

**FLEXICURITY AT WORK:  
THE RELATION BETWEEN TEMPORARY CONTRACT  
AND PERCEIVED JOB SECURITY IN EUROPE**

Marco Facchinetti and Federica Origo<sup>\*</sup>

THIS VERSION: JUNE 2008

**VERY PRELIMINARY DRAFT. DO NOT QUOTE WITHOUT PERMISSION**

**ABSTRACT**

In this study we analyse the determinants of perceived job security in Europe, paying specific attention to the role of temporary contracts. More specifically, we empirically test whether the negative effect of holding a temporary contract on a subjective measure of job security is influenced by individual characteristics (such as gender, age and education) and by the (macro) flexicurity model prevailing in the country where the workers live. On the basis of individual data from the Fourth European Working Condition Survey, we show that the overall negative effect of the temporary contract on individual perceived job security does not vary significantly with workers' characteristics (especially by gender and education), but it is actually lower in countries characterized by higher levels of (macro) flexicurity. In the case of Denmark, which is considered a "best practice" in the implementation of flexicurity in Europe, we don't find any statistically significant relation between temporary contracts and perceived job security, suggesting the existence of some effects of the (macro) flexicurity model at the individual (micro) level. Our main results hold also after controlling for potential endogeneity and are overall robust with respect to alternative definitions of job security and different model specifications, based also on alternative data-sets.

Keywords: flexicurity, perceived job security, temporary employment

JEL Codes: J28, J81

---

<sup>\*</sup> Department of Economics "Hyman P.Minsky", University of Bergamo.  
Corresponding author: federica.origo@unibg.it

## **1. Introduction**

In the last decades the intensification of competitiveness due to markets globalisation and the growing role of Asian economies as China and India, together with the diffusion of new technologies (ICT) has generated new challenges for the labour market of many developed countries.

Adaptability and the capacity to quickly respond to demand and markets changes have become crucial to firms' survival, which also made relevant changes in their organisation, management styles and work practices.

Many OECD countries are still trying to find an optimal way to combine the interests of the parts 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: to promote sustainable economic growth, which also implies to maintain high competitiveness and flexibility as well as contrasting the increasing feeling of job insecurity (OECD, 2003; Schmidt, 1999; Ministry of Economy of Japan, 1999).

In the last decade this feeling of insecurity has in fact been increasing in many countries, regardless of their initial level of employment protection legislation.

For example the Japanese "Toyotist" model, traditionally characterized by long-term employment relationships and the prevalence of "jobs for life", has not been able to face the increasing markets' turbulence by using only internal (functional) flexibility. On the contrary, since the Nineties many Japanese firms started using external flexibility more extensively through massive lay-offs and an increasing share of temporary contracts.

Even in the USA, where employment protection legislation is low and the "employment at will" has always been the norm, there has been a significant reduction in the average of employment duration (Neumark, Polsky and Hansen, 1997). Furthermore, the role of contingent work and staffing agency has been continuously growing, while the downsizing of several industries has generated the so called "firing democratisation" process (Farber, 1997), with lay-offs occurring along the entire occupational ladder, from the middle (and top) managers to manual workers.

In light of the increasing share of temporary employment and the reforms of employment protection legislation carried out in many EU countries (albeit often "at the margin"), the socio-economic debate in Europe has been focussing on the relationship between flexibility and security. In this respect, two opposite views seem to emerge: the "trade-off" theory and the "flexicurity" thesis (Muffels and Lujkx, 2005). The first

hypothesis shows a negative relationship between flexibility and security, especially for the weakest workers groups such as low skilled workers and the young, for whom a high level of flexibility (mainly with the use of temporary contracts) has often been achieved by reducing their job security. Conversely, the “flexicurity” thesis postulates that flexibility is not necessarily the opposite of security and they can be both increased through appropriate labour market policies and institutions (Madsen, 2002; Wilthagen, 2004). This model was first implemented in the Netherlands and Denmark, where the good results gained in terms of low unemployment rate and high perceived security have provided evidence in favour of the combination of high numerical flexibility, low employment protection legislation, a generous social security system and effective labour market policies. More numerical (external) flexibility is thus acceptable with appropriate labour market policies that ensure workers with employment possibilities all life long (EMCO, 2006). The flexicurity approach is also characterized by a shift from job security (the same job all life long) to employment security (any job all life long), thus pointing out the central role of life-long-learning to keep workers’ skills in line with firms’ needs.

In light of these results, the European Commission has recently emphasized the need to achieve an optimal balance of flexibility and security. The Expert Group of Flexicurity, set up by the European Commission in 2006 in order to issue guidelines for the Member States, has recently published its report, reaching a consensus on a definition of flexicurity which comprises four components:

- flexible and secure contractual arrangements and work organisations, both from the perspective of the employer and the employee, through modern labour laws and modern work organisation;
- active labour market policies (ALMP) which helps people to cope with rapid change, unemployment spells and transitions to new jobs;
- reliable and responsive lifelong learning (LLL) systems to ensure the adaptability and employability for all workers.
- modern Social Security systems able to provide adequate income support and facilitate labour market mobility.

Given the main features of the flexicurity model, a central point remains the way workers feel about their job and, more in general, about their employment. There is in fact evidence showing that perceived job security is one of the most important determinants of job satisfaction (Green, 2001; Nikolaou, 2005) and it influences the

overall well-being and workers' behaviour (Bockermann, 2004). Perceived job security seems also to directly influence productivity (Buchele and Christiansen, 1999). Moreover, Aaronson and Sullivan (1999) provide evidence of the link between the stagnation of salaries in the USA and the decrease of job security during the 1990s. Finally, low job security may reduce consumption expenditure when it increases uncertainty on future income (Stephens, 2003).

