

Flexicurity and Job Satisfaction in Europe: Is Temporary Employment Always Bad?

Federica Origo* Laura Pagani**

June 2007

PRELIMINARY VERSION. DO NOT QUOTE WITHOUT PERMISSION.

Abstract. In this paper we study the effect of the security/flexibility mix of workers' job, which can be taken as a micro-level measure of flexicurity, on their overall job satisfaction. To this aim, using micro data from the Eurobarometer survey, we split workers in different groups according not only to their job contract (i.e. permanent or temporary), but also to their perceived work security, and we evaluate differences in job satisfaction between these groups. After controlling for the potential endogeneity of job type, results 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. In order to get potential links between micro and macro-level flexicurity, special emphasis is put on the effect of the interaction between job security/flexibility mix and the institutional setting of the worker's country of residence.

JEL Code: J28, J81

Keywords: Flexicurity, Job Satisfaction

* Dipartimento di Scienze Economiche "Hyman P. Minsky", Università degli Studi di Bergamo, via dei Caniana 2, 24127 Bergamo, Italy, e-mail: federica.origo@unibg.it

** Dipartimento di Economia Politica, Università di Milano Bicocca, Piazza dell'Ateneo Nuovo 1, 20126 Milano, Italy, e-mail: laura.pagani@unimib.it

1. Introduction

In the 1990s in most OECD countries “perceived employment insecurity has become more widespread” (OECD, 1997). However, after the economic recovery in the second half of the 1990s, this feeling of insecurity decreased, although with important differences between countries (Auer and Cazes, 2003).

Employment stability is desirable for both workers, who rank it among the most important factors for job satisfaction (European Commission, 2001), and for firms, who dislike high turn over and prefer stable employment relationships in order to retain human capital investment and reduce both workforce screening and selection costs.

On the other hand, the intensification of competitive pressures, especially after the process of globalisation and the rapid expansion of new technologies, has called for more flexibility in the labour markets for both firms and workers.

Two different relationships between work security and flexibility have been conjectured, the first supporting the “trade off” theory and the second the “flexicurity” thesis (Muffels and Luijkx, 2005). According to the first hypothesis a negative relationship between flexibility and security exists: flexible employment patterns are in conflict with work security, especially for the weakest workers’ groups such as low skilled workers, and a high level of work security can be obtained only at the cost of low flexibility.

An opposite view is at the basis of the “flexicurity” hypothesis, according to which flexibility and security are not contradictions, but can be mutually supportive thanks to appropriate labour market institutions (Madsen, 2002). Indeed, the flexicurity model was first implemented by Denmark as a combination of numerical flexibility (thank to low employment protection legislation), social security (in the form of a generous system of unemployment benefits), and active labour market policies especially focussed on active job search and training. Thus, the main idea 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).

The hypothesis of balancing flexibility and security has been largely emphasized by EU policy makers; for example, Guideline No. 21 of the Integrated Guidelines for Growth and Employment for the period 2005-2008 invite Member States to “...*promote flexibility combined with employment security and reduce labour market segmentation*”. In January 2006 the informal Employment, Social Policy, Health and Consumer Affairs (EPSCO) Council put flexicurity at the centre of EU political agenda (European Commission, 2006).

With regard to these issues, an important point is what affects the perception of work security and its impact on overall workers’ wellbeing. One hypothesis is that what matters is how different labour

market institutions and macroeconomic environment interact among them. For example, in order to protect workers against unemployment risk, either employment protection legislation (EPL) or unemployment benefits (UB) can be used. However, some recent contributions have shown that UB act better than EPL in favouring work security. Descriptive evidence of a negative relation between EPL strictness and perceived security is provided in the 2006 edition of *Employment in Europe* (European Commission, 2006). Postel-Vinay and Saint Martin (2005), using data from the European Community Household Panel (ECHP) and from the International Social Survey Programme (ISSP), show the same negative correlation after controlling for individual and job characteristics and for local labour market performance. Clark and Postel-Vinay (2005) use ECHP data for 12 European countries and, after controlling for selection into job types (permanent in the public sector, permanent in the private sector and temporary), find that perceived job security of private sector workers is lower in countries with stricter EPL. Trevisan (2007) investigates the impact on job security of the introduction in Spain in 1997 of a reform that tried to increase the use of permanent contract by reducing cost of firing, thus loosening EPL, and setting a limit in the number of fixed term contracts that can be offered. In the analysis the author uses ECHP data from 1995 to 2000 and combines the propensity score matching with a fixed effect estimator. In line with the results obtained by Clark and Postel-Vinay (2005), results indicate that the reform have produced a positive and significant effect on job security for workers younger than 30.

Besides studying the link between EPL and job security, the previous contributions have provided evidence, both on a descriptive and on an econometric ground, of a positive relation between generosity of UB and workers' perception of security (Clark and Postel-Vinay, 2005; Postel-Vinay and Saint Martin, 2005; European Commission, 2006).

One explanation for these results may reside in the fact that stricter EPL for permanent workers favour the growth of flexibility on the margins in the form of a higher incidence of temporary work (European Commission, 2006). Put differently, countries with stringent regulation on permanent workers are characterised by dual labour markets, with a segment of highly protected workers coexisting with a segment of unprotected temporary workers. Since various studies has shown a trade off between EPL and UB (among others, Boeri et al., 2003), so that countries with higher EPL are also characterised by lower UB, in countries with higher EPL workers may be more insecure because they cannot count on the safety net provided by UB in case they lose their job.

On the contrary, in countries characterised by flexicurity (i.e. low EPL, high UB and active labour market policies), also temporary workers may feel secure and happy about their employment (even if not about their job).

A number of studies have looked at the effect of temporary contracts on job satisfaction (Booth et al., 2002; Bardasi and Francesconi, 2003; De Witte and Naswall, 2003; de Graaf-Zijl, 2005). They point out that a negative impact emerges only for specific forms of temporary employment (such as seasonal-casual jobs or temporary agency work) and/or for specific job facets (mainly job security and career prospects). In general no significant difference in overall job satisfaction emerges between workers in permanent jobs and workers on fixed-term contracts. Ferrer-i-Carbonell and van Praag (2006) use 1995-2000 ECHP data to examine whether the type of contract influences individual's job satisfaction in Spain and the Netherlands; their results are in line with the hypothesis that what matter for job satisfaction is not necessarily the type of contract. More specifically, they show that the effect of the type of contract varies between the two countries analysed: while for Spain temporary contracts are strongly negatively correlated with job satisfaction, for 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 successfully implemented.

