Determinants of Job Insecurity in 5 European Countries.

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Abstract

The paper studies the determinants of subjective job insecurity in five European Countries (Belgium, Finland, Germany, Spain and The Netherlands), using data from the WageIndicator continuous voluntary web survey. After discussing the different concepts and measuring problems of subjective job insecurity, a model is presented highlighting the main variables and channels of transmissions affecting the perception of job insecurity. The impact of the different theoretical dimensions affecting the perception of job insecurity is estimated using a logistic regression. The analysis shows that the differences in subjective job insecurity of women are fully explained by their objective situation in the labour market. In contrast, insecurity grows with age; education contributes negatively to job insecurity, as do wages, except at very high wage levels; having a temporary contract contributes to insecurity, but not so having a part time job, which points to the different nature of two types of contracts very commonly analysed in tandem.

KEYWORDS: Labour market, subjective job insecurity, unemployment, temporary employment
JEL Classification: J11, J28

Introduction

The present study is intended to shed light on the determinants of subjective job insecurity, *i.e.* what makes employees feel insecure in their jobs, in five European Countries (Spain, Belgium, Finland, The Netherlands and Germany), using data from the WageIndicator continuous voluntary web survey. With that purpose, the paper is organized as follows. In the following section we discuss different definitions of job insecurity, and review the empirical literature regarding the determinants of subjective job insecurity. With this background, section 3 presents a theoretical model of the determinants of subjective job insecurity, SJI, and the channels of transmission ranging from factual labour and personal conditions of job insecurity to its subjective perception by individuals. This model is used as a reference framework to present a set of hypotheses about the determinants of subjective job insecurity. Section 4 briefly explains the characteristics of the data set used in the analysis. Section 5 deals with the specification of the statistical model used to estimate the determinants of SJI, and discuss the results obtained. Finally, section 6 provides a summary of the conclusions reached.

The study of SJI is important for several reasons. First, and most important, job insecurity, and the feeling of insecurity itself, have both a direct and an indirect negative impact on the wellbeing of employees. Regarding the former, job security is a mayor attribute of what workers consider a good job. Different waves (1997, 2005) of the International *Social Survey Program* asked workers about what makes a good job. In both, job security systematically comes in first place, followed by the type of work performed: whether it is interesting, helpful and allows you to work independently. It is only after these, and at a considerable distance, that wages and opportunities for advancement and flexible working hours are considered important. Similar results can be found in other surveys, such as the 2001 Eurobarometer[1]. As for the indirect effects on the wellbeing of the employee, prolonged job insecurity has long term negative effects on workers´ depression levels (Rocha *et al*., 2006), increasing psychosomatic complains and physical strains (Witte, 1999). Job insecurity also reduces psychological well

being and job satisfaction and is one of the most distressful aspects of the work situation (Mauno and Kinnunen, 2002).

Second, SJI has been linked to negative attitudes towards one's job and organization, and reluctance to stay with the organization (Ashford *et al*., 1989, Näswall and De Witte, 2003, Sverke et al., 2002). Indeed, a review of the literature of job insecurity suggests that job insecurity is a vital concern for both employees and their organizations (Sverke and Hellgren 2002).

Definition, measurement and literature review

Starting from a general approach of job insecurity, like the one followed by Greenhalgh and Rosenblatt (1984), where job insecurity is defined as "the perceived powerlessness to maintain desired continuity in a threatened job situation" (p. 438), successive authors have widened the concept of job insecurity to include not only the perceptions of unwanted job termination, but the implications of such an event should it happen. From this wider perspective, Manski and Straub (2000) define SJI as "their (the workers´) subjective probability of exogenous job destruction and their subjective distribution of outcomes should they search for new employment" (p. 448). Sverke and Hellgren (2002) have devised an integrated model describing job insecurity "as a subjectively experienced multidimensional phenomenon which may arise as a function of the interaction between the objective situation (…) and subjective characteristics" (p. 39). Summing up, although some studies use multidimensional definitions and some others use overall definitions of job insecurity, all agree in presenting SJI as the result of a two stage process by which a subjective threat is derived from an objective threat. This approach will also guide the theoretical model presented below.

Since it is a question of perceptions, most studies of SJI construct their indexes of subjective job insecurity directly from the answers given by workers to direct or indirect questions about the perceived security of their jobs. In this respect, it is important to stress that,

as is well known in the literature dealing with surveys, small differences in the way of presenting the questions can lead to significant changes in the outcome. For example, the 2005 ISSP includes two questions directly related to job insecurity. In question 10a the worker has to agree or disagree with the statement: "My job is secure" and in question 25 the worker is asked the "extent you worry about the possibility of losing your job". In only a few countries are the percentage of workers with insecure jobs and the percentage of workers worrying about their jobs similar. In the rest, workers worry more about their jobs than what would be expected given their perception of the security of their jobs (notably Spain, Russia, Bulgaria, East Germany, etc.) or less (Flanders, Finland), although there are more countries in the former situation, and the difference between both indexes is also larger.

Some studies (Anderson and Pontusson, 2007) associate the first question with cognitive job insecurity (a more or less dispassionate statement of the situation), and the second with affective job insecurity, although it can be argued that the first approach is also subjective and as such is the product of the combined effect of the factual risk of losing one's job and the subjective perception of that risk.

In this paper we will use the second approach. In the survey used[2], workers were asked to choose from among 5 possible answers (fully disagree, disagree, neutral, agree, and fully agree) to the statement: "I worry about my job security". In this paper we will assume that responses to the question on *job insecurity* are the result of the interaction between the individual's objective situation, including the subjective distribution of outcomes in case of losing his or her job, and his/her subjective characteristics.

