

Why have permanent workers grown dissatisfied with their jobs?

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Abstract

This paper investigates the role of changing working conditions and labor market institutions in explaining the declining trend in the job satisfaction of permanent workers observed in many EU-15 countries in the last decades. In order to clarify the roles of these two potential factors and assess the extent of their interplay, we propose a simple model à la Mortensen-Pissarides (1999), adequately extended in order for labor effort

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to affect the utility from work and respond to both working conditions and labor market institutions.

The empirical analysis, based on the European Working Condition Survey (EWCS) microdata properly matched with the OECD indicators on labor market institutions, shows that, once controlling for the business cycle, personal and firm characteristics, deteriorating working conditions are more relevant than changes in labor market institutions in explaining the drop in job satisfaction. Our results are robust to a number of checks testing their sensitivity to changing definitions and potential unobserved heterogeneity. We conclude that, despite improving "hard" working conditions and physical work-related health, work intensification has been worsening more for permanent workers than for temporary ones, with negative consequences on psychological work-related health and, more in general, on workers' well being.

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1 Introduction

In the last decades, in developed countries, job satisfaction has been declining despite objective improvements in overall working conditions: data from international surveys suggest that the percentage of satisfied workers in the EU dropped from 87% in 1995 to 84% in 2005 (European Foundation for the Improvement of Living and Working Conditions, 2009). Similar trends are found also for the US, where job satisfaction, employees attitudes and commitment have been continuously declining over time, particularly since the 1980s (Cappelli, 1999; Pfeffer, 2007)

According to Boeri and Garibaldi (2009) the explanation of the European job satisfaction decline lies in the failure to provide workers with sufficient insurance in the face of a rising employment insecurity ensuing from the sea change in labor market conditions. If we exclude the last recessionary period, it appears that the defeat of the European mass unemployment has come at the price of a substantial increase in temporary contracts: finding a job is easier than in the previous twenty years but once employed job security is lower. To cope with this problem and curb unemployment the Danish successfully pioneered the "flexibility" approach: generous unemployment benefits (UBs) to bridge the transition period from two employment spells and active labor market policies (ALMPs) to increase employability. This model, though recommended to other countries (European Commission, 2007), didn't inspired, however, the reforms of major European labor markets; on the contrary, the increasing use of temporary contracts was associated with declining employment protection legislation (EPL) for temporary and, in some cases, for permanent workers, less generous or shorter UBs and declining expenditure on ALMPs.

The surprising fact that job satisfaction decline is essentially confined to permanent workers suggests that once institutions allow a higher employment flexibility, the job contract is no longer a sufficient guarantee of job stability and permanent workers then loose relatively more than temporary workers. Indeed, Origo and Pagani (2009) confirm the crucial role played by the perceived job security on job satisfaction: permanent workers who perceive their job to be at risk are less satisfied than temporary workers who perceive their job to be secure.

A relevant competing explanation to the paradox of declining job satisfaction is centered around the topical issues of work intensification (Green, 2004 and 2006; Oswald, 2010) and difficulties in reconciling work and life (European Foundation for the Improvement of Living and Working Conditions, 2009). Indeed, while the European labor market institutions were taking a turn, another wave of changes, directly affecting employees' life, was underway in the workplace. Initially pioneered by novel management views (Walton, 1985), which saw in employees' genuine involvement in firm's objectives an essential ingredient for improving firm's performance, such changes spread first in the US and then across Europe and were made operative in many firms through the adoption of innovative work systems (European Commission, 2002). They reshaped the work organization and introduced new types of workplace practices centered on concepts like employees' autonomy, discretion and task variety.

