

PETRI BÖCKERMAN

PERCEPTION OF JOB INSTABILITY IN EUROPE

(Accepted 28 March 2003)

ABSTRACT. The perception of job instability is an important measure of subjective wellbeing of individuals, because most people derive their income from selling their labour services. The study explores the determination of perception of job instability in Europe. The study is based on a large-scale survey from the year 1998. There are evidently large differences in the amount of perceived job instability from country to country. The lowest level of perceived job instability is in Denmark (9%). In contrast, the highest level of perceived job instability is in Spain (63%). Perceived job instability increases with age and an earlier unemployment episode. An increase in educational level, on the other hand, leads to a decline in the perception of job instability. In addition, a temporary contract as such does not yield an additional increase to the perception of job instability. The perception of job instability is more common within manufacturing industries and there is some evidence for the view that it increases according to the size of the firm.

1. INTRODUCTION

The empirical evidence on the dynamics of labour demand by firms suggests that market economies are definitely in a state of continuous turbulence. Each year, on the one hand, many businesses expand (and succeed), while, on the other hand, many others contract (and fail). Joseph A. Schumpeter (1942) called this underlying process of capitalism by the expression “creative destruction”. The reallocation and the reorganisation of resources therefore culminates in the functioning of labour markets, where the reallocation of scarce resources takes the form of gross job and worker flows.¹ The magnitude of these gross flows is enormous in comparison to the net rate of employment change. Davis and Haltiwanger (1999) report that in most Western economies roughly ten per cent of jobs are created/destroyed each year. Gross worker flows are even larger in magnitude. Gottschalk and Moffitt (1998) stress that the implicit normative assumption behind much of the public discussion



Social Indicators Research **67**: 283–314, 2004.

© 2004 Kluwer Academic Publishers. Printed in the Netherlands.

of job and worker turnover is that turnover is undesirable, because it is either “involuntary” or leads to worsened outcomes, such as an increase in the probability of unemployment or a decrease in wages.

However, this apparent job instability implied by the enormous magnitude of job turnover and gross worker flows is not as such a malaise, because a large part of the gross worker flows is, in fact, inherently voluntary by nature. For example, the voluntary turnover of workers is often related to career concerns of individuals. In fact, this feature of labour markets suggests that the realized patterns of gross job and worker turnover and the perception of job instability among workers are not necessarily closely correlated with each other. However, the perception of job instability is closely linked to the underlying welfare of individuals, which should be the ultimate focus of any economic policy exercise. This is due to the fact that for the large majority of employees only one match with an employer comprises most of the current earnings, making their welfare closely related to the potential risk of losing their job in the presence of incomplete insurance against shocks (i.e., the so-called replacement rate of unemployment insurance is almost always less than 100%).² The perception of job instability therefore constitutes an important measure of subjective well-being of individuals. This means that it is indeed interesting to investigate what the most important underlying fundamentals that determine the distribution of perception of job instability at the individual level are. By doing this, the following empirical investigation complements the picture of European labour markets painted by a large number of recent empirical studies on gross job and worker flows.

The aim of this study is therefore to investigate the empirical determination of perception of job instability by using unique survey data from all the 15 member states of the European Union and Norway.³ This means that the following study provides detailed empirical evidence, for example, on the individual characteristics such as age and education that are related to the perceived job instability of individuals in European labour markets. In addition, the study includes a consideration of job and firm characteristics and their role in the determination of the perception of job instability. In other words, this unexploited data makes it possible to evaluate the whole spectrum of economic fundamentals that give rise

to the perception of job instability among European workers. The following empirical results are indeed somewhat different with respect to ones obtained recently by using U.S. surveys. Thus, the study is able to contribute to the current discussion on the differences of European-style labour markets compared with the U.S. labour markets.⁴

This study appears in four parts. The first part of the study provides a brief overview of earlier empirical investigations into the perceived job instability of individuals. The motivation of the selected variables in the estimated equation is therefore broadly based on previous empirical literature on the incidence of perceived job instability at the individual level of the economy. The second part provides a description of individual-level survey data that is used to assess the current characteristics of job instability in the context of European labour markets. The third part of the study provides a detailed analysis of the incidence of perceived job instability by applying Probit models. In addition, it contains an elaboration of the robustness of the empirical patterns. The fourth part concludes.

2. PREVIOUS RELATED STUDIES

There has indeed been a great number of empirical studies on that aim to document and investigate the realized patterns of job instability.⁵ However, there is a rather limited number of empirical investigations that aim to investigate the empirical determination of perceived job instability of individual workers. The latter studies require detailed survey data. In addition, the focus of available empirical literature on perceived job instability has been heavily on the unregulated Anglo-Saxon labour markets. The following investigation concerning the determination of perceived job instability in all the 15 member states of the European Union and Norway provides an interesting opportunity for cross-country comparison and fills an important gap in the earlier literature.⁶

The perception of job insecurity is indeed a fact of life and it is not possible to remove a major part of job instability by holding a diversified portfolio of publicly traded assets. For example, Davis and Willen (1999) have studied the correlation between earnings

shocks and asset returns in the context of the U.S. labour markets. According to the results, the correlation between returns on the S&P 500 and earnings shocks exceeds 0.4 for older, college-educated women, ranges from 0.1 to 0.3 over most of the life cycle for college-educated men and is roughly -0.25 for men who did not finish high school. This means that trade in a broad-based equity index enables individuals to hedge only a small portion of the group-level earnings risk induced by the underlying heterogeneity of individuals.

There has been a lively discussion on the issue of perceived job instability in the U.S. Schmidt (1999) provides empirical evidence for the commonly held view that there has been a rise in the perception of job loss among workers as a whole during the 1990s. Aaronson and Sullivan (1998) present empirical evidence of individual characteristics that are related to the incidence of job insecurity. Dominitz and Manski (1996), and Gottschalk and Moffitt (1998) present additional empirical evidence. Manski and Straub (2000) provide the most recent detailed investigation on the issue. Worker perceptions of job insecurity peaked in 1995.⁷ According to the results concerning individual characteristics of American workers, the expectations of job insecurity are not related to the age of individuals. Subjective probabilities of job loss tend to decline with additional years of schooling, which is strongly in line with common sense.⁸ In other words, education seems to provide at least a partial “shield” against job instability in the U.S. labour markets. In addition, the perceptions of job loss vary little by gender. However, the subjective probability of job loss among black people is almost double that of white people.

The UK empirical evidence in terms of perceived job instability can be summarized as follows. Green et al. (2000) provide empirical evidence for the view that the perceived risk of job loss, in aggregate, changed rather little between 1986 and 1997 in the UK. Green et al. (2000) further show that the overall perception of job insecurity was fairly stable between 1996 and 1997, but it did indeed rise, relative to the overall rate of unemployment, which was substantially lower in 1997 than in 1996. There has also been the same kind of redistribution of job insecurity as in the U.S. (i.e., professional workers have become much more insecure about the jobs they hold). In particular,

the results reported by Green et al. (2000) indicate that unions have no observable impact on the magnitude of job insecurity. In addition, Green et al. (2001) provide detailed empirical evidence on the determination of perception of job loss. The perception of job loss is definitely common in the UK. Thus, in 1996 and 1997, approximately 1 in 10 British workers thought that it was either likely or very likely that they would lose their job within 12 months.