In recent decades, perceptions of job insecurity have become an increasing concern for researchers. While early research focused mainly on the detrimental consequences of job insecurity for the individual, the organization (Ashford *et al*., 1989, Cheng and Chan, 2008, Hartley *et al.*,1991, Hellgren *et al.*, 1999, Sverke *et al.*, 2002,) or the unionized workers (Sverke and Goslinga, 2003), more recent literature has focused on perceptions of job insecurity (Manski and Straub (2000), its determinants (Green, 2003, 2008), or the characteristics of individuals undergoing high levels of job insecurity (Näswall and De Witte, 2003). Other

studies covered the issue of job insecurity in the context of the EU (Böckerman, 2004, Erlinghagen, 2007) and the OCDE (OCDE, 1997). Finally, Anderson and Pontusson (2007) focus on the impact of social protection on SJI from a perspective that links two different questions of the ISSP 2005 related to job insecurity to the cognitive and affective approach to SJI, finding that social protection reduce unemployment insecurity, although overall levels of welfare state generosity are not systematically related to SJI.

Using data from the Survey of Economic Expectations[3], Maski and Straub (2000) study workers' subjective probabilities of job loss and expectations of search outcome in the event of losing their job, considering that job insecurity is the net result of both dimensions. According to their results, job insecurity does not vary with age, decreases with schooling, and varies very little according to sex and substantially by race. Finally, the self-employed see themselves as facing less job insecurity than employees. They found that expectations within groups are heterogeneous, the covariates (age, schooling, sex, race, and employer) collectively explaining only a small part of the sample variation in worker expectations.

Using data from four different European countries, Näswall and De Witte (2003) investigate the association of job insecurity with variables such as age, gender, family situation, employment status and union membership, to see whether the results obtained in a single country might be generalized. In a correlational analysis describing the bivariate relationship between the above variables and job insecurity, they found that very little could be generalized among countries. Although the results of Näswall and De Witte (2003) are an important contribution to the study of SJI, the paper has one important shortcoming: the data used in the analysis came from different data bases in the four countries of the sample, leading to problems of comparability and reducing the number of variables included in their multivariate regression analyses, as not all the variables were available for every country. In contrast, in this paper we will profit from the use of a large data base collected using the same survey framework, the WageIndicator continuous web survey. This allows us to use a larger and much more heterogeneous sample[4] and include more explanatory variables.

In this line, an ongoing research study, Green (2008), using data from the ISSP (2005) and a definition of job insecurity built from a similar approach to the one used in this paper, has found the following results: women worry more than men about the security of their jobs only in Transitional and Nordic countries; the impact of age is very low and more educated workers are less likely to worry.

Summing up, from this selected review of the literature of SJI it can be concluded that workers vary considerably in their perception of job insecurity; there is a lot of heterogeneity regarding job insecurity within groups of gender, sectors of activity, age, type of contract and educational levels[5]. Even within the same groups, people differ in how they feel the threat of losing their job because these variables are able to explain only a small part of job insecurity. Results regarding the impact of several explanatory variables also differ among countries. Finally, the literature reviewed suggests that there is a great deal of room for improving our empirical knowledge about the determinants of job insecurity.

The model.

Figure 1 shows the different variables that affect the perception of job insecurity of employees, grouped in separate dimensions. The perspective adopted in this paper is based on recognising the existence of a vector of objective risk factors affecting the probability of a person's losing his or her job together with a vector of factors affecting the cost related with losing one's job. Both can be considered to be *objective variables.*

The objective risk factors comprise three sets of variables: a group of individual demographic variables such as gender, age, and education; a set of individual job related characteristics such as the type of contract, sector of activity or evolution of employment within the firm; and a set of variables related to the labour market and institutional framework such as level of unemployment, employment protection legislation, etc.

Closely related with the objective risk factors, but of a different nature, is the cost related to losing one's job. It can be argued (Green, 2008) that the same risk of losing a job will have different implications for the individual at risk depending on the probability of quickly finding a similar job -or in the presence of generous unemployment benefits (Anderson and Pontusson, 2007) - or in a context of no unemployment benefits and low probability of finding a job with a similar wage. If that were the case, the level of subjective insecurity would depend not only on the objective risk factors and the personal (affective) interpretation of the risks of losing the job faced by the employee, but on the consequences (monetary, work and psychological) of losing it. From this perspective, for example, older workers with low unemployment risk but also with low probability of getting a similar job if unemployed could show higher levels of subjective job insecurity than expected according to their objective risk of unemployment.

Together with these *objective variables,* there are other elements that operate in the process of generating subjective job insecurity. The first one is the degree, and quality, of information available to the individual of the risk factors faced by him or her. *Caeteris paribus*, a low objective unemployment risk is perfectly compatible with a high level of subjective job insecurity if the individual is carried away by a sense of fatality produced by massive pessimistic information about the current state of the labour market. On the other hand, the lack of information about the labour risks faced by the employees can lead to an unrealistic low or high level of subjective job insecurity. In this sense, information plays a crucial role in the translation of objective risks into subjective perceptions.

These risk factors of losing a job and the cost of losing it, screened by the available information, are interpreted by each worker according to his or her own *subjective characteristics*, leading to different perceptions of insecurity. This second realm is *internal* and purely *affective* and composed by variables of a different nature, such as the level of risk aversion, the degree of self-confidence and self-esteem of the worker, his/her perception of employability, etc. This set of affective or subjective variables is crucial in the process of

translating risk and cost factors into feelings of insecurity, as the rest of the variables operate through it.

Therefore, according to our model, subjective job insecurity is the product of the interaction of an objective situation as revealed by the information available, the cost of losing the job if that should happen, and the subjective or affective characteristics of the employees.