Nikolaou et al. (2005) study the relationship between job satisfaction and job security measured in terms of unemployment expectations. After controlling for the potential endogeneity of the job satisfaction-job security relationship, they find that higher job security is linked to higher job satisfaction. However, they do not consider the effect of the type of contract.

In line with the flexicurity approach, our claim is that employment security and its impact on overall job satisfaction is evaluated not only by the type of protection that characterises workers' job, for example as defined by the type of contract or by the level of EPL for permanent workers. As a matter of fact, temporary workers need not necessarily feel insecure and unhappy with their job if they are likely to hold continuously a job and if, in case they lose it, they can count on income stability thanks to generous UB 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 labour market is characterised by low flows out of unemployment (and, thus, high incidence of long term unemployment) due to strict EPL. For this reason, "flexicure" temporary workers may be more secure and satisfied with their job than "at risk" permanent workers.

To test this hypothesis, we split workers into different groups according not only to their job contract (i.e. permanent or temporary), but also to their perceived work security, and we evaluate differences in job satisfaction between these groups. We expect that what matters for job satisfaction is not only their contract, but also (and, eventually, above all) their perceived security,

which may be independent of the type of contract. In our work, we are especially interested in the effect of the country of residence and, more specifically, in the effect of the interaction between the contract/security mix at the individual level and the institutional setting of the country.

The remainder of the paper is structured as follows. Section 2 describes the theoretical background. Section 3 describes the data and reports descriptive results. Section 4 presents the empirical approach. Section 5 discusses the results and Section 6 concludes.

2. Theoretical background

As before mentioned, in our analysis we will consider interactions between job security and flexibility in order to evaluate the impact of different flexibility/security mix on overall job satisfaction. These “dimensions” will be evaluated at the micro-level; in other words, this means that we will consider the level of flexibility and job security characterising workers employment relationship. At this level, the combination of these two dimensions provides four different types of workers: “pure” temporary workers, characterized by job flexibility and the lack of security; flexicure workers, who are on a temporary contract but they perceive that their job is secure; permanent workers, whose contract couples low numerical flexibility with high security; “at risk” permanent workers who, despite the (open-ended) nature of their contract, feel that their job is not secure (see Table 1).

Table 1 - Types of workers by job security and flexibility

Flexibility \ Job security	NO	YES
NO	permanent-at-risk workers	temporary workers
YES	permanent workers	flexicure workers

Our claim is that what matters for overall worker’s wellbeing is (mainly) his/her perceived security rather than the protection characterising his/her employment relationship.

Moreover, in line with the flexicurity approach, our hypothesis is that the impact of the flexibility/security mix on job satisfaction varies with the institutional setting of the country where

the worker is located. For this reason, we will consider how results change with the worker's country of residence; put differently, we consider also the "macro" dimension of flexicurity.

On the basis of the principal component analysis carried out in the 2006 edition of *Employment in Europe* (European Commission, 2006), OECD countries can be clustered in four groups based on their flexicurity model¹. In order to take into account all the dimensions of flexicurity, the study considers 4 variables: strictness of EPL as a measure of numerical flexibility, expenditure on labour market policies (LMP, both passive and active) as a percentage of GDP, percentage of participants in lifelong training programmes and average tax-wedge as a measure of the distortions created by the tax system².

The identified clusters are: Anglo-Saxon countries (UK and Ireland) characterised by high flexibility (low EPL) and intermediate-to-low spending on LMP (i.e. security); Continental countries (Germany, Belgium, Austria and France) with intermediate-to-low flexibility and intermediate-to-high security; Mediterranean countries (Spain, Portugal and Greece) with low flexibility (high EPL) and low security³; Nordic countries (Denmark, the Netherlands, Sweden and Finland) with intermediate to high flexibility and high security.

Table 2 summarizes these results.

Table 2 - A classification of European welfare regimes by job security and flexibility

Flexibility \ Job security	NO	YES
NO	Mediterranean countries	Anglo-Saxon countries
YES	Continental countries	Nordic countries

3. Data and descriptive analysis

In this study data are from the 2001 Special Eurobarometer 56.1 "Social Exclusion and Modernization of Pension Systems". Each survey of Standard Eurobarometer, which was established in 1973 with the aim of monitoring the evolution of public opinion in the Member

¹ Notice that, as clarified by the authors, the principal components analysis is based on correlation coefficients and thus it does not provide indications of causal relationships.

² See European Commission (2006) p.101-109 for further details.

³ Italy is geographically part of the Mediterranean area, although it has a lower level of security and a slightly higher level of flexibility (looser EPL) than other Mediterranean countries.

States, consists in approximately 1000 face-to-face interviews per Member State (except Germany: 2000, Luxembourg: 600, United Kingdom 1300 including 300 in Northern Ireland). Special Eurobarometer, whose reports are based on thorough thematic studies, are integrated in Standard Eurobarometer's polling waves. The universe of the survey is citizens aged 15 and over residing in EU-15.

In the 2001 Special Eurobarometer 56.1, employees were asked a number of questions relative to their job, including the type of contract, and their overall job satisfaction; they were also asked about satisfaction for different job facets, including satisfaction with security, and about the probability they assign to lose their current job in the following year. The data set contains also demographic and other background information like age, gender, nationality, marital status, occupation and education. For our analysis, we selected the sub-sample of employees excluding members of the armed force, corresponding to 6445 observations.

The dependent variable of our empirical analysis is overall job satisfaction. The precise wording of the question in the Eurobarometer survey is "*All in all, how satisfied would you say you are with your job?*" Respondents are asked to provide a rating on a seven-point scale, with the lowest value corresponds to "completely dissatisfied" and the highest to "completely satisfied".