However, Green et al. (2001) argue that workers tend to overestimate the likelihood of job loss. In particular, the empirical investigation of the perception of job instability by Green et al. (2001) includes four sets of potential determinants: the workers' personal unemployment experience and environment, the objective characteristics of the jobs they hold, human capital indicators and, finally, relevant attitudinal variables. The empirical results presented by Green et al. (2001) indicate that the past unemployment experience increases the subjective probability of job loss among men. An increase in the regional unemployment rate yields a rise in the subjective probability of job loss. In addition, the perception of job insecurity is not related to the establishment size. The older workers express higher levels of job insecurity. The attitudinal variables included are also important in the determination of the perception of job instability. The empirical evidence therefore indicates that job dissatisfaction is strongly associated with job insecurity in the UK.⁹

3. THE DATA

The data of this study is drawn from a large-scale survey (Employment Options for the Future). The survey covers the 15 European Union members and Norway.¹⁰ The survey was originally designed to find out who wanted to work and who did not want to work. Thus, the major strength of the survey is that it contains a great number of detailed questions about the underlying preferences of individuals with respect to labour market conditions in Europe. In addition, the survey also includes more detailed information than has been typical in the earlier investigations about job characteristics, which has a potential role in the empirical determination of the perception of job instability. The survey was conducted in 1998 and it was framed

for the residential population aged from 16 to 64 years. The field-work was carried out between May and September 1998 in all 16 countries included.

The survey was done for about 1500 individuals for most of the countries included in Europe. Table A1 contains the tabulation of the number of interviews in each country included in the survey. However, the individuals unemployed and the economically inactive persons at the time of the interview are omitted from the data, because the perception of job instability is not relevant for those persons.¹¹ In addition, the following analysis includes only employees. In other words, self-employed persons are omitted from the following analysis due to the notion that the empirical determination of the perception of job instability ought to be different among them with respect to employees.¹² This means that the data that is used in the following estimations covers 5435 persons after also eliminating a small number of inconsistent answers to the questions of the survey.

The key variable of the survey from the point of view of this study is, of course, the perception of job instability at the individual level of the economy. This question of the survey is formulated as follows: "Do you worry about the security of your present work?". In particular, in the conduct of the survey the notion that "job security" was equal to "job stability" was heavily underlined. The answers to the question can either be "yes" or "no". The formulation of the question means that the applied measure of perception of job instability confounds two components, which are the chance of job loss and the consequences of job loss (see, for example, Dominitz and Manski, 1997). This particular feature of the applied measure of perception of job instability have to be taken into account in the discussion of the following estimation results. One potential problem of the applied question of the survey is that it does not define the exact time span of fear about job instability. However, the following analysis of the survey also includes a number of variables (such as education) that can broadly be interpreted as indicators of the individuals' time preference.

The basic distribution of perceived job instability in Europe based on the applied survey of this study is shown in Table I. There are indeed large differences in the amount of perceived job instability

TABLE I

The frequency of worry about the security of one's present work in Europe (i.e., an answer to the question: "Do you worry about the security of your present work?"). "UN" refers to the standardized unemployment rate in 1998 (Source: OECD, 1999)

Country	"YES"	"NO"	UN (%)
Austria	23	77	6.4
Belgium	25	75	11.7
Denmark	9.0	90	6.3
Finland	17	83	11.4
France	28	72	11.8
Germany	36	63	11.2
Greece	60	39	10.1
Ireland	19	81	7.7
Italy	48	52	12.2
Luxembourg	22	78	3.1
Netherlands	20	80	4.2
Portugal	12	84	5.0
Spain	63	36	18.8
Sweden	20	80	6.5
United Kingdom	26	74	6.2
Norway	15	85	3.2

from country to country. The lowest level of perceived job instability is in Denmark (9%). In contrast, the highest level of perceived job instability is in Spain (63%). According to the survey, the perception of job instability is more common in the UK than the empirical results reported in Green et al. (2001) indicate for 1997 and 1998.

The average unemployment rate in the countries included in the survey is in positive association with the perception of job instability (Figure 1). The underlying correlation of perception of job instability and the unemployment rate is in line with the recent notions based on gross flows of jobs and workers, because the rate of worker outflow into unemployment tends to be at the higher level in the segments of the economy that are characterized by the high unemployment rate. However, the correlation of perception of job instability and the unemployment rate is far from perfect across the

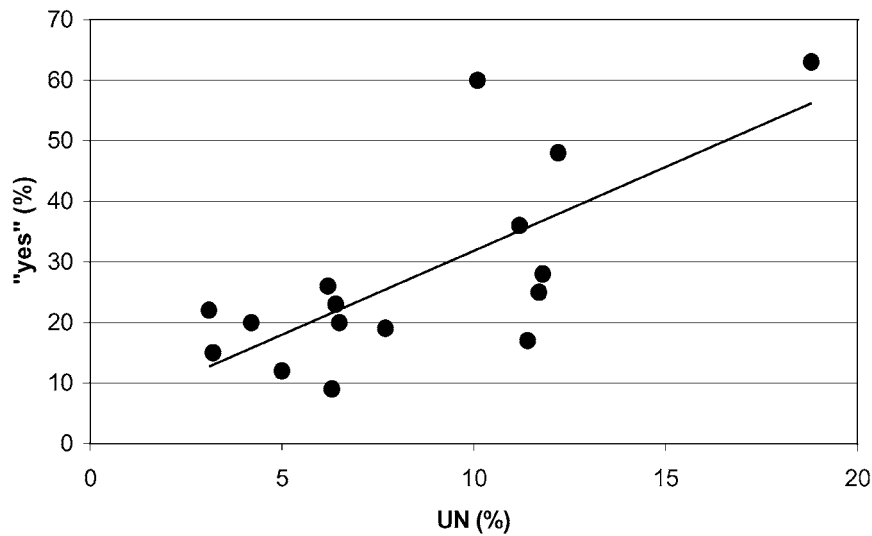


Figure 1. A scatterplot of “yes” answers (to the question: “Do you worry about the security of your present work?”) and the standardized unemployment rate (UN) in 1998 in European countries.

countries of the survey.¹³ Thus, there tends to be about the same amount of perceived job instability among workers despite the fact that the average unemployment rate is far from equal in certain pairs of countries. For instance, the perception of job instability among employed workers is at about the same level in Finland and Norway despite the fact that the unemployment rate was 11.4% in Finland in 1998 and only 3.2% in Norway.

Figures 2–3 relate the incidence of job instability to the strictness of labour standards and to the strictness of employment protection.¹⁴ These figures are not consistent with the popular notion that the perception of job instability declines as the strictness of labour standards and the strictness of employment protection increase in European labour markets.¹⁵ This pattern emerges despite the stylized feature of the literature that the underlying magnitude of gross job and worker flows of the economies declines as the strictness of labour standards and employment protection increases.¹⁶ An explanation for this particular pattern is that strong employment protection may be associated with lower job loss probabilities but greater difficulty in finding an equally good job conditional on losing the current one.

