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Making the Risk of Job Loss a Way of Life: Does it Affect Job Satisfaction?

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ABSTRACT: This study investigates the relationship between job satisfaction and job security in European countries. In doing so, it attempts to take into account the endogenous nature of the job security – job satisfaction relationship after controlling for the various economic and personal characteristics. The results show that, workers in jobs with low likelihood of job termination derive higher utility from work compared to the workers in insecure jobs. This holds even after controlling for endogeneity by using both a conventional IV approach and a selection model. This appears to be the case for both men and women.

JEL Classification Code: J28 ; J16 ; J81

Keywords: Job satisfaction; Job security; Gender differences; Endogeneity

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1. INTRODUCTION

The marked changes in European economies during the last quarter of the twentieth century, with the emphasis on technology and innovation are accompanied by an increase in the so-called labour market flexibility (Harrison, 1998). In the past, firms, in order to attract and retain the best elements of their workforce, had relied on long-term employer-employee relationships as means of human resource management with the result of labour hoarding during periods of weak demand. Yet, during the last quarter of the century these attitudes come to be considered as obsolete. Increases in the productivity resulting from the investment in new technology induce firms to respond to periods of weak demand by firing workers. With company loyalty to workers lowered, the likelihood of someone loosing his or her job increase dramatically. Though this increased flexibility is viewed as having a positive effect on the employment levels and as facilitating the job seekers' access to the labor market, its impact on individual well being remains unclear since flexible employment practices have repercussions on the likelihood of job loss. This is what Harrison (1998) has named the "dark side" of labour market flexibility. Empirical research has clearly documented its repercussions. Employment Outlook (1997) reports a substantial decrease of job security for all European countries and Aaronson and Sullivan (1998) and Blanchflower and Oswald (1999) have found that

from 1991 onwards, the proportion of US workers who believed that they were "not at all likely" to lose their jobs fell, despite decreasing overall unemployment. Nickell *et al* (2002) have reported that, for British men, job insecurity has substantially increased, particularly for higher skilled groups since the early 1980s. Finally, European Commission (2002) has shown that the risk of unemployment for temporary employees is four times higher than the risk for employees on permanent contracts. This risk is particularly high for low skilled and older workers. A quarter of workers, mainly young, women and low skilled are in jobs, which are characterised by a high risk of job termination.

From a human resource management point view, subjective perceptions of risk of job loss and job satisfaction can have important motivational effects for the workforce, which in turn has consequences on productivity, efficiency wages and employment. In addition, for assessing the desirability of labour market reforms towards flexible labour market policies, the issue of increased perceived risk of job loss and its effects on job satisfaction are important to policy makers as low job satisfaction may imply lower productivity (Wright *et al*, 2002). In firms, which are downsizing through redundancy schemes workers suffer from decreased motivation, morale, confidence and increased stress, symptoms which are labeled as the "Survivor Syndrome" (Brockner (1992)). Moreover, Green *et al*, (2000) have shown that increased risk of job loss is harmful for welfare, having repercussions on mental health of employees and their families.

The aim of this study is to assess the effect of increased perceived risk of job loss on the worker's utility derived from work as approximated by the stated job satisfaction. Furthermore, an important issue that is largely ignored in the literature is that though perceived risk of job loss may affect workers' job satisfaction, it may also be the case that dissatisfied workers may face an increased risk of losing their job. Thus, this study takes into account this endogenous nature of the risk of job loss –job satisfaction relationship. The results show that, after controlling for endogeneity, the perceived risk of job loss has a strong and significant detrimental effect on job satisfaction. Interestingly, Campbell *et al* (2001) have found that the expectations of unemployment reported by the workers are strong predictors of actual unemployment experiences occurring in the subsequent year.

The paper is organized as follows: Section 2 offers a brief review the relevant literature. Section 3 discusses the data used in this study, and Section 4 focuses on the estimation methodology. Finally, Section 5 reports the estimation results and Section 6 concludes.

2. JOB SATISFACTION AND JOB SECURITY

Following the work of Locke (1969), Hamermesh (1977), Freeman (1978) and Borjas (1979), economists became increasingly interested in issues related to subjective evaluations of the utility derived from work as measured by stated job satisfaction since it is related to gains in efficiency at an organisational and an individual level (Burchell *et al* (1999) and Brockner *et al*, (1988), Green *et al*, (2000)).

The literature provides evidence for a strong relationship between job satisfaction and specific individual socio-economic characteristics, namely, gender (Clark, 1997; Kaiser, 2002; Moguerou, 2002), age (Clark and Oswald, 1996; Groot and Van de Brink, 1999), education (Ward and Sloane, 1999), wages (Lydon and Chevalier, 2002), working hours (Clark and Oswald, 1996; Drakopoulos and Theodossiou, 1997), trade union status (Borjas, 1979; Freeman and Medoff, 1984; Lillydahl and Singell, 1993) and establishment size (Lang and Johnson, 1994; Sloane and Williams 2000).