The variables of interest for our analysis are the dummy variables describing the security/contract mix that characterises workers' job. To evaluate the degree of work security we used the "probabilistic" question asking individuals about the probability they assign to losing their job. The exact question is "*How likely or unlikely is that you will lose your job for some reason over the next 12 months?*"⁴.

Workers with a flexible contract are those with seasonal, temporary or casual job and employees under contract or for fixed time period. Permanent workers are those hired with a permanent contract.

We have divided workers in four groups. The first group refers to "flexicure" workers, that is those on temporary contracts stating that they are not very likely or not at all likely to lose their job in the following 12 months. The second group refers to the remaining temporary workers, that is those declaring they are very or quite likely to lose their job in the following year. The third group includes "permanent-at-risk" workers: permanent workers stating that they are very or quite likely to lose their job because workplace will close down or they will be declared redundant (thus

⁴ An alternative way to evaluate job security is to use the Eurobarometer question asking individuals to report their satisfaction with regard to their job security ("*On a scale from 1 to 7, where 1 is completely dissatisfied and 7 completely satisfied, how satisfied would you say you are with your job security?*"). However, as stressed by Clark and Postel-Vinay (2005) this formulation contains an important subjective element as the meaning of job security may vary from one person to another (and in some languages job security may be confused with job safety). Moreover, it refers both to probability and cost of job loss. For this reason, we prefer to use the "probabilistic" question, whose use is suggested also in Dominitz and Manski (1996) and Manski and Straub (1999).

excluding voluntary quits and retirement); finally, the last group consists of the remaining permanent workers.

Table 3 reports the distribution of workers according to their contract/security mix by country. The first thing to be noticed is that Mediterranean countries are those with the higher incidence of temporary (both “pure” and flexicure) workers, especially Spain (20.5%), Portugal (17.9%) and Greece (16.5%); this evidence confirms that countries with strong EPL tend to have segmented labour markets, with a (growing) large segment of employment hired with temporary contracts in order to overcome the restrictions posed on the process of hiring and firing permanent workers. Nordic and Continental countries are those with the largest share of permanent employment.

Table 3 - Incidence of types of workers by job security and flexibility (% by row)

	Temporary	Permanent at risk	Flexicure	Permanent	Total
<i>Total</i>	5.9	2.5	5.4	86.3	100
<i>Nordic countries</i>	4.2	3.5	4.5	87.7	100
DK	2.8	3.4	5.9	87.9	100
FIN	6.2	2.4	3.4	88.0	100
SW	4.2	4.1	4.2	87.5	100
<i>Continental countries</i>	4.9	2.2	4.6	88.3	100
A	1.6	4.1	2.8	91.5	100
B+L	3.6	2.2	5.6	88.5	100
FR	8.8	3.4	4.9	82.8	100
GER	3.1	1.2	4.0	91.7	100
NET	2.7	2.8	6.7	87.8	100
<i>Southern countries</i>	8.2	2.0	6.9	82.9	100
GR	10.4	5.2	6.0	78.4	100
IT	6.6	2.4	3.8	87.2	100
P	10.0	0.8	7.9	81.3	100
SP	9.5	1.2	11.0	78.4	100
<i>Anglo-saxon countries</i>	5.8	4.0	5.7	84.5	100
IRE	6.3	1.8	6.7	85.2	100
UK	5.8	4.1	5.6	84.5	100

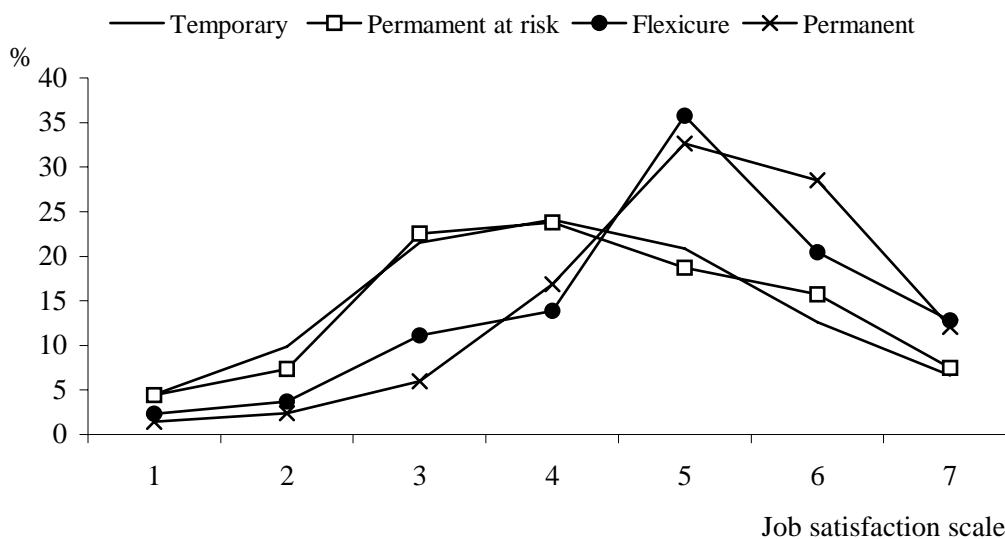
Interestingly, Southern countries are also those with the lowest share of flexicure temporary workers on overall temporary employment (45.8% on average, 36.6% in Italy and 36.7% in Greece), while the highest share is observed in Nordic countries (51.9%). Results for Denmark (68.1%) and the Netherlands (71.4%) are quite striking: they suggest that “micro” and “macro” flexicurity go hand in hand.

Also considering the sum of insecure workers (both temporary and permanent), Southern countries are those with the higher fraction on total employment (10.2% on average and 15.6% in Greece), also higher than in Anglo-Saxon countries (9.8%). The lowest values are found in Germany (4.3%), Austria, Belgium, Luxemburg (5.8%) and Denmark (6.2%).

Overall, results in Table 3 confirm that where institutions draw on principles of flexicurity, workers feel more secure of their job, independently of the type of protection that characterises it. On the other hand, at least at a descriptive level, our results support previous findings showing that strong EPL are generally correlated to lower perceived security.

As a first hint relative to what matters for job satisfaction (either employment protection as defined by the type of contract, or perceived security independently of the type of contract), Figure 1 depicts the distribution of the sample according to the score of overall job satisfaction by workers type.