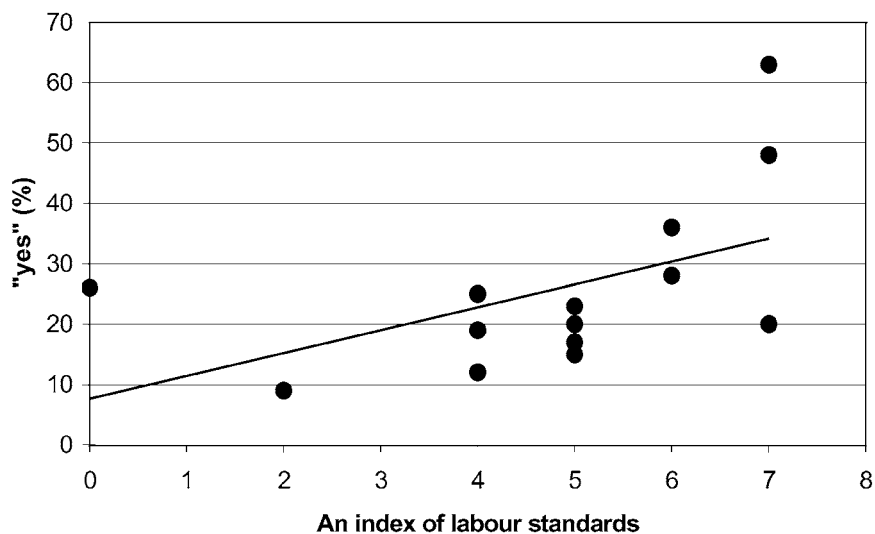


Figure 2. A scatterplot of "yes" answers (to the question: "Do you worry about the security of your present work?") and an index of labour standards (Source: Nickell and Layard, 1999).

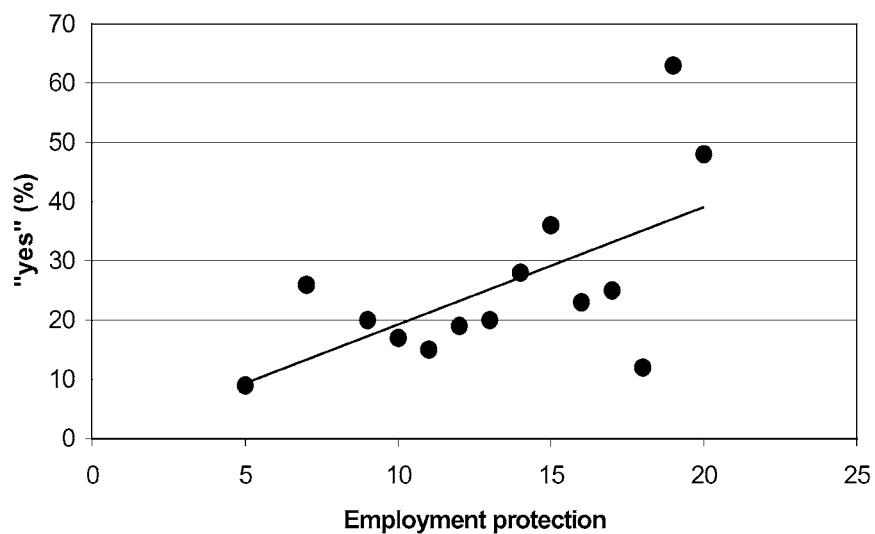


Figure 3. A scatterplot of "yes" answers (to the question: "Do you worry about the security of your present work?") and an index of employment protection (Source: Nickell and Layard, 1999).

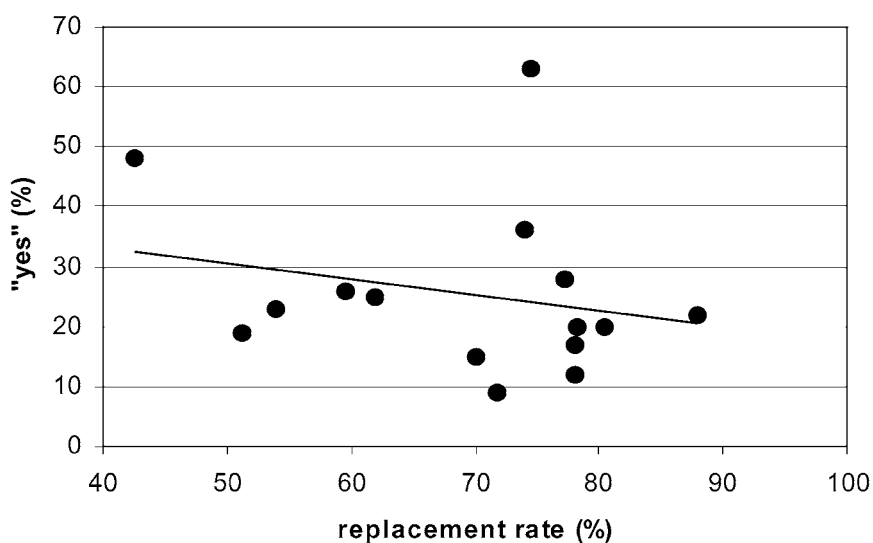


Figure 4. A scatterplot of "yes" answers (to the question: "Do you worry about the security of your present work?") and an index of the replacement rate (Source: OECD, 1998).

In addition, Figure 4 depicts the relationship between the incidence of the perception of job instability and the replacement rate across countries.¹⁷ There therefore seems to be some weak empirical evidence for the view that the perception of job instability is at a lower level in the countries that have high replacement rates. In particular, in the UK there is a low replacement rate and also a high level of the perception of job instability compared with the Nordic countries.

The survey includes a great number of individual characteristics and other variables that facilitate the investigation of the determination of the perceived job instability in Europe. The applied variables of the following analysis are summarized in Table II. In addition, Table A2 provides summary statistics of the most important variables. Most of the applied variables are (almost) self-evident. The variables are divided into three broad categories. Thus, there are variables that characterize (i) individuals (such as education), (ii) jobs that individuals hold (such as the number of jobs that an individual currently holds) and also (iii) variables that capture some key characteristics of firms (such as the size of the company at which the individual is currently working). In addition, the following Probit

TABLE II
The description of the selected variables

Variable	Definition/measurement
Individual characteristics:	
WORRIED	Individual is worried about the security of his/her present job = 1, otherwise = 0
AGE	Age of an employee
AGE ²	AGE squared
GENDER	1 = male, 0 = female
DEGREE	Individual has a university degree/college degree = 1, otherwise = 0
MARRIED	Individual is married = 1, otherwise = 0
PARTNER	Partner is not currently in paid work = 1, otherwise = 0
CHILDREN	Individual has children = 1, otherwise = 0
EXPERIENCE	Individual has been in paid work over 10 years = 1, otherwise = 0
TENURE	Individual has worked over 10 years for current employer = 1, otherwise = 0
UNEMPLOYED	Individual has been unemployed during the past five years = 1, otherwise = 0
GENOPTIMISTIC	Individual thinks that the general economic situation is currently 'very good' = 1, otherwise = 0
PEROPTIMISTIC	Individual thinks that his/her personal economic situation is currently 'very good' = 1, otherwise = 0
Job characteristics:	
JOBS	Individual has currently only one job = 1, otherwise = 0
HOME	Individual would like to work at home = 1, otherwise = 0
PART	Individual has currently a part-time job = 1, otherwise = 0
OVERTIME	Individual has recently done paid or unpaid overtime = 1, otherwise = 0
TEMPORARY	Individual has currently a temporary contract = 1, otherwise = 0
MANUAL	Individual has a manual job = 1, otherwise = 0
MANAGER	Individual has managerial duties in his/her current job = 1, otherwise = 0
HOURS	The number of hours that individual works per week on average
METROPOLITAN	Individual is living in or close to a large city with more than 100,000 inhabitants = 1, otherwise = 0