It is also important to bear in mind that, as can be seen from Figure 1, many of the variables affecting SJI are present in more than one of the dimensions behind SJI. For example, age is a variable to be considered when analysing the objective risk of losing a job, as the unemployment rate is age specific, but also when considering the cost of losing a job, as wages usually grow with age. What is more, as we will see further along, age is also present in the affective dimension that translates objective risks into subjective perceptions. Therefore, subjective characteristics are also influenced by objective ones since job, family and personal situations and experiences can influence personality, self-esteem, risk aversion and so on.

Figure 1 about here

This general model of SJI highlights the role of different variables of a diverse nature in the process of generating job insecurity, guiding the presentation of the following hypotheses. In order to account for the effect of objective risk variables we use the following variables:

Gender. Taking into consideration the usually higher female rate of unemployment, women should show higher subjective job insecurity, although after controlling for the different labour market characteristics of men and women, that is, after controlling for objective risk factors, these differences should disappear. In the affective realm, most studies on risk aversion and gender (Palsson, 1996, Hersch, 1998, or Halek and Eisenhauer, 2001) find that even after controlling for individual characteristics women have higher risk aversion than men, and therefore higher subjective job insecurity. Summing up, we should expect a positive impact of gender (being a woman) on SJI, although we could also hypothesise that this impact should be somehow reduced in those countries with fully developed Welfare States and more equal labour markets that compensate for the greater difficulties found by women in their working life.

Age. Young people usually have more insecure jobs and a higher turnover rate, *i.e.* higher risk of losing a job. Unemployment rates are also higher for young people. So we would expect higher job insecurity for younger workers, although the impact of this objective risk on SJI should be reduced once we control for the specific characteristics of the youth labour market. From a different perspective, most research on age and risk aversion (Bakshi and Chen, 1994, Halek and Eisenhauer, 2001) points to the existence of a direct relationship between age and risk aversion, so in the affective realm, and in relative terms, young people should show less subjective insecurity once we control for other risk factors.

Education. It can be argued that education increases the resources of employees for confronting difficulties in their firms and in the labour market. Therefore, we should expect a negative relationship between SJI and education, with workers with tertiary education showing lower SJI.

Sector of economic activity. Not all sectors of economic activity are equally stable. In these times of growing globalization, our hypothesis in relation to this variable is that employees in those sectors most open to foreign competition, notably industry, should have higher SJI. Moreover, the chances of regaining a job in this sector are lower due to its shrinking size (in terms of employment). Finally, following Iversen and Cusak (2000), under the assumption that skills in industry are firm specific, it can be argued than de-industrialisation will lead to higher SJI for industrial workers, with a type of human capital much less valued outside the industrial sector. A similar argument applies to agriculture due to the low alternative re-employment probabilities in rural areas.

Type of contract. With the unemployment rate, having a temporary contract is another major objective variable in explaining SJI. The relation between temporary employment and SJI should be a direct one.

Part time (PT)/full time (FT) job. This variable is difficult to interpret as it could simply reflect different types of persons showing different preferences. It is difficult to find reasons why there should be any difference in SJI between FT/PT workers fully explained by the type of working hours.

Trade Union Membership. The relation between SJI and TU membership is complex. On the one hand, we could argue that those affiliated with a TU should have lower SJI, since they have the collective support of the union (Bender and Sloane, 1999, Dekker and Shaufeli, 1995). On the other hand, union membership could be fuelled by a feeling of insecurity (Sverke and Hellgren, 2002).

Public/private sector. Workers in the public sector are highly isolated from the up and downs of the market. In fact, in many countries, such as Spain, for example, a majority of public sector workers are civil servants with employment for life. Working in the public sector, then, should affect SJI negatively.

Size of the firm. From one perspective, small firms may be less prepared to compete in difficult situations (technical change, globalization, etc.), contributing to SJI. Alternatively it can be argued that labour relations in small firms are more personal. If that is the case, employees of small firms could show higher confidence that their employers will do as much as they can to keep them in their labour force (Goss, 1988). However, it is also true that size, by itself, might not reflect the complexities of employment relationships (Atkinson 2008).

Collective agreement. Collective agreements can be interpreted as a limitation of the capacity of the firm to behave unilaterally. From that perspective having a collective agreement in the firm should have a negative impact on SJI.

National/international firm. It can be argued that transnational firms are less attached to their specific location than local firms. If that were the case, working in a transnational firm would contribute to higher SJI.

Firm's labour force changes. This variable complements the unemployment rate, and can be interpreted in terms of the micro-story of unemployment. Our point is that workers in firms showing a reduction in the labour force or in firms that have announced redundancies should show higher concern about their job security.

Unemployment is the prime suspect in explaining SJI and should have a positive impact on SJI. Nevertheless, bivariate analysis between these two variables shows that the unemployment rate by itself is far from explaining the differences in SJI between countries,

pointing to the importance of other variables. In order to capture the effects of the labour market characteristics we have introduced dummies to identify workers living in dynamic regions or geographical units with low levels of *unemployment.*

Finally, we consider wages, former employment search experience and family arrangements to proxy the cost of losing one's job.

Wage. In the model of figure 1 the relationship between wage and SJI is direct: the higher the wage, the higher the cost of losing the job and therefore higher SJI. At the same time, the higher the wage the lower the probabilities of finding a similar job with the same salary because very high salary jobs are rare[6], and therefore, the higher the SJI. Nevertheless, from a different perspective it can be argued that those with higher wages would have more savings, reducing the short term impact of unemployment and likewise reducing the level of SJI. Therefore, there may be transmission channels operating in opposite directions. If this argument is correct, the relation would depend on the power of both impacts. Furthermore, different effects could be dominant in different ranges of wage income: at low/medium wages the savings effect might be prevalent, at very high wage levels the cost of losing the job and difficulty of finding a similar job might be more important. In order to test this possibility we will introduce in the analysis both wages and square wages.

