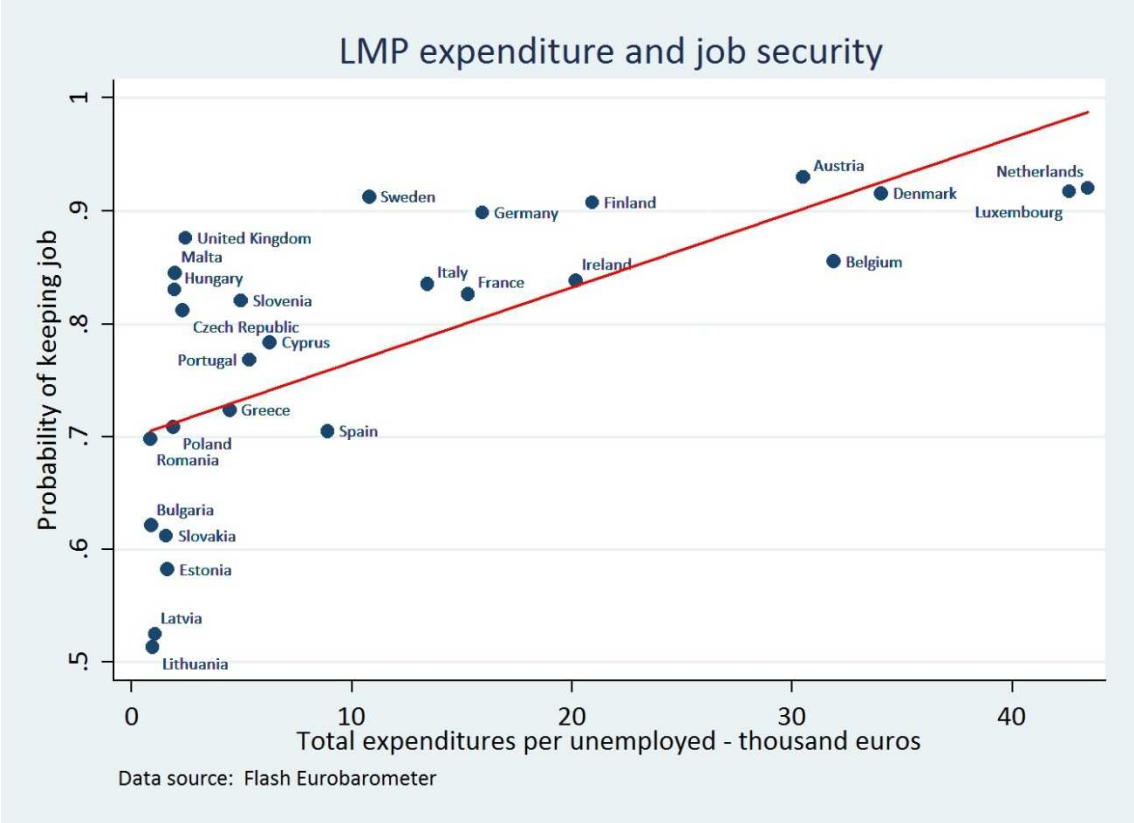
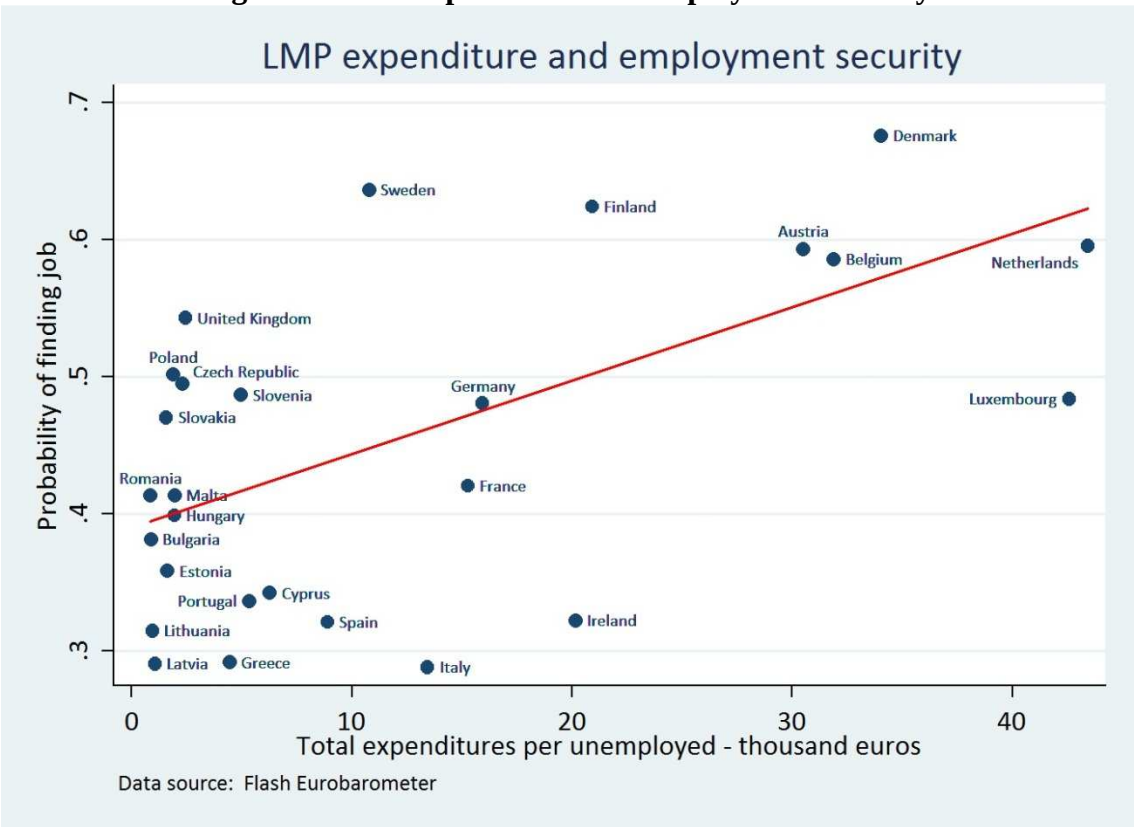


Figure 2: LMP expenditure and employment security



The relationship between reducing EPL and job and employment security is described in Table 1. Reducing EPL among all workers is associated with an increase in perceived employment security in each wave and on average (46,54 per cent in countries that have not reduced EPL among all workers versus 52,23 per cent in countries that have intervened in this sense). Conversely, job security is almost constant.