One consistent finding in the job satisfaction literature is the large and significant effect of risk of job loss on job satisfaction. The International Social Survey Programme (ISSP (1989)) survey reveals that in eight out of the nine OECD countries surveyed, job security ranks as the most important characteristic of a job among the respondents. Only in the Netherlands the respondents rank job security below having an interesting job. Blanchflower and Oswald (1999) use cross-section information from three sources "the International Social Survey Programme" (1989), "the Eurobarometer Surveys" (1995-1996), and "the US General Social Surveys" (GSS) data and show that expectations of possible job loss have the largest negative effect on job satisfaction. Kaiser (2002) confirms this result by investigating cross-national differences in the determination of job satisfaction by different type of contract and concludes that workers in permanent full and part-time jobs with the lowest likelihood of job loss appear to also enjoy high job satisfaction. In contrast, workers in fixed-term jobs and self-employment who bear a high risk of job loss appear to have low job satisfaction. Similarly, Moguerou (2002) shows that job security is a major determinant of job satisfaction in all sectors of employment

for both males and females and Heaney *et al*, (1994) have conclude that high likelihood of losing the job is cumulative stressor for the worker with increasing effects over time.

Souza-Poza and Souza-Poza (2000)[1] reports that job security significantly increases the individual's job satisfaction. Job security is ranked 7th in importance among all the determinants of job satisfaction. They find that some determinants of job satisfaction such as job security are country specific. Thus, perceived risk of job loss is highest among Danish workers and lowest among French workers.

The literature reviewed above shows that effects of perceived risk of job loss are significant and important. Yet, the literature has largely ignored the issue of the endogeneity in the job satisfaction – risk of job loss relationship. Thus, this study adds to this literature by confirming that the significant effect of perceived risk of job loss on job satisfaction persists even after controlling for the endogeneity in this relationship.

3. DATA AND MEASURES OF JOB SATISFACTION AND JOB SECURITY

The data set used in this study is taken from a single year –1996- of the Eurobarometer 44.3OVR, "Employment, Unemployment and Gender Equality". The survey covers issues on employment, general attitudes toward work, work organization and several socio-demographic variables. It contains questions on job satisfaction in general and

[1] Sousa-Poza and Sousa-Poza (2000) analysed job satisfaction on the assumption that it depends on the balance between work-role inputs (education, working time, effort) and work-role outputs (wages, fringe benefits, status, working conditions, intrinsic aspects). Thus, if work work-role outputs ("pleasures") increase relative to work-role inputs ("pains"), then job satisfaction will increase.

questions which are related to a number of specific aspects of job satisfaction. In this study a sub-sample of 5,778 workers from EU countries is used. Non-employed and self-employed individuals, members of the armed forces and people older than 65 years of age are excluded from the sample.

The measure of "overall job satisfaction" is derived from the following question:

"How satisfied would you say you are with your job?"

The answers are ranked on a scale from 1 (completely dissatisfied) to 7 (completely satisfied. This is the dependent variable to be explained by a set of personal and job characteristics.

Weiling (2000) suggests that job security is the likelihood of keeping a job until the person decides otherwise, or it can be measured in terms of unemployment prospect[2]. In this study the risk of perceived job loss is measured in terms of expectations of job loss based on the following question:

[2] The risk of perceived job loss can be measured by number of ways. In some surveys, respondents are asked whether they agree or disagree with the statement "My job is secure" (Bender and Sloane, 1999). However, this type of question may lead the respondents to consider the wider implications of insecurity, such as the stability of their employment conditions (Burchell et al, 1999). The Economic Outlook (OECD, 1997) calculates job security as the simple average of the percentage of individuals reporting favorable answers to a series of questions regarding facets of job security namely: 1) I am frequently worried about the future of my company; 2) My company offers a level of job security as good as, or better than, the job security offered in most other companies in our industry; 3) I can be sure of a job with my company as long as I perform well; 4) How satisfied are you with your job security?

"How likely or unlike is it that you will lose your job or decide to leave your employer or forced to close your business for some reason over the next 12 months?"

Individuals are required to respond on a four-point scale, (ranging from very likely to very unlikely)[3].

Nickell *et al* (2002), Aaronson and Sullivan (1998), Green *et al* (2000), Green *et al* (2001)) use also this measure of job security[4]. Importantly, Campbell *et al* (2001) find that the expectations of job loss reported by the workers are strong predictors of actual unemployment experiences occurring in the subsequent year.

Figure 1 shows that the most satisfied workers are in jobs with low risk of job loss. Approximately only 3.4% of satisfied workers in 1996 viewed their job as being not secure in terms of continuation of the employment contract. For those who are dissatisfied with their jobs, 21.95% of workers believe job loss to be "very likely". Thus, the fear of job loss is confined to workers with low job satisfaction. However, it might be argued that dissatisfied workers may cause their own jobs to become more likely to be terminated. Whether the correlation shown in Figure 1 is spurious due to endogeneity or not, is the focus of this paper. Thus, this study attempts to assess the effect of perceived job loss on job satisfaction after controlling for the possible endogeneity in the relationship.

3 Those who replied "don't know" are excluded from the sample.
4 There is lack of datasets on job security combined with job satisfaction. To the knowledge of the authors this is possible only in waves 6 and 7 (1996 and 1997) of the British Household Panel Survey, in the Eurobarometer 44.3OVR, "Employment, Unemployment and Gender Equality" and in the US General Social Survey (GSS). This explains the limited research on this subject.

The variables included in the model are defined in the Appendix Table 1. Appendix Table 2 reports the sample means and the means of the sample disaggregated by gender.

4. EMPIRICAL METHODOLOGY

The methodology employed is to run regressions that relate the job satisfaction to the perceived risk of job loss and a number of personal and job characteristics. The variables L_i and S_i namely the job satisfaction and the perceived risk of job loss are ordered categorical variables. In this study continuous versions of the job satisfaction variable and of the perceived risk of job loss variable are used. Following Freeman's (1978) the job satisfaction variable and the perceived risk of job loss variable are rescaled according to the standard normal distribution. With this unit transformation, the above variables become z-scores measuring the number of standard deviations between a given response and the mean. This transformation of ordered variables into continuous variables preserves the rank-order of the values and yields qualitatively similar results with the original variables.