Employment search experience. In the same line of reasoning as above, we should expect that those workers with a past of long duration of job search should be more afraid of losing their job than those with no (or short) previous unemployment experience.

Family-living arrangements. Living with a (working) partner reduces the cost of losing a job, as there is another income in the house, so we should expect a negative relation between SJI and employees living with a working partner[7]. On the other hand, it can be expected that having children will increase the preoccupation, and therefore the psychological cost of workers in the event of losing their job, thus increasing SJI.

The Data

To empirically study how job insecurity perceptions are formed we have used a new data set: the Wage Indicator continuous voluntary web survey (WI)[8]. This study covers five European countries: Spain, Belgium, Finland, The Netherlands and Germany, the Wage Indicator countries that included the question about job insecurity in their questionnaires. The number of observations ranges from 85,000 in the Netherlands to 3,500 in Finland[9]. Data collection took place throughout 2005 and 2006. This type of survey has advantages and disadvantages. On the one hand, they give access to vast amounts of people at very low cost. On the other hand, this type of survey is systematically biased owing to different reasons, such as self-selection and internet access.

In order to attempt to correct some of the problems posed by this type of survey, namely the under-representation of certain groups of employees (older, living in rural areas, with lower education, etc), the www.wageindicator.org has developed a weighting methodology that has been tested for its efficiency. The results, which can be found in Pedraza *et al.* (2007), show that weights are able to partly solve the bias problem when calculating inequality indexes and salary regressions. The estimations reported below were calculated using WI weighted data[10]. Nevertheless, we have to acknowledge that there remains a problem of self-selection that is a product of unequal access to the Internet and the different interests in answering the survey.

Table 1 shows the proportion of workers who worry about their job security in five European countries (Spain, Belgium, Netherlands, Germany and Finland) according to the WageIndicator dataset, including the country mean of the variable (using weighted data). As mentioned before, although the countries were chosen according to the availability of the question on job insecurity, they represent an interesting combination in terms of different income per capita, labour market characteristics, unemployment rate and social expenditure. The index of SJI is quite broad, ranging from a minimum of 30% in Belgium to a maximum of 46% in Spain. Compared with other surveys that use conventional sampling methods, for example the ISSP 2005, two countries, Germany and Spain, show similar SJI indexes in both surveys, while for Finland the index according to ISSP is much lower[11]

Table 1 about here

Estimation strategy and results

We have estimated ordered multinomial and binomial country specific probit regressions. As stated above, the dependent variable is built from a WI question in which workers were asked to choose from among five possible answers (fully disagree, disagree, neutral, agree, fully agree) to the statement: "I worry about my job insecurity". In order to estimate the relationship between our dependent ordinal (categorical and ordered) variable and the set of independent ones, we started with the estimation of a multinomial model. The multinomial model is able to correctly predict a very different percentage for each outcome. Depending on the country, it is able to predict between 44% and 90% of values 1(fully disagree) and 5(fully agree). However, it was able to correctly predict only between 4% and 15% of values 2, 3 and 4. Under these circumstances, we considered it more appropriate to recode the dependent variable into a binary one and estimate a binomial probit regression with the advantage of making it possible to interpret the marginal effect of each variable on the probability of a worker feeling insecure. The recoded dependent variable takes value 1 when a respondent agrees or fully agrees with the above statements and value 0 otherwise. The model was estimated first in a parsimonious version including only demographic characteristics and a dummy to account for temporary employment (considered to be the best proxy of the objective situation of the worker). We have augmented the parsimonious version by including more explanatory variables. For the sake of economy of space we will only report the last version including all the variables, referring to the other specification in the results and conclusions whenever we consider parsimonious results relevant[12]. Finally, we ran a third binomial probit regression merging the data of the five countries and introducing country dummies, aiming to measure the impact of living in each country on SJI.

The results are reported in Table 2. The control group is a man, unmarried and without children living at home, between 25 and 34 years old, with a University education and not a

member of a trade union who works full time in the private service- sector with a permanent employment contract in a fully or partly owned domestic firm that has a collective agreement, employs between 100 and 500 employees[13] and with a stagnant labour force in the previous six months[14].

The results can be divided into two types: those that can be generalized across countries and those that can be considered country specific. Regarding the former, we have found the following conclusions. First, *gender* is not an explanatory variable of SJI, not being significant in any of the five countries. However, it is important to point out that if we use a very parsimonious model including only demographic variables and the type of contract, gender is significant in every country but Finland. When other explanatory variables capturing labour market, firm and individual job-related characteristics are introduced, *gender* loses its explanatory power. This leads us to the conclusion that women are not more insecure *per se*, on the contrary, their situation in the labour market makes them feel more insecure. In fact, in Finland, a country characterized by a more egalitarian labour market, the impact of being a woman is never statistically significant.

Table 2 about here

Second, in relation to the impact of *age*, which was measured taking as control group the age interval ranging between 25 and 34 years old, we found that, in every country but Belgium, the age interval below the control group feels less insecure. Although younger workers occupy more insecure jobs, their lower risk aversion and cost of losing the job explain the negative impact of young age on SJI: being below 25 reduces the probability of feeling insecure by 23% in Spain, by 14% in Finland, by 7% in Germany and by 4% in The Netherlands.