If we focus on government interventions to decrease EPL strictness only among permanent workers, we again notice job security is almost constant; but that employment security is lower (49,49 per cent in countries that have not reduced EPL at least among permanent workers versus 47,03 per cent in countries that have decreased EPL only among permanent workers). These conflicting results can be reconciled and interpreted considering that, if more flexibility is guaranteed by government interventions focused on reducing EPL among all workers, the interviewees in our dataset have higher confidence of finding a job in the following six months, at least in a non-permanent position.

Table 1: Employment strictness and job and employment security

Reducing employment strictness for all workers

	Job security		Employment security	
	No	Yes	No	Yes
July 2009	0,8328	0,8136	0,4683	0,5222
Nov.-Dec. 2009	0,8391	0,8241	0,4790	0,5025
March 2010	0,8339	0,8379	0,4635	0,5270
May 2010	0,8295	0,8429	0,4631	0,5279
October 2010	0,8376	0,8361	0,4527	0,5311
All five waves	0,8346	0,8310	0,4654	0,5223

Reducing employment strictness only for permanent workers

	Job security		Employment security	
	No	Yes	No	Yes
July 2009	0,8247	0,8272	0,4937	0,4761
Nov.-Dec. 2009	0,8307	0,8398	0,4933	0,4754
March 2010	0,8381	0,8272	0,4985	0,4668
May 2010	0,8339	0,8401	0,5016	0,4549
October 2010	0,8325	0,8525	0,4878	0,4773
All five waves	0,8319	0,8372	0,4949	0,4703

5. Results

The aim of the empirical analysis is to identify, ceteris paribus, the effect of flexicurity on workers job and employment security during the economic crisis.

Following the empirical strategy discussed in Section 3, we first identify such effect through the estimated country/region fixed effects The main results of the probit estimations of equation [1] are presented in Table 2. The specifications presented differ in the dependent variables and in the set of variables used to identify differences between countries, In column (I) and (II) we explore differences between groups of countries, with Nordic countries being our excluded group, in terms of job and

employment security, respectively. Similarly, in columns (III) and (IV) we use countries fixed effects, with Denmark being our excluded country[17].

The estimated country fixed effects show that, ceteris paribus, workers in Mediterranean and Eastern countries display the lowest level of perceived job security (column I): differences with respect to the Nordic countries equal to 20.7 and 25 per cent, respectively. Compared with the Nordic countries, job security is significantly lower (by almost 10 percent) also in the UK and Ireland.

Similar results emerge for employment security. Workers in Mediterranean countries are those with the lowest confidence of finding a new job in the following six months: in these countries employment security is 32.1 per cent lower than in Nordic countries. A negative and statistically significant difference is also estimated for the Continental countries (-12.4 per cent), for UK and Ireland (-22.6 per cent) and for Eastern countries (- 25.2 per cent).

Estimates of specific country fixed effects confirm these results (see columns III and IV). Countries in Mediterranean and Eastern Europe are characterized by lower perceived job security. These differences are particularly large for Greece (-32.8 per cent), Latvia (-48.4 per cent) and Lithuania (-51.4 per cent). Generally, job security in Mediterranean and Eastern countries is always much lower than in Denmark. On the contrary, in Continental countries, with the exception of France, and in UK and Ireland these differences are smaller and in few cases, namely the Netherlands and Austria, they are not statistically significant. Similar results are estimated in terms of employment security. In Mediterranean countries, employment security is between 27.2 per cent (Spain) and almost 34 per cent (Greece) lower than in Denmark. Among Eastern countries, in Cyprus and Latvia employment security is much lower than in Denmark: 31.3 and 30.6 per cent, respectively. Compared to Denmark, employment security is 15.9 per cent lower in Slovakia, 18.7 per cent lower in Poland and 19.8 per cent lower in Czech Republic. Similar patterns emerge for some Continental countries (France and Luxembourg), but much smaller differences emerge for Belgium (-8.5 per cent), the Netherlands (-10.4 per cent) and the other Nordic countries (3.6 per cent lower in Sweden, 6.7 in Finland).

[17] The table reports only the marginal effects. The full set of results and the coefficient of the probit estimations are available from the authors upon request.

Table 2: Differences by group of countries and by singular country in terms of job and employment security

	Group of countries		Singular countries	
	Job security (I)	Employment security (II)	Job security (III)	Employment security (IV)
Nordic countries				
Finland			-0.0390***	-0.0668***
			(0.0084)	(0.0071)
Sweden			-0.0398***	-0.0361***
			(0.0082)	(0.0072)
Netherlands			-0.0138	-0.1036***
			(0.0127)	(0.0120)
Continental countries	-0.0405	-0.1241***		
	(0.0322)	(0.0367)		
Austria			0.0280***	-0.1043***
			(0.0097)	(0.0111)
Belgium			-0.0965***	-0.0854***
			(0.0065)	(0.0055)
Luxembourg			-0.0159	-0.2235***
			(0.0117)	(0.0092)
France			-0.1480***	-0.2341***
			(0.0121)	(0.0073)
Germany			-0.0201***	-0.1695***
			(0.0033)	(0.0032)
UK & Ireland	-0.0975***	-0.2261***		
	(0.0274)	(0.0738)		
United Kingdom			-0.0822***	-0.1555***
			(0.0061)	(0.0042)
Ireland			-0.1493***	-0.3175***
			(0.0346)	(0.0143)
Mediterranean countries	-0.2075***	-0.3207***		
	(0.0399)	(0.0153)		
Greece			-0.3280***	-0.3396***
			(0.0258)	(0.0094)
Italy			-0.1172***	-0.3255***
			(0.0091)	(0.0040)
Spain			-0.2800***	-0.2723***
			(0.0732)	(0.0346)
Portugal			-0.2000***	-0.3014***
			(0.0228)	(0.0102)
Eastern countries	-0.2504***	-0.2515***		
	(0.0397)	(0.0273)		
Cyprus			-0.2376***	-0.3132***
			(0.0092)	(0.0044)
Czech Republic			-0.1550***	-0.1986***
			(0.0037)	(0.0042)
Estonia			-0.4013***	-0.2299***
			(0.0568)	(0.0301)
Hungary			-0.1125***	-0.2506***
			(0.0199)	(0.0112)
Latvia			-0.4836***	-0.3059***
			(0.0670)	(0.0299)
Lithuania			-0.5141***	-0.2970***
			(0.0516)	(0.0252)
Malta			-0.1075***	-0.2742***
			(0.0050)	(0.0040)
Poland			-0.2863***	-0.1871***
			(0.0135)	(0.0075)
Slovakia			-0.3875***	-0.1590***
			(0.0387)	(0.0235)
Slovenia			-0.1743***	-0.2052***
			(0.0049)	(0.0048)
Bulgaria			-0.3892***	-0.2699***
			(0.0113)	(0.0058)
Romania			-0.2957***	-0.2726***
			(0.0058)	(0.0030)
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	47,580	47,580	47,580	47,018
Log Likelihood	-22625	-22625	-21822	-29147