Although workers involved in these new workplace practices usually report higher levels of job satisfaction with respect to workers on traditional fordist type of jobs (Freeman and Kleiner, 2000; Bauer, 2004; Mohr and Zoghi, 2008; Origo and Pagani, 2008), results are not

unanimous (Godard, 2001; Guest, 1999; Guest and Conway, 2007). Moreover, in presence of innovative practices, various findings regarding specific job dimensions are uncomfortable: the probabilities of occupational illnesses, mental strain and risk of injuries are shown to rise (Askenazy 2001; Fairris and Brenner, 2001; Brenner et al., 2004; Askenazy and Caroli, 2006); likewise, the pace of work, stress and anxiety increase as the peer pressure rises when autonomous teams are engaged in high quality standards (Adler et al., 1997); finally, thorough reorganizations appear to rise layoffs (Osterman, 2000; Black and Lynch, 2004).

Interestingly, the contrast between the institutional transformation moving the labor market towards a higher flexibility, on the one side, and the search for substantial employees' involvement as revealed by firms espousing the new work system, on the other side, is striking. We think that this contradiction is likely to exacerbate the duality of the labor market and penalize the permanent workers most. Temporary workers, because of their short labor relation, cannot accumulate the tacit knowledge that involvement programs and practices aim to extract, so we expect them to be only marginal actors of the firm's reorganization design. On the contrary, permanent workers are expected to be substantially involved in the workplace reorganization. Then, as the overall job security declines and the cost of losing the job rises, the threshold of the acceptable effort is likely to increase and with it work intensification. In the transformed labor market, permanent workers may then be 'trapped' into a new workplace that demands a deeper involvement which, though enriching, may easily bring about anxiety and stress. Permanent workers' welfare drop would then result from the interaction of institutional and workplace transformations.

The main objective of this paper is to assess the relative role and the interplay of these two

possible explanations of the declining trend in permanent workers' job satisfaction. We make use of a simple model of the permanent workers' utility from work where workplace-related factors determine the minimum work effort and institutions-related factors determine the additional work effort as well as state transition probabilities. The model is estimated using three waves of the European Working Condition Survey, of which we exploit the very detailed information on extrinsic and intrinsic job attributes, properly matched with the OECD measures of labor market institutions to capture changes in relevant labor market institutions across countries.

The paper is organized as follows: the next section describes the model, section 3 describes the data, the definitions used in the empirical analysis and provides some key descriptive statistics; section 4 discusses the empirical results, while robustness checks are presented in section 5; the last section concludes.

2 A model to account for employees' utility from work

A labor contract is assumed to be either permanent or temporary; the latter lasts one period at the end of which it is either transformed into a permanent one, with probability λ , or it is definitely closed and the worker becomes unemployed. A permanent contract is maintained with probability π and closed with probability $(1 - \pi)$: in this case the worker becomes unemployed. People in unemployment can find a permanent job with probability γ and a temporary job with probability τ , with $\gamma + \tau \leq 1$. For given cyclical conditions, transition probabilities capture labor market institutions; in particular π and γ capture the extent of employment protection legislation (EPL) for permanent workers while λ and τ capture the

legislation affecting temporary contracts.

Let the present value of the utilities of being permanent employed (U_P), temporary employed (U_T) and unemployed (U_U) satisfy standard arbitrage conditions (Mortensen and Pissarides, 1999):

$$U_P = W_P - e_P + \frac{1}{1+r}(\pi U_P + (1-\pi)U_U) \quad (1)$$

$$U_T = W_T - e_T + \frac{1}{1+r}(\lambda U_P + (1-\lambda)U_U) \quad (2)$$

$$U_U = b + \frac{1}{1+r}(\tau U_T + \gamma U_P + (1-\tau-\gamma)U_U) \quad (3)$$

where r is the real interest rate, $W_P - e_P$, $W_T - e_T$ and b are the instantaneous utilities defined either as current labor earnings (W_P , W_T) net of efforts (e_P , e_T) or as unemployment benefits b .