TABLE II
Continued

Variable	Definition/measurement
Firm characteristics:	
MANU	Individual is currently employed in manufacturing industries (including mining and construction) = 1, otherwise = 0
SERVICE	Individual is currently employed in service sectors (including public services) = 1, otherwise = 0
SIZE1	Size of company measured by the number of employees is less than 9 = 1, otherwise = 0
SIZE2	Size of company measured by the number of employees is from 10 to 49 = 1, otherwise = 0
SIZE3	Size of company measured by the number of employees is from 50 to 499, otherwise = 0
SIZE4	Size of company measured by the number of employees is more than 500 = 1, otherwise = 0 (reference)
Country dummy variables:	
AUSTRIA	Individual is currently living in Austria = 1, otherwise = 0
BELGIUM	Individual is currently living in Belgium = 1, otherwise = 0
DENMARK	Individual is currently living in Denmark = 1, otherwise = 0
FINLAND	Individual is currently living in Finland = 1, otherwise = 0
FRANCE	Individual is currently living in France = 1, otherwise = 0
GERMANY	Individual is currently living in Germany = 1, otherwise = 0
GREECE	Individual is currently living in Greece = 1, otherwise = 0
IRELAND	Individual is currently living in Ireland = 1, otherwise = 0
ITALY	Individual is currently living in Italy = 1, otherwise = 0
LUXEMBOURG	Individual is currently living in Luxembourg = 1, otherwise = 0
NETHERLANDS	Individual is currently living in the Netherlands = 1, otherwise = 0
PORTUGAL	Individual is currently living in Portugal = 1, otherwise = 0
SPAIN	Individual is currently living in Spain = 1, otherwise = 0
SWEDEN	Individual is currently living in Sweden = 1, otherwise = 0
UNITED KINGDOM	Individual is currently living in the United Kingdom = 1, otherwise = 0
NORWAY	Individual is currently living in Norway = 1, otherwise = 0 (reference)

models include country dummies owing to the fact that there are evidently large differences in the perceived job instability from country to country in Europe.

4. THE RESULTS

Owing to the fact that the applied variable WORRIED can, by definition, have only two values (0 or 1), it is convenient to estimate a Probit specification as follows:¹⁸

$$\text{Prob}(\text{WORRIED}_i = 1) = \Phi(\beta'x) + \epsilon_i, \quad (1)$$

where WORRIED_i is a dichotomous variable obtaining the values of an answer to the question: "Do you worry about the security of your present work?" for the individual i of the survey. Thus, if WORRIED_i is 1, then an individual is worried about his/her present job, and if WORRIED_i is 0, then an individual is not worried about his/her present job. x is a vector of explanatory variables, β is a vector of the estimated coefficients and Φ is the cumulative standard normal distribution function. ϵ_i is a normally distributed error term with mean 0 and variance σ^2 .

The estimation results are summarized in Tables III–IV. The following assessment of the estimation results is focused on the results that cover the whole population (reported in Table III). The probit model was also estimated separately for the subpopulation of females (reported in Table IV).¹⁹ This is due to the fact females hold quite different jobs compared with the jobs that are held by males. In particular, most of the part-time workers included in the survey are females.

The individual characteristics are obviously an important element in the empirical determination of the perception of job instability in Europe. In particular, the results reveal that the perception of job instability is indeed higher among older workers than among young workers despite the stylized feature of labour markets that the turnover of jobs and workers is more intensive among young employees.²⁰ The results are therefore consistent with the popular notion that job instability is more of a problem for aged employees and that the turnover of jobs among young employees is mainly due

TABLE III

The estimation results from the Probit model with marginal effects (DF/dx) for the whole population of workers (dependent variable: WORRIED). DF/dx is for dummy variables an impact of discrete change from 0 to 1 on the probability of perception of job instability

	DF/dx	z-statistics
AGE	0.02389	4.37
AGE ²	-0.00023	-3.51
GENDER	0.02156	1.50
DEGREE	-0.03529	-2.14
MARRIED	-0.05703	-0.44
PARTNER	-0.05537	-0.44
CHILDREN	0.00811	0.47
EXPERIENCE	-0.02951	-1.44
TENURE	0.03447	2.06
UNEMPLOYED	0.06930	4.27
GENOPTIMISTIC	-0.03335	-1.32
PEROPTIMISTIC	-0.07363	-3.43
JOBS	-0.00205	-0.07
HOME	0.00359	0.17
PART	-0.04574	-2.05
OVERTIME	0.04981	3.50
TEMPORARY	-0.14925	-7.87
MANUAL	0.02408	1.64
MANAGER	-0.03664	-2.63
HOURS	-0.00136	-1.61
METROPOLITAN	-0.01313	-0.97
MANU	0.05723	2.09
SERVICE	0.00860	0.32
SIZE1	-0.02820	-1.45
SIZE2	-0.0297349	-1.70
SIZE3	-0.0275853	-1.68
AUSTRIA	0.10857	2.54
BELGIUM	0.13760	3.03
DENMARK	-0.13490	-3.58

TABLE III
Continued

	DF/dx	z-statistics
FINLAND	-0.05126	-1.27
FRANCE	0.14227	3.73
GERMANY	0.20757	5.42
GREECE	0.42901	7.77
IRELAND	0.06135	1.35
ITALY	0.32619	7.44
LUXEMBOURG	0.11059	2.01
NETHERLANDS	0.03921	1.01
PORTUGAL	-0.08627	-2.09
SPAIN	0.46465	10.00
SWEDEN	0.00542	0.13
UNITED KINGDOM	0.13144	3.30
Pseudo R ²	0.113	
Log-likelihood	-2900.000	
Number of observations	5435	

Base case is a male, living in Norway, who is employed in agriculture.

to the voluntary quits, which are often related to career concerns. The result is also in line with a recent investigation by Blanchflower and Oswald (1999), according to which there is an increase in the perception of job insecurity as an employee ages. In addition, the observation is in line with the stylized fact that job displacements tend to cause much larger wage losses for the older worker (see, for example, Kuhn, 2001). This variation of wage losses across age groups of workers may reflect the feature that a greater fraction of older workers' skills are specific to an occupation or industry, thus exposing them to a much "thinner" labour market, compared with the young workers with more general labour market engagement. In other words, the result is in line with the notion that it is the job loss wage penalty more than the job loss incidence that drives the perception of job instability among workers in Europe.

There are no differences in the perceptions of job instability between males and females. This result is nicely in line with obser-

TABLE IV

The estimation results from the Probit model with marginal effects (DF/dx) for the subpopulation of females (dependent variable: WORRIED). DF/dx is for dummy variables an impact of discrete change from 0 to 1 on the probability of perception of job instability

	DF/dx	z-statistics
AGE	0.01887	2.46
AGE ²	-0.00022	-2.25
DEGREE	-0.06498	-2.68
MARRIED	-0.20308	-1.28
PARTNER	-0.16004	-1.08
CHILDREN	0.03467	1.37
EXPERIENCE	-0.00189	-0.07
TENURE	0.00854	0.34
UNEMPLOYED	0.03895	1.67
GENOPTIMISTIC	-0.06214	-1.30
PEROPTIMISTIC	-0.08399	-2.40
JOBS	0.01953	0.49
HOME	0.01208	0.36
PART	-0.02461	-0.81
OVERTIME	0.04812	2.33
TEMPORARY	-0.17390	-6.42
MANUAL	0.00093	0.04
MANAGER	-0.02302	-1.06
HOURS	0.00015	0.11
METROPOLITAN	-0.03247	-1.56
MANU	0.11134	2.55
SERVICE	0.05415	1.37
SIZE1	-0.03263	-1.15
SIZE2	-0.05722	-2.14
SIZE3	-0.06804	-2.67
AUSTRIA	0.10379	1.54
BELGIUM	0.17152	2.40
DENMARK	-0.15936	-2.68
FINLAND	-0.01736	-0.27

TABLE IV
Continued

	DF/dx	z-statistics
FRANCE	0.13734	2.25
GERMANY	0.22063	3.57
GREECE	0.41291	5.23
IRELAND	-0.01420	-0.19
ITALY	0.33785	4.76
LUXEMBOURG	0.18643	2.19
NETHERLANDS	-0.00101	-0.02
PORTUGAL	-0.11909	-2.02
SPAIN	0.44884	6.10
SWEDEN	0.02801	0.39
UNITED KINGDOM	0.07185	1.16
Pseudo R ²	0.126	
Log-likelihood	-1316.268	
Number of observations	2472	

Base case is living in Norway and employed in agriculture.

vations by Manski and Straub (2000) for the U.S., Green et al. (2001) for the UK and OECD (1997) for Europe, but in disagreement with an empirical study by Clark (1997), according to which males rank job security more highly than females, applying the British Household Panel Survey.