Robust standard errors in parentheses. Excluded dummy variables: Nordic countries - Denmark. We account for cluster errors within countries. *** p<0.000, ** p<0.050, * p<0.100

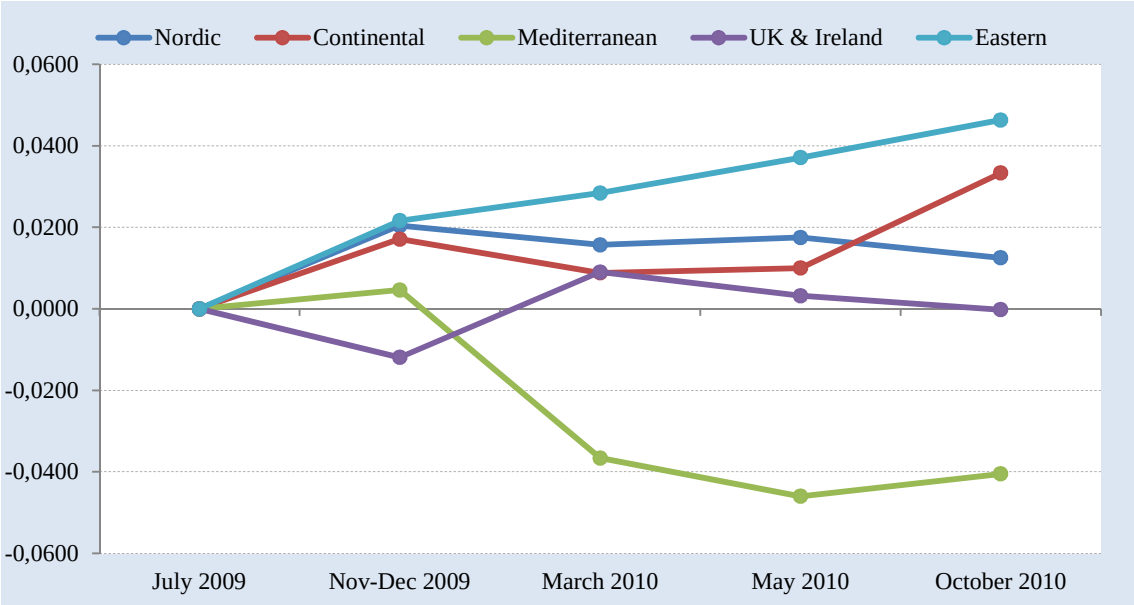
In a second stage, we turn our attention to how job and employment security vary over time within each country/flexicurity model[18]. Figure 3 describes the estimated trends in perceived job security (Figure 3a) and in perceived employment security (Figure 3b). Job security is increasing in Nordic, Continental and in Eastern countries. Specifically, in Eastern Europe the confidence of workers of keeping their jobs have raised of 4.6 percentage points, from almost 68 per cent in July 2009 to 72.6 per cent in October 2010. This effect is mainly driven by the statistically significant increase in job security in Hungary, Latvia, Lithuania and Malta. The estimated trend is increasing, albeit at a lower pace, also in Continental and in Nordic countries, but Contrary Denmark has experienced a significant decline in perceived job security, particularly in the last two waves. Conversely, job security is substantially constant in the UK and Ireland and decreasing in Mediterranean Europe, where the percentage of those confident in keeping their job went, in the same period, from 77 to 73 per cent. The decrease in job security in Mediterranean countries is completely determined by Greece, while the estimated trends for Italy, Spain and Portugal are not statistically significant. Among Greek workers job security has been declining by more than 15 percentage points between July 2009 and October 2010.

Employment security has been increasing in the UK and Ireland, in Continental Europe and in the Nordic countries, but also in this case a statistically significant decline (by almost 7 percentage points) is estimated for Denmark. On the contrary, Mediterranean and Eastern countries are characterized by decreasing employment security: from 30.4 to 29.8 per cent in Mediterranean Europe and from 39.7 to 38 per cent in the East. As for job security, the estimated decline of employment security in the Mediterranean countries is driven by Greece, while changes over time are not statistically significant in the case of Italy, Spain and Portugal.

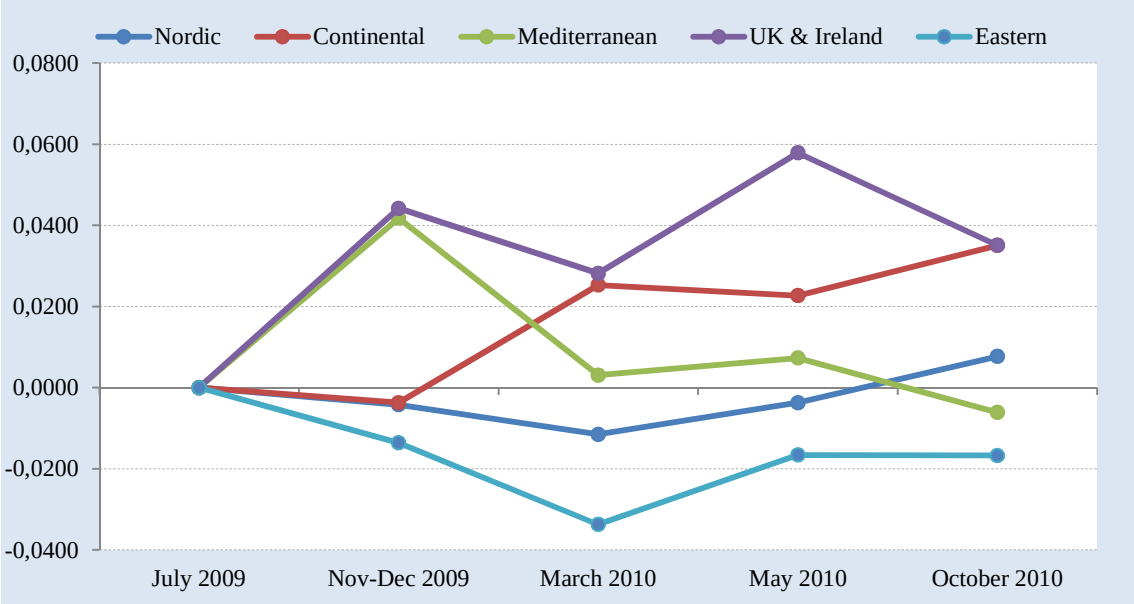
[18] On the basis of the EC classification discussed in the previous Section, we group EU countries in the following way: Nordic countries (Denmark, Finland and Sweden) and the Netherlands, Continental countries (Austria, Belgium, France, Germany and Luxemburg), UK & Ireland, Mediterranean countries (Greece, Italy, Spain and Portugal) and Eastern countries (Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia, Bulgaria and Romania).