In recent years the overall decrease of job tenure and the growth of temporary work has generated a decrease in the perceived job security in many European countries. However, recent studies have shown that temporary contracts *per se* are not necessarily associated with low perceived security or low job satisfaction. For example, using micro-data from the ECHP for 1995-2000, Ferrer-i-Carbonell and van Praag (2006) show that the effect of temporary employment on job satisfaction is quite different in Spain and the Netherlands, with a strong negative correlation between the two emerging only in the case of Spain. 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, as we mentioned above, The Netherlands are considered, together with Denmark, the country where the flexicurity model has been successfully implemented. Other studies point out that the negative impact of temporary contracts on job satisfaction emerges only for specific forms of temporary employment, such as seasonal jobs or temporary agency work, or for specific job facets as career prospects (Bardasi and Francesconi, 2003; Booth et al., 2002; De Graaf-Zijl, 2005; De Witte and Naswall, 2003). Using micro data from the Eurobarometer survey and splitting workers in different groups according not only to their employment contract (i.e. permanent or temporary), but also to their perceived job security, Origo and Pagani (2007) show that what matters for job satisfaction is not just the type of contract, but mainly the perceived job security, which may be independent of the type of contract. The combination "temporary but secure job" seems preferable with respect to the combination "permanent but insecure job", pointing out that the length of the contract may be less relevant if the worker perceives that he/she is not at risk of becoming unemployed.

In light of these considerations, our aim is to shed more light on the possible interaction between flexibility and security, showing how the effect of temporary employment on workers' perceived job security can change depending on workers' characteristics and the model of flexicurity considered. Our main research hypothesis is that temporary

employment could be less detrimental for perceived security if temporary workers have the “right” skills or live in a country characterized by the “right” combination of flexibility and labour market policies.

Given our aim, the remainder of the paper is organized as follows: in Section 2 we briefly sketch the main features of the prevailing flexicurity models in Europe, discussing the possible links between these macro-models and the combination of flexibility and security at the individual level. In Section 3 we present the data and the basic definitions used in the empirical analysis, whose main results are presented in the following two Sections (descriptive statistics in Section 4, econometric results and robustness checks in Section 5). The last Section concludes.

## **2. Flexibility and security: macroeconomic models and microeconomic relationship (TO DO)**

### **3. Data and definitions**

The data we used for this study are from the Fourth European Working Condition Survey (EWCS). This survey has been conducted by the European Foundation for the improvement of Living and Working Conditions in 2005 and covers 31 countries in Europe. The survey was originally designed to understand the conditions of work across the different EU Member States and other European countries, trying to identify the trends which might influence the future developments. Thus, the major strength of the survey is that it reflects workers’ point of view on a wide range of work-related issues, such as work organisation, wage structure, working time, contractual arrangements, equal opportunities, training and job satisfaction. It includes also demographic and other background information like age, gender, education level, family composition and country. As many other individual socio-economic surveys, some questions required subjective evaluation on a “factual” aspect of work, such as questions about health outcomes of work, exposure to risk, work intensity as well as the perceived work security, which is the object of this research. Even if subjective measures may be different from objective ones, it’s not necessarily true that the last are always preferable to the first: in most cases it is the perceived reality that has social effects, not reality itself (Karpinnen, 2005).

The target number of interviews was 1.000 in all countries except Cyprus, Estonia, Luxemburg, Malta and Slovenia, in which it was 600. Paper-and-pencil interviews

(PAPI) were used in all countries except in the Czech Republic, Denmark, Germany, the Netherlands and Slovakia, where interviews were collected using computer-assisted personal interviews (CAPI). The total sample contains almost 30,000 individuals.

For our empirical analysis, we have used data from the EU-25 Member States, restricting our sample to workers aged 15-70.

Furthermore, due to the object of our analysis, we have excluded workers with no contract, whose economic and social situation is likely to differ substantially across countries. After dropping also the observations with some missing values for the relevant variables, we ended up with a final sample of 17.506 observations.

Referring to Appendix 1 for a precise definition of all the variables used in our analysis, here we focus our attention on the definitions of perceived job security and temporary employment.

Perceived job security is our key (dependent) variable. The precise wording of the related question in the survey is: “How much do you agree or disagree with the following statement: ‘I might lose my job in the next 6 months’”. The workers could strongly agree, agree, neither agree nor disagree, disagree or strongly disagree with this statement. On the basis of this set of possible answers, we created a dummy variable for perceived job security according to which “secure workers” are those who strongly disagree with the statement, while “insecure workers” are all the remaining individuals. Even if we used a strict definition for perceived security, more than 40% of the sample workers can be considered as “secure”<sup>1</sup>.

The “type of contract”, our key independent variable, is evaluated by the question “What kind of employment contract do you have?”. The possible answers were:

- 1- An indefinite contract
- 2- A fixed term contract
- 3- A temporary employment agency contract
- 4- An apprenticeship or other training scheme
- 5- No contract

We considered as “permanent workers” only those with an indefinite contract, while “temporary workers” are those on a fixed term contract, a temporary employment agency contract, an apprenticeship or any other training scheme. As before mentioned,

---

<sup>1</sup> We replicated our analysis also using a larger definition of perceived security (i.e., including among the secure workers those who disagree with the statement). Results didn't change from a qualitative point of view and they are available from the authors upon request.

we have excluded from our analysis those workers who declared to have no contract: without further information on their relation with the company and given the institutional differences across EU counties, the inclusion of this category could make more difficult the interpretation of the results. We then defined a dummy variable which takes value equal to 1 for temporary workers, 0 otherwise.

#### 4. Descriptive statistics

Table 1 reports perceived job security by type of contract, gender, age and level of education.

**Table 1 – Perceived job security by type of contract and workers’ characteristics**

	TEMPORARY	PERMANENT	TOTAL	PERMANENT - TEMPORARY
TOTAL	0.244	0.425	0.397	0.181
GENDER				
Males	0.243	0.419	0.394	0.176
Females	0.245	0.429	0.389	0.185
AGE				
<30	0.248	0.380	0.339	0.131
30-49	0.242	0.430	0.407	0.188
>50	0.238	0.441	0.421	0.203
EDUCATION				
Low	0.205	0.385	0.354	0.180
Medium	0.216	0.381	0.355	0.165
High	0.334	0.533	0.504	0.198

Note: the difference between permanent and temporary workers is always statistically significant (p-value<0.01)

As expected, on average the share of secure workers is much higher among the permanent workers (42.5%) than the temporary ones (24.4%): perceived security for permanent workers is then almost two times higher than that of temporary ones. A statistically significant gap in perceived job security by type of contract is registered for all the groups considered, regardless of gender, age and education.