Figure 1 - Job satisfaction by workers type



First, the distribution of job satisfaction is similar, on the one hand, between temporary flexicure and permanent secure workers and, on the other hand, between insecure temporary and permanent-at-risk workers; this finding seems to confirm that the patterns of job satisfaction are more determined by perceived security than by actual protection. Second, what matters for job satisfaction is more perceived security than the type of contract; as a matter of fact, happiest workers are those with a secure permanent contract, followed by flexicure temporary workers, permanent-at-risk and “pure” temporary workers. Notice also that the difference in the reported level of job satisfaction between temporary and permanent insecure workers is negligible.

Table 4 reports differences in mean job satisfaction between permanent workers and other workers' type by country. The Table reports also *t* tests for the significance of the differences in mean values. Permanent workers turn out again to be the happiest workers, although in only few cases (Sweden, Germany, Spain and UK) they are happier than flexicure workers. In the case of Belgium and Luxemburg flexicure workers are even happier than permanent ones. Conversely, in most cases both permanent and temporary insecure workers are less satisfied with their job. Once again descriptive results point to security as a more important factor than contract type for job satisfaction.

Table 4 - Average job satisfaction by workers type and country

	Difference between permanent and:			
	Temporary	Permanent at risk	Flexicure	Permanent (avg)
<i>Total</i>	-0.99 ***	-0.89 ***	-0.21 ***	5.1
<i>Nordic countries</i>	-0.56 ***	-0.24	-0.05	5.4
DK	-0.85 ***	0.08	0.23	5.6
FIN	-0.63 ***	0.49	0.21	5.2
SW	-0.32	-0.63 ***	-0.46 *	5.4
<i>Continental countries</i>	-1.03 ***	-1.19 ***	-0.16	5.2
A	-0.46	-1.54 ***	-0.39	5.3
B+L	-1.21 ***	-1.34 ***	0.39 **	5.3
FR	-0.94 ***	-0.86 ***	0.26	4.8
GER	-0.70 ***	-1.53 ***	-0.55 **	5.3
NET	-1.11 ***	-0.81 **	-0.20	5.7
<i>Southern countries</i>	-0.79 ***	-0.58 **	-0.13	4.9
GR	-1.08 ***	-0.29	0.14	4.9
IT	-0.44	-0.64	0.13	4.8
P	-0.69 ***	-1.61 ***	-0.19	4.9
SP	-0.99 ***	-0.17	-0.26	4.9
<i>Anglo-saxon countries</i>	-1.37 ***	-0.90 ***	-0.47 **	5.2
IRE	-0.90 ***	0.16	0.21	5.0
UK	-1.40 ***	-0.94 ***	-0.51 **	5.2

4. Empirical strategy

Utility from work is empirically proxied by self-reported job satisfaction, which is traditionally measured through a scale in which the lowest value corresponds to complete dissatisfaction and the highest value to complete satisfaction.

Given the intrinsic ordinal nature of the dependent variable, and assuming that the error term is normally distributed, an ordered probit estimator may be used to get the relevant estimates.

Estimation of the job satisfaction equation has to deal with some econometric issues, particularly endogeneity. In our specific case, some unobservable factors (such as individual ability, motivation, information regarding the labour market) may be correlated with both the type of contract and job security. As long as some unobserved individual (or workplace) characteristics simultaneously affect both flexicurity and job satisfaction, the estimated effect of the first on the latter might be biased, since it captures also the effect of other unobservable confounding factors on job satisfaction.

To take into account of potential endogeneity, we adopt two estimation strategies. First, we start exploiting the richness of the data-set in terms of information on individual characteristics, including a large set of variables on workers psychological attitude toward work and life. More specifically, the data set contains detailed information on job expectations (also in terms of security, flexibility and career prospects), physical and psychological uneasiness due to work (such as headaches or muscular pain due to work, continuous worrying, sleep problems, blood pressure, etc.), individual motivation (measured through the willingness to work even without the need to do that for living), importance and intensity of social relations, overall self-esteem. These variables may be considered as a good proxy for personality traits, which are among the most important determinants of satisfaction (Ferrer-i-Carbonell and Frijters, 2004). Hence, they are likely to capture the effect of unobserved time-invariant factors (such as individual ability, motivation, and personal attitudes) that are the primary source of endogeneity and are usually controlled for with fixed effects estimators when panel data is available⁵.

Second, we perform a two-stage procedure in which we first estimate the probability to be one of the four types of workers discussed in the previous section (i.e., flexible worker, flexicure worker, permanent-at-risk worker and permanent worker) and then we use these estimates to control for endogeneity in the job satisfaction equation.

Given the multinomial nature of the endogenous variable, in the first stage we estimate the following equation using a multinomial logit:

$$T_i = \beta_T' X_{Ti} + \varepsilon_{Ti} \quad (1)$$

where T is an indicator variable for the four worker types discussed above, X is a vector of observable characteristics, β s the associated parameters to be estimated and ε the error term.

⁵ Ferrer-i-Carbonell and Frijters (2004) point out that it is important to use fixed effects estimators or else to include as regressors the time-invariant personality traits. Given the nature of our data, we follow this second estimation strategy.

From this first equation, we retrieve a set of correction terms (some sort of Inverse Mills Ratios) that we add as controls in the job satisfaction equation to take into account of the possible correlation in the unobservables of the two models as follows:

$$JS_i = \alpha_{JS} \cdot DT_i + \beta_{JS} \cdot X_{JS_i} + \lambda_{JS} \cdot E(\varepsilon_{JS_i}/T_i) + \varepsilon_{JS_i} \quad (2)$$

where JS is a measure of job satisfaction, DT_i is the set of dummy variables related to worker types (and α the corresponding parameters of interest to be estimated), and $E(\varepsilon_{JS_i}/T_i)$ is a function of the estimated probabilities from equation (1), capturing the correlation between the unobservables of worker types and job satisfaction equation. X, β s and ε have the same interpretation as above.