Figure 3: Trends in job and employment security over time

a) job security



b) employment security



Results presented in Table 2 and in Figure 3 unequivocally show the presence of marked differences in terms of both job and employment security between Nordic countries, like Denmark and the Netherlands, and the other EU countries, particularly the Mediterranean and Eastern ones. However, within countries time trends show that both measures of security have been significantly declining in the case of Denmark, casting some doubts on the effectiveness of the flexicurity approach (at least of the Danish version) during an economic downturn.

In what follows we try to investigate whether such trends, particularly in the case of Denmark, are explained by changes in flexibility and/or security (as captured by, respectively, EPL strictness and public expenditures on LMP) going actually against the flexicurity principles. Specifically, the research question we test is whether changes in the policy mix according to the flexicurity principles, which should entail increasing flexibility (through a reduction of EPL) accompanied by increasing security (through increasing expenditure on LMPs), contributes to a stable or increasing workers' confidence in keeping their current job and/or of finding a new job within six months. This question is particularly relevant as the years 2008-2010 were marked by a severe economic and financial crisis.

The model presented in Table 2 is thus revised including information on public expenditures on LMP interventions, still controlling for country fixed effects. The estimated coefficients for the new variables allow to test whether, within country, an increase in LMP expenditure (and hence an increase in security) affects workers perceived security. Results are presented in Table 3: the specifications differ in the dependent variables and in the proxy used to capture public expenditures on LMP interventions: column (I) reports the estimated effects of the total expenditures on LMP interventions per unemployed on job security; in column (II) we replicate the same analysis but focusing on employment security; column (III) and (IV) show results related to expenditures on LMP measures and LMP supports, on job and employment security, respectively.

Results confirm the existence of a positive relationship between public expenditures on LMP interventions and job and employment security. The specification in column (I) shows that, for each additional thousand euros per unemployed of total expenditures on LMP interventions, job security is 1.08 per cent higher. This effect is attributable to expenditures on LMP supports; indeed, expenditures on LMP measures do not have a statistically significant effect on job security, as shown in column (III).

As predicted by the flexicurity approach, the effect of an increase of total expenditures on LMP interventions is even larger on employment security: an additional thousand euros per unemployed of expenditures on LMP interventions increases the confidence of workers of finding a new job within six months by 1.37 per cent. In terms of

employment security, expenditures on both LMP measures and LMP supports are correlated with an increase of employment security: an additional thousand euros per unemployed increase the confidence of workers of finding a new job in the next six months of 1.85 per cent and of 1.18 per cent, respectively.

These results seem to suggest that, in a period of economic and financial crisis, such as the one between July 2009 to October 2010, active labour market policies (LMP measures) or passive labour market policies (LMP supports) have helped in increasing workers confidence in keeping their job and of finding a new job in the short term.

Table 3: Effects of public expenditures on LMP interventions on job and employment security

	Total expenditure on LMP interventions		Expenditures on LMP measures and on LMP supports	
	Job security (I)	Employment security (II)	Job security (III)	Employment security (IV)
Total expenditure on LMP interventions	0.0108***	0.0137***		
	(0.0047)	(0.0026)		
Expenditures on LMP measures			0.0108	0.0185**
			(0.0109)	(0.0103)
Expenditures on LMP supports			0.0107*	0.0118***
			(0.0063)	(0.0035)
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	36,036	35,550	36,036	35,550
Log Likelihood	-16161	-21992	-16161	-21992

Robust standard errors in parentheses. Excluded dummy variable: Denmark. We account for cluster errors within countries. *** p<0.000, ** p<0.050, * p<0.100

As the final step of our analysis, we have to investigate whether combining increasing expenditures on LMP interventions with decreasing EPL strictness would affect the workers perceptions in terms of job and employment security. This analysis is performed including in the model of interest variables capturing whether a certain country has changed its policy mix according to the flexicurity principles: the variables included are the interaction between the dummy variables that capture a reduction of EPL (since 2005), among all workers or only among permanent workers, and the variables related to public expenditures on LMP interventions.

Results are presented in Table 4: the specifications differ in the dependent variables, in the way in which LMP interventions are measured (total expenditures vs. expenditures on LMP measures and LMP supports) and in the way in which variations in EPL strictness are identified. Table 4a, column (I) reports the estimated effects of the application of the flexicurity model among all workers controlling for country fixed

effects; in column (II) we replicate the same analysis on employment security; column (III) and (IV) show results related to the application of the principles of the flexicurity model only on permanent workers on job and employment security, respectively. In Table 4b, the same pattern is followed to estimate the effects on job and employment security of expenditures on LMP measures and LMP supports, respectively.

Results shown in Table 4a suggest that the flexicurity strategy contributes to increasing the positive effects of public expenditures on LMP interventions. When the reduction of EPL have concerned all workers, the estimated effect is around 2.3 per cent higher per each additional thousand euros per unemployed, with respect to the effect of expenditures on LMP interventions in countries that have not changed EPL framework. This effect is slightly lower if the reduction of EPL have concerned only permanent workers, with an estimate of 1.01 per cent per each additional thousand euros per unemployed compared to the effect of public expenditures on LMP interventions in countries which have not intervened to reduce EPL.

