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Flexicurity and Workers Well-Being in Europe: Is Temporary Employment Always Bad?♦

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Abstract

In this paper we study the effect of a micro-level measure of flexicurity on workers job satisfaction. To this aim, using micro data from the Eurobarometer survey, we split workers in different groups according not only to their employment contract (i.e. permanent or temporary), but also to their perceived job 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. 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. Our main conclusions are robust to the use of alternative definitions of workers' types and they generally hold within different welfare regimes and also for different aspects of job satisfaction, mainly for those more related to job security.

JEL Code: J28, J81

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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 turnover and prefer stable employment relationship 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). 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 Affair (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 matter 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 (Clark and Postel-Vinay, 2005; European Commission, 2006; Postel-Vinay and Saint Martin, 2005). One explanation for these results may be that stricter EPL for permanent workers favour the growth of flexibility "at the margin" 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, mainly among the most disadvantaged groups such as immigrants, women, the less skilled and young workers (Kahn, 2007). Nonetheless, countries with strict EPL may be induced to increase flexibility "at the margin" by allowing the use of short temporary contracts because of the subsequent positive effects in terms of employment growth in the short run, even if this may imply a fall in average labour productivity (Boeri and Garibaldi, 2007).

Since various studies have also shown that countries with higher EPL are also characterised by lower UB (among others, Boeri et al., 2003), in countries with higher EPL workers may feel 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 (among the others, Bardasi and Francesconi, 2003; Booth et al., 2002; De Graaf-Zijl, 2005; De Witte and Naswall, 2003). 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.

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 no consider the effect of the type of contract.

More in general, there are no microeconometric studies showing the joint effect of perceived job security and the type of contract on job satisfaction, probably also because the two concepts are often treated as interchangeable: given the formal lower level of job security characterizing

temporary contracts with respect to permanent ones, it is common wisdom to assume that temporary workers feel less secure of their job than permanent ones.

Given this gap in the literature and departing from the (macro) flexicurity approach, we try to take a more microeconomic perspective, measuring the flexibility/security mix at the individual level. At this level, flexibility can be proxied by the type of contract (either permanent or temporary), while security can be measured through worker's subjective evaluation of his/her job (or employment) security. In this context, our research hypothesis is that individual perceived security is not necessarily positively correlated with the formal level of employment protection that characterises workers' employment contracts. 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 or 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 for example to strict EPL. For this reason, "flexicure" temporary workers may be more secure and satisfied with their job than "at risk" permanent workers.

As in most of the previous empirical work, we also claim that the institutional context is important for both perceived job security and job satisfaction, but the effect of the individual flexibility/security mix (or individual flexicurity) discussed above should be robust within each welfare/flexicurity regime.

In order to provide an empirical test for these hypotheses, the remainder of the paper is structured as follows. Section 2 provides more details of the theoretical background of our empirical analysis. Section 3 describes the data and reports descriptive results. Section 4 presents the empirical approach. Section 5 discusses the main econometric results and Section 6 provides a sensitivity analysis. Concluding remarks and some policy implications of our results are discussed in the last Section.

2. Theoretical framework

As before mentioned, the aim of our analysis is to evaluate the joint effect of the (objective) type of contract and the (subjective) perceived job security on job satisfaction. We will then consider interactions between job security and flexibility in order to evaluate the impact of different flexibility/security mix on overall job satisfaction.

In socio-economic literature, the relationship between these two factors has been traditionally explored at the macroeconomic level. For example, the European Commission has tried to classify OECD countries in different groups according to their flexicurity model, the latter measured

through a set of variables aimed at capturing different dimensions of flexicurity at the country level, namely: 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 system (European Commission, 2006) . The results of the principal component analysis carried out on the basis of these variables show that EU countries can be clustered in four main groups, corresponding to different flexicurity models[1]. 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 security[2]; Nordic countries (Denmark, Sweden and Finland) and the Netherlands, with intermediate to high flexibility and high security.

These clusters are quite robust to the methodology and the definition of the variables used; similar results were in fact obtained by Muffels and Luijkx (2005) on the basis of more theoretical considerations on the main features of the prevalent welfare regimes in Europe, and by Nicoletti et al. (2000), who used separate measures of EPL for, respectively, regular and temporary jobs[3]. In the latter a major exception is France, that is grouped with the Mediterranean countries instead of the Continental ones.

These rankings were then used to show that the probability to move from temporary to permanent employment and/or between jobs, as well as job satisfaction, is heavily influenced by the institutional context and the welfare regime of the country in which workers are located. For example, Ferrer-i-Carbonell and van Praag (2006) use 1995-2000 ECHP data to examine the effect of the type of contract on individual's job satisfaction in Spain and the Netherlands and show that this effect 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, as we mentioned above, the Netherlands are considered, together with Denmark, the country where the flexicurity model has been successfully implemented.

[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] 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.

[3] Nicoletti et al. (2000) also show the existence of a positive correlation between the strictness of EPL and the regulation of product markets.

In this paper, we go further in the microeconomic analysis of flexicurity by jointly considering the type of contract (either permanent or temporary) and perceived security, which refers to the likelihood of either losing the job in a certain time spell or finding relatively easily a new job in case of losing it. While the first definition of perceived security is more related to "pure" job security, the second one encompasses employment security, since it is aimed at measuring also the easiness of transition from one job to the other. In a flexicurity perspective, the latter may be the desirable measure of perceived security; nonetheless, also the first measure may capture some employment security, mainly in terms of transitions between different contracts/jobs within the same firm.

The combination of flexibility and security at the micro level allows to define four different types of workers: insecure temporary workers, characterized by job flexibility and low perceived 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; permanent-at-risk workers who, despite the (indefinite) length of their contract, feel that their job is not secure (see Table 1).

TABLE 1 HERE

Our claim is that what matters for overall worker's well-being is mainly his/her perceived security rather than the formal protection characterising his/her employment relationship.

In the following section we shall discuss the data used to actually measure the flexibility/security mix at the individual level and the subsequent identification of the four groups of workers depicted in Table 1.

3. Data, definitions 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 States, consists of 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 corresponding to "completely dissatisfied" and the highest to "completely satisfied".

The variables of interest for our analysis are the dummy variables describing the contract/security mix that characterises workers' job.

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

To evaluate the degree of 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 twelve months? Would you say it is very likely, quite likely, not very likely or not at all likely?*"[4].

In light of the set of possible answers, we considered as "insecure" workers those stating that they were very likely or quite likely to lose their job in the twelve months following the survey.

It should be also noticed that, given the wording of the question, our empirical measure of perceived security is limited to job security (rather than employment security) and the results presented in the following sections will be interpreted accordingly. As mentioned in section 2, some employment security (in terms of the likelihood of transitions between different contracts/positions within the firm) is captured also by this measure of security[5].

[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).

[5] Unfortunately perceived security is rarely investigated in individual surveys: for example, the EHCP does not contain such type of questions. Furthermore, for the employees it is more likely to find questions related to job rather than employment security (in terms of the likelihood to find another job in case of losing the current one).

Once defined the type of contract and perceived job security on the basis of the information available in the survey, we have divided workers in the four groups presented in Table 1. 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 twelve months. The second group refers to insecure 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 the workplace will close down or they will be declared redundant (thus excluding voluntary quits and retirement); finally, the last group consists of the remaining permanent workers.