Given the specification of equation (2), if the estimated λ s are not statistically different from zero, the endogeneity issue may be ignored; on the contrary, if the estimated λ s are statistically significant, the proposed specification allows to get unbiased estimates of our parameters of interest (i.e., the vector α).

Following Dubin and McFadden (1984), the set of correction terms from a multinomial logit were obtained as follows:

$$E(\varepsilon_{JS}/T=i) = \sum_{j \neq i}^m \left(\frac{P_j \ln P_j}{1 - P_j} + \ln P_i \right) \quad (3)$$

where P are estimated probabilities from equation (1).

Furthermore, it should be noted that a second stage procedure provide consistent estimates only if the second equation is linear (Wooldridge, 2001)⁶. In case of job satisfaction equations, it has been recently shown that a linear estimator (such as OLS) provides results that are very similar to those obtained with an ordered probit model: not only the sign and the significance of the coefficients are the same, but also the trade-offs between variables are similar (Dunn, 1993; Ferrer-i-Carbonell and Frijters, 2004). In light of this evidence, this two step procedure is applied estimating by OLS the job satisfaction equation.

A final remark concerns the identification strategy. More specifically, other than relying on functional forms, identification may be achieved using a set of “valid instruments”, i.e. variables that are significantly correlated with worker types but that don’t influence directly job satisfaction (and hence they may be excluded from the job satisfaction equation). In our specific case, during

⁶ Alternatively, the two equations should be estimated simultaneously by Maximum Likelihood. However, in our specific case it may be quite difficult to define the joint distribution of the error terms, given that we should jointly estimate a multinomial logit and an ordered probit.

the survey the workers were asked to express their opinion on a number of general statements related to politics, society and social inclusion. Among them, the workers were asked how much they agreed (on a scale from 1 – strongly agree – to 5 – strongly disagree -) with the following two statements:

1) “The unemployed should be forced to take a job quickly, even if it is not as good as the previous job”;

2) “The government should provide a job for everyone who wants it”.

Workers that agree on the first statement should be more likely to accept any job, even if with a temporary contract, while workers that agree on the second one should be pickier in accepting temporary/insecure jobs. We also claim that workers’ opinion on these statements is highly influenced by the institutional context of the country in which they live and the latter should influence the degree of flexicurity of their job. Furthermore, their opinion on these general statements should not directly influence their satisfaction for their current job once we control for worker types, other individual and job characteristics. In light of these considerations, we use as instruments two dummy variables capturing whether the worker strongly agrees with the above two statements.

5. Econometric results

Table 5 reports the relevant results from the estimation of different specifications of equation (2). Columns differ also for the nature of the estimator used. The first three columns report ordered probit estimates, with the first specification being the most parsimonious: besides the flexicurity variables of interest, it controls for demographic, country and local area conditions. Model 2 adds controls for employer and job characteristics. As a first control for potential endogeneity, the full specification in model 3 includes a large set of controls for personality and psychological traits, such as past and future job expectations, physical and psychological uneasiness due to work, attitudes towards work and life, self-esteem, intensity of social relations⁷. Column 4 reports estimates by OLS for the same specification, while estimates from the two-stage procedure discussed in section 4 are presented in the last column.

Overall, even after controlling for endogeneity, our results point out that job satisfaction of flexicure workers is not statistically different from that of permanent workers. On the contrary, compared to the latter, job satisfaction of “true” temporary workers and those on permanent contracts at risk of

⁷ See Appendix for a detailed description of all the covariates. Complete results are available from the authors upon request.

unemployment is much lower. Furthermore, the two negative coefficients are statistically different⁸, thus showing that insecure temporary workers are the least satisfied. Results in column 5 show that estimates may be affected by endogeneity, but results don't change from a qualitative point of view once we correct for it⁹.

Table 5 - Job satisfaction estimates, relevant coefficients

	Ordered probit			OLS	D-McF correction
	1	2	3	4	5
Ref group: permanent workers					
temporary	-0.575 *** <i>0.061</i>	-0.311 *** <i>0.066</i>	-0.314 *** <i>0.085</i>	-0.391 *** <i>0.134</i>	-0.425 *** <i>0.094</i>
permanent at risk	-0.594 *** <i>0.086</i>	-0.370 *** <i>0.088</i>	-0.337 *** <i>0.088</i>	-0.417 ** <i>0.170</i>	-0.217 ** <i>0.111</i>
flexicure	-0.084 <i>0.062</i>	0.079 <i>0.065</i>	-0.011 <i>0.083</i>	-0.008 <i>0.121</i>	-0.074 <i>0.093</i>
OTHER CONTROLS					
demographics, country and local area conditions;	YES	YES	YES	YES	YES
employer and job characteristics;	NO	YES	YES	YES	YES
personality and psychological traits (past and future expectations, uneasiness due to work, work and life attitude, social relations, self-esteem)	NO	NO	YES	YES	YES
E(ϵ_{JS}/T =temporary)					-0.212 ***
E(ϵ_{JS}/T =permanent at risk)					0.072 ***
E(ϵ_{JS}/T =flexicure)					0.153 ***
LR chi2 (df)	627.4 (29)	2306.4 (76)	2474.4 (91)	-	-
Pseudo R2	0.03	0.12	0.13	0.34	0.34
N. observations	5768	5609	5609	5609	5608

legend: * p<.1; ** p<.05; *** p<.01; standard errors in italicus

Note: in column 5, conditional expectation correction method as in Dubin-McFadden (1984). Bootstrapped standard errors (1000 replications)

Our estimates clearly highlight that job stability and security are quite different things, reducing job satisfaction mainly when they are together. Furthermore, the combination “temporary but secure job” seems Pareto superior 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 (either because there is a high chance to move from a temporary to a

⁸ The test of the null hypothesis of equality of the two coefficients in the last model yields an F test of 3.1, that allows rejecting the null hypothesis at 8% confidence level.

⁹ Estimates in column 5 also show a negative correlation in the unobservables of temporary workers, a positive correlation for permanent workers at risk of unemployment and flexicure workers.

permanent contract or because the combination of active and passive labour market policy in place favours the transition from one (temporary) job to another, reducing the unemployment spell between the two).