The additional effect of the application of the flexicurity model is significantly greater on employment security: combining public expenditures on LMP interventions and policies aimed to reducing EPL among all workers contributes to increasing the confidence of workers in finding a new job in the short term by 2,97 per cent per each additional thousand euros per unemployed expended, with respect to corresponding confidence of workers in countries which exclusively increase public expenditures on LMP interventions. This effect is again slightly lower if the reduction of EPL has concerned only permanent workers and it is equal to 2.1 per cent per each additional thousand euros per unemployed expended.

Table 4b confirms the positive and statistically significant effect of the flexicurity system on job and employment security. Splitting the total expenditures on LMP interventions into LMP measures and LMP supports, we find a positive and statistically significant effect on job and employment security of LMP measures. The additional effect of mixing a reduction of EPL with public expenditures on LMP measures increases job security by 3.1 per cent and employment security by 4.4 per cent per each additional thousand euros per unemployed, with respect to the effect of public expenditures on LMP measures in countries that do not intervene to reduce EPL. On the contrary, the additional effect of mixing a reduction of EPL with an increase of public

expenditures on LMP supports does not have statistically significant effects on job and employment security.

Table 4: Effects of flexicurity on job and employment security

a) Total expenditures on LMP interventions

	Job security	Employment security	Job security	Employment security
Total expenditure on LMP interventions	0.0090*** (0.0021)	0.0148*** (0.0018)	0.0112*** (0.0028)	0.0172*** (0.0027)
Flexicurity (all workers)	0.0233*** (0.0073)	0.0297*** (0.0094)		
Flexicurity (only permanent workers)			0.0101* (0.0058)	0.0207** (0.0108)
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	25,713	25,331	25,713	25,331
Log Likelihood	-10275	-15688	-10275	-15688

Robust standard errors in parentheses. Excluded dummy variable: Denmark. We account for cluster errors within countries. *** p<0.000, ** p<0.050, * p<0.100

b) Expenditures on LMP measures and supports

	Job security	Employment security	Job security	Employment security
Expenditures on LMP measures	0.0002 (0.0104)	0.0032 (0.0091)	0.0202*** (0.0062)	0.0263*** (0.0069)
Expenditures on LMP supports	0.0090*** (0.0014)	0.0153*** (0.0015)	0.0102*** (0.0027)	0.0163*** (0.0027)
Flexicurity (all workers) – LMP measures	0.0307*** (0.0119)	0.0436*** (0.0106)		
Flexicurity (all workers) – LMP supports	0.0205 (0.0223)	0.0455 (0.0315)		
Flexicurity (only permanent workers) – LMP measures			-0.0126 (0.0116)	-0.0063 (0.0172)
Flexicurity (only permanent workers) – LMP supports			0.0700*** (0.0192)	0.0997*** (0.0239)
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	25,713	25,331	25,713	25,331
Log Likelihood	-10274	-15687	-10274	-15687

Robust standard errors in parentheses. Excluded dummy variable: Denmark. We account for cluster errors within countries. *** p<0.000, ** p<0.050, * p<0.100

In countries which have decreased EPL strictness only among permanent workers, only expenditures on passive LMP have positive effects on job and employment security: combining a reduction of EPL with an increase of public expenditures on LMP supports increase the confidence of workers of keeping their jobs of 7.0 per cent and of finding a

new job in the following six months of almost 10 per cent per each additional thousand euros per unemployed, in comparison with the effect of public expenditures on LMP supports in countries that do not intervene to reduce EPL even among permanent workers. No statically significant effects are found when we combine a reduction of EPL only among permanent workers with an increase of public expenditures on LMP measures, compared to the effect of public expenditures on LMP interventions in countries which have not intervened to reduce EPL even among permanent workers.

6. Sensitivity analysis

- Different dependent variables

We test the results of the specification [4] which investigates the effect of the flexicurity model using different dependent variables, in place of the dummy variables that capture a sufficient level of workers' confidence of keeping their jobs and of finding a new job in the following six months.

Specifically, we test our results on job security using the dummy variables $d\_keeping\_job\_high$ and $d\_keeping\_job\_low$. The dummy $d\_keeping\_job\_high$ is equal to 1 if the interviewees are very confident to keep their jobs and to 0 otherwise[19]. The dummy $d\_keeping\_job\_low$ is equal to 1 if the interviewees are at least not at all confident to keep their jobs and to 0 otherwise[20]. Performing the model of interest [4] using these dummy variables[21], we notice that our results on the effect of the flexicurity strategy are robust only considering a reduction of EPL among all workers.

With the aim of testing our results on employment security, we introduce the pseudo-continuous variable $finding\_job$ which varies between 1 and 10 and capture the likelihood of finding a job in the following six months perceived by the interviewees. Results using the pattern described in the equation [4] with an OLS estimator provide more robustness to our results. Indeed, we notice positive and statistically significant effects of any measures of flexicurity on the variable used to proxy employment security.

[19] It occurs when employees are fairly, not very or not at all confident to keep their jobs.
[20] It occurs when employees are not at all confident to keep their jobs.
[21] Results of the sensitivity analysis are shown in Appendix.

- Results using public expenditures on LMP interventions as percentage of GDP

A further test for our results consists in using measures of public expenditures on LMP interventions as percentage of GDP, rather than per unemployed. Results confirm our findings: an increase of public expenditures on LMP interventions in terms of percentage of GDP, combined with a reduction of EPL, has a positive and statistically significant effect on job security and employment security if these expenditures are directed to promote training, employment incentives, supports for employment and rehabilitation, direct job creation and start-up incentives (active LMP). If the reduction of EPL has concerned only permanent workers, the public expenditures either on LMP measures or on LMP supports contribute to increase workers' confidence of keeping their jobs or of finding a new job in the short term.

7. Conclusion

The aim of this paper was to empirically assess the effect of flexicurity on workers perceived security also during a severe economic downturn, like the 2008-2010 one.

According to the 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. This means that, if a country want to increase flexibility by lowering EPL strictness, it should increase security by increasing LMP expenditure. However, the 2008-2010 severe economic and financial crisis has posed new challenges to the flexicurity strategy, particularly in terms of financial sustainability for public budget (generous – or increasing - unemployment benefits and active labour market policies may be in fact very costly during recessions) and of the effectiveness of its basic components in fighting unemployment or workers 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", show that the so called "flexicurity" countries, namely Denmark and the Netherlands, are characterized by much higher level of both job and employment security than the other EU-27 countries, particularly if compared with the Mediterranean and the Eastern ones. However, differently from the

Netherlands, during the economic crisis Denmark has experienced a significant decline in both indicators, particularly in 2010, when most of the other countries have registered a significant increase. Such decline has been accompanied by a significant reduction in LMP expenditures, not accompanied by an increase of EPL, suggesting that the policy mix in Denmark has actually moved against the flexicurity principles during the economic crisis.