With respect to the two age intervals immediately above the control group, between 35 and 44 and between 45 and 54 years old, we find that employees in this age group feel more insecure in every country but Finland, where being between 35 and 44 is not significant. The increase in the probability of feeling insecure for this group ranges from 6 to 8%. As mentioned in the previous section, behind these results could be the fact that risk aversion increases with

age and that the chances of finding a similar job decreases with age, especially after the thirties[15]. The impact of the last interval, above 55 years old, differs among countries[16].

Third, as expected, the impact of having a *temporary contract* on SJI is clearly positive in every country. The objective situation has a direct impact on SJI, increasing the probability of feeling insecure by 15% in Germany, 22% in the Netherlands, 23% in Spain, 28% in Belgium and 48% in Finland.

Fourth, as expected, being a *civil servant* reduces the probability of a worker feeling insecure. This variable is significant in every country. Only in the Netherlands, where the variable was not available and was substituted by a dummy for those working in the public sector, is it not significant. Being a civil servant reduces the probabilities of SJI by 26% in Germany, by 22% in Spain, by 14% in Finland and by 13% in Belgium.

Fifth, regarding the *evolution of the labour force within the firm*, working in a firm where the labour force has been reduced in the previous semester, or, where redundancies have been announced (in Germany), increases the probability of a worker feeling insecure from 7% in Spain to 29% in Belgium. In contrast, the results regarding the impact of labour force increases in the previous six months differ among countries, showing the expected sign (negative impact on SJI) in all countries but Spain[17].

Sixth, *former employment search experiences* matter in every country but Belgium. Spanish and Finnish workers that had to search for their first job for more than six months have, respectively, 9% and 11% more probabilities of suffering SJI; Dutch workers that did not have to search for their first job have a lower probability, 3%, of suffering SJI; finally, the more often a German worker changes employer the higher his or her probability of feeling insecure[18]: each contract increases the probabilities of feeling insecure by 1%.

Seventh, *union membership* shows a direct positive impact, between 6 and 7%, on SJI in 3 countries (Belgium, Netherlands and Germany), not being significant in the rest (although the sign is also positive). Thus, according to our data, union membership is at least partially self-selected and driven by preoccupation with the situation of the labour market. In contrast, having

a *collective agreement* reduces SJI in Belgium, Finland and Germany, is not significant in The Netherlands and increases SJI in Spain[19].

Eighth, in all countries, and contrary to what was expected, having family responsibilities does not seem to contribute to SJI. The same can be said in relation to counting on a second income in the family, a variable only relevant (with the expected negative sign) in the Netherlands and Germany.

Ninth, to account for aggregate labour market characteristics we introduced dummy variables identifying workers living in dynamic-low employment environments, in Spain, Belgium and Germany. The dummy variable identifies low unemployment-dynamic regions in Spain (Catalonia, Madrid, the Basque Country, Navarra and The Balearic Islands), in Belgium (Flanders and Brussels) and in Germany (the Western part of the country). Living in Brussels or Flanders reduces the probability of a Belgian worker feeling SJI by 2%, and 9% for a German worker living in West Germany. However, and surprisingly, living in a low unemployment region in Spain does not reduce the probability of a Spanish worker feeling insecure. This result is not robust to the specification of the model, however. If the model is specified without introducing *Firm Characteristics*, living in a low unemployment region turns into a significant variable, with the expected sign.

The second set of results groups those that can be interpreted as country specific, although sometimes they apply to more than one country. In this respect, it is important to note that in an exploratory regression using merged data including the five countries, we found that living in Belgium, Finland, the Netherlands or Germany reduces the probability of feeling SJI with respect to living in Spain[20], pointing to the existence of country specific elements. For example, *education* has the expected sign (the lower the education the higher the feeling of insecurity) in all the countries but Finland and the Netherlands, where the variable has the expected sign but is not statistically significant..

Regarding sectors of activity, the results show that working in industry only has a positive and significant effect on SJI in Belgium, 4%, and Germany, 8%. Working in agriculture only has a significant positive effect in Spain, 20%, and Belgium, 27% Finally, working in

construction increases SJI in some countries (12% in Finland and 17% in Germany), decreases SJI in others (8% in Belgium and 4% in the Netherlands), and it is not significant in Spain. These results are not related to the specific situation of the sector in 2005-6, as in all countries the sector was growing.

The characteristics of the firm also show a diverse impact in the countries of the sample although in most cases size does not seem to have an impact on SJI, perhaps due to the fact that size by itself does not reflect the complexities of the employment relationship. Exceptions are Germany, where working in a firm with less than 100 employees has a positive impact on SJI (an increase of 6%), while working in a firm with more than 500 reduces job insecurity by 3%. These results are consistent with research showing that in Germany, job security is lower in small firms (Wagner 1997). In relation to the impact of w*ages*, another important variable in our model, the results are also mixed. In general, they point to the prevalence of the higher income-higher saving effect over the higher cost of losing the job effect. In all countries, the relation of wage and SJI is negative: the higher the wage the lower the SJI (with the exception of Spain where the variable is not significant). Nevertheless, the established hypothesis regarding the quadratic effect of wages holds in Belgium, the Netherlands and Germany. In these countries, the higher the salary the lower SJI, but very high salaries increase job insecurity[21]. In Finland, wages do not have any impact on SJI under either specification.

Finally, *part–time* work does not have a clear effect on SJI, reducing SJI in Belgium and Germany, but with no effect on the rest of the countries. This result, in any case, should not come as a surprise since, as mentioned before, there is no clear rationale for this variable to impact SJI once we control for other variables like gender, wage, etc.

Conclusions

The results of the binomial regression using WI data are consistent in many respects with the theoretical framework presented in the paper. Although some variables are not significant, most of them have the hypothesised impact on SJI.