Table 2 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 highest incidence of temporary (both insecure and flexicure) workers, especially Spain (20.5%), Portugal (17.9%) and Greece (16.4%). Nordic and Continental countries are those with the largest share of permanent employment.

TABLE 2 HERE

Interestingly, Mediterranean countries are also those with the lowest share of flexicure temporary workers on overall temporary employment (45.8% on average), while the highest share is observed in Nordic countries (51.9%). Results for Denmark (68.1%) and the Netherlands (71.4%) suggest that "micro" and "macro" flexicurity go hand in hand.

Also considering the sum of insecure workers (both temporary and permanent), Mediterranean countries are those with the highest fraction on total employment (10.2% on average), also slightly higher than in Anglo-Saxon countries (9.8%). The lowest values are found in many Continental countries (Germany, Austria, Belgium and Luxembourg) and Denmark.

Overall, results in Table 2 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.

As a first hint relative to what matters for individual 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. In the first panel, workers are divided only according to their type of contract (either permanent or temporary), while in the second panel workers are classified according to the flexibility/security mix discussed above.

FIGURE 1 HERE

As expected, the first panel points out that permanent workers are more satisfied of their job than temporary ones. However, the second panel shows that the type of contract by itself is not able to fully capture the effect of perceived job security. In fact, when we consider the four groups of workers defined by the combination of the type of contract and perceived job security, 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 the type of contract: happiest workers are those with a secure permanent contract, followed by flexicure temporary workers, permanent-at-risk and insecure temporary workers. Notice also that the difference in the reported level of job satisfaction between temporary and permanent-at-risk workers is negligible.

Table 3 reports differences in mean job satisfaction between permanent workers and other workers' type by welfare regime and 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 and UK) they are significantly happier than flexicure workers. Note also that permanent-at-risk workers are significantly less satisfied than permanent ones mainly in most Continental countries.

Once again descriptive results point to perceived security as a more important factor than the mere contract type for job satisfaction.

TABLE 3 HERE

4. Empirical strategy

In the empirical analysis we assume that utility from job for the i-th worker (U_i) can be expressed as follows:

$$U_i = U_i(T_i, I_i, E_i, J_i) \qquad (1)$$

where T is the flexibility/security mix characterizing each worker (as proxied by one of the four worker types discussed in the previous section), *I*, *E* and *J* are vectors of controls for, respectively, individual, employer and job characteristics.

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.

The empirical (linear) equivalent of the utility function in (1) is then given by:

$$JS_i = \alpha' DT_i + \beta' X_i + \varepsilon_i \qquad (2)$$

where JS is a measure of self-reported job satisfaction, DT is the set of dummy variables related to workers types (and α the corresponding parameters of interest to be estimated), X is a vector of observable individual, employer and job characteristics, βs the associated parameters to be estimated and ε the error term.

Given the intrinsic ordinal nature of the dependent variable, and assuming that the error term is normally distributed, an ordered probit estimator is the usual candidate estimator.

However, it has been shown that a traditional linear regression estimator may be used once the (ordinal) dependent variable has been properly transformed into a "pseudo "continuous one (Terza, 1987; Van Praag et al., 2003; Van Praag and Ferrer-i-Carbonnell, 2006). This approach, proposed by Van Praag and Ferrer-i-Carbonnell (2006) and named "Probit-OLS (POLS)", is particularly useful if one has to deal with ordered response models with panel data or, as in our case, with a system of equations. Exploiting the latent variable approach used also in traditional ordered response estimates, the transformed variable is derived assuming that the observed job satisfaction levels (JS) is related to the "true" unobserved (continuous) propensity for job satisfaction (JS*, such that $JS_i = j$ if $\mu_{j-1} < JS_i^* < \mu_j$ for j=1,2,...k). But, unlike in ordered response models, all the μ_js (the cut-off points) are then retrieved on the basis of the unconditional sample distribution and the true latent variable is approximated by its conditional expectation. Intuitively, even if we don't observe the exact value of the latent variable for each individual/observation, we may approximate it with a set of means (whose number equals the number of categories of the observed ordinal variable and individuals with the same observed response are characterized by the same value of the transformed variable) of the underlying continuous latent variable. OLS (or other linear estimators) can then be used with the transformed dependent variable. Note that POLS estimates (in terms of sign and standard errors) are similar to Ordered Probit estimates but, as mentioned above, the possibility to use a linear estimator allows to better handle problems such as endogeneity and self-selection[6].

The latter are in fact relevant also in job satisfaction equations. In our specific case, some unobservable factors (such as individual ability, motivation, and information regarding the labour

[6] For more details on POLS see the technical appendix.

market) may be correlated with both the type of contract and job security. As long as some unobserved individual 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, 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 and psychological attitude, 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 available[7].

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., insecure temporary 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 (estimated by POLS)[8].

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

$$T_i=\gamma_T' X_{Ti}+\varepsilon_{Ti} \qquad (3)$$

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

[7] 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.

[8] We do not estimate an ordered probit in the second stage because a two-stage procedure provides consistent estimates only if the second equation is linear (Wooldridge, 2001). 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. In this sense, POLS provides a straightforward solution to all these computational problems.

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 account of the possible correlation in the unobservables of the two models as follows:

$$JS_i = \alpha' DT_i + \beta' X_i + \lambda' E(\varepsilon_i/T_i) + \varepsilon_i \quad (4)$$

where all the terms have the same meaning as in (2) and $E(\varepsilon_i/T_i)$ is a function of the estimated probabilities from equation (3), capturing the correlation between the unobservables of worker types and job satisfaction equation.

Given the specification of equation (4), if the estimated λs are not statistically different from zero, the endogeneity issue may be ignored; on the contrary, if the estimated λs 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:

$$E(\varepsilon/T=i) = \sum_{j \neq i}^{m} \left(\frac{P_j \ln P_j}{1 - P_j} + \ln P_i \right) \quad (5)$$

where P are estimated probabilities from equation (3).

A final remark concerns the identification strategy. More specifically, other than relying on functional forms, identification may be achieved using a set of exclusion restrictions, that is 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 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 who, respectively, disagree on the first statement and 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 and other individual and job characteristics. In light of these considerations, we use as instruments two dummy variables capturing the worker's opinion on the two statements above.

5. Econometric results

Table 4 reports the relevant results from the estimation of different specifications of equations (2) and (4). 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 labour market conditions, which should capture the influence of unemployment and job opportunities at the local level. Model 2 adds controls for employer and job characteristics. The inclusion of explanatory variables related to individual, employer and job characteristics are standard in the estimation of job satisfaction equations (among others see Clark, 1997). With regard to job characteristics, beside usual controls such as economic sector, firm size, occupation and tenure, we have exploited the richness of the dataset including all the job-related variables that should produce effects on job satisfaction, such as whether the worker has to work long hours, at very high speed, to tight deadlines or in dangerous or unhealthy conditions, and we have also included indicators of the type of relationships inside the firm. We have controlled also for employment-related past events - such as whether the worker has been unemployed in the last five years or whether there has been a staff reduction in his/her firm, thus controlling that the estimated effect of the current flexibility/security mix on job satisfaction does not capture also the spurious effect of past events that can anyway influence current job satisfaction.