The model is:

$$Li = \theta X_i + \delta S_i + \varepsilon_i \qquad (1)$$

$$S_i = \alpha X_i + \lambda Z_i + u_i \qquad (2)$$

where L_i is the stated job satisfaction, X_i is a vector of k_1 exogenous variables, S_i is the perceived risk of job loss which is the endogenous variable - and Z_i is a vector of k_2 instrumental variables, $k_2 \geq k_1$ and $E(X_i, \varepsilon_i)=0$, $E(Z_i, u_i)=0$. Since it is likely that the perceived risk of job loss affects job satisfaction and vice versa there is a possible endogenous relationship between these variables and the estimation of job satisfaction equation (L_i) by OLS will produce biased and inconsistent estimates. Therefore the instrumental variables (IV) approach is used (Wooldridge, 2000; Davidson and MacKinnon, 1993[5]).

Following Harmon and Walker (1995) the estimation strategy is implemented in three stages: In the first stage, appropriate instruments variables are chosen i.e., variables that are assumed to be highly correlated with the perceived risk of job loss but are orthogonal to the measure of job satisfaction. These are included in the perceived risk of job loss equation (equation-2). In this study, the instrumental variables are generated by exploiting some additional information available in the survey. In particular, the respondents are asked the following question:

"For you personally, how important do you think each of the following is in choosing a job? Would you say it is very important, important, neither important or unimportant, or not important at all?

[5] Stata Manual 2003- (Vl 2, p.186)

There is a list of options available for different job characteristics from which the respondent can chose. Among them is the item *'a secure job'*.

The four-point scale ranking the importance of this preference is collapsed to a binary variable indicating that the individual considers that a "secure job is very important" (secu_vi) when she or he is in the process of choosing *a* job. This variable is attitudinal and, importantly, it does not refer to the respondent present job. Therefore, it is reasonable to assume that it is exogenous to the model. Specifically, whether an individual feels that a "secure job is very important", when he or she is choosing a job, may be central to his decision to accept or reject a job at the time of hiring, (when she or he is in the process of deciding about a job offer), there is no compelling reason to assume that this attitude has an independent effect on his or her current job satisfaction. Yet, it is a standard problem with such selectivity models that the identifying restrictions appear always to be somewhat *ad hoc*. Therefore, in order to provide further evidence on the appropriateness of the chosen instrument the Staiger and Stock (1997) test for exogeneity is utilized.

In the second stage, the predicted values of perceived risk of job loss $\widehat{S}$ are obtained from equation (2). In the third stage $\widehat{S}$ is included in the job satisfaction regression (equation 1). The above methodology is implemented separately for the whole sample data and for each gender-specific sub-sample. However, when the generated regressors $\widehat{S}$ is introduced in the job satisfaction regression, the standard errors of this regression should

be adjusted accordingly. In this study all standard errors of the third stage job satisfaction regressions are adjusted via Bootstrapping[6].

To investigate the sensitivity of the results an alternative method of estimation is used (Harmon and Walker (1995))[7]. This methodology controls for the endogeneity of the perceived risk of job loss via a selection model using a Heckman's (1979) two-step estimation approach. This is as follows:

Job Satisfaction: $$Li = \theta X_i + \delta S_i + \varepsilon_i \quad (3)$$

Perceived risk of job loss: $$S^*_i = \alpha X_i + \lambda Z_i + u_i \quad (4)$$

Where S_i=1 if S^*_i>0 and S_i=0 if $S^*_i \leq 0$, X_i and Z_i are defined as above.

In the first stage of the selection model, equation (4) is estimated using a probit model and the Mill's ratio is obtained $\lambda = \varphi(X_i\hat{h}) \Big/ \Phi(X_i\hat{h})$ where $\varphi(.)$ and $\Phi(.)$ are the standard normal density and distribution functions, which then is used as instrument to obtain unbiased estimates of the following job satisfaction equation (5).

Job Satisfaction with selectivity term: $$L_i = \theta X_i + \delta S_i + \sigma_u \, \varphi(X_i\hat{h}) \Big/ \phi(X_i\hat{h}) \quad (5)$$

[6] The authors are grateful to an anonymous referee of this journal for this point.
[7] Harmon and Walker (1995) uses an ordered probit. In this study a binary probit is used.

Where: σ_u is the covariance between the reduced-form of perceived risk of job loss equation (4) and the job satisfaction equation (3) errors. Estimate of σ_u indicates the direction, which the OLS estimates are biased.

5. THE RESULTS

This section presents: a) the results of the perceived risk of job loss regression estimation (Table 1, Column 2), b) the estimation results of the job satisfaction equation for the whole sample after controlling for endogeneity, (Table 1, Column 3) and c) the estimation results of the perceived risk of job loss and job satisfaction estimation disaggregated by gender (Table 3, Column 6-7 and 8-9 respectively). Table 2 presents the Heckman's (1979) two-step estimation approach.