Starting with the objective factors: (1) Certain variables, such as age, influence SJI not only through the objective risk that different age groups face in the labour market, but through subjective aspects like risk aversion. (2) Other demographic characteristics, such as being a woman, are highly related to the situation that this group faces in each labour market; therefore, when controlling for these differences the specificity of sex disappears. (3) Education is also an important variable in explaining SJI; in general, more education means lower SJI although the impact is not uniform in all the countries of the sample. (4) The variable often used to measure objective job insecurity, type of contract, has a clear and powerful explanatory power of SJI in every country. Firm characteristics and situation, such as labour force changes, are also important in explaining SJI. (5) Aggregated labour market characteristics, such as unemployment levels, are able to explain differences in SJI even within the context of the same institutions and labour legislation, that is, within the same country.

With respect to the objective pecuniary cost of losing the job, we found that in all countries the higher the wage the lower the probability of feeling job insecurity. We interpret these results in terms of the higher saving capacity of those with higher wages. Working in the same direction, we could speculate that higher wages could also operate through the affective channel, reducing SJI if those with higher wages have a higher sense of control over their lives or are in administrative jobs more cushioned from the ups and down of the market (compared to direct workers). Nevertheless we found indications that at very high wages the impact could be insecurity enhancing (probably due to the higher cost of loosing the job). Finally, former experiences of employment search do have a clear impact on SJI in every country.

Summarizing, there are variables, such as *age*, *temporary contract*, being a *civil servant*, *evolution of the labour force within the firm*, and past *search experiences* whose effects are clear and are shared by all countries, making it possible to generalize some of the results to a set of different countries in terms of unemployment, development of the welfare state, etc. There are

other variables, like gender, whose effect disappears as we control for objective variables such as age, wage, and so on. A third set of variables, such as *firm size, time* or *union membership*, *or type of activity*, have nation-specific impacts. Differences in labour market conditions and regulations could be behind those differences.

Although these conclusions can be interpreted as a step forward in the process of identifying job insecurity predictors, as shown in the low R squared obtained, there is much regarding job insecurity that remains unknown. In fact, the relative low explanatory power of the analysis performed can be interpreted in terms of the important role played by the affective variables in the determination of SJI, a dimension highly neglected in this (and other) papers due to the different nature of the data needed. In fact, we could interpret the residual, at least in part, as the role played by these affective variables on SJI. As a result, future research should focus on the analysis of other variables, probably of a psychological nature.

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NOTES

[1] National surveys, such as the Spanish Barometer of May 2005, produced by the Centre for Sociological Research, confirm this pattern. In this survey, to the question: "Which of the following aspects of a job do you value more? 74 % answered job security, followed by high wages (50 %).

[2] A summary of the survey methodology and the sample used for the analysis is given below. For more details see Muñoz de Bustillo and Tijdens (2005) and Pedraza *et al.* (2007).

[3] The Survey of Economic Expectations is a periodic module of Wisconsin's Continual Omnibus National Survey. For details see http://www.faculty.econ.northwestern.edu/faculty/manski/see_introduction.pdf

[4] For example, in Näswall and De Witte (2003) the Swedish sample was taken only from two emergency hospitals where the majority of the respondents were women and the Dutch sample consisted only of Union members.

[5] See Manski and Straub (2000) using US data.

[6] According to the 2005 wave of the ISSP the average percentage of workers considering it difficult or very difficult to find a similar job for a group of 26 countries or territories was 52.2. The percentage for Finland was 51.6, 29.1% for Flanders, 71% for Germany (West) and 35% for Spain.
[7] This interaction is not the only one that can arise between the members of a household with potential effect of SJI. In this respect, Mauno and Kinnunen (2002), for example, have found the possibility of contagion of insecurity between the spouses or partners of a household.
[8] More information about the survey can be found at http://www.wageindicator.org/main/researchlab.
[9] The details of the sample can be obtained from the authors upon demand.
[10] The same estimations were run using non-weighted data. The results obtained were not significantly different, they are available under request.
[11] The ISSP (2005) does not cover the Netherlands, and only covers the Flemish part of Belgium, so the comparison for these two countries is not possible.
[12] We estimated five multinomial and binomial different models for every country; results are available upon request.
[13] In the case of Spain, between 10 and 100 employees.
[14] In the case of Germany in firms where redundancies have not been announced.
[15] As we have controlled for wages, the effect of age on SJI has to be explained for reasons different to the higher wage of older workers and thus the higher cost of losing their jobs.
[16] Being older than 55 is only significant in Spain and the Netherlands, having a positive impact on SJI in both countries, 17% and 9% respectively. In Finland being over 55 reduces the probabilities of feeling insecure and in Belgium and Germany it is not significant. The explanation for these results cannot be found in differences in the different average exit age from the labour force, nor in the unemployment rate of the age group.
[17] Working for a firm that has increased its labour force in the last six months reduces SJI in Finland by 7%, and the Netherlands by 6%. Paradoxically, in Spain the effect is the opposite, by 9%.
[18] Due to the lack of data it was not possible to homogenise this variable.
[19] This last counterintuitive effect can be explained by Spanish workers' lack of knowledge about the existence of a collective agreement in their firms. In fact, although almost 92% of Spanish workers have a collective agreement, only 80 of the sample answered yes to this question.
[20] For the sake of economy of space the regression is not included in the paper, although it is available on request from the authors.
[21] In the case of Spain wages are significant (and negative) only when running the model without the squared values of gross wages.

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REFERENCES

Aaronson, D. and Sullivan, D. G. (1998) "The decline of job security in the 1990's: Displacement, anxiety and their effect on wage growth". *Federal Bank of Chicago, Economic perspectives*, XXII: 17-43

Anderson, C. J. and Pontusson, J. (2007) "Workers, worries and welfare states: Social protection and Job insecurity in 15 OECD countries", *European Journal of Political Research*, 46:211-235.