As a first control for potential endogeneity, the full specification in Model 3 includes a large set of controls for personality and psychological characteristics, such as past and future job expectations, physical and psychological uneasiness due to work, attitudes towards work and life, self-esteem and intensity of social relations (see table A1 for a detailed description and basic statistics of all the covariates).

Column 4 reports estimates by POLS for the same specification. Estimates based on the two-stage procedure discussed in section 4 are reported in column 5 and 6. In order to highlight the importance of controlling for psychological characteristics, the two columns differ for the presence of such controls (not used in columns 5, but included in column 6).

First stage multinomial logit estimates for the last specification are reported in table A2[9], while complete POLS estimates (referring to columns 4-6 in table 4) are reported in table A3.

TABLE 4 HERE

Generally our results point out that job satisfaction of flexicure workers is not statistically different from that of permanent workers, regardless of the estimator and the specification used. On the contrary, compared to the latter, job satisfaction of insecure temporary workers and those on permanent contracts at risk of unemployment is much lower. Furthermore, the two negative coefficients are not statistically different[10], thus showing that permanent workers at risk of losing their job feel as unsatisfied as insecure temporary workers. Comparison of results in Table 4 shows that POLS estimates are coherent with Ordered Probit ones. Furthermore, estimates may be affected by endogeneity, but results don't change from a qualitative point of view once we correct for it.

It should be also noticed that estimates in columns 4 and 6 are very similar and some of the estimated correction terms in the second stage are statistically significant only in the model without controls for psychological characteristics (column 5)[11]. These results suggest that in this case such controls are sufficient to take into account of potential endogeneity and in the following tables we shall use the model in column 4 as our preferred specification.

To sum up, estimates in table 4 clearly highlight that job stability and perceived security are quite different things and the lack of job security is a primary source of job dissatisfaction, even when it is not coupled with flexibility. Furthermore, the combination "temporary but secure job" seems preferable, in terms of workers well-being, 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 losing his/her job.

Estimates by welfare regime reported in table 5 show that, despite of the differences across countries in the level of job satisfaction and in the incidence of the four types of workers previously discussed, in each group of countries insecure temporary workers are the least satisfied, and again no statistically significant differences in job satisfaction emerge between permanent and flexicure

[9] In the first stage we included all the controls used in the job satisfaction equation and the two identifying restrictions (i.e, "ushouldnotacc" and "govshoudprov"). The Hausman test allows accepting the IIA. Furthermore, preliminary analysis showed that the two variables used for identification were jointly statistically not significant in the job satisfaction equation (F test (2, 16) = 1.7, with corresponding p-value=0.21), but statistically significant in the multinomial logit model estimated in the first stage (see estimates in the first two rows in table A2).

[10] The test of the null hypothesis of equality of the two coefficients in column 4 yields an F test of 0.3, with a corresponding p-value of 0.62. Similar results were obtained for the other specifications.

[11] Table A3 shows that also estimates for the other coefficients are generally similar, but in many cases standard errors are larger in column 6 than in column 4. This larger variance is due to the inclusion of the estimated correction terms (analytical standard errors are actually lower than the reported bootstrapped ones), which increase the variance without improving the explanatory power of the model once controlling for personality and psychological characteristics.

workers. The aggregate result related to permanent-at-risk workers seems driven mainly by the Continental countries, which are the only group characterized by statistically significant differences between permanent workers at risk of unemployment and other permanent workers.

TABLE 5 HERE

Given the availability of different measures of job satisfaction, we also tested whether our results change using different facets of job satisfaction as dependent variable. More specifically, we evaluated the impact of the flexibility/security mix on satisfaction with job security, career prospects, chance for own development and pay. We claim that our results should hold mainly when considering job facets more related to job security, either directly (as in the case of satisfaction for job security itself) or indirectly (as in the case of career prospects and the chance to develop yourself). On the contrary, the effect of perceived job security on other (more general) aspects of the job (such as pay) may be more ambiguous and difficult to predict.

Estimation results reported in Table 6 overall confirm that perceived job security, together with contractual flexibility, significantly influences workers satisfaction mainly for job aspects more related to job security.

Workers' satisfaction for job security is the only facet for which flexicure temporary workers are statistically less satisfied than permanent ones, but the estimated differential is anyway much lower than the corresponding estimates for insecure temporary workers and permanent-at-risk ones. Furthermore, job security is the only aspect for which the latter are much more dissatisfied than insecure temporary workers[12].

When considering other aspects of the job, including those that we expect to be more influenced by the permanent/temporary nature of job contract (such as career prospects and the chance for own development), flexicure workers are equally satisfied as permanent workers and more satisfied than permanent-at-risk workers, thus confirming our main results.

Finally, satisfaction with pay is not significantly influenced by the flexibility/security mix characterising workers' job except for insecure temporary workers (albeit the estimated negative coefficient is only weakly statistically significant), supporting that the estimated differences in overall job satisfaction by workers types discussed above are mainly driven by aspects of the job actually related to - or influenced by – perceived job security.

[12] Differences among these coefficients are all statistically significant. The F tests on the equality of the estimated coefficients for flexicure workers and, respectively, insecure temporary and permanent-at-risk ones are equal to 10.2 and 28.2 (in both cases p-value=0.00). Also the estimated coefficient for insecure temporary workers is statistically different from the one estimated for permanent-at-risk ones (F test=6.3, with corresponding p-value=0.01).

TABLE 6 HERE

6. Sensitivity analysis

In this section we perform a sensitivity analysis in order to test further the robustness of the main results discussed in the previous section. More specifically, we want to verify whether our estimates are sensitive to different definitions of the four workers types. This exercise is particularly important, given that our basic classification is partly based on arbitrary choices and other researchers may define the four workers types differently.

We then replicated estimates slightly changing the definitions of workers' types. As discussed in section 3, in the basic definition flexicure workers are those stating that are not very or not at all likely to lose their job in the following twelve months while insecure temporary workers are the remaining temporary ones; permanent-at-risk workers are permanent workers stating that are very or quite likely to lose their job because the firm will close down or they will be declared redundant, while permanent workers are the remaining permanent ones[13].

We now adopt three different definitions of workers' types. In the first, we use a larger definition of flexicure workers, considering part of them also temporary workers stating that are very or quite likely to lose their job for reasons different from lay-off, firm closing or expiring contract; insecure temporary workers are the remaining temporary ones, while permanent-at-risk and permanent ones are the same as in the basic definition.

In the second definition, we adopt a larger definition of permanent-at-risk workers, considering among them also those stating that are very or quite likely to lose their job for "other reasons" (different from retirement, job change or family duties); permanent workers include the remaining workers on permanent contracts, while insecure temporary and flexicure workers are as in the basic definition.

Finally, in the third definition we use the larger definition of both flexicure and permanent-at-risk workers.

Table 7 displays the distribution of workers' type according to the basic and to the three new definitions. With the larger definition of flexicure workers, the share of these latter on the whole

[13] The question related to the reasons for leaving the current employer provided the following list of reasons: 1) The organization/workplace will close down; 2) I will be declared redundant; 3) I will reach normal retirement age; 4) My contract of employment will expire (for temporary workers); 5) I will take early retirement; 6) I will decide to leave and work for another employer; 7) I will decide to leave and work for myself as self-employed; 8) I will have to look after my home, relatives or children; 9) Other reasons.

group of employees changes from 5.4% to 6.9%, while when adopting the larger definition of permanent-at-risk workers, their share varies from 2.5% to 8.7%.