Furthermore, within each type of contract there are no relevant differences between males and females, while more heterogeneity seems to emerge by age and by education. The youngest shows the lowest level of security for permanent workers (38%), while it is above the total average for prime age workers (43%) and older workers (44%). Thus,

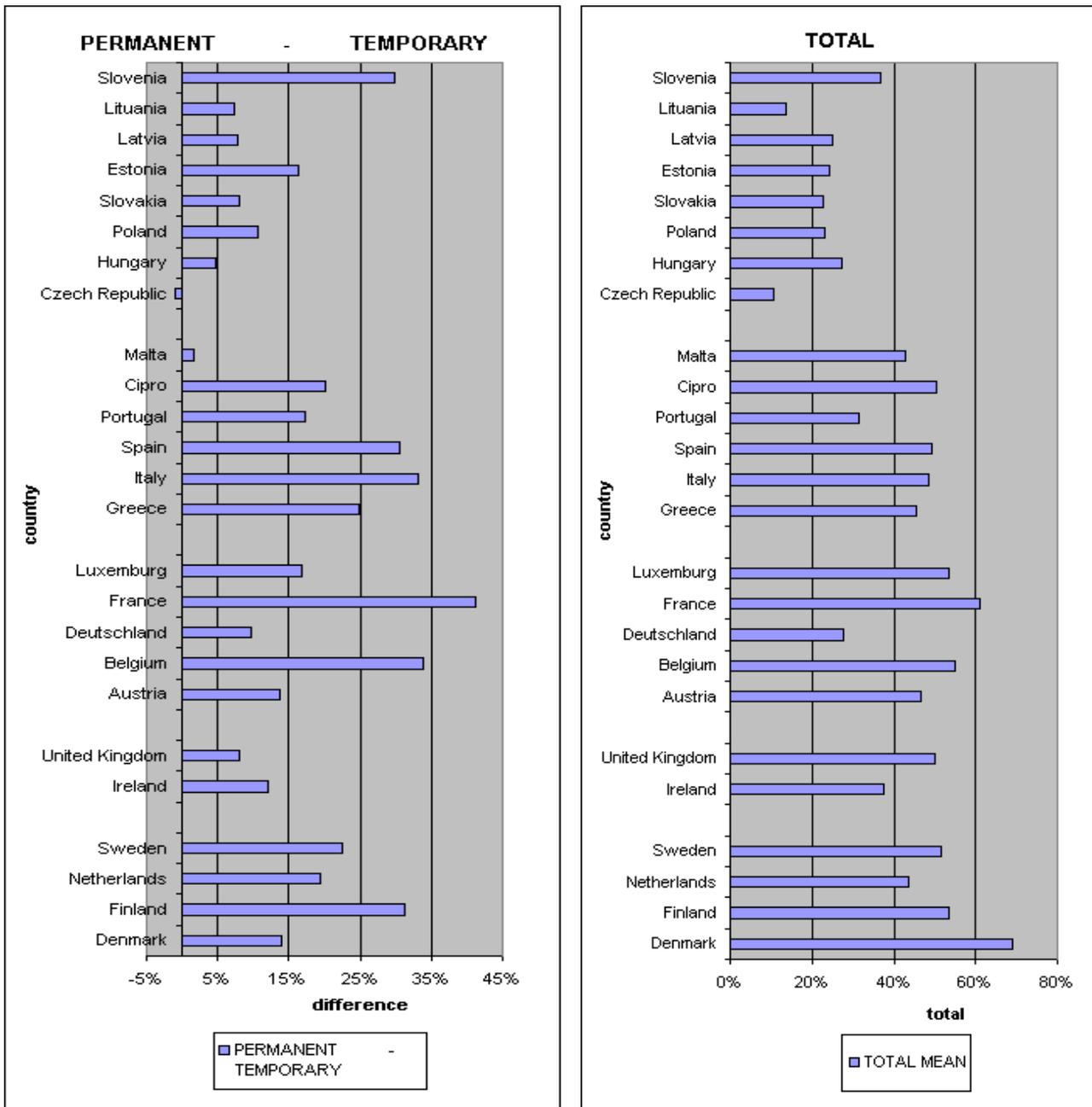
there is some evidence of a positive relation between security and age for permanent workers, while no clear-cut relationship seems to emerge for the temporary ones (the share of secure workers is almost 25% among the youngest, only one percent point higher than that registered for the other age groups). As a result, the difference in perceived job security between permanent and temporary workers is lower for the young than for the older workers.

Education seems to be more correlated with perceived security, regardless of the type of contract considered: for both temporary and permanent workers, the share of secure workers substantially increases with the level of education, particularly with a college degree. The share of secure workers with a high school degree is in fact similar to that registered for people with a low level of education. Despite these differences, the difference in perceived security between permanent and temporary workers is similar across educational levels, showing that the pace of increase in perceived security with education is much the same for the two types of contract considered.

Figure 1 shows the difference in perceived job security between workers with temporary and permanent jobs (left panel) and the average perceived job security (right panel) across European countries. Countries are clustered according to the flexicurity models discussed in section 2. Regardless of the flexicurity regime and with the only exception of the Czech Republic, permanent workers are much more secure in all countries, especially in France, Belgium and Italy, whose gaps amount, respectively, to 41%, 34% and 33%. However, the size of the negative relation between security and temporary contract varies significantly by country, as shown by the large differences depicted in the left panel. With a few exceptions in each group, common patterns seem to emerge within each flexicurity model, with relatively low differences in Anglo-Saxon and Nordic countries (except for Finland) and larger differences in many Mediterranean countries. Low gaps are registered also for most Eastern countries, mainly due to the average low level of security prevailing in these countries rather than to relatively high level of security for temporary workers (compare the left and right panel).