By solving the above system of equations, the solution for U_P reads as follows:

$$U_P = A(W_P - e_P) + B(W_T - e_T) + Cb \quad (4)$$

where A, B and C are non linear functions of transition probabilities and the interest rate¹:

$$A = \frac{D(1+r)^2(1-\pi)(r\lambda + \gamma(1+r))}{(1+r-\pi)D} \quad (5)$$

$$B = \frac{\tau(1-\pi)(1+r)}{D} \quad (6)$$

$$C = \frac{(1-\pi)(1+r)^2}{D} \quad (7)$$

¹Simulations of the coefficients A,B and C based on the empirical values of the transition probabilities (European Commission, 2004) and the real interest are presented in Figure 4, in Appendix. Coefficient C is significantly lower in values with respect to A and B. All coefficients are rather stable for reasonable changes of the transition probabilities.

and $D = (1 + r - \pi)[(r + \tau + \gamma)(1 + r) - \tau(1 - \lambda)] - (1 - \pi)(\tau\lambda + \gamma(1 + r))$.

Equation 4 is further characterized by allowing efforts e_p and e_T to depend on both working conditions and institutions. Specifically, efforts are characterized as in figure 2 and in equations 8 and 9 . Drawing on the empirical literature, permanent workers' effort is assumed to decline with the probability of remaining employed² and temporary workers' effort is assumed to rise with the probability of having the contract changed into permanent³. Moreover, to allow for non linearities both efforts are assumed to be quadratic functions of π and λ : the minimum permanent workers' effort (\bar{e}_p) is then reached at $\pi = 1$ and the minimum temporary workers' effort (\bar{e}_t) is reached at $\lambda = 0$. In both cases minimum efforts are determined by working conditions only; specifically: $\bar{e}_p = \rho'_p \varepsilon$ and $\bar{e}_t = \rho'_t \varepsilon$, where ε is a vector of working condition and ρ_p and ρ_t are the weighting vectors. As π approaches zero and λ approaches 1, the efforts of permanent and temporary workers rise to the maximum.

$$e_p = \alpha\pi^2 - 2\alpha\pi + (\bar{e}_p + \alpha) \quad (8)$$

$$e_T = \alpha\lambda^2 + \bar{e}_t \quad (9)$$

where α is the maximum increase in effort over the minimum.

Finally, we let the wage be defined hedonically:

²Evidence of a negative relation between permanent workers' effort and probability of employment is shown by Engellandt and Riphahn (2005) and by Ichino and Riphahn (2005)

³See for example Dolado and Stucchi (2008) to support a positive relations between λ and temporary workers' effort.

$$W_P = \gamma_P Z + \beta_P \rho'_P \varepsilon \quad (10)$$

$$W_T = \gamma_T Z + \beta_T \rho'_T \varepsilon \quad (11)$$

where individual characteristics Z may be differently priced (γ_P and γ_T) in the permanent and temporary workers' wage and $\beta_P, \beta_T > 0$ as long as the wage compensates for the working conditions; notice that the additional institutions- related effort is not compensated.

Substituting equations 8-11 in 4 yields:

$$U_P = (\gamma_P A + \gamma_T B) Z - (\rho'_P (1 - \beta_P) A + \rho'_T (1 - \beta_T) B) \varepsilon - \alpha A (\pi^2 - 2\pi + 1) - \alpha B \lambda^2 + C b \quad (12)$$

According to equation (12), utility from work depends on personal characteristics (Z), working conditions (ε), transition probabilities π and λ and unemployment benefits (b). Notice that working conditions affect utility from work only as long as wages do not perfectly compensate for them (that is, as long as $\beta_P \neq 1$ and/or $\beta_T \neq 1$); moreover, with the exception of unemployment benefits, labor market institutions directly affect utility from work only as long as they affect effort (that is, as long as $\alpha \neq 0$).

In order to obtain an empirical version of the model, write equation (12) in a compact form:

$$U_P = \mathbf{X}\beta + e \quad (13)$$

where β is a vector of parameters and \mathbf{X} a vector of explanatory variables including individual characteristics, working conditions, a measure of unemployment benefits, and the OECD measures of EPL for permanent (to capture π) and of EPL for temporary workers (to capture λ)⁴.