TABLE 7 HERE

In Table 8 we report estimation results of the job satisfaction equation adopting the three alternative definitions of workers' types.

Comparing these estimates with those in column 4 of Table 4, it can be noticed that ore main results hold: once again insecure temporary workers and permanent-at-risk workers are the least satisfied[14], whatever the adopted definition, while no significant differences emerge between flexicure workers and permanent ones.

Overall, these results show that the main message of our estimates, that is that what matter for job satisfaction is more perceived job security than the type of contract, seems robust to changes in the definition of workers' types.

TABLE 8 HERE

7. Conclusions

Employment stability is desirable not only for workers, but also for firms, which dislike high turnover and prefer stable employment relationship in order to recoup human capital investment and selection costs. 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 workplace practices and labour market institutions. The hypothesis of balancing flexibility and security has been largely emphasized in the last years also by EU policy makers.

Departing from the (macro) flexicurity approach, in this paper we tried to take a more microeconomic perspective, measuring the flexibility/security mix at the individual level. More specifically, by measuring flexibility through the type of contract and security through perceived job security, we empirically tested at the individual level the hypothesis that what matters for job

[14] Even if the use of these alternative definitions seems to widen the gap between insecure temporary and permanent-at-risk workers, making the latter much more dissatisfied, the difference between the two coefficients is not statistically significant (the F test on the equality of the two coefficients in the last column of table 7 is equal to 1.8, with a corresponding p-value of 0.18).

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.

To test this hypothesis, we split workers in four groups according to the flexibility/security mix characterizing their employment relationship and we analysed the impact of this mix on overall job satisfaction. Moreover, we studied whether this effect changes with the welfare regime considered and when considering workers' satisfaction for different aspects of the job.

Overall, also 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. Our main conclusions generally hold within different welfare regimes and also for different aspects of job satisfaction, mainly for those more related to job security. Furthermore, our results are robust to the use of alternative definitions of workers' types.

Thus, our estimates clearly highlight that job stability and perceived security are not the same thing and job satisfaction is relatively low mainly when perceived job security is low. Furthermore, the combination "temporary but secure job" (hence, the lack of only job stability) seems preferable with respect to the combination "permanent but insecure job" (that is the lack of only job security), 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.

Overall our results indicate that flexicurity, also at the micro level, is a very important determinant of job satisfaction: in this sense, more flexibility may be introduced without necessarily reducing job satisfaction if this doesn't negatively affect perceived job security.

From a policy point of view, this may be guaranteed either directly by the employer or indirectly by the policy maker through an appropriate mix of labour market policies.

Within the firm, the employer may in fact reduce the negative effect of the temporary contract on individual job satisfaction if this is somehow associated with some job continuity. When a permanent contract is lacking, job continuity may be sustained through adequate working conditions, such as training opportunities, career prospects and good internal relationships.

From the policy maker point of view, flexibility can be obtained without detrimental effects on workers' satisfaction if policies aimed at favouring the use of flexible contracts are coupled with policies aimed at enhancing employment stability, such as active labour market policies helping workers in their transition from one job to another.

More in general, given the increasing incidence of temporary contracts in the labour market, a shift from "job security" (i.e., the same job for life) to "employment security" (i.e., staying in

employment for life, eventually making transitions between jobs or firms) should loosen up the link between the reduced formal job security characterising these contracts and workers' well-being.

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Technical Appendix - Probit OLS (POLS)

Probit OLS (POLS) represents an alternative approach to traditional ordered response models.

Assume that the dependent variable Y is categorical and naturally ordered (for example, ranging from "very low" to " very high" or from "very dissatisfied" to "very satisfied"). Assume also that the observed variable is related to a "true" unobserved continuous one (say Y*) such that:

$$Y_i = j \quad \text{if } \mu_{j-1} < Y_i^* < \mu_j \quad \text{for } j=1,2,...k \qquad \text{(I)}$$

This implies that the latent variable is partitioned in k intervals such that if the jth response is observed, then the latent variable Y* lies in the range $(\mu_{j-1}, \mu_j]$. Define $\mu_0=-\infty$ and $\mu_k=+\infty$.

Define also as $p_1,\ldots p_k$ the frequency for each category of the observed ordinal variable.

Assume that Y* has a standard normal distribution in the population. Given the distributional assumption, the μ_js can be estimated exploiting that:

$$p_j=N(\mu_j)-N(\mu_{j-1}),\ j=1,\ldots.k-1 \qquad \text{(II)}$$

where N is the cumulative standard normal distribution.

Even if we don't know the exact value of the latent variable for each observation, we can compute its conditional expectation based on the properties of the normal distribution (Maddala, 1983):

$$\overline{Y_i} = E(Y_i^* / \mu_{j-1} < Y_i^* < \mu_j) = \frac{n(\mu_{j-1}) - n(\mu_j)}{N(\mu_j) - N(\mu_{j-1})} = \frac{n(\mu_{j-1}) - n(\mu_j)}{p_j} \qquad \text{(III)}$$

where *n* is the standard normal density.

$\overline{Y_i}$ is a discrete random variable with chances equal to p_j. It represents the discrete version of the underlying continuous variable and it has as many values as the observed categorical variable.

OLS and other linear estimators may be used with $\overline{Y_i}$ as dependent variable. This procedure was called Probit OLS – POLS (Van Praag, 2005; Van Praag and Ferrer-i-Carbonnell, 2006).

POLS estimates are coherent with Ordered Probit estimates, but the adoption of POLS allows to better handle econometric issues such as endogeneity, simultaneous equations and estimates with panel data. In many of these cases it also substantially reduces computational time (Van Praag and Ferrer-i-Carbonnell, 2006).

This approach is also useful in presence of ordinal variables among the regressors (for some applications, see Terza, 1987; Van Praag and Baarsma, 2005; Van Praag and Ferrer-i-Carbonnell, 2004).

With respect to linear estimations with the "true" latent variable, there is some loss of information due to discretization, implying that the residual variance is underestimated and hence the corresponding t-statistics are overestimated. Note, however, that the same problem affects also Ordered Probit estimates and hence the use of POLS should not cause any further loss of information with respect to using an Ordered Probit estimator.