More in general, there is not a clear-cut relationship between differences by type of contract and the average perceived job security, given that among the countries with the highest levels of perceived job security we have both countries with relatively low gaps by type of contract (such as Denmark) and some of the above mentioned countries with large gaps (namely France and Belgium).

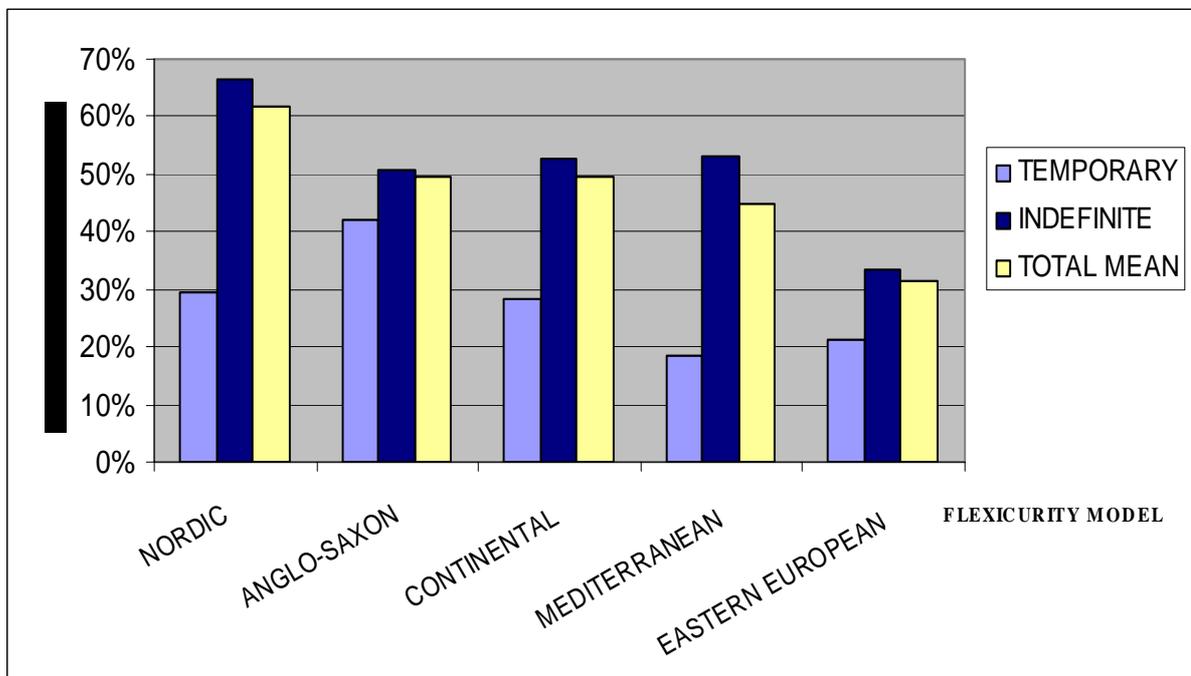
**Figure 1 – perceived job security by type of contract and country**



In Figure 2 we try to better capture the effect of different flexicurity models by looking at the average perceived job security in the following clusters (corresponding to different flexicurity models): Nordic countries (Denmark, Finland and Sweden and the Netherlands); Anglo-Saxon countries (Ireland and United Kingdom); Continental countries (Austria, Belgium, France, Germany and Luxemburg); Mediterranean countries (Cipro, Greece, Italy, Malta, Spain and Portugal) and Eastern European countries (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia).

The Nordic flexicurity model is characterized by the highest average of perceived security (54%), determined by the very high level registered for permanent workers and the second highest level (after Anglo-Saxon countries) for temporary ones. East countries are at the bottom of the ranking (22%), due to very low levels of security for both groups of workers. Despite similar average levels (around 45%) Mediterranean and Anglo-Saxon countries differ substantially for the level of security by type of contract, which is much higher (lower) for permanent (temporary) workers in Mediterranean countries,

**Figure 2 – Perceived job security by type of contract and flexicurity model.**



## 5. Econometric results

The aim of the empirical analysis is to study the determinants of perceived security, paying specific attention to the role of temporary contracts.

To this end, we estimate the following model:

$$Y_i = \alpha + \beta T_i + \rho X_i + \gamma c + \varepsilon_i$$

where  $Y$  is our measure of perceived security for the  $i$ th worker,  $T$  is the dummy for temporary contracts,  $X$  is a vector of controls,  $\gamma_c$  are country fixed effects and  $\varepsilon$  the usual error term.

Table 2 presents the main probit estimates of different specifications of the above model: in model 1 we control, other than for the type of contract, only for personal characteristics (gender, age, education and family composition); in model 2 we add controls for firm characteristics (economic sector, firm size and tenure); finally, in model 3 we control also for detailed job-related characteristics (such as working hours and time schedules, wage structure, work practices, work-related health).

In the table we present the main estimates for the whole sample, but separated estimates were run also by gender, age and education groups.

**Tab. 2 - The determinants of perceived job security in Europe**

Marginal effects from probit estimates

Variable	MODEL 1		MODEL 2		MODEL 3	
	dF/dx	Robust Std. Err.	dF/dx	Robust Std. Err.	dF / dx	Robust Std. Err.
Temporary contract	-0.182 ***	0.019	-0.156 ***	0.020	-0.156 ***	0.020
<i>Personal characteristics:</i>						
Female	0.027 *	0.015	0.004	0.016	0.003	0.017
<30	0.000	0.019	0.061 ***	0.020	0.063 ***	0.020
Over50	0.053 ***	0.020	0.037 *	0.020	0.037 *	0.020
High school degree	0.054 ***	0.020	0.034 *	0.020	0.008	0.021
University degree	0.140 ***	0.023	0.075 ***	0.024	0.010	0.026
2 people household	0.052 **	0.024	0.056 **	0.024	0.052 **	0.024
3 people household	0.043 *	0.026	0.042 *	0.025	0.035	0.026
>3 people household	0.083 ***	0.024	0.087 ***	0.024	0.081 ***	0.002
<i>Firm characteristics:</i>						
Agriculture			0.087	0.059	0.077	0.061
Energy			0.143 ***	0.051	0.123 **	0.053
Costructions			-0.009	0.035	0.010	0.035
Commerce			-0.002	0.023	-0.005	0.024
Hotels and restaurants			-0.075 *	0.038	-0.069 *	0.040
Transports and communications			0.028	0.032	0.035	0.033
Finance and consulting			0.029	0.027	-0.005	0.027
Public Administration			0.239 ***	0.031	0.208 ***	0.034
Education			0.184 ***	0.023	0.184 ***	0.024