More in general, our results suggest that changes of the policy mix according to the flexicurity principles increase, ceteris paribus, both perceived job and employment security, but the effect is usually larger for the latter.

Overall, our analysis seems to confirm that flexicurity positively affects workers wellbeing also during an economic downturn. The relatively negative trends registered in the case of Denmark are actually not determined by the failure of the Danish flexicurity model, but by a change in the policy mix which actually was against the flexicurity principles.

Appendix

Table A1: Distribution of answers by country and time

	July 2009	Nov.-Dec. 2009	March 2010	May 2010	October 2010	All 5 waves
Nordic countries						
Denmark	593	600	472	516	527	2708
Finland	441	408	393	421	380	2043
Sweden	435	360	675	643	548	2661
Netherlands	461	474	431	450	494	2310
Continental countries						
Austria	370	335	406	366	354	1831
Belgium	395	309	319	262	312	1597
Luxembourg	232	222	191	241	215	1101
France	393	409	402	394	392	1990
Germany	383	372	380	340	366	1841
UK & Ireland						
United Kingdom	427	373	393	350	375	1918
Ireland	391	309	387	395	426	1908
Mediterranean countries						
Greece	286	272	264	275	327	1424
Italy	385	316	321	329	318	1669
Spain	437	399	356	336	385	1913
Portugal	354	388	366	342	348	1798
Eastern countries						
Cyprus	181	206	170	151	199	907
Czech Republic	378	404	404	336	320	1842
Estonia	434	432	430	394	408	2098
Hungary	370	369	353	321	327	1740
Latvia	400	392	361	383	365	1901
Lithuania	464	431	447	417	442	2201
Malta	142	143	139	136	141	701
Poland	378	351	334	331	300	1694
Slovakia	449	417	367	314	414	1961
Slovenia	317	283	254	285	289	1428
Bulgaria	419	425	389	390	423	2046
Romania	370	352	343	250	303	1618
Total	10285	9751	9747	9368	9698	48849

Table A2: Data description

	N.Obs	Mean	Std.Dev.	Min	Max
Dependent variables					
d_keeping_job	47580	0,7838	0,4116	0	1
d_finding_job	47018	0,4571	0,4982	0	1
Independent variables					
Country					
Nordic countries					
Denmark	48849	0,0554	0,2288	0	1
Finland	48849	0,0418	0,2002	0	1
Sweden	48849	0,0545	0,2270	0	1
Netherlands	48849	0,0473	0,2123	0	1
Continental countries					
Austria	48849	0,0375	0,1899	0	1
Belgium	48849	0,0327	0,1778	0	1
Luxembourg	48849	0,0225	0,1484	0	1
France	48849	0,0407	0,1977	0	1
Germany	48849	0,0377	0,1904	0	1

	N.Obs	Mean	Std.Dev.	Min	Max
UK & Ireland					
United Kingdom	48849	0,0393	0,1942	0	1
Ireland	48849	0,0391	0,1937	0	1
Mediterranean countries					
Greece	48849	0,0292	0,1682	0	1
Italy	48849	0,0342	0,1817	0	1
Spain	48849	0,0392	0,1940	0	1
Portugal	48849	0,0368	0,1883	0	1
Eastern countries					
Cyprus	48849	0,0186	0,1350	0	1
Czech Republic	48849	0,0377	0,1905	0	1
Estonia	48849	0,0429	0,2027	0	1
Hungary	48849	0,0356	0,1853	0	1
Latvia	48849	0,0389	0,1934	0	1
Lithuania	48849	0,0451	0,2074	0	1
Malta	48849	0,0144	0,1189	0	1
Poland	48849	0,0347	0,1830	0	1
Slovakia	48849	0,0401	0,1963	0	1
Slovenia	48849	0,0292	0,1685	0	1
Bulgaria	48849	0,0419	0,2003	0	1
Romania	48849	0,0331	0,1790	0	1
Unemployment rate	48849	10,04314	4,331618	3,3	20,7
Wave					
July 2009	48849	0,2105	0,4077	0	1
Nov.-Dec. 2009	48849	0,1996	0,3997	0	1
March 2010	48849	0,1995	0,3997	0	1
May 2010	48849	0,1918	0,3937	0	1
October 2010	48849	0,1985	0,3989	0	1
Personal characteristics					
Male	48849	0,4348	0,4957	0	1
Age class					
15-24 years	48849	0,0445	0,2063	0	1
25-39 years	48849	0,3193	0,4662	0	1
40-54 years	48849	0,4615	0,4985	0	1
55+ years	48849	0,1747	0,3797	0	1
Years in education					
Never in education	48849	0,0089	0,0941	0	1
Less than 15 years	48849	0,0700	0,2551	0	1
16-20 years	48849	0,5000	0,5000	0	1
20+ years	48849	0,4058	0,4911	0	1
Still in education	48849	0,0088	0,0932	0	1
Refuse to answer	48849	0,0065	0,0803	0	1
Area of residence					
Rural area	48849	0,3316	0,4708	0	1
Metropolitan area	48849	0,2101	0,4074	0	1
Urban area	48849	0,4565	0,4981	0	1
Job attributes					
Professional employee	48849	0,1294	0,3356	0	1
General management, director or top management	48849	0,0325	0,1774	0	1
Middle management	48849	0,0751	0,2635	0	1
Civil servant	48849	0,1484	0,3555	0	1
Office clerk	48849	0,1283	0,3344	0	1
Salesman, nurse, etc	48849	0,1955	0,3966	0	1
Other employee	48849	0,1063	0,3083	0	1
Supervisor / foreman (team manager, etc...) of manual workers	48849	0,0159	0,1253	0	1
Manual worker	48849	0,1287	0,3349	0	1
Unskilled manual worker	48849	0,0251	0,1565	0	1
Other worker	48849	0,0148	0,1208	0	1