TABLE A1 HERE

TABLE A2 HERE

TABLE A3 HERE

Figure 1 - Job satisfaction by workers type

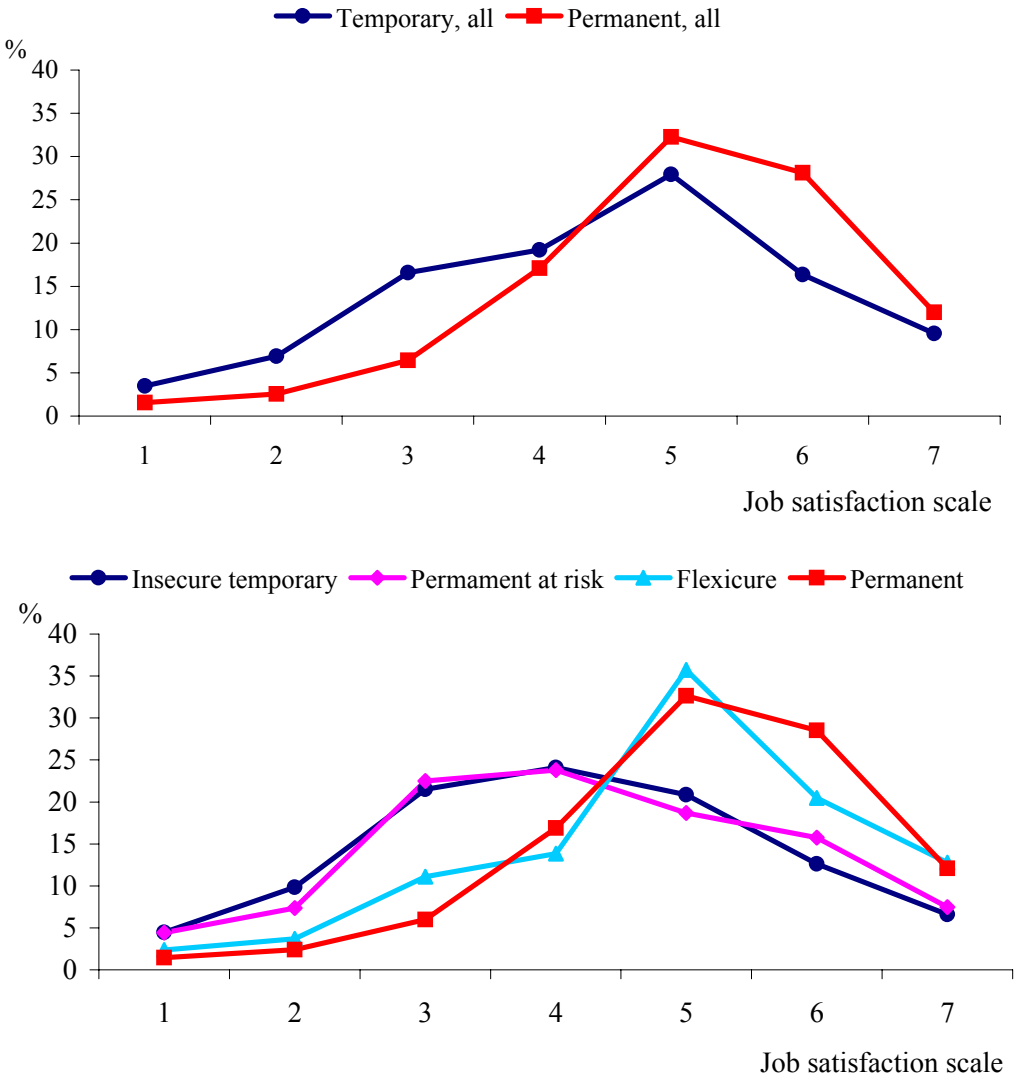

Table 1 - Types of workers by job security and flexibility

Flexibility / Security	NO	YES
NO	Permanent-at-risk workers	Insecure temporary workers
YES	Permanent workers	Flexicure workers

Table 2 - Incidence of types of workers by job security and flexibility (% by row)

	Insecure temporary	Permament at risk	Flexicure	Permanent	Total
Total	5.9	2.5	5.4	86.3	100
Nordic countries	3.6	3.2	5.4	87.8	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
NET	2.7	2.8	6.7	87.8	100
Continental countries	5.1	2.2	4.4	88.4	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
Southern countries	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
Anglo-saxon countries	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

Table 3 - Average job satisfaction by workers type and country

	Difference between permanent and:			
	Insecure temporary	Permament at risk	Flexicure	Permanent (avg)
Total	-0.99 ***	-0.89 ***	-0.21 ***	5.1
Nordic countries	-0.77 ***	-0.45 ***	-0.09	5.5
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
NET	-1.11 ***	-0.81 **	-0.20	5.7
Continental countries	-0.99 ***	-1.23 ***	-0.17	5.1
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
Southern countries	-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
Anglo-saxon countries	-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

Table 4 - Job satisfaction estimates, relevant coefficients

	Ordered probit			POLS	2 stage POLS (D-McF correction)	
	1	2	3	4	5	6
Ref group: permanent workers						
insecure temporary	-0.575 ***	-0.298 ***	-0.235 ***	-0.184 **	-0.229 ***	-0.181 **
	0.061	*0.066*	*0.067*	*0.079*	*0.085*	*0.081*
permanent at risk	-0.594 ***	-0.400 ***	-0.334 ***	-0.251 **	-0.289 ***	-0.239 **
	0.086	*0.088*	*0.088*	*0.115*	*0.113*	*0.114*
flexicure	-0.084	0.122 *	0.068	0.052	0.105	0.053
	0.062	*0.065*	*0.066*	*0.077*	*0.084*	*0.079*
OTHER CONTROLS						
demographics, country f.e. and local area conditions;	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
employer and job characteristics;	*NO*	*YES*	*YES*	*YES*	*YES*	*YES*
personality and psychological characteristics (past and future expectations, uneasiness due to work, work and life attitued, social relations, self-esteem)	*NO*	*NO*	*YES*	*YES*	*NO*	*YES*
E(ε/T=temporary)	-	-	-	-	0.134 *	0.035
E(ε/T=permanent at risk)	-	-	-	-	-0.072 **	-0.034
E(ε/T=flexicure)	-	-	-	-	-0.028	0.009
LR/Wald chi2 (df)	627.4 (29)	2102.0 (74)	2485.8 (91)	2168.9 (91)	1795.5 (77)	2304.84 (94)
Pseudo/Adjusted R^2	0.03	0.11	0.14	0.36	0.31	0.35
N. observations	5768	5609	5609	5609	5609	5609

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

Note: in column 4 robust standard errors; in column 5 and 6 conditional expectation correction method as in Dubin-McFadden (1984), bootstrapped standard errors (1000 replications).

Table 5 - Job satisfaction estimates by welfare regimes

	Nordic countries & the Netherlands	Continental countries	Southern countries	Anglosaxon countries
Ref group: permanent workers				
insecure temporary	-0.276 **	-0.219 **	-0.194 **	-0.361 **
	0.11	*0.096*	*0.105*	*0.149*
permanent at risk	0.058	-0.384 ***	0.041	-0.198
	0.141	*0.122*	*0.183*	*0.200*
flexicure	-0.076	0.007	0.117	0.022
	0.105	*0.096*	*0.105*	*0.153*
R2	0.32	0.36	0.32	0.32
N observations	1585	2177	1080	767

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

Note: Separate regressions for each group. POLS estimates; model specification as in column 4 of table 4.

Table 6 - Estimates with alternative definitions of job satisfaction

	Satisfaction with:			
	Job security	Career prospects	Chance for own development	Pay
Ref group: permanent workers				
insecure temporary	-0.513 ***	-0.275 ***	-0.145 *	-0.137 *
	0.086	*0.075*	*0.079*	*0.074*
permanent at risk	-0.833 ***	-0.263 **	-0.027	-0.081
	0.099	*0.120*	*0.121*	*0.116*
flexicure	-0.166 **	-0.023	0.034	-0.048
	0.076	*0.074*	*0.076*	*0.073*
R^2	0.28	0.29	0.31	0.34
N. observations	5601	5595	5605	5607

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

Note: POLS estimates; model specification as in column 4 of table 4.