5.1 The job security results (Overall Sample results)

To investigate whether there is endogeneity in the relationship between job satisfaction and the perceived risk of job loss requiring the use of IV estimation, two endogeneity tests are used. First, the Davidson-MacKinnon test (Harmon and Walker, 1995) involves a two-step estimation process. In the first stage, the variable suspected for endogeneity is expressed as a linear projection of the chosen instrument and all other explanatory variables. The residuals from the first stage regression are then included in the main model. A test on the significance of the coefficient of the instrument on the residual series is performed. If the main model is appropriately specified the coefficient on the residuals variable should have no explanatory power. However, the coefficient on the residuals

variable turns out to be a highly significant explanatory factor in the regression (2) (t-value 3.17). Second, the Durbin-Wu-Hausman test[8] results in the rejection of the null hypothesis postulating that any endogeneity among the regressors would not have a any effect on the OLS estimates ($\chi^2(1)=11$). Hence, both tests point out to the importance of the endogeneity issue in the job satisfaction -the risk of job loss relationship.

Column 2 in Table 1, reports the results obtained from the estimation of the perceived risk of job loss (reduced-form equation (2)). As discussed earlier, the identification is obtained via the inclusion in the perceived risk of job loss regression of the variable secu_vi ("secure job is very important") when the individual is in the process of choosing a job, described above. This variable turns out to be highly significant, a salutary result indicating the suitability of this variable as the identifying restriction. To further investigate the appropriateness of this variable to act as identifying restriction the Staiger and Stock (1997) test for (weak) endogeneity is utilised. The test shows that the chosen instrument is adequate (F-stat value is 41.12, the critical value for one instrument is 10).

In line with the OECD (1997) report, this study reveals that low received risk of job loss is higher among older workers compared to younger ones. This finding suggests that younger workers may exhibit higher job mobility since they are in the beginning of their labour market career and they may be in a process of finding a suitable job for them.

[8] Durbin-Wu-Hausman test for endogeneity in a regression estimated via instrumental variables (IV). The null hypothesis states that an ordinary least squares (OLS) estimator of the same equation would yield consistent estimates: that is, any endogeneity among the regressors would not have deleterious effects on OLS estimates. A rejection of the null indicates that the effects of the endogenous regressors on the estimates are meaningful and instrumental variables techniques are required (Wooldridge 2000, p.483-484).

A number of studies establish a positive link between risk of job loss and educational attainment (OECD, 1997; Blanchflower and Oswald, 1999). Kaiser (2002) also reports a significant positive effect for Portugal among five European countries (The Netherlands, UK, Germany, Denmark, Portugal). The results of this study do not suggest a significant relationship between education and perceived risk of job loss. Further, in contrast to Burchell (1999) who finds that higher social class affects job security the present study suggests that occupational status does not affect the perceived likelihood of a worker retaining in his or her current job.

The results show that perceived risk of job loss is higher among married individuals and among those who they utilise their skills in their current job. In addition the results support Blanchflower and Oswald (1999) who show that workers in the public sector have less fear for their job than in private sector. Clark (1997) finds that those who work in smaller firms are less likely to lose their jobs. Aaroson and Sullivan (1998) also finds that workers in small firms report higher job security. They argued that this is misleading since this usually concerns the size of the work site and not the size of the firm. The present study suggests that the firm size does not appear to influence the likelihood of job loss at least as this is assessed by the employees.

Long job tenure is an important determinant of greater job security as this shows long-term employer-employee relationship and a good job-match (Okun, 1981, Campbell *et al* (2001)). This study shows that employees who have long-term contract report lower risk

of job loss compared with those with short tenures who unambiguously feel that suffer from the greatest job insecurity.

Brown Johnson et al (1992) found that unionised employees perceived job security as more important than their non-union counterparts and seem willing to trade off wages for job security. Bender and Sloane (1999) and OECD (1997) showed that union membership appears to offer protection from job insecurity. Yet, the present study does find any significant union effects on the perceived risk of job loss.

5.2 Endogeneity correction results (Overall Sample results)

Table 1, Column 3, reports the estimation results of the job satisfaction regression after correcting for the effects of the endogenous relationship between perceived risk of job loss and job satisfaction[9]. They show that the effect of the perceived risk of job loss on job satisfaction is significant and large. Those who feel that they have higher job security are more satisfied with their jobs compared to those who are employed in a job with a perceived high likelihood of job termination. Importantly, this effect appears to be more than twice as high as the one reported in the uncorrected estimates reported in the Table 1 Column 1. This shows that the problem of endogeneity is important and that ignoring the simultaneous nature of perceived risk of job loss - job satisfaction relationship results in an underestimation of the true effects. The present results are in line with Blanchflower and Oswald (1999).

9 The estimation results for the endogeneity uncorrected results are reported in the Table 1 column 1, for completeness but they are not discussed.

A number of interesting issues are also highlighted in Table 1, Column 3. The level of job satisfaction increases with the educational level. Thus, an educated individual reports higher levels of job satisfaction compared to those of low-educated (the reference group). Job satisfaction levels tend to be higher among those in high-skilled, non-manual occupations such as managers and professionals, in line with Kaiser (2002) who shows that professionals and technicians are more satisfied with their job compared to all other occupations. The results imply that some sort of occupational hierarchy exists in terms of job satisfaction. Importantly, workers who report that they use their skills and experience when they perform their job tasks are more likely to report high job satisfaction compared to the remainder.

In contrast to the findings of Blanchflower and Oswald (1999) who finds that being a public sector employee has a positive effect on job satisfaction this study shows that those who work for the private sector are more satisfied compared to those in the public sector. Yet, this may reflect the fact that the positive effect of the public sector employees' job satisfaction has decreased sharply through the 1990s (Gardener and Oswald (1999)).