The perception of job instability does decline as an individual gets additional years of schooling. In other words, education provides a kind of “shield” against job instability in Europe. This particular result is in line with earlier empirical studies from Anglo-Saxon labour markets elaborated in the earlier section of this study. In other words, the European labour markets, as a whole, and the Anglo-Saxon labour markets seem to be similar in this respect. The breakdown of job insecurity by OECD (1997) reveals only weak empirical evidence for the view that there are differences in the perception of job instability based on the years of education in Europe.²¹

In principle, there should be less perception of job instability if an individual is married and, in particular, if the partner is currently in paid work. This is due to the fact that the partner's income provides at least a partial shield against job insecurity in the presence of imperfect private insurance markets. However, the estimation results are not in line with this line of thinking. In addition, the results do not support the view that the presence of children increases the perception of job instability. In principle, the perception of job instability, other things being equal, should rise if the individual has children, because children's wellbeing is almost totally dependent on the stability of their parents' income stream. The hypothesis that the presence of children should, other things being equal, yield an increase in the perception of job instability does not hold even for the subpopulation of females (see Table IV).

According to the results, a long attachment to labour markets in terms of general experience fails to deliver a decline in perceived job instability among European workers. The conventional wisdom says that job tenure can be considered to be a proxy variable for the firm-specific human capital of individuals. This means that a long tenure should yield a decrease in job instability at the individual level of the economy, because firms typically follow the policy of "last in, first out". In fact, Green et al. (2000) provide empirical evidence for this kind of reasoning in the context of the UK. However, the results indicate that a long tenure (i.e., a long-term attachment to the same firm of the economy) does not yield a decline in the perception of job instability in European labour markets.²² In other words, the results are therefore in keeping with the view that human capital is mostly general by its nature.

An occurrence of unemployment during the past five years yields a substantial rise in the perception of job instability. However, this pattern does not hold for females (see Table IV). The results is therefore closely in line with the recent observations by Green et al. (2001) for the UK. In addition, Aaronson and Sullivan (1998) have discovered that individuals that have previously had an unemployment period are more prone to job insecurity in the U.S. labour markets.²³ In principle, there can be both real and psychological reasons for this correlation. The real reasons arise from the fact that there is an episode of deaccumulation of human capital during

the periods of unemployment. The occurrence of unemployment therefore yields a decline in the future probability of finding a job. On the other hand, the psychological effects are based on the notion that past experience tends to heighten the “availability” of that particular option to the individual.²⁴ In addition, the result concerning the effect of past unemployment on the perception of job instability is connected to the emerging economic literature that stresses the notion that unemployment is a significant contributor to the unhappiness of individuals across industrialized countries (see, for example, Di Tella et al., 2001). A part of the contribution of unemployment to unhappiness can therefore be realized via the increase in the perception of job instability in the case that individuals are risk-aversers.

The empirical finding that unemployment history strongly matters for the perception of job instability is also consistent with the notion that an unemployment episode provides otherwise private information about unobservable productivity of an employee. Thus, a layoff of individual worker in contrast to a quit or a closure of whole plant is indeed a credible signal about low-productivity of an employee (see, for example, Gibbons and Katz, 1991).²⁵ This means that unemployment tends to bring future unemployment at the individual-level of the economy (see, for example, Arulampalam et al., 2001). The welfare losses associated with unemployment episodes can manifest in extreme form. In fact, Charles and Stephens (2001) observe that a layoff yields an increase in the future divorce probability of individuals in the U.S.

The results further reveal that an optimistic view of the general economic conditions in the country of an individual has no effect at all on the perception of job instability, but an optimistic view about one’s personal economic conditions is associated with a decline in perception of job instability. The estimation results therefore underline the view that the perception of job instability is deeply a personal matter.

There are a number of job characteristics that are essential in the determination of the perception of job instability in the context of the European labour markets. In principle, the fact that an individual holds more than just one current job should decrease the perception of job instability, because the presence of multiple jobs should

diversify various risks induced by labour markets, owing to the fact that the idiosyncratic shocks that affect these jobs are not perfectly correlated with each other.²⁶ However, this line of reasoning is not in line with the estimation results.

Green et al. (2001) observe that the various measures of job dissatisfaction are positively related to the perception of job instability in the unregulated UK labour markets. In addition, Blanchflower and Oswald (1999) discover out that both U.S. evidence and European data point out that there is a strong positive correlation between feeling secure and saying one is satisfied with a job. In fact, the HOME variable of this study can be interpreted as an indication of job dissatisfaction. The estimation results are therefore not in line with the earlier UK empirical evidence.

The perception of job instability is negatively related to the presence of a part-time contract and positively related to the past overtime hours.²⁷ In principle, the presence of earlier overtime hours could put more faith in the stability of the current match, because overtime hours are often implemented in the case of robust demand for the products and services of the particular firm, but the estimation results are not in line with this kind of reasoning. In contrast, the estimated impact of overtime hours on the perception of job instability is in line with the notion that hours of work are adjusted before the adjustment of number of employees as there is an increase in demand. Thus, the implementation of overtime hours reflects, in fact, the underlying uncertainty about the firms' current environment that is also reflected in the perception of job instability among employees. The results further indicate that the effect of a part-time contract on the perception of job instability disappears within the subpopulation of females (see Table IV).

However, the most striking result of this study is that the perception of job instability is negatively related with the variable that captures the individuals that have a temporary contract.²⁸ The estimation result also holds for the subpopulation of females (see Table IV). The result can be interpreted as an indication of the feature in the European labour markets that persons who have started a temporary contact have already discounted the high subjective probability of job loss when they accept that type of contract. This means that a temporary contract as such does not

yield an additional increase to the perception of job instability at the individual level of the economy, other things being equal. The above result is not in line with the observations by Green et al. (2001), according to which individuals holding short-term employment contracts are found to report the greatest levels of job insecurity in the UK. However, the result can be rationalized by noting that temporary contracts often provide a path towards more stable employment relationships.²⁹ This effect is especially relevant in the context of the European unemployment problem.

The perception of job instability is not related at all to the fact that an individual is a manual worker, but negatively related to the feature that an individual has managerial duties in his/her current job. The latter can be rationalized by the notion that individuals that have managerial duties also have at least some power to decide about the separations of employees. In addition, the weekly hours of work are not related to the perception of job instability despite the fact that long hours of work by employees could serve as an indicator that the demand for firms' goods and services is relatively robust in the current market conditions. The perception of job instability is not more common in large cities with more than 100000 inhabitants. This may reflect the stylized feature that an increase in the density of economy activity leads to more efficient matching within regional labour markets via the so-called thick market externalities despite the fact that large cities have pockets of high unemployment rates.