Table 7 - Alternative definitions of workers types

% in total sample

	Insecure temporary	Permament at risk	Flexicure	Permanent	Total
Basic definition	5.9	2.5	5.4	86.3	100
1 Larger def. of flexicure	4.3	2.5	6.9	86.3	100
2 Larger def. of perm at risk	5.9	8.7	5.4	80.1	100
3 Combination of the previous two	4.3	8.7	6.9	80.1	100

Note: In the basic definition, flexicure workers are those stating that are not very or not at all likely to lose their job in the following 12 months. Insecure temporary workers are the remaining temporary ones. Permanent workers at risk of unemployment are permanent workers stating that are very or quite likely to lose their job because the firm will close down or they will be declared redundant. Permanent workers are the remaining permanent ones.
In 1, flexicure workers as in the basic definition + temporary workers stating that are very or quite likely to lose their job for reasons different from lay-off, firm closing or expiring contract. Insecure temporary workers are the remaining temporary ones. Permanent workers at risk of unemployment and permanent ones are defined as in the basic definition.
In 2, Permanent workers at risk of unemployment as in the basic definition + those stating that are very or quite likely to lose their job for reasons different from retirement, job change or family duties. Permanent workers include the remaining workers on permanent contracts. Insecure temporary and flexicure workers are defined as in the basic definition.
In 3, larger definition of both flexicure and permanent at risk workers.

Table 8 - Robustness check: alternative definitions of workers types

	Larger definition of:		
	Flexicure workers	Permanent at risk workers	Both
Ref group: permanent workers			
insecure temporary	-0.133 **	-0.233 ***	-0.177 ***
	0.057	*0.080*	*0.090*
permanent at risk	-0.246 ***	-0.325 ***	-0.318 ***
	0.067	*0.062*	*0.062*
flexicure	-0.025	0.024	-0.059
	0.044	*0.077*	*0.067*
R^2	0.35	0.36	0.36
N. observations	5609	5609	5609

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

Note: POLS estimates; model specification as in column 4 of table 4. See note in table 7 for details on the alternative definitions of workers types

Table A1. Variables description

Name	Description	Mean	Std dev
insecure temporary	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	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
permatrisk	1 if permanent worker very/quite likely to lose job in the following year	0.025	0.157
permanent	1 if permanent worker not very/not at all likely to lose job in the following year	0.863	0.344
Individual and local characteristics			
female	1 if female	0.430	0.495
age	Age (continuous)	37.981	11.454
age2	Squared age (continuous)	1573.761	914.523
education	Age when stopped full time education minus 6 (continuous)	12.448	3.779
married	1 if married	0.636	0.481
head	1 if contributes most to the household income	0.626	0.484
child5	1 if has a child under five years of age	0.175	0.380
Residence (ref: rural area or village)			
small_town	1 if lives in small or middle sized town	0.377	0.485
large_town	1 if lives in large town	0.300	0.458
local_u	1 if agrees that there is a lot of unemployment in the area in which lives	0.253	0.435
area_rep	1 if strongly agrees that the area in which lives has not a good reputation	0.040	0.197
localjob	1 if thinks that job opportunities in local area are very good	0.139	0.346
Employer and job characteristics (including employment-related past events)			
Firm size (ref: lee than 10 people)			
size_1049	1 if 10-49 people	0.314	0.464
size_5099	1 if 50-99 people	0.102	0.302
size_100499	1 if 100-499 people	0.161	0.367
size_500	1 if more than 500 people	0.113	0.317
Sector of employment (ref: manufacturing)			
i_agriculture	1 if agriculture, hunting, forestry, fishing	0.006	0.075
i_mining	1 if mining and quarrying	0.002	0.050
i_electricity	1 if electricity, gas and water supply	0.010	0.101
i_construction	1 if construction	0.066	0.248
i_trade	1 if wholesale and retail trade repairs	0.145	0.352
i_hotels	1 if hotels and restaurants	0.036	0.185
i_transportation	1 if transportation and communications	0.068	0.253
i_finance	1 if financial intermediation	0.037	0.188
i_business	1 if real estate and business activities	0.075	0.263
i_pa	1 if public administration	0.092	0.289
i_services	1 if other services	0.232	0.422
public	1 if works in the public sector	0.365	0.482

Table A1. Variables description (continued)

Name	Description	Mean	Std dev
Occupation (ref: unskilled manual worker)			
o_professional	1 if employed professional	0.025	0.155
o_topmanager	1 if general management, director or top management	0.029	0.167
o_middelmanager	1 if middle management, other management	0.144	0.351
o_desk	1 if employed position: working mainly at a desk	0.203	0.402
o_travelling	1 if employed position: travelling	0.061	0.240
o_service	1 if employed position: service job	0.139	0.346
o_supervisor	1 if supervisor	0.038	0.191
o_skilledbc	1 if skilled manual worker	0.234	0.423
Tenure (ref: less than 3 years)			
tenure_3to4	1 if 3-4 years	0.309	0.462
tenure_5to9	1 if 5-9 years	0.200	0.400
tenure_10	1 if equal or more than 10 years	0.365	0.481
union	1 if member of a trade union	0.249	0.432
Labour income (ref: very bad)			
income_verygood	1 if the worker states that his/her income is very good	0.166	0.372
income_fairlygood	1 if the worker states that his/her income is fairly good	0.631	0.483
income_fairlybad	1 if the worker states that his/her income is fairly bad	0.179	0.383
hours	number of weekly working hours (continuous)	37.735	11.049
skillmatch	1 if uses experiences, skills and abilities	0.737	0.440
use_ict	1 if the job involves the use of computerise or automated equipment	0.525	0.499
job_extratime	1 if often has to work extratime	0.130	0.337
job_speed	1 if works almost all the time at very high speed	0.145	0.352
job_deadlines	1 if works almost all the time to tight deadlines	0.134	0.341
job_dangerous	1 if works always/often in dangerous or unhealthy conditions	0.111	0.314
injury	1 if had an injury at work in the last five years	0.100	0.300
rel_ind	1 if relations at the workplace between management and employees are very good	0.186	0.389
rel_hor	1 if has good friends at work	0.314	0.464
rel_ver	1 if get support from management when there is pressure at work	0.153	0.360
been_promoted	1 if have been promoted while with current employer	0.323	0.468
staff_reduction	1 if the number of people employed in the organisation has been reduced over the last 3 years	0.251	0.433
ben_unemployed	1 if unemployed in the last five years	0.181	0.385
Proxies for personality and psycological characteristics			
exp_secure	1 if thinks very important to have a secure job	0.066	0.249
promotion_in	1 if strongly agrees that is likely to get a better job in current organisation in the next 3 years	0.049	0.217
promotion_out	1 if strongly agrees that is likely to get a better job with another employer in the next 3 years	0.045	0.208
values	1 if finds that his/her values are very similar to those of his/her organisation	0.114	0.318
proud	1 if very proud of working for his/her company	0.168	0.374
tired_physical	1 if often has headaches and/or muscular pains due to work	0.201	0.401
tired	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
motivation	1 if thinks absolutely necessary to have a successful career	0.534	0.499
motivation2	1 if states continue to work if were to get enough money to live as confortably as would like	0.526	0.499
unsleep	1 if often lost much sleep over worry	0.157	0.364
worthless	1 if thinks of himself/herself as a worthless person	0.053	0.223