Firm size: 50-99		0.042	**	0.019	0.054	***	0.019
Firm size: 100-499		0.061	***	0.020	0.072	***	0.021
Firm size: >=500		0.060	**	0.024	0.070	***	0.024
Tenure<one year		-0.044		0.029	-0.050	*	0.029
Tenure<two years		-0.080	***	0.021	-0.075	***	0.021
<b>Job characteristics:</b>							
Part-time					0.002		0.022
Daily work time flexibility					-0.007		0.018
Weekly work time flexibility					-0.013		0.020
Working at night					0.038		0.031
Work on week-end					0.011		0.019
Work overtime					0.014		0.018
Payed overtime					-0.034	**	0.016
Special benefits					0.034		0.030
PRP scheme					-0.005		0.028
Employees Stock Ownership Plans					0.035		0.053
Pc users					0.024		0.018
Unhealthy conditions					-0.129	***	0.048
Mobbing					-0.086	**	0.040
Discrimination					-0.175		0.141
Job-rotation					0.236	**	0.099
Multiskilling					-0.022		0.017
Team-working					-0.026		0.016
Training					0.043	**	0.017
Problem solving					0.010		0.020
Work autonomy					0.087	***	0.016
Help from boss					0.038	**	0.016
Work at very high speed					0.086	***	0.016
Carrier opportunities					0.047	***	0.017
Country FE	yes		Yes			Yes	
Pseudo R <sup>2</sup>	0.085		0.113			0.138	
Log Likelihood	-10.931		-10.590			-10.297	
Number of Oservations	17.506		17.506			17.506	

Legend: \* p<0.1 \*\* p<.05 \*\*\* p<.01

Our estimates show a strong negative influence of temporary contracts on perceived security, with a significant negative coefficient of 0.16 in the complete model. The estimated effect is robust to the model specification. Furthermore, this result also holds for all the sub-sample analysed, with no significant differences by gender and education. The estimated contract effect is significantly lower only for young workers (0.11 in

absolute value), which is consistent with different expectations regarding job security by age, given also that in many countries temporary employment is often the first (obligated) step to enter the labour market.

In order to test the effect of temporary employment for different flexicurity models, we replicated our estimates for a selected set of countries, representing different combinations of flexibility and security in Europe: Denmark and the Netherlands as two different examples of policies and institutions combining high flexibility with high security, the UK as an example of high flexibility combined with low security; France and Germany as an example of low flexibility combined with high security and Italy and Spain as two examples of both low flexibility and low security (but with a quite different share of temporary employment, which is much higher in Spain than in Italy).

Table 3 reports estimates for the relevant coefficient referred to temporary employment for the selected countries.

**Table 3 – Estimates by country**

	Denmark	Netherlands	UK	Germany	France	Spain	Italy
temporary	-0.039 (0.069)	-0.186 *** (0.066)	-0.142 ** (0.055)	-0.132 * (0.061)	-0.328 ** (0.067)	-0.197 *** (0.067)	-0.362 *** (0.062)
Other controls:							
Personal characteristics	yes	yes	yes	yes	yes	yes	yes
Firm characteristics	yes	yes	yes	yes	yes	yes	yes
Job characteristics	yes	yes	yes	yes	yes	yes	yes
N obs	818	876	717	848	854	716	646
Pseudo R squared	0.088	0.111	0.088	0.188	0.21	0.227	0.275

Note: for each country model specification as in Model 3 of table 1

The figures in the table clearly highlight that the effect of the temporary contract on perceived job security is quite different in the countries considered, ranging from -0.04 in Denmark (not statistically significant) to -0.362 in Italy. With the partial exception of Spain (partly explained by the peculiar regulation and diffusion of temporary employment in this country), the negative effect of the temporary contract on perceived security is particularly high in Mediterranean countries, which are characterized by a combination of both low flexibility and low social security. On the contrary, there seems to be no significant relationship between flexibility and perceived security in Denmark, the country considered as a best practice in terms of flexicurity (hence, with a combination of high flexibility and high social security) in Europe. This result is

consistent with most of the macroeconomic literature that emphasizes the excellent results gained by the “Danish Golden Triangle” (Whilthagen and Tros, 2004; Whilthagen, 2002). The other Continental countries and the UK are in an intermediate position. The comparison of the results obtained for the Netherlands with those for Denmark (two different examples of flexicurity models in Europe) suggest that not all the macro flexicurity models have the same effect on the microeconomic relationship between temporary employment and perceived job security. In this sense, a general support to flexicurity may not be enough to increase workers’ well-being, but policy makers should put more effort in designing the proper (probably country-specific) combination of numerical flexibility, employment protection legislation, active and passive labour market policies.

Regarding differences by country, it is also interesting to look at the differences in perceived job security measured by the country fixed effects, whose estimates are reported in figure 2. With reference to Denmark, estimates for all countries are negative, confirming that Denmark, the prime example of flexicurity in Europe is, *ceteris paribus*, the EU country with the highest level of perceived security, regardless of the type of contract considered. The wide differences in country fixed effects are partly due to the inclusion of Eastern Countries, which score the worst results (-0.39 Czech Republic, -0.35 Poland and -0.35 Slovakia), followed by Germany (-0.30) and Portugal (-0.28). With respect to Denmark, differences are instead smaller in the case of the other Nordic countries, the UK and France, confirming that for the latter job insecurity is more related to temporary contracts than to permanent ones.