Table A3: Descriptive statistics

	Job security	Employment security
Country		
Nordic countries		
Denmark	0,9151	0,6758
Finland	0,9072	0,6242
Sweden	0,9122	0,6365
Netherlands	0,9205	0,5957
Continental countries		
Austria	0,9299	0,5932
Belgium	0,8552	0,5858
Luxembourg	0,9171	0,4835
France	0,8260	0,4205
Germany	0,8985	0,4806
UK & Ireland		
United Kingdom	0,8759	0,5427
Ireland	0,8381	0,3221
Mediterranean countries		
Greece	0,7234	0,2915
Italy	0,8351	0,2878
Spain	0,7048	0,3209
Portugal	0,7679	0,3361
Eastern countries		
Cyprus	0,7830	0,3422
Czech Republic	0,8119	0,4947
Estonia	0,5824	0,3583
Hungary	0,8301	0,3987
Latvia	0,5250	0,2903
Lithuania	0,5134	0,3146
Malta	0,8449	0,4134
Poland	0,7083	0,5015
Slovakia	0,6120	0,4702
Slovenia	0,8202	0,4868
Bulgaria	0,6215	0,3815
Romania	0,6983	0,4133
Wave		
July 2009	0,7673	0,4614
Nov.-Dec. 2009	0,7798	0,4575
March 2010	0,7852	0,4517
May 2010	0,7911	0,4584
October 2010	0,7969	0,4565
Personal characteristics		
Female	0,7751	0,4216
Male	0,7951	0,5032
Age class		
15-24 years	0,7584	0,5395
25-39 years	0,7848	0,5575
40-54 years	0,7829	0,4435
55+ years	0,7909	0,2791
Years in education		
Never in education	0,0089	0,4746
Less than 15 years	0,0700	0,3077
16-20 years	0,5000	0,4195
20+ years	0,4058	0,5281
Still in education	0,0088	0,5196
Refuse to answer	0,0065	0,3843
Area of residence		
Rural area	0,7944	0,4550
Metropolitan area	0,7952	0,5063
Urban area	0,7713	0,4362

	Job security	Employment security
Job attributes		
Professional employee	0,8174	0,5173
General management, director or top management	0,8616	0,6042
Middle management	0,8553	0,5497
Civil servant	0,8665	0,4154
Office clerk	0,8001	0,4209
Salesman, nurse, etc	0,7662	0,4778
Other employee	0,8014	0,4796
Supervisor / foreman (team manager, etc...) of manual workers	0,7447	0,4761
Manual worker	0,6309	0,3683
Unskilled manual worker	0,6044	0,3085
Other worker	0,7318	0,4208

Table A4: Public expenditures on LMP measures and LMP supports by country and time

	LMP measures	LMP supports
Nordic countries		
Denmark	14,9622	19,0814
Finland	6,4729	14,4427
Sweden	6,1623	4,6562
Netherlands	13,7470	29,6630
Continental countries		
Austria	9,6338	20,8783
Belgium	10,6270	21,2630
Luxembourg	13,8914	28,6848
France	5,3985	9,8802
Germany	4,6547	11,2723
UK & Ireland		
United Kingdom	0,2960	2,1693
Ireland	4,0245	16,1564
Mediterranean countries		
Greece	1,0579	3,4294
Italy	2,6835	10,7682
Spain	1,5927	7,3174
Portugal	1,6453	3,7054
Eastern countries		
Cyprus	1,6042	4,6783
Czech Republic	0,7738	1,5473
Estonia	0,1943	1,4607
Hungary	0,7910	1,1729
Latvia	0,3524	0,7268
Lithuania	0,2351	0,7233
Malta	0,1749	1,8118
Poland	1,1577	0,7414
Slovakia	0,2929	1,3081
Slovenia	1,3333	3,6694
Bulgaria	0,3291	0,5629
Romania	0,0579	0,8137
Waves		
July 2009	3,9314	8,6679
Nov.-Dec. 2009	3,9225	8,5732
March 2010	4,8823	8,4410
May 2010	5,1982	8,9081
October 2010	5,0196	8,7287

Table A5: Effects of flexicurity on job security (d_keeping_high and d_keeping_low)

a) Total expenditures on LMP interventions

	d_keeping_high	d_keeping_high	d_keeping_low	d_keeping_low
Total expenditure on LMP interventions	0.0177***	0.0201***	-0.0006	0.0015
	(0.0039)	(0.0036)	(0.0021)	(0.0023)
Flexicurity (all workers)	0.0192		0.0203***	
	(0.0196)		(0.0056)	
Flexicurity (only permanent workers)		-0.0384*		0.0069
		(0.0226)		(0.0078)
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	25,713	25,713	25,713	25,713
Log Likelihood	-16482	-16482	-5071	-5071

Robust standard errors in parentheses. Excluded dummy variable: Denmark. We account for cluster errors within countries.
*** p<0.000, ** p<0.050, * p<0.100

b) Expenditures on LMP measures and supports

	d_keeping_high	d_keeping_high	d_keeping_low	d_keeping_low
Expenditures on LMP measures	0.0391***	0.0390***	-0.0220***	0.0069*
	(0.0103)	(0.0073)	(0.0032)	(0.0045)
Expenditures on LMP supports	0.0165***	0.0180***	-0.0007	0.0010
	(0.0029)	(0.0029)	(0.0006)	(0.0026)
Flexicurity (all workers) – LMP measures	-0.0191		0.0391***	
	(0.0214)		(0.0072)	
Flexicurity (all workers) – LMP supports	-0.0622		0.0171	
	(0.0670)		(0.0208)	
Flexicurity (only permanent workers) – LMP measures		-0.0741**		-0.0147**
		(0.0364)		(0.0082)
Flexicurity (only permanent workers) – LMP supports		0.0546		0.0795***
		(0.0548)		(0.0129)
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	25,713	25,713	25,713	25,713
Log Likelihood	-16479	-16479	-5067	-5067

Robust standard errors in parentheses. Excluded dummy variable: Denmark. We account for cluster errors within countries.
*** p<0.000, ** p<0.050, * p<0.100

Table A6: Effects of flexicurity on employment security (finding_job)

a) Total expenditures on LMP interventions

	finding_job	finding_job
Total expenditure on LMP interventions	0.0795***	0.0963***
	(0.0097)	(0.0166)
Flexicurity (all workers)	0.2124***	
	(0.0494)	
Flexicurity (only permanent workers)		0.1621***
		(0.0438)
Control Variables		
Country fixed effects	YES	YES
Unemployment rate	YES	YES
Time fixed effects	YES	YES
Demographic characteristics	YES	YES
Job attributes	YES	YES
Observations	25,331	25,331
R-squared	0.1794	0.1793