The survey includes a limited number of variables that aim to characterize the firms' position in the economy. The results show that the perception of job instability is more common within manufacturing industries. This result is in line with the observations by Aaronson and Sullivan (1998) for the U.S., according to which job insecurity is substantially higher in the manufacturing sector than in all other major industries, but the breakdown of job insecurity by OECD (1997) is not able to find differences in the magnitude of the perception of job instability between industries and services in the context of European labour markets. However, the above result, according to which the perception of job instability is more common within manufacturing industries, is not in line with the stylized features presented in the recent literature on gross job and worker flows. The magnitude of gross job and worker flows

tends to be higher in non-manufacturing industries compared with manufacturing industries (see, for example, Davis and Haltiwanger, 1999).

In addition, there is some empirical evidence for the view that the perception of job instability by individuals increases according to the size of the firm. This effect is most notable for the subpopulation of females (see Table IV). The perception of job instability therefore seems to be less common in small establishments. This result is not in line with the realized patterns of turnover, either, because the turnover of jobs and workers tends to decline as firms' size increases.³⁰ However, this observation can be rationalized by noting that there is almost always a low hierarchy in small firms compared with large companies with a great number of separate establishments, which facilitates a more efficient and detailed flow of information about firms' position in the population of small firms.

Finally, the country dummies that we included indicate that there are genuine differences in the perception of job instability from country to country in Europe after taking account of various factors that contribute to the incidence of job instability. For instance, the perception of job instability is lower in Denmark and higher in Spain than in Norway even after taking into account the controls included for the incidence of job instability at the individual level of the economy. This same pattern of job instability holds for the subpopulation of females (Table IV). There are also unobservable idiosyncratic elements that affect the incidence of job instability in European labour markets.

4.1. *The Robustness of the Reported Results*

Along with the reported estimation results in Tables III–IV, a version of Probit model was estimated that included the gender-specific unemployment rate by Eurostat (2000) for the European Union countries in 1998. The unemployment variable was not statistically significant with the country dummies including the same control variables as the models reported in Tables III–IV. The reason for this feature is that there is no temporal variation in unemployment rates within countries at all, because the applied survey of this study provides cross-country information only for the single year 1998. This feature of estimation naturally extends to another variables by

similar nature (including the variables that capture the institutional characteristics of European labour markets that were discussed at the end of the third section of the study). This means that there is no point to try to include institutional features as an additional explanatory variables to the reported Probit models of the study.

Without the country dummies, the results indicated that an increase in the gender-specific unemployment rate yields an increase in the perception of job instability among workers, which is, of course, deeply in line with common sense. The result is also in line with the Figure 1. The rest of the results remained the same as the reported ones in Tables III–IV. The same results as the ones with the gender-specific unemployment rate hold in the case that the unemployment rate was replaced by the gender-specific share of long-term unemployed of all unemployed individuals for the European Union countries excluding Luxembourg and Ireland provided by Eurostat (2000). The motivation for that particular specification was the fact that long-term unemployment definitely yields extremely high private costs to individuals in terms of lost human capital in the context of European labour markets.

Another points concerning the robustness of the reported results in Tables III–IV can be in a nutshell summarized as follows. Without the country dummies, the estimation results remained the same, but the GENOPTIMISTIC variable turned out to be statistically significant with negative sign as *a priori* expected. Thus, an increase in the optimistic perception about the aggregate economy delivers definitely a decline in the perception of job instability at the individual-level of the economy. In addition, the JOBS variable did get a negative sign. This means that there is some evidence for the view that an increase in the number of jobs is able to reduce the perception of job instability at the individual-level of the economy. The exclusion of the PEROPTIMISTIC and GENOPTIMISTIC variables yielded the same results as the reported ones in Tables III–IV.

The survey includes a question about the employees' view about his/her labour market position from five years after the interview (the question 109a in the manual of interview, see Infratest Burke Sozialforschung, 1999a). The estimation results showed that the perception of job instability is highly correlated with the notion

that an employee thinks that he/her is in the pool of unemployment individuals from five years after the interview. This fact is in line with thinking that workers are indeed able to deliver consistent answers to the questions about the perception of job instability at the individual-level of the economy.

5. CONCLUSIONS

The study explored the empirical determination of perceived job instability in Europe. The study was based on the large-scale survey from the year 1998 covering 15 member states of the European Union and Norway. All in all, there tends to be a rather vague relationship between institutional features and the perception of job instability among workers. However, the patterns of perceived job instability and the institutional features of European countries are not consistent with the popular notion that the perception of job instability declines as the strictness of labour standards and the strictness of employment protection increase in European labour markets. This pattern emerges despite the stylized feature of the earlier literature that the underlying magnitude of gross job and worker flows of the economies declines as the strictness of labour standards and employment protection increases. This means that the perception of job instability and the underlying gross flows of job and workers need not to be closely correlated.

The results show that perceived job instability increases with age. In other words, there is evidence for the view that it is the job loss wage penalty more than the job loss incidence that drives the perception of job instability among workers. An increase in educational level, on the other hand, leads to a decline in the perception of job instability. There are no differences in the perceptions of job instability between males and females. An occurrence of unemployment during the past five years delivers a substantial rise in the perception of job instability. The empirical finding that unemployment history strongly matters for the perception of job instability is consistent with the notion that an unemployment episode provides otherwise private information about unobservable productivity of an employee. The most striking result was that a temporary contract as such does not yield an additional increase to the perception of

job instability at the individual level of the economy. However, the perception of job instability is more common within manufacturing industries and there is some evidence for the view that it increases according to the size of the firm. There are also strong country effects.

ACKNOWLEDGEMENTS

Financial support from the Yrjö Jahnsson Foundation is gratefully acknowledged. I am grateful to European Foundation for the Improvement of Living and Working Conditions for allowing me to use their Employment Options Survey Data in this study. I am grateful to Pekka Ilmakunnas, Erkki Koskela and Reija Lilja for comments. Paul A. Dillingham has kindly checked the language. The usual disclaimer applies.

TABLE A1
The number of interviews across countries

Country	Number of interviews
Austria	1501
Belgium	1510
Denmark	1485
Finland	1504
France	3026
Germany	2998
Greece	1506
Ireland	1400
Italy	2992
Luxembourg	822
Netherlands	1500
Norway	1500
Portugal	1501
Spain	3000
Sweden	1312
United Kingdom	3000

TABLE A2

Selected descriptive statistics for the whole population of employees

Variable	MEAN	STD	MIN	MAX
WORRIED	0.27703	0.44755	0	1
AGE	38.43222	10.93591	16	64
GENDER	0.51688	0.49974	0	1
DEGREE	0.29214	0.45477	0	1
MARRIED	0.65463	0.47551	0	1
PARTNER	0.34134	0.47418	0	1
CHILDREN	0.61717	0.48610	0	1
EXPERIENCE	0.71911	0.44945	0	1
TENURE	0.41225	0.49226	0	1
UNEMPLOYED	0.19785	0.39840	0	1
GENOPTIMISTIC	0.09970	0.29961	0	1
PEROPTIMISTIC	0.10992	0.31280	0	1
JOBS	0.93188	0.25196	0	1
HOME	0.09980	0.29975	0	1
PART	0.19287	0.39457	0	1
OVERTIME	0.64088	0.47976	0	1
TEMPORARY	0.83084	0.37491	0	1
MANUAL	0.36214	0.48064	0	1
MANAGER	0.37767	0.48483	0	1
HOURS	39.03729	12.0639	1	88
METROPOLITAN	0.42980	0.49507	0	1
MANU	0.24377	0.42938	0	1
SERVICE	0.71599	0.45096	0	1
SIZE1	0.17435	0.37944	0	1
SIZE2	0.24815	0.43197	0	1
SIZE3	0.29471	0.45595	0	1

NOTES

¹ Davis and Haltiwanger (1999) provide a survey of the literature on gross job and worker flows. Burda and Wyplosz (1994) provide empirical evidence on the magnitude of gross job and worker flows in Europe.