Referring to the other controls, estimates in table 2 reveal that gender has no statistically significant influence on perceived job security. This is confirmed in other studies (Bockerman, 2004; Deloffre and Rioux, 2004).

We instead found a stronger effect of age, being perceived security higher among young workers. Previous studies reached discordant results about the age effect on perceived job security: Clark and Postel-Vinay (2005) showed that security is decreasing and convex with age, while Manski and Straub (2000) found no link between age and perceived security. Our estimates are in line with those in Bockerman (2004) and Kuhn (2001), according to which there is an increasing perception of job insecurity as an employee ages due to much larger wage losses associated with potential unemployment for the older workers. In interpreting the results by age, we have also to consider that temporary contracts are much more widespread among young workers, 31% of whom

has a temporary contract (twice as high as the total average of 15%). As we mentioned in the previous section, the higher probability to get a temporary job for the young can influence their expectations: if accepting a temporary contract is the first step to enter the labour market (and to subsequently be hired on a permanent contract), with respect to older workers the young may feel more confident about their job in the next future even when they hold a temporary contract.

The level of education seems to increase security only when we control for personal and firm characteristics. This effect is no longer statistically significant once we include detailed controls for job characteristics that are likely to be correlated with skills and education (such as work autonomy, use of multiple skills and problem solving). These results point out the importance of controlling for such type of variables in a perceived security equation, thus casting some doubts on previous studies finding a positive relationship between education and security (Bockerman, 2004; OECD, 2003).

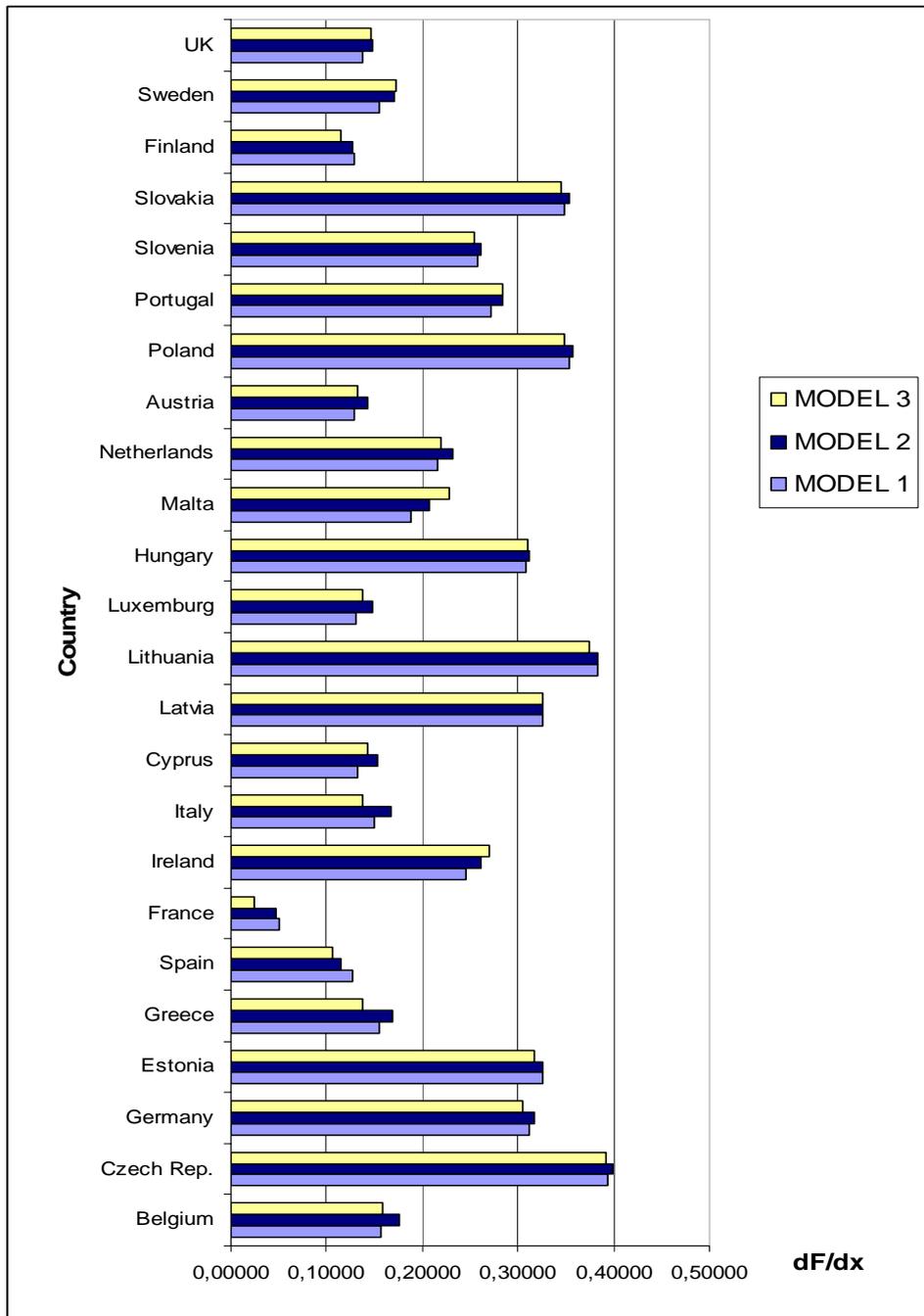
Regarding firm characteristics, working in the public sector (either public administration or education) increases perceived security. A similar result is found for the energy sector. Our estimates show also a positive relationship (albeit not particularly strong) between firm size and job security, probably because workers re-location is more easier in large firms than in small ones. Finally, as expected also tenure is positively related to perceived security, a result in line with the “last in, first out” policy typically used by firms in their firing decisions.