In order to test the sensitivity of these results to the institutional context of the country in which the workers live, we replicated these estimates by welfare regimes and by country. Main results of the preferred specification are reported in table 6 and 7 respectively.

Table 6 clearly shows that the general results discussed in table 5 differ substantially by type of welfare regime. Differences are particularly relevant between Nordic and Continental countries. In the first group of countries there are no significant differences between the four types of workers, while in the second one also flexicure workers are significantly less satisfied than permanent ones. Furthermore, continental countries are the only group characterized by significant differences between permanent workers at risk of unemployment and the other permanent workers, suggesting that permanent workers in insecure jobs are more penalized in countries characterized by relatively rigid Employment Protection Legislation and high social protection (such as most of the continental ones).

Finally, also in Southern and Anglo-Saxon countries “true” temporary workers are significantly less satisfied than permanent ones.

Table 6 - Job satisfaction estimates by welfare regimes

	Nordic countries	Continental countries	Southern countries	Anglosaxon countries
Ref group: permanent workers				
temporary	-0.343 <i>0.238</i>	-0.579 *** <i>0.155</i>	-0.458 *** <i>0.181</i>	-0.445 * <i>0.263</i>
permanent at risk	0.205 <i>0.191</i>	-0.582 *** <i>0.182</i>	0.089 <i>0.297</i>	-0.336 <i>0.300</i>
flexicure	-0.186 <i>0.238</i>	-0.286 * <i>0.157</i>	0.189 <i>0.162</i>	0.191 <i>0.256</i>

legend: * p<.1; ** p<.05; *** p<.01; standard errors in italicus

Separate regressions for each group; estimates from two-step procedure, bootstrapped standard errors

Estimates in table 7 overall confirm the previous results, but they also highlight interesting differences between countries with the same welfare regime, particularly in the case of Continental countries. Among the latter, France and Germany displays quite different patterns: the most dissatisfied are “true” temporary workers in France, permanent workers at risk of unemployment in Germany. The latter, together with the Netherlands, is also characterized by a significant negative effect of flexicurity on job satisfaction.

Analysis by country point out how the specific features of flexicurity may be relevant in affecting its impact on job satisfaction. For instance, even if Denmark and the Netherlands are both considered best practice countries of flexicurity and are both characterized by substantive labour market policy spending, they highly differ in terms of composition of this spending and of the combination between employment protection and social protection (European Commission, 2006). These differences may explain why no significant differences in job satisfaction emerge between worker types in Denmark, while in the Netherlands temporary workers (regardless of the security level of their job) are less satisfied than permanent ones.

Table 7 - Job satisfaction estimates by country

	Temporary	Permanent at risk	Flexicure
<i>Nordic countries</i>			
DK	-0.491	0.504	-0.251
FIN	-0.416	0.117	-0.217
SW	-0.120	-0.256	-0.103
<i>Continental countries</i>			
A	1.353 *	-1.099 **	0.624
B+L	-0.379	-1.035 **	0.187
FR	-0.663 ***	-0.357	0.01
GER	-0.093	-1.019 **	-0.386 *
NET	-0.981 **	-0.523	-0.664 **
<i>Southern countries</i>			
GR	-0.292	0.220	0.016
IT	-0.018	0.258	0.337
P	-0.551 **	-0.870 **	0.034
SP	-0.303	-0.026	-0.047
<i>Anglo-saxon countries</i>			
IRE	-0.308	0.059	0.395
UK	-0.428	-0.478	-0.062

legend: * p<.1; ** p<.05; *** p<.01; standard errors in *italicus*

Separate regressions for each country; estimates by OLS; specification as in model 2 of table 5

6. Conclusions

Employment stability is desirable not only for workers, but also for firms, which dislike high turn over and prefer stable employment relationship in order to recoup human capital investment and selection costs (Auer and Cazes, 2003). However, the intensification of competitive pressures has required in the last decades more flexibility both on firms and on workers side.

According to the “flexicurity” approach, the two goals of flexibility and security are not contradictions, but can be mutually supportive thanks to appropriate labour market institutions. The hypothesis of balancing flexibility and security has been largely emphasized in the last years also by EU policy makers.

In line with the flexicurity approach, in this paper we empirically test the hypothesis that what matters for job satisfaction is not only the type of contract (whether permanent or temporary), but mainly workers’ perceived security, which may be independent of the type of contract. For example, temporary workers need not necessarily feel insecure and unhappy with their job if they are likely to hold it continuously and if, in case they lose it, they can count on income stability thanks to generous UB and are likely to find rapidly a new job thank to active labour market policies.

To test this hypothesis, we split workers in four groups according to the security/flexibility mix that characterizes their employment relationship and we analysed the impact of this mix on overall job satisfaction. Moreover, we studied how this impact is influenced by the country of residence and by the welfare regime that characterizes it.

Overall, even after controlling for endogeneity, our results point out that job satisfaction of flexicure temporary workers is not statistically different from that of permanent workers. On the contrary, compared to the latter, job satisfaction of insecure temporary workers and that of permanent-at-risk workers is much lower. Thus, our estimates clearly highlight that job stability and security are quite different things, reducing job satisfaction mainly when they are together. Furthermore, the combination “temporary but secure job” seems Pareto superior 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.

Results of estimation by welfare regimes and by country highlight substantial differences by welfare system, which are particularly relevant between Nordic and Continental countries. Continental countries are also the only group characterized by significant differences between permanent workers at risk of unemployment and the other permanent workers, suggesting that permanent workers in insecure jobs are more penalized in countries characterized by relatively rigid EPL and relatively generous UB. Finally, also in Southern and Anglo-Saxon countries “true” temporary workers are significantly less satisfied than permanent ones.

Overall our results indicate that flexicurity, both at the micro and at the macro level, is a very important determinant of job satisfaction. Furthermore, different flexicurity systems produce different effects on job satisfaction, with the most positive results in Nordic countries. However, caution should be taken in trying to “export” the Danish flexicurity model as it is elsewhere. For

example, Algan and Cahuc (2006) show that the success of this model is highly based on the strong level of civic attitude of Danish citizens; thus, Continental and Mediterranean countries are unlikely to implement successfully the same model due to the weaker public-spiritedness of their citizens, which would raise moral hazard issues when implementing an extensive public system of UB. Nonetheless, it is clear that, despite of the flexicurity regime, at the micro level more employment security for temporary workers may be beneficial for individual job satisfaction and subsequent motivation and productivity.