Take U_P to be a latent variable of which we observe a binary outcome JS :

$$JS = \begin{cases} 1 & \text{if } U_P > 0 \\ 0 & \text{if } U_P \leq 0 \end{cases}$$

On the assumption that the errors e are independent of \mathbf{X} and normally distributed, the model is therefore estimated using a standard probit regression.

3 Data, definitions and descriptive statistics

The empirical analysis is based on microdata from different waves of the European Working Conditions Survey (EWCS). The EWCS, carried out every five years since 1990 by the European Foundation for the Improvement of Living and Working Conditions, is designed to

⁴The OECD indicator for EPL in the case of temporary employment measures the extent to which firms can freely use fixed term and temporary agency contracts; the measure is computed with regards to: valid cases for the use of temporary contracts, maximum number of successive temporary contracts and their cumulative duration. The stricter is EPL in terms of these aspects, the higher is the probability that firms have to hire temporary workers on a permanent basis in order to retain them once their (last) temporary contract expires. In this perspective, EPL for temporary contracts can be considered as a proxy for the probability of temporary workers to get a permanent job, i.e. of λ .

investigate the conditions of work across the EU Member States and other European countries and is the best comparable source of information on working conditions and related issues. A target of around 1000 workers are interviewed in all countries⁵ about a wide range of work-related matters, such as work organisation, wage structure, working time and other contractual arrangements. The survey also includes demographic and other background information like age, gender, education, family composition as well as tenure, occupation and sector (see table A-7 in Appendix for more details on definitions and basic statistics of the main variables used in the empirical analysis). Like many other individual socio-economic surveys, most of the questions that we are interested in, such as work-related health, exposure to risk, working conditions, stress, job satisfaction are based on subjective evaluations; objective evaluations, if available, could be different but would not necessarily be preferable as in most cases it is the perceived reality that has social effects, not reality itself (Karppinen et al., 2006).

We focus our analysis on the last three waves of the survey, covering all the EU-15 countries in the 1995-2005 period. The EWCS measures job satisfaction through the following question: "Are you very satisfied, satisfied, not very satisfied or not at all satisfied with working conditions in your main paid job?" On the basis of this question, we consider as satisfied workers who are very satisfied or satisfied with their job.

Figure 1 depicts the share of satisfied workers by type of contract. According to the figure, job satisfaction of permanent workers has been steadily declining since 1995, while job satisfaction of temporary workers, albeit always significantly lower than that of permanent

⁵In the smallest countries (Cyprus, Estonia, Luxembourg, Malta and Slovenia) the sample is 600. The survey provides sampling weights in order to enable reliable comparisons across countries.

workers, has been roughly stable.

Regarding working conditions, from the EWCS we compute a wide set of variables measuring physical working conditions, working time arrangements and job characteristics related to innovative practices. Furthermore, we control for job-related health problems to account for further pressure exerted by increasing job intensification.

Physical working conditions are carefully measured through a question asking whether the respondents are exposed at work to a number of risky factors, namely: vibrations (from hand tools, machinery, etc.); noise so loud that you would have to raise your voice to talk to people; high temperatures (which make you perspire even when not working); low temperatures (whether indoors or outdoors); breathing in smoke (including fumes, powder or dust etc.); handling or being in skin contact with chemical products or substances; radiation (such as X rays, radioactive radiation, welding light, laser beams).

Answers are on a 7-point Likert scale: All of the time (1), Almost all of the time (2), Around three quarters of the time (3), Around half of the time (4), Around one quarter of the time (5), Almost never (6), Never (7). For each risky condition we compute a dummy equal to 1 if the value of the answer is less or equal to 5. We then compute a summary indicator, called **exposure**, by averaging out these dummies.