Lang and Johnson (1994) find that firm size acts as a contingency variable only affecting satisfaction, as it interacts with other determinants of job satisfaction[10]. Thus, for

[10] Lang and Johnson (1994) use the Scneider's Attraction-Selection-Attrition (ASA; 1987) framework to examine the effects of firm size on job satisfaction. In this framework, firm size affects job satisfaction as it interacts with the employee characteristics. Attraction refers to the decision of potential employees to join or leave organisations according to their perceptions of correspondence of interests and /or values.

instance, for smaller firms the initial employer – employee attachment affects significantly job satisfaction. However, for bigger firms, the quality of the relationship is important. Drakopoulos and Theodossiou (1997) show that people who are employed in small firms report higher job satisfaction compared to the remainder. This is consistent with the findings of this study where an individual who is employed in a small firm is more satisfied with his or her job compared to those who work for big companies (the reference group). This may be due to the fact that employees in smaller firms enjoy a higher employee involvement in the work organisation, a wider diversity in the working activities, or a higher opportunity of assuming responsibility compared to their counterparts employed in bigger firms.

The relationship between union status and job satisfaction has attracted considerable interest in the literature. The literature suggests that though union membership is positively related to wages, it has a negative effect on the job satisfaction due to the so-called 'exit voice' motive (Freeman and Medoff, 1984; Blanchflower and Oswald, 1999, Drakopoulos and Theodossiou, 1997). The 'exit voice' argument suggests that dissatisfied union workers tend to remain in their jobs and 'voice' their complaints through the union whereas dissatisfied nonunion workers tend to leave (Miller, 1990; Bender and Sloane, 1998). Lillydahl and Singell (1993) found that, although unionised members feel more satisfied with salaries, benefits and job security, their satisfaction with all other facets of their job is so low that their reported job satisfaction is overall

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Similarly, managers select recruits according to their own perceptions of that correspondence (Selection). Over time, either the firm integrates the employees in the workforce or the employees eventually quit (Attrition).

lower compared to that of the non-unionised employees. The findings of the present study show that union membership is associated with a lower job satisfaction.

In order to investigate the robustness of the risk of job loss effect on job satisfaction the two stage Heckman selectivity approach is used. Table 2[11] reports estimates for this alternative model, whereby the perceived risk of job loss is estimated by a probit model and the job satisfaction equation is selectivity corrected by including the Mills ratio. The effect of the perceived risk of job loss on job satisfaction turns out to be strongly significant and higher than in the uncorrected OLS. The coefficient of the Mills ratio, which is significant and negative, indicates the endogenous nature of perceived risk of job loss - job satisfaction relationship, implying that OLS gives estimates that are biased downward.

5.3 Job security and Job satisfaction -Differences by gender

Studies on job security and job satisfaction show important differences with respect to gender (Burchell, 1999; Clark, 1997). Research into job satisfaction issues shows that women consistently report higher job satisfaction compared to men (Clark, 1997, Blanchflower and Oswald, 1999) in the UK. Ward and Sloane (1999) argue that "this is surprising given that studies across occupations and countries have found substantial and significant male-female earnings differentials and there is evidence of discrimination

[11] Only the estimated results for the whole sample are presented. The estimation results for males and females separately are available upon request

against women in areas of the labour market such as hiring/firing and promotion"[12]. Clark (1997) explains this result in term of jobs, work values, self-selection and expectations by assuming that workers who expect comparatively less of their job report higher job satisfaction, compared to those who expect more in the terms of career opportunities and the career status. Thus, women, on average, may generally expect less from their job, due to the fact that they are often secondary earners and due to their heavy involvement in home production. Thus, they may have lower expectations from their job and hence feel more satisfied than men, since the satisfaction gap between the current state of job career and what is expected to be reached is narrower compared to that of males (Kaiser, 2002). Sloane and Williams (2000) also argue that the persistence of occupational segregation by gender is a result of differing tastes for work between the sexes. Usually, men seek jobs in which pecuniary factors such as overtime hours are emphasized whereas women prefer jobs with flexible hours and other non-pecuniary aspects. The above literature implies that job satisfaction for female employees is determined by a different set of characteristics than that of their male counterparts. The purpose of the following section is to highlight whether there are male –female differences in terms of the perceived job loss risk – job satisfaction relationship after taking the effects of endogeneity into account.

Risk of job loss and Gender

Table 3 column 6 and 7 reports the results of this study on the perceived risk of job loss regression separately for men and women employees.

[12] Ward and Sloane (1999), p.1

Burchell (1999) and Brown Johnson *et al* (1992) find that men suffer more than women when they are faced with high likelihood to lose their job. Campbell *et al* (2001) show that women working in the private sector are more insecure concerning the retention of their current job compared to their public sector counterparts, but these differences are not significant for men. This study shows that married women report lower risk of job loss compared to single women, whereas for men this effect is not statistically significant. Both men and women employed in the private sector do appear to have negative statistically significant differences regarding their perceived risk of job loss compared to public sector employees.

Bender and Sloane (1999) show that job security increases with the job tenure as long tenure employees gain job rights such as favourable treatment in relation to possible redundancy, the so called a FIFO principle. Also, Green *et al* (2000) suggest that the relationship between job insecurity and tenure is U-shaped. The present study confirms these findings. Both males and females whose job has lasted for more than 3 years report lower likelihood of losing their job. In addition, workers who report that they utilise their skills in performing the job tasks feel that their job is more secure in terms of retention compared to the remainder.