Ashford, S.J., Lee, C. and Bobko, P. (1989) "Content, Causes and Consequences of Job Insecurity: A Theory-Based Measure and Substantive Test", *Academy of Management Journal* 32:803-29.

Atkinson, C. (2008) "An exploration of small firm psychological contracts", *Work, Employment and Society,* 22(3): 447-465.

Bakshi, G. and Chen, Z. (1994) "Baby Boom, Population Aging, and Capital Markets", *Journal of Business* 67(2): 165-202.

Bender K. A. and Sloane, P. J. (1999) "Trade union membership, tenure and the level of job security", *Applied Economics,* 31: 123-135

Böckerman, P. (2004) "Perception of Job Instability in Europe", *Social Indicators Research* 67(3): 283-314.

Cambell, D. Carruth, A., Dickerson, A. and Green, F. (2007) "Job Insecurity and Wages", *The Economic Journal* 117(518): 544-566, March.

Cheng Grand, H.-L. and Darius, Chan, K.-S. (2008) "Who Suffers More from Job Insecurity? A Meta -Analytic Review", *Applied Psychology* 57 (2):272–303

Dekker, S.W.A. and Schaufeli, W. B. (1995) "The effects of job insecurity on psychological health and withdrawal: a longitudinal study" *Australian Psychologist* 30: 57-63

Erlinghagen, M. (2007) *Self-Perceived Job Insecurity and Social Context. Are there Different European Cultures of Anxiety*?, DIW Berlin Discussion Paper 688. April.

Goss, D. (1988), "Social Harmony and Small Firm: A Reappraisal", *Sociological Review,* 36(1): 114-32.

Green, F. (2003) *The Rise and Decline of Job Insecurity*. University of Kent. http://www.kent.ac.uk/economics/papers/papers-pdf/2003/0305.pdf

Green, F. (2008) "Job Quality in the Affluent Economy". Presentation to Employment Analysis Unit, DG Employment, Social Affairs & Equal Opportunities. May. Brussels.

Green, F. Cambell, D., Carruth, A. and Dickerson, A. (2001) "An analysis of subjective views of job insecurity". *University of Kent at Canterbury*, Working paper 08/01

Greenhalgh, L. and Rosenblatt, Z. (1984) "Job Insecurity: Toward Conceptual Clarity" *The Academy of Management Review*, 9(3): 438-448 .

Halek, M. and Eisenhauer, J. G. (2001) "Demography of risk aversion" *Journal of Risk and Insurance* 68(1): 1-24.

Hartley, J. D. Jacobson, B. Klandermans, and van Vuuren, T. (1991) *Job Insecurity.* London: Sage.

Hellgren, J., M. Sverke and K. Isakson (1999) "A Two-Dimensional Approach to Job Insecurity: Consequences for Employee Attitudes and Well Being", *European Journal of Work and Organizational Psychology* 8: 179-95.

Hersch, J. (1998) "Compensating Differentials for Gender Specific Job Injury Risk", *American Economic Review* 88(3): 589-608.

ISSP (2005) *International Social Survey Program. Module on Work Orientation.* Available at: http://www.issp.org/

Iversen, T., and Cusak, T. (2000) "The causes of welfare state expansion", *World Politics* 52(3): 313-349.

Manski, C. F., and Straub, J. D. (2000) "Workers Perceptions of Job Insecurity in the Mid-1990´s: Evidence from the Survey of Economic Expectations", *Journal of Human Resources*, 35(3): 447-479.

Mauno, S. and Kinnunen, U. (2002) "Perceived Job Insecurity Among Dual Earner Couples: Do its Antecedents Vary According to Gender, Economic Sector and the Measure Used", *Journal of Occupational and Organizational Psychology,* 75 (3): 295-314.

Muñoz de Bustillo, R. and Pedraza, P. de (2007) "Subjective and Objective job insecurity in Europe: measurement and implications". WOLIWEB. www.wageindicator.org/documents/publicationslist/jobinsecurity2007

Muñoz de Bustillo R. and Tijdens, K. (2005) "Measuring job insecurity in the Wageindicator questionnaire". WOLIWEB. www.wageindicator.org/documents/publicationslist/jobinsecurity2005

Näswall, K. and De Witte, H. (2003): "Who feels insecure in Europe? Predicting job insecurity from background variables", *Economic and Industrial Democracy* 24(2): 189-215.

OECD (1997) *Employment Outlook 1997*. Paris:OECD.

Palsson, J. M. (1996), "Does the Degree of Relative *Risk* Aversion Vary with Household Characteristics?", *Journal of Economic Psychology* 17(6): 771-787

Pedraza, P., Muñoz de Bustillo, R. and Tijdens K. de (2007) "Sample bias, weights and efficiency of weights in a continuous web voluntary survey". WOLIWEB. http://www.uva-aias.net/uploaded_files/publications/WP60.pdf

Rocha, C. Crowell, J. H. McCarter, A.K. (2006) "The Effects of Prolonged Job Insecurity on the Psychological Well Being of Workers", *Journal of Sociology and Social Welfare*, 33(3): 9-28.

Sverke, M. and Hellgren, J. (2002) "The Nature of Job Insecurity: Understanding Employment Uncertainty on the Brink of a New Millennium", *Applied Psychology: An International Review* 51(1): 23-42.

Sverke, M. and Goslinga, S. (2003) "The Consequences of Job Insecurity for Employers and Unions: Exit, Voice and Loyalty", *Economic and Industrial Democracy* 24(2): 241-70.