Another measure of physical working conditions can be derived from a question asking whether the main paid job involves: tiring or painful positions; carrying or moving heavy loads; repetitive hand or arm movements. Answers to each item are still based on a 7-point Likert scale. As above, we first compute the relative dummies (equal to 1 if the answer is less or equal to 5) and then the summary (average) indicator, which we name **position**.

We then consider two questions to capture the pace of work: "Does your work involve working at very high speed?" and "Does your work involve working to tight deadlines?". Both questions use the above Likert scale, from which we compute two dummy variables (**speed** and **deadlines**) equal to 1 if the value of the answer is less or equal to 5.

Working time arrangements are measured by two indicators, one related to flexible hours and one to non-standard working time. The first indicator measures whether the workers can freely choose: when to start and finish their job; their breaks; and their holidays. The overall indicator, named **flex hours**, is the mean of the three dummies related to each item. The indicator for non-standard working hours (**no std hours**) is the mean of the dummies measuring whether the workers work at night, during the week-end or on shifts.

Involvement in innovative practices is distinguished between a formal top-down dimension and a more individual dimension, capturing a personal participation in the innovative system. The former, named **formal involvement**, is a dummy equal to 1 if the workers have been consulted about changes in the organization of work and/or their working conditions in the twelve months before the survey. This is the standard definition of involvement in the literature on High Performance Workplace Practices (see, for example, Mohr and Zoghy 2008)

The second dimension is measured by a set of questions asking whether the main paid job involves: assessing yourself or the quality of your own work; solving unforeseen problems on your own; learning new things. The overall indicator, named **individual involvement**, is the mean of the three dummy variables related to these items.

Finally, job-related health problems are classified into two main groups: physical and psychological ones. In the survey workers are asked to assess whether their job causes the fol-

lowing health problems/illnesses: hearing problems; problems with vision; skin problems; backache; headaches; stomach ache; muscular pains; respiratory difficulties; heart disease; allergies; stress; overall fatigue; sleeping problems; anxiety; irritability. All items are coded as dummy variables; we compute a measure of physical health problems (**body**) by averaging over the first ten dummies and a measure of psychological problems (**mind**) by averaging over the last five dummies.

Table 1 reports the means of our main indicators of working conditions by type of contract and year. Working conditions regarding exposures to substances, temperatures and similar have improved for both permanent and temporary workers, while the conditions regarding position and loads have, since the nineties, improved for temps but deteriorated for permanent workers. Speed and deadlines have also increased, specially in the last quinquennium, confirming previous results (Green, 2004) and more for permanent workers than for temps. Formal involvement in 2005 is not significantly different from its level in 1995, particularly for temps; individual involvement has been steadily declining for temps, while improving for permanent workers. Finally, the relevance of psychological related problems is clearly on the rise for permanent workers but stable for temps; both groups enjoy, instead, an improvement in physical health.

The picture suggested by these bivariate analysis is one in which permanent workers are relatively more empowered in their jobs and more involved at the workplace; however, their pace of work has risen over time and they have to adjust to high speed of work and tight deadlines. Permanent workers also suffer worsening working conditions related to stress and anxiety, a feature that is not shared by temporary workers. Offsetting effects are coming

from the general improvement of the 'hard' working conditions.

EWCS microdata are merged with country-level time-variant indicators of **labor market institutions** taken from the OECD database. More specifically, as suggested by the model proposed in Section 2, we focus our attention on three institutions: the strictness of Employment Protection Legislation (EPL) for, respectively, permanent and temporary workers ⁶, and the generosity of unemployment benefits (in terms of replacement rate). Together with Active Labour Market Policies (ALMP), these are the main institutions shaping the flexicurity model of each country. As can be seen from Table 2, the decline of EPL rigidity is particularly clear from 1995 to 2000 and for temporary workers. Unemployment benefits actually grew in the same period, but declined from 2000 to 2005, while ALMPs have declined steadily in the decade. On the whole, this evidence is against the flexicurity principles, since declining EPL was not counterbalanced by more generous unemployment benefits and/or higher expenditure on ALMPs.