With respect to job characteristics, we found that part-time and working time flexibility (including overtime) have no significant influence on perceived security, but the latter seems significantly negatively correlated with both unhealthy working conditions<sup>2</sup> and mobbing (including both physical and psychological violence). We also find that perceived job security is positively influenced by many High Performance Workplace Practices, such as job rotation, work autonomy and training. Finally, as expected perceived job security is higher for workers who have good relations with their boss (given the help that can get from him/her) and for those who foresee good career prospects.

---

<sup>2</sup> This variable is a summary indicator for different possible unhealthy situations: exposure to vibrations, high temperatures, radiations, smoke, painful positions and heavy charges.

**Fig. 2 - Estimated Country fixed effects -**



### 5.1 Robustness check

Even if the European Working Condition Survey has been carried out since 1990 every five years and a large number of questions are always the same in all the waves available (1990, 1995, 2000 and 2005), the question we used to evaluate perceived security was included for the first time in the last wave. This did not allow us to check

the robustness of our results by replicating the analysis for other waves or by estimating our model on repeated cross-section data.

It should be also noticed that such type of questions are not often asked in socio-economic surveys<sup>3</sup> and, even when they are present, their wording may be quite different from one survey (wave) to the other.

In order to check the robustness of our estimates to a different definition of perceived security, we replicated our analysis using individual data from the European Social Survey (ESS) 2006/07. This survey is mainly aimed to monitor changes in public attitudes and values within Europe and to investigate how they interact with Europe's changing institutions. The reference population is then made of all the citizens aged 15 and over of the participating countries. It is funded by the European Commission's 6<sup>th</sup> Framework Programme and the European Science Foundation and covers a wide range of topics, including social trust, political interest, social exclusion, religious allegiances, personal and social well-being and satisfaction with work and life. With respect to the EWCS, also given the different aim and reference population, it contains much less information on working conditions and other work-related aspects, but it is much richer on many socio-demographic aspects (such as family, social life, personal attitude toward different issues such as politics, religion, social problems, etc.). Moreover, the two surveys don't cover exactly the same countries (at least in the waves considered in this study), since Greece, Ireland, Italy, the Netherlands and Austria are not included in the 2006/07 wave of the EES.

Despite of these differences, also the EES contains a question related to perceived security. More specifically, interviewed workers were asked to answer the following question: "How likely would you say it is that you will become unemployed in the next 12 months?". Workers could answer using a 4-points scale, where 1 was "very likely" and 4 "not at all likely". Not that the main difference with respect to the similar question in the EWCS is the different time span considered (6 months in the EWCS, 12 months in the ESS), which may be useful to test if our results hold also when perceived security is evaluated on a longer period of time<sup>4</sup>. On the basis of this question, our dependent variable, "perceived security", is a dummy variable considering as "secure workers" only people who said to be not at all likely to lose their job in the next 12 months.

---

<sup>3</sup> For example, the EHCP does not contain questions on perceived job security.

<sup>4</sup> If any, the extension of the time span should reinforce our findings, mainly if perceived security is linked to the length of temporary contracts.

The “type of contract” is classified by the statement “do you have a work contract of ...” which indicates as possible answers: unlimited or limited duration forms and the lack of any contract. As previously done in our main analysis, we excluded people with no contract and refusals. We have also excluded workers under 15 and over 70 years old, selecting a final sub-sample of 14.427 observations.

Table 4 reports the estimates of our relevant coefficient obtained with different model specifications: in model 1 we control, other than for the type of contract, only for personal characteristics; in model 2 we add controls for firm characteristics; finally, in model 3 we also include job-related characteristics.

**Table 4 - Temporary contract effect on perceived job security - Marginal effects from probit estimates**

	MODEL 1		MODEL 2		MODEL 3				
	dF/dx	Robust Std. Err.	dF/dx	Robust Std. Err.	dF / dx	Robust Std. Err.			
TEMPORARY	-0.181	***	0.016	-0.185	***	0.016	-0.180	***	0.017
Personal Characteristics		YES			YES			YES	
Firm Characteristics		NO			YES			YES	
Job Characteristics		NO			NO			YES	
Pseudo R <sup>2</sup>		0.063			0.079			0.095	
Log Likelihood		-9.153			-8.998			-8.848	
Number of Observations		14.427			14.427			14.427	

Legend: " - " no significant \* p<0.1 \*\* p<.05 \*\*\* p<.01

Estimates in the Table show the negative effect of temporary contracts on perceived job security, confirming our previous results. Moreover, the 12 months time span doesn't seem to affect significantly the “temporary” coefficient, given that current estimates are not much higher (in absolute value) than those obtained with the EWCS (respectively, 0.18 and 0.16).

We run also separated estimates by gender, age, education groups and flexicurity models. The results confirm the significance of the negative relation between temporary contracts and security in all the sub-populations considered; moreover, we find evidence of the influence of flexicurity models on security. These estimates are in line with our previous results, showing that the Nordic flexicurity system has the highest level of job security, while East Countries have the lowest. With reference to Denmark, results

confirm that it is the country with the highest level of perceived security for both temporary and permanent workers.

## **6. Conclusions (TO BE COMPLETED)**

In this study we analyse the determinants of perceived job security in Europe, paying specific attention to the role of temporary contracts.

More specifically, we empirically test whether the negative effect of holding a temporary contract on a subjective measure of job security is influenced by workers' characteristics (such as gender, age and education) and the (macro) flexicurity model prevailing in the country where the workers live.

Using individual data from the Fourth European Working Condition Survey, we show the existence of a strong negative influence of temporary contracts on perceived security. No significant differences emerge on the estimated effect by gender and education, while some heterogeneity is evident by age, given that the estimated (temporary) contract effect is significantly lower for young workers, which is consistent with different expectations along the life cycle (and between different cohorts) regarding job security.