Job Satisfaction and Gender

Table 3, column 8 and 9, presents the job satisfaction results separately for men and women employees. In general, it appears that the determinants of job satisfaction do not

differ substantially between genders. However, the Chow test for testing for the differences between the coefficients of the job satisfaction regressions for the male and female sample is rejected[13]**.** Table 3 shows that the perceived risk of job loss is a significant determinant of job satisfaction for both men and women even after controlling for endogeneity. Thus, uncertainty concerning the job retention has detrimental effect on the utility derived from work for both genders. Hence, if happy workers are also productive workers, then uncertainty about unfavorable prospects for job retaition has also detrimental effects on labour productivity for both genders. In addition, whether one utilizes his or her skills in performing the job has positive effect on the job satisfaction for both groups.

The effect of age on job satisfaction is significant for both males and females and this is in line with Clark (1997) who shows that age has comparable effects on the job satisfaction for men and women.

This study suggests that there may be a significant effect of occupational status on the job satisfaction for men. Managers and professionals are the most satisfied. Moguerou (2002) finds that females in the academic sector are as less satisfied with their job than males, other things being equal. Lydon and Chevalier (2002) report that highly educated women are more satisfied than highly educated men. The present study shows that there is a positive and significant effect of higher education on the job satisfaction only for men.

[13] F(29, 5719) at 1% level.

The size of the firm by which the worker is employed affects the job satisfaction of women. However, contrary to Sloane and Williams (2000), who report that women employed in the largest establishments enjoy higher job satisfaction than men, this study shows that women working in small firms exhibit higher level of job satisfaction compared to women working in bigger firms and also that they are more satisfied with their jobs compared to men who work also in small firms. Union membership is significantly correlated with lower job satisfaction, in line with the "exit voice" view, but only for men.

6. CONCLUSIONS

This paper focuses on the effect of perceived risk of job loss on job satisfaction using both a conventional instrumental variable approach and a selection model to address the issue of endogeneity in this relationship. In addition, the paper investigates the existence of gender-specific differences in the perceived risk of job loss-job satisfaction relationship. The results show that, after controlling for endogeneity, the effect of the individual's job security perception on job satisfaction is significant for both genders. The IV method exhibits an estimated effect of the perceived risk of job loss on the job satisfaction that is almost twice the size of the effect obtained by the OLS. The size of the corresponding effect obtained by the selectivity model turned out to be between the two extremes above. Importantly, all models estimated in this study confirm that uncertainty concerning one's ability to retain his or her job has detrimental effect on his or her job satisfaction, even after the endogenous nature of the relationship is taken into account.

Since there is evidence that workers who exhibit high job satisfaction are also productive workers, one might conclude that high risk of job loss should also have detrimental effects on the productivity of both male and female workers.

This study raises doubts on the social and economic desirability of human resource management measures solely favouring labour market efficiency via labour market flexibility. A more appropriate balance between labour market flexibility and reduction of the risk of job loss for the incumbent workforce may be more fruitful in enhancing a well functioning labour market and increasing labour productivity. Policy makers and human resource managers may need to take into account the negative effects of job insecurity on workers' job satisfaction and the associated detrimental effects on the labour productivity of dissatisfied workers.

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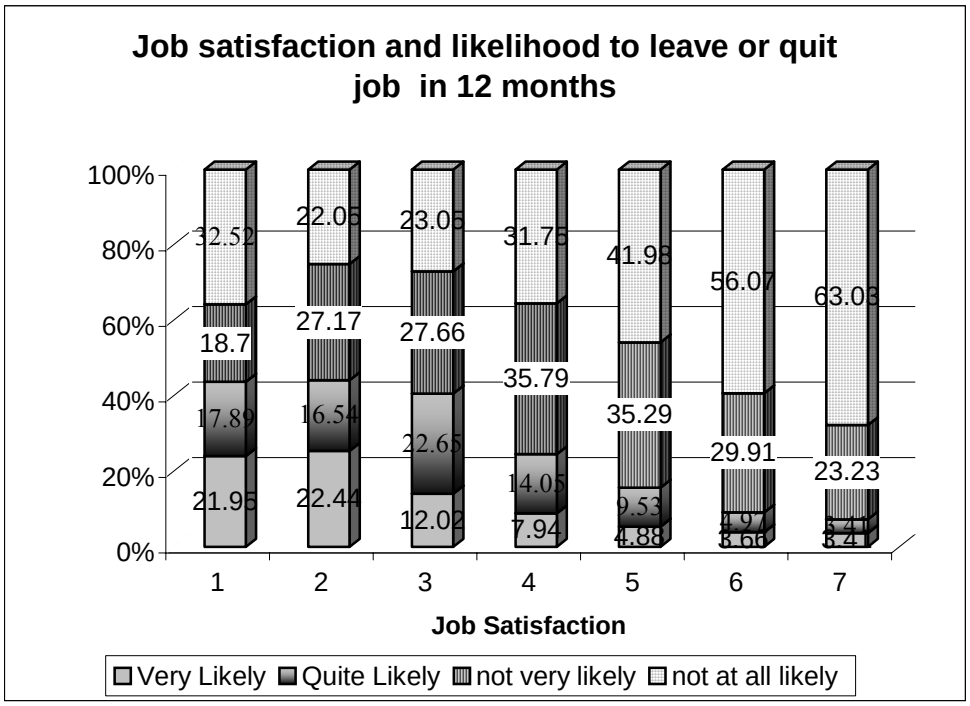
Figure 1: Job satisfaction and likelihood to lose or quit job in 12 months



Source: Eurobarometer 44.3-1996

Table 1: OLS and IV estimates of the Job Satisfaction Perceived Risk of Job Loss Models