Table A1. Variables description (continued)

Name	Description	Mean	Std dev
socialrel	1 if regularly meets friends, relatives and/or neighbours	0.827	0.378
member	1 if member of clubs, voluntary organisation and/or political party	0.421	0.494
Political party (ref: left)			
pol_right	1 if right	0.141	0.348
pol_centre	1 if centre	0.354	0.478
pol_dk	1 if does not know	0.222	0.416
Country of residence (ref: Italy)			
c_be	1 if Belgium	0.026	0.160
c_dk	1 if Denmark	0.019	0.137
c_de	1 if Germany	0.262	0.440
c_gr	1 if Greece	0.017	0.129
c_es	1 if Spain	0.094	0.292
c_fr	1 if France	0.173	0.378
c_ie	1 if Ireland	0.008	0.088
c_lu	1 if Luxemburg	0.001	0.036
c_nl	1 if Netherlands	0.039	0.194
c_pt	1 if Portugal	0.022	0.147
c_uk	1 if UK	0.158	0.365
c_fi	1 if Finland	0.011	0.102
c_se	1 if Sweden	0.028	0.164
c_at	1 if Austria	0.022	0.147
Variables used for identification in 2 stage POLS			
ushouldnotacc	1 if disagrees that unemployed should be forced to take a job quickly, even if it not as good as the previous job	0.103	0.304
govshouldprov	1 if strongly agrees that the government should provide a job for everyone who wants it	0.390	0.488

Table A2
Multinomial logit estimates
Model specification as in column 6 of table 4

	Worker type (ref: permanent)					
	Insecure temporary		Permanent at risk		Flexicure	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
ushouldnotacc	0.12	0.27	0.78 ***	0.31	-0.12	0.28
govshouldprov	-0.15	0.21	-0.11	0.26	-0.38 **	0.20
Personal and local characteristics						
female	0.21	0.22	0.61 *	0.34	0.29	0.23
age	0.02	0.05	0.04	0.09	-0.19 ***	0.06
age2	0.00	0.00	0.00	0.00	0.00 ***	0.00
education	0.03	0.03	0.03	0.04	-0.05	0.04
married	-0.49 **	0.22	-0.40 *	0.25	-0.05	0.21
head	-0.22	0.20	0.08	0.33	-0.67 ***	0.22
child5	-0.04	0.26	-0.03	0.31	0.16	0.25
small_town	-0.13	0.24	0.38	0.29	-0.06	0.22
large_town	-0.34	0.24	-0.14	0.33	0.12	0.24
local_u	0.27	0.21	0.40	0.26	0.11	0.22
area_rep	0.01	0.39	0.00	0.63	-0.25	0.42
localjob	0.12	0.27	-0.32	0.48	0.16	0.25
Employer and job characteristics						
size_1049	-0.45 **	0.23	-0.58	0.38	-0.05	0.23
size_5099	-0.78 *	0.42	-0.79	0.51	-0.13	0.36
size_100499	-0.27	0.33	0.39	0.33	-0.19	0.33
size_500	-0.70 *	0.40	-0.26	0.46	0.34	0.33
public	0.30	0.24	-0.04	0.28	-0.05	0.22
tenure_3to4	-1.16 ***	0.22	-0.93 ***	0.35	-0.37	0.24
tenure_5to9	-2.31 ***	0.41	-2.01 ***	0.58	-1.00 ***	0.37
tenure_10	-2.49 ***	0.47	-1.20 **	0.50	-1.07 ***	0.36
union	-0.63 **	0.28	0.49 *	0.29	0.11	0.26
income_verygood	-1.10 **	0.56	-0.36	0.74	0.38	0.76
income_fairlygood	-0.76 *	0.47	0.09	0.61	0.80	0.71
income_fairlybad	-0.49	0.45	0.99 *	0.62	0.97	0.73
hours	-0.02 *	0.01	0.00	0.01	-0.03 ***	0.01
skillmatch	-0.51 **	0.21	0.11	0.32	-0.21	0.22
use_ict	0.17	0.23	0.49 *	0.27	0.22	0.23
job_extratime	-0.10	0.35	0.19	0.33	0.10	0.41
job_speed	0.20	0.36	-0.35	0.39	-0.26	0.34
job_deadlines	-0.21	0.42	0.01	0.37	0.37	0.36
job_dangerous	0.15	0.29	0.41	0.33	0.17	0.28
rel_ind	-0.46	0.30	-0.70 *	0.42	-0.43 *	0.26
rel_hor	-0.27	0.25	0.40	0.31	-0.11	0.25
rel_vert	-0.15	0.35	-0.33	0.53	0.57 **	0.28
injury	-0.01	0.31	0.20	0.36	0.00	0.30
been_promoted	-0.74 **	0.29	0.12	0.27	-1.21 ***	0.32
staff_reduction	0.32	0.23	0.80 ***	0.23	0.14	0.24
ben_unemployed	0.62 ***	0.21	0.29	0.34	0.41 *	0.25
Industry dummies	yes		yes		yes	
Occupation dummies	yes		yes		yes	

Proxies for personality and psychological characteristics						
exp_secure	-0.06	0.20	-0.14	0.25	-0.09	0.20
promotion_in	-0.09	0.38	-0.35	0.57	0.88 ***	0.34
promotion_out	1.21 ***	0.31	0.61	0.43	-0.03	0.38
values	0.22	0.50	-0.36	0.54	-0.72 *	0.38
proud	0.11	0.40	-0.51	0.48	0.89 ***	0.31
tired_physical	0.32	0.26	-0.12	0.34	0.32	0.26
tired	-0.18	0.25	0.31	0.27	-0.05	0.23
stressful	0.29	0.24	0.39	0.29	0.02	0.24
motivation	0.01	0.21	-0.08	0.28	0.25	0.20
motivation2	-0.30 *	0.19	-0.27	0.26	0.39 **	0.20
unsleep	0.12	0.26	0.46	0.30	-0.47	0.33
worthless	0.54 *	0.33	0.15	0.49	-0.45	0.48
socialrel	-0.03	0.27	0.15	0.30	-0.26	0.27
member	-0.03	0.22	0.41 *	0.25	0.08	0.20
pol_right	-0.36	0.30	0.15	0.37	-0.07	0.32
pol_centre	-0.20	0.25	-0.22	0.31	-0.22	0.23
pol_dk	-0.20	0.27	-0.05	0.35	-0.12	0.27
Country Fixed Effects						
c_be	-0.48	0.49	0.07	0.59	-0.09	0.52
c_dk	-0.54	0.54	0.18	0.56	-0.21	0.55
c_de	-0.94 **	0.43	-0.74	0.53	-0.05	0.46
c_gr	0.13	0.49	0.78	0.57	-0.06	0.57
c_es	0.23	0.44	-0.71	0.81	0.85 **	0.46
c_fr	0.11	0.41	0.57	0.47	0.18	0.49
c_ie	-0.27	0.49	0.20	0.67	-0.01	0.53
c_lu	-0.34	0.64	0.28	0.59	0.63	0.57
c_nl	-0.37	0.53	0.57	0.55	0.46	0.49
c_pt	0.24	0.45	-0.78	0.74	0.26	0.54
c_uk	-0.56	0.45	0.57	0.52	-0.32	0.50
c_fi	0.15	0.49	-0.51	0.63	-0.05	0.55
c_se	-0.06	0.52	0.00	0.53	-0.33	0.55
c_at	-1.65 ***	0.64	0.61	0.54	-0.49	0.52
Constant	1.05	1.20	-4.84 **	2.01	2.52 **	1.26

legend: * p<.1; ** p<.05; *** p<.01

Hausman test allows to accept the IIA (chi2=0.00 regardless of the omitted alternative)