² In addition, Aaronson and Sullivan (1998) argue that the trends in job security are much more relevant to the discussion of whether special factors might be restraining wage inflation than are the trends in realized job stability. In particular, if declines in job stability are less dramatic than declines in job security, it must largely be because workers are less likely to leave jobs voluntarily, and a decreased tendency to quit jobs may itself signal worker insecurity.

³ The survey was commissioned by the European Foundation for the Improvement of Living and Working Conditions, Dublin, and the Norwegian Royal Ministry of Labour and Government Administration, Oslo. Fieldwork was coordinated by Infratest Burke Sozialforschung, which also prepared the initial analyses of the survey.

⁴ Alesina et al. (2001) provide a recent study on the differences of European and U.S. welfare systems.

⁵ Neumark et al. (1999) summarize the evidence on job instability in the United States. OECD (1997) provide empirical evidence on the evolution and the causes of job instability for Europe. In addition, Givord and Maurin (2001) provide recent evidence on the rise in magnitude of job instability in France.

⁶ OECD (1997) provides a breakdown of perceived job insecurity in Europe based on Eurobarometer Survey for 1996. Blanchflower and Oswald (1999) provide an investigation into job insecurity by applying ISSP (International Social Survey Program) including a large group of countries. In addition, Domenighetti et al. (2000) provide empirical evidence for the view that job insecurity generates substantial negative health effects (for example, sleeplessness).

⁷ Aaronson and Sullivan (1998) provide additional evidence on this issue.

⁸ However, the empirical evidence presented by Aaronson and Sullivan (1998) reveals that an increase in the perceived likelihood of job loss has been especially great among white-collar workers during the 1990s. Thus, there has been a kind of “democratization” of job insecurity in the U.S.

⁹ Green et al. (2001) also find that increased job insecurity, relative to aggregate unemployment rate, has contributed in part to wage restraint in the UK. Aaronson and Sullivan (1998) have earlier reported similar empirical results for the U.S. by using General Social Survey (GSS). Nickell et al. (2002) provide additional evidence on the issue of job insecurity in the UK.

¹⁰ Infratest Burke Sozialforschung (1999a, b, c, d) provides the detailed documentation of the survey.

¹¹ The total number of telephone assisted interviews was 30557. The number of non-employed individuals and the economically inactive persons was 17908.

¹² Self-employed persons are defined as persons who declare themselves to be self-employed.

¹³ Green et al. (2001) present similar scatterplots by using the International Social Survey Programme (ISSP) and find that there is a positive association between job insecurity and the aggregate unemployment rate across countries.

¹⁴ Greece and Luxembourg are excluded from Figures 2–3 due to the fact that indexes of labour standards and employment protection are not available for these countries. These indexes are adapted from Nickell and Layard (1999: p. 3040).

The index of labour standard strictness is originally by OECD. Each country is scored from 0 (lax or no legislation) to 2 (strict legislation) on five dimensions: working hours, fixed-term contracts, employment protection, minimum wages and employees' representation rights. The scores are then totalled, generating an index ranging from 0 to 10. The OECD employment protection index is based on the strength of the legal framework governing hiring and firing of workers. Countries are ranked from 1 to 20, with 20 being the most strictly regulated.

¹⁵ Another possible interpretation of the correlation is that the demand for employment protection rises if there is a great deal of perception of job instability among employees. Agell (1999) provides an elaboration along this line of thinking.

¹⁶ Bertola (1992), Garibaldi et al. (1997), Salvanes (1997) and Garibaldi (1998) provide presentations of this view of labour market adjustment.

¹⁷ Greece is excluded from the figure owing to the fact that the replacement rate is not available for that particular country. The replacement rates are adapted from OECD (1998) and calculated as an average of the first four columns in Table 3.1, which report replacement rates for four family types (i.e., single, married couple, couple with two children and lone parent with two children).

¹⁸ Horowitz and Savin (2001) provide a survey of binary response models.

¹⁹ A limited number of observations does not make it possible to estimate the specifications separately for each country of the survey.

²⁰ Ryan (2001) provides a survey of these issues.

²¹ However, the measure of education in the investigation by OECD (1997) is far from perfect, because education is proxied by the age at which the individual first left full-time education.

²² This result is not in line with a stylized fact in the literature on gross worker flows, according to which the probability of a job ending, in fact, declines with tenure (see, for example, Farber, 1999). A potential problem with the conclusion that a long tenure does not yield a decline in the perception of job instability is the fact that the age of an employee and the length of the tenure tend to be positively correlated across individuals.

²³ A related study by Ruhm (1991) finds that job losers continue to experience lasting wage reductions in the U.S. This suggests that there are significant worker attachments to specific jobs. In addition, Hall (1995) focuses on the permanent effects of job losses in the U.S. Kletzer (1998) provides a summary of empirical findings.

²⁴ Tversky and Kahneman (1982) provide a discussion of these effects.

²⁵ Lupi and Ordine (2002) report that individual unemployment experiences tend to scarring only in the northern regions of Italy, where aggregate unemployment rate is relatively low compared with southern parts of the country.

²⁶ Another possibility is that employees that have by nature a substantial risk of losing their jobs should hold more than just one current job. Bell et al. (1997) observe by using the British Household Panel Study that multiple job holding is an incomplete 'hedge' against financial insecurity in the UK. Keyssar (1986) provides an interesting discussion of unemployment in Massachusetts in the 19th

century. According to Keyssar (1986) many people held many jobs as a mechanism of self-insurance.

²⁷ The results concerning the effect of a part-time job on insecurity is in conflict with the observations by Green et al. (2000) for the UK, according to which part-time jobs tend to yield an increase in the perception of job insecurity in low wage occupations.

²⁸ Temporary employment is defined as non-permanent employment (including fixed-term and temporary agency contracts).

²⁹ Houseman (1998) provides empirical evidence on this feature of labour markets for the U.S.

³⁰ Davis and Haltiwanger (1999) provide a survey of the literature.

REFERENCES

- Aaronson, D. and D.G. Sullivan: 1998, 'The decline in job security in the 1990s: displacement, anxiety, and their effect on wage growth', Federal Bank of Chicago, *Economic Perspectives* 22, pp. 17–43.
- Agell, J.: 1999, 'On the benefits from rigid labour markets: Norms, market failures, and social insurance', *The Economic Journal* 109, pp. F143–F164.
- Alesina, A., E. Glaeser and B. Sacerdote: 2001, 'Why doesn't the U.S. have a European style welfare system?', Working Paper 8524 (National Bureau of Economic Research, Cambridge MA).
- Arulampalam, W., P. Gregg and M. Gregory: 2001, 'Unemployment scarring', *The Economic Journal* 111, pp. F577–F584.
- Bell, D., R.E. Wright and R.A. Hart: 1997, 'Multiple job holding as a 'hedge' against unemployment', Discussion Paper 1626 (Centre for Economic Policy Research, London).
- Bertola, G.: 1992, 'Labour turnover costs and average labour demand', *Journal of Labor Economics* 10, pp. 389–411.
- Blanchflower, D.G. and A.J. Oswald: 1999, 'Well-being, insecurity and the decline in American job satisfaction', Unpublished paper (Department of Economics, University of Warwick).
- Burda, M. and C. Wyplosz: 1994, 'Gross worker and job flows in Europe', *European Economic Review* 38, pp. 1287–1315.
- Charles, K.K. and M. Stephens: 2001, 'Job displacement, disability and divorce', Working Paper 8578 (National Bureau of Economic Research, Cambridge MA).
- Clark, A.E.: 1997, 'Job satisfaction and gender', *Labour Economics* 4, pp. 341–372.
- Davis, S.J. and J. Haltiwanger: 1999, 'Gross job flows', in O. Ashenfelter and D. Card (eds.), *Handbook of Labour Economics*, Vol. 3C (North-Holland, Amsterdam), pp. 2711–2805.
- Davis, S.J. and P. Willen: 1999, 'Using financial assets to hedge labor income risks: Estimating the benefits', Unpublished paper. (Department of Economics, University of Chicago).