References

- Algan, Y. and Cahuc, P. (2006). Civic Attitudes and the Design of Labour Market Institutions: Which Countries Can Implement the Danish Flexicurity Model?. CEPR Discussion Paper No.5489
- Auer, P. and Cazes, S. (eds.) (2003). *Employment Stability in an Age of Flexibility. Evidence from Industrialized Countries*. ILO Publication, Geneva.
- Bardasi, E. and Francesconi, M. (2003). The Impact of Atypical Employment on Individual Wellbeing: evidence from a panel of British Workers. ISER Working Paper 2003-02.
- Boeri, T., Conde-Ruiz, I. and Galasso, V. (2003). Protecting against labour market risk: employment protection or unemployment benefits. IZA Discussion Paper No. 834.
- Booth, A., Francesconi, M. and Frank, J. (2002). Temporary jobs: Stepping stones or dead ends?. *Economic Journal* 112, 189-213.
- Christensen, T. (2004). Eurobarometer 56.1: Social Exclusion and Modernization of Pension Systems, September-October 2001 [Computer file]. 2nd ICPSR version. Brussels: European Opinion Research Group EEIG [producer], 2001. Cologne, Germany: Zentralarchiv für Empirische Sozialforschung/Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributors].
- Clark, A. and Postel-Vinay, F. (2005). Job Security and Job Protection. CEP Discussion Paper No.678.
- De Graaf-Zijl, M. (2005). The anatomy of job satisfaction and the role of contingent employment contracts, Tinbergen Institute Discussion Papers 119/3.
- De Witte, H., Naswall, K. (2003). "Objective" vs "Subjective" job insecurity: Consequences of temporary work for job satisfaction and organizational commitment in four European countries. *Economic and Industrial Democracy* 24, 149-189.
- Dominitz, J. and Manski, C.F. (1996). Perceptions of Economic Insecurity: Evidence from the Survey of Economic Expectations. NBER Working Paper No.5690
- Dubin, J. and McFadden, D. (1984). An Econometric Analysis of Residential Electric Appliance Holdings and Consumptions. *Econometrica* 52, 345-362.
- Dunn, L. (1993). Category versus Continuous Survey Responses in Economic Modelling: Monte Carlo and Empirical Evidence. *Review of Economics and Statistics* 75, 188-193.
- EMCO (2006). Working Group on Flexicurity, available online at:
http://ec.europa.eu/employment_social/employment_strategy/pdf/emco_workgroupflexicurity06_en.pdf
- European Commission (2001). *Employment in Europe 2001*, Luxembourg, Employment and Social Affairs Directorate, Office for Official Publications of the European Union.

European Commission (2006). Flexibility and Security in the EU Labour Markets, in *Employment in Europe 2006*, pp. 75-118, Luxembourg, Employment and Social Affairs Directorate, Office for Official Publications of the European Union.

Ferrer-i-Carbonell, A. and Frijters, P. (2004). How important is methodology for the estimates of the determinants of happiness?. *Economic Journal* 114, 641-659.

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.

Madsen, K. (2002). The Danish Model of “Flexicurity” – A Paradise with some Snakes. In Sarfati H. and 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. and Straub, J.D. (1999). Worker Perception of Job Insecurity in the Mid-1990s: Evidence from the Survey of Economic Expectations. NBER Working Paper No.6908.

Muffels, R.J.A. and 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 No.2005-13, Amsterdam: SISWO/Social Policy Research.

Nikolaou, A., Theodossiou, I., and Vasileiou, E.G. (2005). Does job security increase job satisfaction? A study of the European experience. Paper presented at the Second World Conference SOLE/EALE, San Francisco, USA, June 2-5, 2005.

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

Trevisan, E. (2007). Job Security and New Restrictive Permanent Contracts. Are Spanish Workers More Worried of Losing Their Job?. Department of Economics, University Ca' Foscari of Venice Research Paper No. 02-07.

Wooldridge, J. (2001). *Econometric Analysis of Cross-Section and Panel Data*. MIT Press, Cambridge, MA, USA.

Table A1. Variables description

Name	Description	Mean	Std dev
flexible temporary worker	1 if seasonal, temporary or casual job and employees under contract or for fixed time period, very/quite likely to lose job in the following year	0.059	0.235
flexicure worker	1 if seasonal, temporary or casual job and employees under contract or for fixed time period, not very/not at all likely to lose job in the following year	0.054	0.225
permanent-at-risk workers	1 if permanent worker very/quite likely to lose job in the following year	0.025	0.157
permanent worker	1 if permanent worker not very/not at all likely to lose job in the following year	0.863	0.344
instrument I	1 if strongly agrees that unemployed should be forced to take a job quickly, even if it not as good as the previous job	0.365	0.481
instrument II	1 if strongly agrees that the government should provide a job for everyone who wants it	0.390	0.488
female	1 if female	0.430	0.495
age	Age (continuous)	37.981	11.454
squared age	Squared age (continuous)	1573.761	914.523
years of education	Age when stopped full time education minus 6 (continuous)	12.448	3.779
married	1 if married	0.636	0.481
head of the household	1 if contributes most to the household income	0.626	0.484
have a child < 5	1 if has a child under five years of age	0.175	0.380
<i>Residence (ref: rural area or village)</i>			
live in small town	1 if lives in small or middle sized town	0.377	0.485
live in large town	1 if lives in large town	0.300	0.458
<i>Standard of living (ref: very poor)</i>			
standard of living: rich	1 if rich	0.001	0.034
standard of living: very comfortable	1 if very comfortable	0.033	0.178
standard of living: comfortable	1 if comfortable	0.221	0.415
standard of living: average	1 if average	0.558	0.497
standard of living: just getting along	1 if just getting along	0.175	0.380
standard of living: poor	1 if poor	0.010	0.102
high area unemployment	1 if agrees that there is a lot of unemployment in the area in which lives	0.253	0.435
bad area reputation	1 if strongly agrees that the area in which lives has not a good reputation	0.040	0.197
very good area job opportunities	1 if thinks that job opportunities in local area are very good	0.139	0.346
<i>Firm size (ref: less than 10 people)</i>			
firm size: 10-49	1 if 10-49 people	0.314	0.464
firm size: 50-99	1 if 50-99 people	0.102	0.302
firm size: 100-499	1 if 100-499 people	0.161	0.367
firm size: >=500	1 if more than 500 people	0.113	0.317
<i>Sector of employment (ref: manufacturing)</i>			
agriculture, hunting, forestry, fishing	1 if agriculture, hunting, forestry, fishing	0.006	0.075
mining and quarrying	1 if mining and quarrying	0.002	0.050
electricity, gas and water supply	1 if electricity, gas and water supply	0.010	0.101
construction	1 if construction	0.066	0.248
wholesale and retail trade repairs	1 if wholesale and retail trade repairs	0.145	0.352
hotels and restaurants	1 if hotels and restaurants	0.036	0.185
transportation and communications	1 if transportation and communications	0.068	0.253
financial intermediation	1 if financial intermediation	0.037	0.188
real estate and business activities	1 if real estate and business activities	0.075	0.263
public administration	1 if public administration	0.092	0.289
other services	1 if other services	0.232	0.422
public sector	1 if works in the public sector	0.365	0.482