Estimates for selected countries, representing different flexicurity models, show much heterogeneity: the effect of the temporary contract on perceived job security ranges from -0.04 in Denmark (not statistically significant) to -0.362 in Italy. The negative effect of the temporary contract on perceived security is particularly high in many Mediterranean countries, which are characterized by a combination of both low flexibility and low social security. On the contrary, there seems to be no significant relationship between flexibility and perceived security in Denmark, the country considered as a best practice in terms of flexicurity in Europe. The other Continental countries and the UK are in an intermediate position. The comparison of the results obtained for the Netherlands with those for Denmark (two different examples of flexicurity models in Europe) suggest that not all the macro flexicurity models have the same effect on the microeconomic relationship between temporary employment and perceived job security. In this sense, a general support to flexicurity may not be enough to increase workers' well-being, but policy makers should put more effort in designing the proper (probably country-specific) combination of numerical flexibility, employment protection legislation, active and passive labour market policies.

## References

- Aaranson D. e Sullivan D.G. (1999), "The decline of job security in the 1990s: displacement, anxiety, and their effect on wage growth", *Federal Bank of Chicago, Economic Perspectives*, vol.22, pp. 17-43.
- Algan Y. e Cahuc P. (2006), Civic attitudes and design of labour market institutions: which country can implement the Danish flexicurity model?. CEPR Discussion Paper, 5489.
- Auer P. e Cazes S. (2003), *Employment stability in an age of flexibility. Evidence from industrialised countries*, ILO Publication, Geneva.
- Bardasi E. e Francesconi M. (2003), The impact of atypical employment on individual wellbeing: evidence from panel of British Workers, *ISER Working Paper* 2003-02.
- Bockerman P. (2004), "Perception of job instability in Europe", *Social Indicator Resourch* 67, pp.283-314.
- Boeri T. e Galasso V. (2003), Protecting against labour market risk: employment protection or unemployment benefits, *CEPR Working Paper*,3990.
- Booth A., Francesconi M e Frank J.(2002), Temporary jobs: stepping stones or dead ends?. *Economic Journal*, 112, pp.189-213.
- Clark F. e Postel-Vinay (2005), Job security and job protection, *IZA Discussion Papers*,1489.
- European Commission (2006). *Flexibility and security in the EU markets*, Luxemburg, Employment an Social Affaire Directorate.
- European Commission (2006). *Time to move up a gear. The European Commission's 2006 annual progress report on growth and jobs*, Luxemburg, Employment an Social Affaire Directorate.
- European Commission (2005), *Working together, working better: a new framework for the open coordination of social protection and inclusion policies in the European Union*, Luxemburg, Employment an Social Affaire Directorate.
- Deloffre A. e Rioux L. (2004), *Do workers correctly assess their job security? A European comparison*. mimeo, CERC e CREST-INSEE.
- European Employment Observatory, *Autumn review 2006*.

- European Expert Group on Flexicurity (2007). *Flexicurity Pathways. Turning hurdles into stepping stones.*
- European Foundation for the Improvement of Living and Working Conditions. *Fourth European Working Condition Survey*, 2005.
- Farber H. (2003), Job loss in the United States, 1981-2001. *NBER Working Papers*, 9707.
- Gaard S. (2005), Labour market regimes in Europe and labour market performance, Ministry of finance, Denmark, *Working Paper* n.13.
- Green F., Campbell D., Carruth A. e Dickerson A. (2001), An analysis of subjective views of job insecurity, *Working Paper* 08/01, University of Kent, Canterbury.
- Green F., Felstead A. e Burchell B. (2000), "Job insecurity and the difficulty of regaining employment: an empirical study of unemployment expectations", *Oxford Bulletin of Economic and Statistics*, vol. 62, pp.857-885.
- Jepsen M. e Pascual A.S. (2005), "The European Social Model: an exercise in deconstruction", *Journal of European Social Policy*, vol.15, pp.231-245.
- Madsen K. (2006), *Flexicurity: a new perspective on labour markets and welfare states in Europe*, CARMA/Centre of Labour Market Research, Aalborg University.
- Madsen K. (2002), The Danish model of flexicurity: a paradise with some snakes. In Sarfati H. e Bonoli G. (eds), *Labour Market and Social Protection Reforms in International Perspective. Parallel or converging tracks?*. Aldershot: Ashgate/ISSA, pp.243-65.
- Manski C.F. e Straub J.D. (2000), "Worker perceptions of job insecurity in the mid-1990s. Evidence from the survey of economic expectations", *The Journal of Human Resources*, vol.35, pp.447-479.
- Ministero degli Affari Esteri Giapponese (2007). *Social security in Japan. Toward a Japanese model of the welfare state market system, planned system and social system*, Tokyo.
- Muffels R.J. (2005), Labour market mobility and employment patterns, *TLM.NET Working Paper*, ISSN n. 15.72.3380-004.

- Muffels R. J., Luijkx R. (2005), Job Mobility and Employment Patterns across European Welfare States. Is there a “trade-off” or a “double bind” between flexibility and security? *TLM.NET 2005 Working Paper* n.2005-13, Amsterdam, SISWO.
- Muffels R., Wilthagen T. (2002), Labour market transitions and employment regimes, *ISSN Working Paper* n. 1011-9523.
- Nicoletti G., Scarpetta S. (2005), Product market reforms and employment in OECD Countries, *OECD Working Paper* n.59.
- Origo F. e Pagani L. (2007), *Flexicurity and job satisfaction in Europe: is temporary employment always bad?*, paper presentato al XXII Convegno Nazionale di Economia del Lavoro, AIEL.
- Rychly L. e Vylitova M. (2005), National social dialogue on employment policies in Europe, *ILO Working Papers*, 8, Geneva.
- Sverke M. e Hellgren J.(2002), “No security: a meta-analysis and review of job security and its consequences”, *Journal of Occupational Health Psychology*, vol.7, pp.242-264.
- Valetta R.G. (1999), “Declining job security”, *Journal of Labour Economics*, vol.17, n.4, pp.170-197.
- Whiltagen T. e Tros F. (2004), The concept of “flexicurity”: a new approach to regulating employment and labour markets. *Working Paper TRANSFER*, 2.
- Whiltagen T. e Tros F. (2003), Dealing with the flexibility-security nexus: institutions, strategies, opportunities and barriers. *AIAS Working Papers*, 10, University of Amsterdam.