Dependent variables / Independent variables	OLS Job Satisfaction (zscore)		Perceived risk of job loss (zscore)		IV Job Satisfaction (zscore)	
	All		All		All	
	1		2		3	
	coefficient	t-stat	coefficient	t-stat	coefficient	t-stat[1]
Constant	.3399	2.20***	-2.224	-14.65***	1.383	3.64***
Job security	.3006	22.72***	-		.7905	4.89***
Job security is very important	-		.1665	6.48***		
Male	-.0672	-2.66***	-.0226	-0.90	-.0572	-2.21**
Age	-.0423	-5.41***	.0383	4.94***	-.0609	-5.75***
Age squared	.0005	5.59***	-.0003	-3.80***	.0007	5.83***
Education 16-19 years	.0979	2.70***	.0628	1.74*	.0664	1.56
Education 20 plus	.0942	2.32**	.0025	0.06	.0990	2.28**
Married	.0947	3.43***	.0710	2.59***	.0579	1.86*
Managers & Professionals	.0908	2.11**	-.0181	-0.42	.1065	2.32**
Skilled	.0652	1.82*	-.0383	-1.08	.0870	2.16**
Clerks & service and sales workers	.0285	0.79	-.0441	-1.23	.0523	1.28
Use of skills and experience in job	.3909	13.34***	.2098	7.23***	.2810	5.77***
Number of employees: 1 to 24 people	.0953	3.78***	-.0110	-0.44	.1004	3.91***
Member of Trade Union	-.0891	-3.05***	.0299	1.03	-.1109	-3.63***
Working in the private sector	.0119	0.46	-.1416	-5.50***	.0824	2.32***
A job lasting longer than 3 years	-.0389	-0.91	1.025	25.40***	-.5450	-3.11***
Country variables	*Yes*		*Yes*		*Yes*	
Number of observations	5,778		5778		5778	
R-squared	0.17		0.18		0.10	

Notes: [1]Based on bootstrap standard errors with 500 replications
*, **, *** indicate significant improvement at 10, 5, 1 percent levels respectively.

Table 2: Probit Model of Perceived Risk of Job Loss and Selectivity Model of Job Satisfaction

Dependent variables / Independent variables	Probit: Perceived Risk of Job Loss		Selectivity corrected Job Satisfaction	
	All Sample		All Sample	
	1		2	
	coef	t-stat	coef	t-stat[1]
Constant	-1.847	-8.23***	.6388	1.89*
Job security	-	-	.4665	17.36***
Job security is very important	.2611	7.06***	-	-
Male	-.0333	-0.92	-.0594	-2.27**
Age	.0239	2.12***	-.0424	-4.98***
Age squared	-.0001	-1.13	.0005	4.97***
Education 16-19 years	.0550	1.06	.0923	2.39**
Education 20 plus	-.0254	-0.44	.1129	2.69***
Married	.0630	1.59	.0859	3.01***
Managers & Professionals	.0199	0.32	.0834	1.89*
Skilled	-.0375	-0.74	.0740	1.94**
Clerks & service and sales workers	-.0695	-1.35	.0490	1.24
Use of skills and experience in job	.2265	5.38***	.3428	8.74***
Number of empl: 1 to 24 people	-.0037	-0.11	.0937	3.70***
Member of Trade Union	.0409	0.98	-.1051	-3.57***
Working in the private sector	-.2686	-7.24***	.0924	2.58***
A job lasting longer than 3 years	.8746	13.65***	-.1499	-1.44
Selection Term			-.4492	-3.02***
Country variables	*Yes*		*Yes*	
Log likelihood	-3659.9344		-	
R-squared	-		.15	
Number of obs	5,778		5,778	

Notes: [1]based on bootstrap standard errors with 500 replications
*, **, *** indicate significant improvement at 10, 5, 1 percent levels respectively.

Table 3: OLS and IV estimates of Job Satisfaction and Perceived Risk of Job Loss Equations by gender

Dependent variables / Independent variables	OLS Job Satisfaction (zsore)		Reduced form Perceived Risk (zscore)		IV Job Satisfaction (zscore)	
	4	5	6	7	8	9
	Male	Female	Male	Female	Male	Female
	Coef *t-stat*	Coef *t-stat*	Coef *t-stat*	Coef *t-stat*	Coef *t-stat*[1]	Coef *t-stat*[1]
Constant	.2142 *(0.96)*	.3276 *(1.37)*	-2.298 *-(11.33)***	-2.184 *-(9.54)***	.9665 *(2.39)***	2.357 *(3.61)***
Job security	.2142 *(14.72)***	.2964 *(13.69)***	-	-	.6497 *(4.12)***	1.250 *(3.01)***
Job security is very important	-	-	.2164 *(6.22)***	.1064 *(2.76)***	-	-
Age	-.0488 *-(4.36)***	-.0341 *-(2.84)***	.0378 *(3.67)***	.0378 *(3.17)***	-.0617 *-(4.67)***	-.0700 *-(3.89)***
Age squared	.0006 *(4.63).***	.0004 *(2.92)***	-.0003 *-(2.89)***	-.0003 *-(2.28)***	.0007 *(4.85)***	.0007 *(3.92)***
Education 16-19 years	.1188 *(2.34)***	.0820 *(1.33)*	.0986 *(2.08)***	.0316 *(0.57)*	.0856 *(1.54)**	.0474 *(0.72)*
Education 20 plus	.1361 *(2.45)***	.0448 *(0.69)*	.0127 *(0.24)*	-.0045 *-(0.07)*	.1403 *(2.39)***	.0511 *(0.82)*
Married	.0032 *(0.08)*	.1701 *(4.25)***	.0206 *(0.53)*	.1186 *(2.98)***	-.0066 *-(0.16)*	.0565 *(0.96)*
Managers & Professionals	.1164 *(2.16)***	.0925 *(1.34)*	-.0517 *(0.95)*	.0404 *(0.58)*	.1404 *(2.52)***	.0651 *(0.83)*
Skilled	.0499 *(1.10)*	.0987 *(1.51)*	-.0063 *-(0.15)*	-.0781 *-(1.28)*	.0535 *(1.16)*	.1814 *(2.35)***
Clerks & service and sales workers	.0111 *(0.22)*	.0567 *(0.97)*	-.0424 *-(0.85)*	-.0362 *-(0.67)*	.0272 *(0.51)*	.0960 *(1.53)*
Use of skills and experience in job	.4166 *(9.75)***	.3642 *(8.19)***	.2042 *(5.12)***	.2125 *(4.97)***	.3383 *(5.96)***	.1541 *(1.73)**