Table A1. Variables description (continued)

Name	Description	Mean	Std dev
<i>Occupation (ref: unskilled manual worker)</i>			
employed professional	1 if employed professional	0.025	0.155
general management, director or top management	1 if general management, director or top management	0.029	0.167
middle management, other management	1 if middle management, other management	0.144	0.351
employed position: working mainly at a desk	1 if employed position: working mainly at a desk	0.203	0.402
employed position: travelling	1 if employed position: travelling	0.061	0.240
employed position: service job	1 if employed position: service job	0.139	0.346
supervisor	1 if supervisor	0.038	0.191
skilled manual worker	1 if skilled manual worker	0.234	0.423
<i>Tenure (ref: less than 3 years)</i>			
tenure: 3-4 years	1 if 3-4 years	0.309	0.462
tenure: 5-9 years	1 if 5-9 years	0.200	0.400
tenure: >=10 years	1 if equal or more than 10 years	0.365	0.481
unionised worker	1 if member of a trade union	0.249	0.432
<i>Income (ref: very bad)</i>			
income: very good	1 if very good	0.166	0.372
income: fairly good	1 if fairly good	0.631	0.483
income: fairly bad	1 if fairly bad	0.179	0.383
hour of work	number of weekly working hours (continuous)	37.735	11.049
use experiences, skills and abilities	1 if uses experiences, skills and abilities	0.737	0.440
use of computerise or automated equipment	1 if the job involves the use of computerise or automated equipment	0.525	0.499
work extratime	1 if often has to work extratime	0.130	0.337
work at very high speed	1 if works almost all the time at very high speed	0.145	0.352
work to tight deadlines	1 if works almost all the time to tight deadlines	0.134	0.341
work in dangerous or unhealthy conditions	1 if works always/often in dangerous or unhealthy conditions	0.111	0.314
injury at work in last five years	1 if had an injury at work in the last five years	0.100	0.300
been promoted in current job	1 if have been promoted while with current employer	0.323	0.468
staff reduction in last three years	1 if the number of people employed in the organisation has been reduced over the last 3 years	0.251	0.433
been unemployed in last five years	1 if unemployed in the last five years	0.181	0.385
very good industrial relations	1 if relations at the workplace between management and employees are very good	0.186	0.389
good friends at work	1 if has good friends at work	0.314	0.464
get support from management	1 if get support from management when there is pressure at work	0.153	0.360
similarity with firm's values	1 if finds that his/her values are very similar to those of his/her organisation	0.114	0.318
expectation gap: temporary work	1 if thinks very important to have secure job but temporary=1	0.066	0.249
likely to get a better job in present workplace	1 if strongly agrees that is likely to get a better job in current organisation in the next 3 years	0.049	0.217
likely to get a better job in another workplace	1 if strongly agrees that is likely to get a better job with another employer in the next 3 years	0.045	0.208
headaches and/or muscular pains due to work	1 if often has headaches and/or muscular pains due to work	0.201	0.401
exhausted and/or tired after work	1 if often exhausted and/or too tired after work	0.335	0.472
stressful	1 if work is often stressful and/or keep worrying about job problems after work	0.396	0.489
successful career absolutely necessary	1 if thinks absolutely necessary to have a successful career	0.534	0.499
continue to work even without income motivation	1 if states continue to work if were to get enough money to live as comfortably as would like	0.526	0.499
lost much sleep over worry	1 if often lost much sleep over worry	0.157	0.364
thinking of himself/herself as a worthless person	1 if thinks of himself/herself as a worthless person	0.053	0.223
have relations with friends, relatives or neighbours	1 if regularly meets friends, relatives and/or neighbours	0.827	0.378
member of clubs, voluntary organisation, political party	1 if member of clubs, voluntary organisation and/or political party	0.421	0.494

Table A1. Variables description (continued)

Name	Description	Mean	Std dev
<i>Political party (ref: left)</i>			
political party: right	1 if right	0.141	0.348
political party: centre	1 if centre	0.354	0.478
political party: don't know	1 if does not know	0.222	0.416
<i>Country of residence (ref: Italy)</i>			
Belgium	1 if Belgium	0.026	0.160
Denmark	1 if Denmark	0.019	0.137
Germany	1 if Germany	0.262	0.440
Greece	1 if Greece	0.017	0.129
Spain	1 if Spain	0.094	0.292
France	1 if France	0.173	0.378
Ireland	1 if Ireland	0.008	0.088
Luxemburg	1 if Luxemburg	0.001	0.036
Netherlands	1 if Netherlands	0.039	0.194
Portugal	1 if Portugal	0.022	0.147
UK	1 if UK	0.158	0.365
Finland	1 if Finland	0.011	0.102
Sweden	1 if Sweden	0.028	0.164
Austria	1 if Austria	0.022	0.147