Sverke, M. Hellgren, J. and Näswall, K. (2002) "No Security: A Meta-analysis and Review of Job Insecurity and Its Consequences", *Journal of Occupational Health Psychology* 7(3): 242-64.

Sverke, M. and Hellgren, J. (2002) "The Nature of Job Insecurity: Understanding Employment Uncertainty on the Brink of a New Millennium", *Applied Psychology: An International Review* 51(1): 23-42.

Wagner, J. (1997) "Firm Size and Job Quality: A Survey of the Evidence from Germany", *Small Business Economics* 9: 411-425.

Wang, H. and Hanna S. (1997) "Does Risk Tolerance Decrease With Age", *Financial Consulting and Planning* 8(2): 27-31

Witte, H. D. (1999) "Job Insecurity and Psychological Well Being: Review of the Literature and Exploration of Some Unresolved Issues", *European Journal of Work and Organizational Psychology* 8(2): 155-177

Table 1.: I worry about my job security (%). Mean values and SJI index

	Neutral	SJI index*	Mean values** Weighted data
Belgium	17.21	29.98	2.638
Finland	14.15	39.58	2.886
Germany	15.59	34.50	2.764
Netherlands	16.17	27.60	2.525
Spain	14.54	46.02	3.300

* Agree plus fully agree. ** fully disagree=1; disagree=2, Neutral=3. agree=$ fully agree=5
Source: authors' analysis from WageIndicator dataset.

Table 2.- Binomial probit models for worker's probability of feeling insecure

		Spain	Belgium	Finland	Netherlands	Germany
1. Objective job insecurity variables						
1.1.-Individual demographics characteristics						
Gender (female)		.0107716	-.0027746	.0056655	-.0028164	.0133348
Age	16-24	-.2377326 *	-.412532	-.1401227*	-.0404214*	-.076664 *
	35-44	.0670171 *	.0637983 *	.031532	.0567654*	.0874104 *
	45-54	.0829027 *	.0545805 *	.0521873**	.1112772*	.0766758 *
	> 55	.169516 *	.018155	-.0585915**	.0926408*	-.0147083
Education	Primary	.165865 *	.0564517 *	.0053075	.0083843	.0738045 *
	Secondary	.0754202 *	.0230086	.0296695	.0392934*	.0146601
1.2.- Individual job related characteristics						
Sector of activity	Agriculture	.1977828 *	.2756705 *	n.a	-.0246017	-.0568838
	Industry	-.0192499	.0427286 *	.0218931	-.0013918	.088133 *
	Construction	.0033185	-.079081 *	.119939 *	-.0430548 *	.1744771 *
Type of contract	Temporary contract	.2314941 *	.2790716 *	.4788164 *	.2202189 *	.1538437 *
	Working part time	.0344649	-.053298 *	.0070218	-.0110988	-.0508522 *
Trade Union membership		.0102645	.0605566 *	.0396709	.0593038 *	.0737448 *
Public sector/civil servant [a]		-.2272105 *	-.1377214 *	-.142416 *	-.002803	-.2670659 *
Firm characteristics	Firm < 100	-.0135395	.0260098	-0108405	-.0022282	.0683052 *
	Firm > 500	.0391019 *	.0004714	-.0208967	-.00553	-.0370099 *
	No collective agreement	-.0429318 *	.062238 *	.0796635 *	-.0011955	.0670172 *
	Foreign firm	.0297009	.0580628 *	.1703077 *	.0175558 **	n.a.
Firm's labour force changes	Decrease	.0775564 *	.2937702 *	.2405115 *	.2581038 *	n.a.
	Increase	.0893543 *	-.0336187	-.0716962 *	-.060818 *	n.a.
	Redundancies announced	n.a.	n.a.	n.a.	n.a.	.2587055 *
1.3.- Aggregate labour market characteristics.						
Living in a low unemployment region, Flanders or Brussels, West Germany [b].		-.0160144	-.1040188 *	n.a.	n.a.	-.0913461
2.- Cost Variables						
2.1.-Pecuniary costs						
	Gross annual wage	-9.97e-07	-.1.63e-06 **	-2.73e-07	-2.22e-06 *	-2.84e-06 *
	Gross annual wage sq.	8.30e-13	4.22e-12 **	-3.80e-12	5.61e-12 *	5.17e-12 **
2.2.- Difficulty of finding another job						
Search experience	Long search	.092763 *	.033989	.1102585 **	n.a.	n.a.
	No search[c]	n.a	n.a.	n.a.	-.0305879 *	n.a.
	Number of change of employer					.0101344 *
2.3.- Family- living arrangements						
	Child living at home	.0265186	-.0139277	-.0316996	.00003	-.0133536
	Working partner/married [d]	.0277304	-.0172976	-.0163746	-.0176108 *	-.0250607 *
Pseudo R^2		0.0601	0.0761	0.1158	0.0717	0.1051
χ^2		0.000	0.000	0.000	0.000	0.000
Right predictions %		60.9%	72.6%	69%	73.51%	70.52%

Notes: dF/dx is for discrete change of the dependent dummy variable from 0 to 1; *Significant at 95%; **Significant at 90%. The specific level of significance can be obtained from the authors. n.a.: not available. a) *Civil servant* in Spain, Belgium, Finland and Germany, for the Netherlands: *working in the public sector* b) *living in a low unemployment region,* that is, Catalonia, Madrid, Basque Country, Navarra and the Balearic Islands, for Spain, *living in Brussels or Flanders* for Belgium and *living in West Germany for Germany* c) only available for The Netherlands d) we used marital status (*married*) in countries where the variable *having a working partner* was not available.

Figure 1. Factors affecting subjective job insecurity.