Robust standard errors in parentheses. Excluded dummy variable: Denmark. We account for cluster errors within countries. *** p<0.000, ** p<0.050, * p<0.100

b) Expenditures on LMP measures and supports

	finding_job	finding_job
Expenditures on LMP measures	0.0805	0.1870***
	(0.0635)	(0.0390)
Expenditures on LMP supports	0.0806***	0.0858***
	(0.0095)	(0.0149)
Flexicurity (all workers) – LMP measures	0.2331***	
	(0.0682)	
Flexicurity (all workers) – LMP supports	0.3028**	
	(0.1334)	
Flexicurity (only permanent workers) – LMP measures		-0.0009
		(0.0683)
Flexicurity (only permanent workers) – LMP supports		0.5610***
		(0.1360)
Control Variables		
Country fixed effects	YES	YES
Unemployment rate	YES	YES
Time fixed effects	YES	YES
Demographic characteristics	YES	YES
Job attributes	YES	YES
Observations	25,331	25,331
Log Likelihood	0.1794	0.1794

Robust standard errors in parentheses. Excluded dummy variable: Denmark. We account for cluster errors within countries. *** p<0.000, ** p<0.050, * p<0.100

Table A7: Effects of flexicurity on job and employment security

a) Total expenditures on LMP interventions (as percentage of GDP)

	Job security	Employment security	Job security	Employment security
Total expenditure on LMP interventions	-0.0769*	-0.1071	-0.1020*	-0.1474*
	(0.0448)	(0.0708)	(0.0588)	(0.0841)
Flexicurity (all workers)	0.1171	0.1940		
	(0.1433)	(0.2380)		
Flexicurity (only permanent workers)			0.2640***	0.4406***
			(0.0992)	(0.1473)
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	25,713	25,331	25,713	25,331
Log Likelihood	-10275	-15688	-10275	-15688

Robust standard errors in parentheses. Excluded dummy variable: Denmark. We account for cluster errors within countries. *** p<0.000, ** p<0.050, * p<0.100

b) Expenditures on LMP measures and supports (as percentage of GDP)

	Job security	Employment security	Job security	Employment security
Expenditures on LMP measures	-0.2084***	-0.3103***	-0.0979	-0.1712
	(0.0406)	(0.0518)	(0.1036)	(0.1437)
Expenditures on LMP supports	-0.0383	-0.0371	-0.0999	-0.1274
	(0.0380)	(0.0405)	(0.0728)	(0.0937)
Flexicurity (all workers) – LMP measures	0.4367***	0.6765***		
	(0.0652)	(0.0892)		
Flexicurity (all workers) – LMP supports	0.0514	0.0993		
	(0.0698)	(0.0786)		
Flexicurity (only permanent workers) – LMP measures			0.2180**	0.3768***
			(0.1221)	(0.1416)
Flexicurity (only permanent workers) – LMP supports			0.3268***	0.4952***
			(0.1424)	(0.1772)
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	25,713	25,331	25,713	25,331
Log Likelihood	-10274	-15687	-10274	-15687

Robust standard errors in parentheses. Excluded dummy variable: Denmark. We account for cluster errors within countries. *** p<0.000, ** p<0.050, * p<0.100

References

Algan, Y. and Cahuc, P. (2009). Civic Virtue and Labor Market Institutions. *American Economic Journal*: Macroeconomics, 1(1): 111-145.

Boeri, T., Conde-Ruiz J. and Galasso, V. (2011). The Political Economy of Flexicurity. *The Journal of the European Economic Association*, forthcoming.

Clark A. and Postel-Vinay F. (2009). Job Security and Job Protection. *Oxford Economic Papers*, 61, 207-239.

Easterlin, R. (2001). Income and happiness: towards a unified theory, *Economic Journal*, 111: 465–484.

European Commission (2007). Commission Communication *'Towards Common Principles of Flexicurity: More and better jobs through flexibility and security*', 27.6.2007, COM(2007) 359 final.

Facchinetti, M. and Origo, F. (2010). Perceived Job Security in Transition Countries: a Comparative Perspective. in Marelli, E. and Signorelli, M. (eds), *Economic Growth and Structural Features of Transition*, Pelgrave-McMillian, 206-235.

Ferrer-i-Carbonell A. and van Praag B. M. S. (2006). Insecurity in the Labor market: The impact of the type of contract on job satisfaction in Spain and the Netherlands. Mimeo.

Jørgensen, H. (2011). Danish "Flexicurity" in Crisis- Or Just Stress-Tested by the Crisis? *Report to the Friedrich Ebert Foundation*, Stockholm.

Kristensen, N. e Johansson, E. (2008). New evidence on cross-country differences in job satisfaction using anchoring vignettes, *Labour Economics*, 15: 96-117.

Layard, R. (2005). *Happiness: Lessons from a New Science*, The Penguin Press.

Madsen, K. (2002). The Danish Model of Flexicurity: a Paradise With Some Snakes. in H. Sarfati and G. Bonoli (eds), *Labour Market and Social Protection Reforms in International Perspective. Parallel or Converging Tracks?*. Aldeershot: Ashgate/ISSA, 243-65.

OECD (2003). More and Better Jobs? Aggregate Performance during the Past Decades. *Employment Outlook*, Paris, 17-66.

Origo, F. and Pagani L. (2009). Flexicurity and Job Satisfaction in Europe: The Importance of Perceived and Actual Job Stability for Well Being at Work. *Labour Economics*, 16, 547-555.

Pissarides, C. (2001). Employment Protection, *Labour Economics*, 8 : 131-59.

Postel-Vinay, F. and Saint-Martin, A. (2005). Comment les Salariés Perçoivent-ils la Protection de l'Emploi?. *Economie et Statistique* 372, 41-59.

Schmidt, S. (1999). Long-Run Trends in Workers' Beliefs about Their Own Job Security: Evidence from the General Social Survey. *Journal of Labor Economics,* 17(4), 127–141.

Whiltagen, T. and Tros, F. (2004). The Concept of “Flexicurity”: a New Approach to Regulating Employment and Labour Markets. *Working Paper TRANSFER*, 2.

Kristensen, N. e Johansson, E. (2008). New evidence on cross-country differences in job satisfaction using anchoring vignettes, *Labour Economics*, 15: 96-117.

Layard, R. (2005). *Happiness: Lessons from a New Science*, The Penguin Press.