- Di Tella R., R.J. MacCulloch and A.J. Oswald: 2001, 'Preferences over inflation and unemployment: Evidence from survey of happiness', *The American Economic Review* 91, pp. 335–341.
- Domenighetti, G., B. D'Avanzo and B. Bisig: 2000, 'Health effects of job insecurity among employees in the Swiss general population', *International Journal of Health Services* 30, pp. 477–490.
- Dominitz, J. and C.F. Manski: 1996, Perceptions of economic insecurity: Evidence from the survey of economic expectations, Discussion Paper 1105-96 (Institute for Research on Poverty, The University of Wisconsin-Madison).
- Dominitz, J. and C.F. Manski: 1997, 'Perceptions of economic insecurity', *Public Opinion Quarterly* 61, pp. 261–287.
- Eurostat: 2000, Eurostat Yearbook. A Statistical Eye on Europe. Data 1988–1998 (European Commission, Brussel).
- Farber, H.S.: 1999, 'Mobility and stability: The dynamics of job change in labor markets', in O. Ashenfelter and D. Card (eds.), *Handbook of Labour Economics*, Vol. 3C (North-Holland, Amsterdam), pp. 2439–2483.
- Garibaldi, P.: 1998, 'Job flow dynamics and firing restrictions', *European Economic Review* 42, pp. 245–275.
- Garibaldi, P., J. Konings and C. Pissarides: 1997, 'Gross job reallocation and labour market policy', in D.J. Snower and G. de la Dehesa G. (eds.), *Unemployment Policy: Government Options for the Labour Market* (Cambridge University Press, Cambridge), pp. 467–498.
- Gibbons, R. and L. F. Katz: 1991, 'Layoffs and lemons', *Journal of Labor Economics* 4, pp. 351–380.
- Givord, P. and E. Maurin: 2001, Changes in job stability and their causes: An empirical analysis method applied to France, 1982–2000, Unpublished (INSEE, Paris).
- Gottschalk, P. and R. Moffitt: 1998, Job instability and insecurity for males and females in the 1980s and 1990s, Working Papers in Economics 408 (Department of Economics, Boston College).
- Green, F., A. Felstead and B. Burchell: 2000, 'Job insecurity and the difficulty of regaining employment: An empirical study of unemployment expectations', *Oxford Bulletin of Economics and Statistics* 62, pp. 857–885.
- Green, F., D. Campbell, A. Carruth and A. Dickerson: 2001, An analysis of subjective views of job insecurity, Working Paper 08/01 (University of Kent at Canterbury).
- Hall, R.E.: 1995, 'Lost jobs', *Brookings Papers on Economic Activity* 1, pp. 221–256.
- Horowitz, J.L. and N.E. Savin: 2001, 'Binary response models: Logits, probits and semiparametrics', *Journal of Economic Perspectives* 15, pp. 43–56.
- Houseman S.N.: 1998, Why employers use flexible staffing arrangements: Evidence from an establishment survey, Working Papers 01-67 (W.E. Upjohn Institute, Michigan).

- Infratest Burke Sozialforschung: 1999a, Employment options of the future. Representative survey in all 15 member states and in Norway – documentation of questionnaires. Volume 1-2 (IBS, Munich).
- Infratest Burke Sozialforschung: 1999b, Employment options of the future. Representative survey in all 15 member states and in Norway. Additional cross-tabulations – Volume A–B (IBS, Munich).
- Infratest Burke Sozialforschung: 1999c, Employment options of the future. Representative survey in all 15 member states and in Norway. Field report and cross-Tabulations (IBS, Munich).
- Infratest Burke Sozialforschung: 1999d, Employment options of the future: High demand for new jobs in Europe – high interest in non-standard work-forms. First results from a representative survey in all 15 member states and in Norway (IBS, Munich).
- Keyssar, A.: 1986, *Out of Work: The First Century of Unemployment in Massachusetts* (Cambridge University Press, Cambridge).
- Kletzer, L.G.: 1998, 'Job displacement', *Journal of Economic Perspectives* 12, pp. 115–136.
- Kuhn, P. 2001, 'Summary and Synthesis', in P. Kuhn P. (ed.), *Losing Work, Moving On: Worker Displacement in an International Perspective* (W.E. Upjohn Institute for Employment Research, Michigan), pp. 1–72.
- Lupi, C. and P. Ordine: 2002, 'Unemployment scarring in high unemployment regions', *Economics Bulletin* 10, pp. 1–8.
- Manski, C.F. and J.D. Straub: 2000, 'Worker perceptions of job insecurity in the mid-1990s. Evidence from the survey of economic expectations', *The Journal of Human Resources* 35, pp. 447–479.
- Neumark, D., D. Polsky and D. Hansen: 1999, 'Has job stability declined yet? New evidence for the 1990s', *Journal of Labor Economics* 17, pp. S29–S64.
- Nickell S. and R. Layard: 1999, 'Labor market institutions and economic performance', in O. Ashenfelter and D. Card (eds.), *Handbook of Labour Economics*, Vol. 3C (North-Holland, Amsterdam), pp. 3029–3084.
- Nickell, S., T. Jones and G. Quintini: 2002, 'A picture of job insecurity facing British men', *The Economic Journal* 112, pp. 1–27.
- OECD: 1997, *Employment Outlook* (OECD, Paris). OECD: 1998, *Benefit Systems and Work Incentives* (OECD, Paris).
- OECD: 1999, *OECD Economic Outlook* (OECD, Paris).
- Ruhm, C.: 1991, 'Are workers permanently scarred by job displacements?', *The American Economic Review* 81, pp. 319–324.
- Ryan, P.: 2001, 'The school-to-work transition: Cross-country perspective', *Journal of Economic Literature* 39, pp. 34–92.
- Salvanes, K.G.: 1997, 'Market rigidities and labour market flexibility: An international comparison', *Scandinavian Journal of Economics* 99, pp. 315–333.
- Schmidt, S.R.: 1999, 'Long-run trends in workers' beliefs about their own job security: Evidence from the general social survey', *Journal of Labor Economics* 17, pp. S127–S141.

Tversky, A. and D. Kahneman: 1982, 'Chapter one', in A. Tversky and D. Kahneman (eds.), *Judgement and Uncertainty: Heuristics and Biases* (Cambridge University Press, Cambridge), pp. 1–27.

Van Praag, B.M.S., P. Frijters and A. Ferrer-i-Carbonell: 2001, *The anatomy of subjective well-being*, Discussion Paper 265 (DIW, Berlin).

Labour Institute for Economic Research

Pitkänsillanranta 3A

FIN-00530 Helsinki

Finland

E-mail: petri.bockerman@labour.fi