Table 3 Continued…						
Number of employees: 1 to 24 people	.0434 *(1.29)*	.1484 *(4.06)***	-.0569 *-(1.70)**	.0340 *(0.89)*	.0637 *(1.71)**	.1149 *(2.84)****
Member of Trade Union	-.1017 *-(2.65)****	-.0568 *-(1.27)*	.0486 *(1.28)*	.0152 *(0.33)*	-.1273 *-(2.87)****	-.0769 *-(1.63)*
Working in the private sector	.0319 *(0.90)*	-.0146 *-(0.38)*	-.1693 *-(4.83)****	-.1213 *-(3.14)****	.0921 *(2.05)**	.1026 *(1.72)**
A job lasting longer than 3 years	.0779 *(1.20)*	-.1422 *-(2.11)***	1.071 *(19.23)****	.9844 *(16.67)****	-.2994 *-(1.66)*	-1.084 *-(3.12)****
Country variables	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Number of observations	3,140	2,638	3,140	2,638	3,140	2,638
R-squared	0.18	0.17	0.20	0.18	0.11	0.10

Notes: [1] based on bootstrap standard errors with 500 replications
*, **, *** indicate significant improvement at 10, 5, 1 percent levels respectively.

Appendix Table 1: Variable List

Variables	Definition
Job satisfaction	Standardized score of an individuals' job satisfaction where is measure on a seven point scale of 1=not at all satisfied to 7=very satisfied
Perceived Risk of Job Loss	Standardized score of a individuals' Job security were is measure on a four point scale of 1=very likely to lose your job or decide to leave your employer over the next 12 months, to 4=very unlikely
Job Sec is very important	Dummy variable equal to 1 if the individuals; reported the highest score in the four-point scale and 0 otherwise
Male	Dummy variable equal to 1 if the respondent is a male
Age	Age of the respondent in years (18 to 65)
Married	Dummy variable equal to 1 if the respondent is married or cohabitant
Education 15	Dummy variable –Formal education continued up to 15 years of age
Education 16-19 years	Dummy variable- Formal education continued up to 16-19 years of age
Education 20 plus	Dummy variable - Formal education continued until 20 plus years of age
Managers & Professionals	Dummy variable- Managers & Professionals
Skilled	Dummy variable- Technicians, craft and related trades workers
Clerks	Dummy variable-Clerks & service and sales workers
Farmer	Dummy variable-Agricultural and Fishery, Workers Plant, Machine operators and Elementary occupations
Use of skills and experience in job	Dummy variable equal to 1 if the respondent use her skills and experience in the job
Number of employees: 1 to 24 people	Dummy variable equal to 1 if the respondent work in a firm with number of employees: 1 to 24 people
Member of Trade union	Dummy variable equal to 1 if the respondent is in a trade union
Working in private sector	Dummy variable equal to 1 if the respondent works in the private sector
A job lasting longer than 3 years	Dummy variable equal to 1 if the respondent replies that his contract duration according to his employer is longer than 3 years
Countries	Dummy variables for the following countries: Austria, Belgium, Denmark, EastGermany, Finland, France, Germany, Great Britain, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden.

Appendix Table 2: Sample descriptive statistics (%)

Variables	All	Men	Women
Job Satisfaction from 1 to 7 (SD)	5.14(1.33)	5.10(1.32)	5.18(1.33)
Likelihood to leave job in 12 months from 1 to 4 (SD)	3.23(0.90)	3.23(0.89)	3.23(0.90)
Personal characteristics			
Age mean (SD)	38(11.15)	38(11.26)	37(11.02)
Gender		54.34	45.66
Married	57	69.63	65.30
Education			
Education 15	17.95	18.44	17.38
Education 16-19 years	46.72	47.05	46.34
Education 20 plus	35.31	34.50	36.27
Occupations			
Managers & Professionals	18.78	20.02	17.30
Skilled (technicians, craft and related trades workers)	37.50	35.23	22.39
Clerks & service and sales workers	31.05	21.35	42.57
Agricultural and Fishery Workers Plant and machine operators Elementary occupations	20.79	23.38	17.72
Job Characteristics			
Use of skills and experience in the job	76.72	78.31	74.83
Number of employees: 1 to 24 people	51.20	47.33	55.82
Trade Union	44.08	46.98	40.64
Working in the private sector	59.00	64.41	52.55
A job lasting longer than 3 years	73.32	74.84	71.41
Secure job is very important	62.41	63.97	60.55
Valid N	**5,808**	**3,150**	**2,638**