4 Empirical specification and results

Let JS be the dependent variable which is equal to 1 if the permanent worker states to be very satisfied or satisfied with his/her main paid job and 0 otherwise. We therefore estimate the following model:

⁶These indicators vary between 0 and 6 and are increasing in protection. For further details, see OECD (2004)

$$\begin{aligned}
JS_{ict} = & c + \alpha_1 y_{2000_t} + \alpha_2 y_{2005_t} \\
& + \beta_1 epl_perm_{ct} + \beta_2 epl_perm_{ct}^2 + \beta_3 epl_temp_{ct} + \beta_4 epl_temp_{ct}^2 + \beta_5 ub_{ct} \quad (14) \\
& + \gamma' \varepsilon_{ict} + \rho' \mathbf{z}_{ict} + \sigma' \mathbf{f}_c + \tau' u_{ct} + e_{ict}
\end{aligned}$$

where subscripts i , c and t indicate the permanent worker, the country of residence and the year of the survey (1995, 2000 or 2005), respectively. y_{2000} and y_{2005} are dummy variables for the years 2000 and 2005; epl_perm is OECD measure of strictness of EPL for permanent workers, and epl_temp is the OECD measure of easiness of transforming temporary contracts into permanent ones, ub are unemployment benefits, ε , \mathbf{z} and \mathbf{f} are the vectors of working conditions, individual characteristics and country fixed effects, respectively, u is the standardized unemployment rate, to control for the business cycle and e is the error term. Since the dependent variable is binary, we use a probit estimator⁷. Given the nature of the data, our main objective is to 'explain' as much as possible of the correlation between job satisfaction and time by working on the explanatory variables. More specifically, we want to test whether and how our controls for working conditions and labor market institutions, other things constant, capture the declining trend in job satisfaction, as measured by time fixed effects. We are aware of the potential endogeneity of working conditions in a job satisfaction equation, but the large number of potentially endogenous variables and the features of the data makes it quite difficult to properly control for this⁸. However, some attempts to

⁷Notice that the original variable measuring job satisfaction can take four values: very satisfied, satisfied, not very satisfied, not at all satisfied. We then estimated also ordered probit models using this variable as the dependent one. Our main results do not change.

⁸One way to simplify the problem could be to create a unique indicator for working conditions by aggre-

control for endogeneity are presented and discussed in section 5.

Table 3 reports the marginal effects of the main probit estimates. All estimates are weighted using sampling weights and standard errors are clustered by country⁹. Column (1) replicates the evidence discussed in the previous section: even after controlling for country fixed effects, the probability of being satisfied with the job declines over time at an increasing pace. Cross-country differences in the business cycle, as captured by the unemployment rate, explain the 1995-2000 drop, which now becomes negligible and not statistically significant (column (2)). Additional controls for personal characteristics and for occupation, economic sector and firm size (column (3)) further reduce the drop in 2005, leaving a statistically significant reduction of job satisfaction of 2.6% between 1995 and 2005 to be explained.

Labour market institutions are included in the next two columns, but when we do not use the quadratic form for the two measures of EPL all the estimated coefficients are not statistically significant (column (4)); on the contrary, when we use a more flexible specification, we find that both EPL indicators enter in the expected quadratic form and the estimated coefficients for EPL for permanent workers are statistically significant. In the latter specification the estimated time fixed effect for 2005 declines in value and remains weakly statistically significant.

gating further the available variables and then properly instrument this indicator. However, such approach has two main drawbacks. First, the use of a unique indicator implies a huge loss of information on the effect of different working conditions; this problem is even more relevant if, as in our case, different working conditions have a quite different effect on job satisfaction. Second, with repeated cross-sections it may be difficult to find valid instruments (i.e., variables that are uncorrelated with the error term).

⁹This should allow to take into account that institutions are measured at a more aggregated level than working conditions and other individual characteristics.

nificant.