Table A3

Estimates of job satisfaction equation, POLS estimates

The number of the columns refers to the corresponding models in table 4

	POLS estimates (columns 4-6 in table 4)					
	Column 4		Column 5		Column 6	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
insecure temporary	-0.18 **	0.08	-0.23 ***	0.09	-0.18 **	0.08
permatrisk	-0.25 **	0.12	-0.29 ***	0.11	-0.24 **	0.11
flexicure	0.05	0.08	0.11	0.08	0.05	0.08
Personal and local characteristics						
female	0.01	0.04	0.06	0.06	0.04	0.06
age	-0.02 *	0.01	-0.03	0.03	-0.01	0.03
age2	0.0002 **	0.00	0.0004	0.00	0.0001	0.00
education	0.00	0.00	-0.02	0.01	0.00	0.01
married	0.01	0.04	0.11	0.09	0.02	0.10
head	0.00	0.04	0.04	0.06	0.05	0.06
child5	-0.04	0.04	-0.02	0.05	-0.05	0.05
small_town	0.03	0.04	0.14 **	0.06	0.08	0.07
large_town	-0.05	0.04	0.03	0.08	-0.03	0.11
local_u	0.03	0.04	0.01	0.05	0.04	0.05
area_rep	-0.02	0.11	-0.04	0.13	-0.01	0.13
localjob	0.08 *	0.05	-0.08	0.09	0.03	0.07
Employer and job characteristics						
size_1049	0.03	0.04	0.07	0.07	0.02	0.09
size_5099	0.06	0.05	0.17	0.13	0.06	0.15
size_100499	0.03	0.05	0.24 **	0.11	0.11	0.10
size_500	0.11 **	0.06	0.42 **	0.21	0.15	0.24
public	-0.05	0.04	-0.20 **	0.09	-0.08	0.10
tenure_3to4	-0.01	0.06	0.18	0.18	0.01	0.21
tenure_5to9	-0.04	0.07	0.30	0.32	0.02	0.36
tenure_10	0.01	0.07	0.63	0.42	0.17	0.46
union	-0.07 *	0.04	0.30	0.19	0.05	0.23
income_verygood	0.33 ***	0.12	0.93 ***	0.37	0.39	0.36
income_fairlygood	0.14	0.12	0.65 **	0.33	0.21	0.35
income_fairlybad	-0.19	0.12	0.38	0.33	-0.06	0.38
hours	-0.001	0.002	0.002	0.003	0.00	0.00
skillmatch	0.35 ***	0.04	0.65 ***	0.14	0.42 ***	0.13
use_ict	0.00	0.04	0.05	0.05	0.02	0.05
job_extratime	-0.02	0.05	-0.002	0.06	0.01	0.08
job_speed	0.01	0.06	-0.20 *	0.12	-0.04	0.13
job_deadlines	-0.07	0.06	0.02	0.10	-0.06	0.13
job_dangerous	-0.09 *	0.06	-0.14 **	0.06	-0.07	0.06
rel_ind	0.39 ***	0.04	0.44 ***	0.06	0.38 ***	0.06
rel_hor	0.09 **	0.04	0.39 ***	0.11	0.17 *	0.10
rel_vert	0.12 **	0.05	0.13 *	0.08	0.08	0.12
injury	-0.10 *	0.06	-0.11 *	0.06	-0.08	0.06
been_promoted	0.02	0.04	0.30 **	0.14	0.14	0.10
staff_reduction	-0.10 ***	0.04	-0.08	0.06	-0.06	0.05
ben_unemployed	-0.01	0.05	-0.17 *	0.10	-0.05	0.11
Industry dummies	yes		yes		yes	
Occupation dummies	yes		yes		yes	

Proxies for personality and psychological characteristics						
exp_secure	0.08 **	0.03	-		0.08 **	0.04
promotion_in	0.07	0.07	-		0.02	0.15
promotion_out	-0.34 ***	0.09	-		-0.39	0.30
values	0.01	0.07	-		-0.03	0.21
proud	0.43 ***	0.05	-		0.34 ***	0.10
tired_physical	-0.09 **	0.04	-		-0.14 **	0.08
tired	-0.02	0.04	-		0.04	0.08
stressful	-0.13 ***	0.04	-		-0.12 **	0.06
motivation	0.02	0.03	-		0.00	0.04
motivation2	0.15 ***	0.03	-		0.14	0.12
unsleep	-0.03	0.05	-		0.02	0.09
worthless	-0.16 *	0.09	-		-0.18	0.21
socialrel	0.07 *	0.04	-		0.10 **	0.05
member	0.01	0.03	-		0.05	0.07
pol_right	0.08 *	0.05	-		0.13	0.11
pol_centre	-0.01	0.04	-		-0.01	0.04
pol_dk	0.005	0.05	-		0.02	0.06
Country Fixed Effects						
c_be	0.08	0.07	0.34 **	0.14	0.14	0.14
c_dk	0.21 ***	0.08	0.57 ***	0.16	0.30 **	0.16
c_de	0.26 ***	0.07	0.47 ***	0.16	0.28	0.20
c_gr	-0.02	0.08	0.09	0.09	0.05	0.10
c_es	-0.03	0.07	-0.28 **	0.13	-0.15	0.10
c_fr	-0.10	0.07	-0.02	0.08	-0.05	0.08
c_ie	-0.04	0.08	0.10	0.10	0.02	0.12
c_lu	0.22 ***	0.08	0.54 ***	0.19	0.27	0.22
c_nl	0.31 ***	0.08	0.66 ***	0.21	0.40 *	0.23
c_pt	-0.03	0.08	-0.19	0.14	-0.15	0.13
c_uk	0.12 *	0.07	0.43 ***	0.17	0.25	0.18
c_fi	0.29 ***	0.08	0.15	0.11	0.22 *	0.12
c_se	0.19 ***	0.08	0.28 ***	0.07	0.20 **	0.08
c_at	0.21 ***	0.08	1.01 **	0.41	0.46	0.45
Correction terms						
E(ε/T=temp)			0.13 *	0.08	0.03	0.09
E(ε/T=permatrisk)			-0.07 **	0.03	-0.03	0.03
E(ε/T=flexicure)			-0.03	0.04	0.01	0.05
Constant	-0.58 **	0.23	-1.59 ***	0.49	-1.22 **	0.49

legend: * p<.1; ** p<.05; *** p<.01

Note: robust standard errors in column 4, bootstrapped standard errors in columns 5 and 6