In column (6) we add, instead of institutions, the vector of working conditions. Almost all working conditions and both work-related health problems are highly significant, the declining trend between 1995 and 2005 is fully explained and the pseudo R^2 rises. The signs are as expected: unpleasant working conditions (in terms of risk exposure, tiring or dangerous positions, work pressure) and work-related health problems reduce job satisfaction, while flexible working time and any kind of involvement increase it.

Column (7) includes both labor market institutions and working conditions: the estimated marginal effects remain almost unchanged ¹⁰.

To better assess the relative weight of different factors in explaining the change in job satisfaction over time, using the full specification of column (7) we computed the predicted change in job satisfaction and evaluated how much of this change is explained by changes in, respectively, personal characteristics, job characteristics (occupation, sector and firm size), working conditions and labor market institutions. Our estimates point out that, keeping all the other things constant, deteriorating working conditions explain the largest part (almost 60%) of the decline in job satisfaction, while changing labor market institutions accounts for around 45% of such decline. The share explained by firm characteristics is very small (around 4%), while changing personal characteristics (other things constant) partly counter-balanced such negative effects, since they would have actually risen job satisfaction over the period considered.

¹⁰Our main results do not change even when we control for the expenditure on ALMP as a share of GDP, whose effect on job satisfaction is positive but not statistically significant.

5 Robustness Checks

Our estimates are based on repeated cross-sections. Even if the data-set contains very rich and detailed information on many personal characteristics and working conditions, unobserved heterogeneity may still influence our main results. Furthermore, given the specific definitions of working conditions used, it is important to test the sensitivity of the estimates to changes in those definitions.

We then perform a number of checks to verify the robustness of our results.

First, we replicate estimates of Table 3 changing, whenever possible, the definitions of working conditions used. More specifically, where a Likert scale is available (see again Section 3), we use a stricter definition, making the dummy variable equal to 1 only when each feature is present at least three quarters of the time (i.e., answer based on the Likert scale less or equal to 3). On the basis of this definition, we re-define in a stricter way the variables related to exposure to risky factors, tiring positions and loads, working at high speed and presence of tight deadlines. In the case of non-standard working hours, we re-define our variable considering the presence of work at night or during the week-end only if this happens, respectively, at least 20 days and 3 weeks a month. The main estimates based on these stricter definitions of working conditions are reported in Table A-8 in Appendix¹¹. Results in the table are very similar to our main estimates: both the size and the significance of the coefficients are roughly unchanged, except for non-standard working hours, whose marginal effect is still negative but now weakly statistically significant. On the whole, we can conclude that our

¹¹All the working conditions whose name is tagged 'b' are those based on a stricter definition with respect to Table 3.

results are not sensitive to the definitions of working conditions used¹².

Second, we try to take into account potential unobserved heterogeneity by re-estimating Table 3 using pseudo-panel data. More precisely, we split workers into different groups on the basis of their gender, year of birth and country of residence, thus creating some 'types' that we can follow over time. For each type and year, we compute the (cell) mean of job satisfaction and working conditions, assuming that they may be proxy of the actual variables. We then use this pseudo-panel data to replicate estimates in Table 3, using a linear FE estimator instead of a probit one¹³. Estimates are reported in Table 4 and confirm the main results of our analysis. However, in this case some working conditions (particularly the 'hard' ones) are no longer statistically significant, but we can still reject the null hypothesis that the coefficients estimated for working conditions are jointly equal to zero¹⁴.

Third, we replicate our analysis for temporary workers. In light of the descriptive evidence discussed in Section 3, they should not be affected as much as permanent workers by changes in working conditions. In particular, we expect an increase in personal involvement to be related more to permanent positions than to temporary ones. Also, as long as empowerment brings anxiety and stress, then we should find that temps are relatively less affected by job-related psychological problems than permanent workers. Table 5 is the corresponding of Table 3 for temps. The results confirm that job satisfaction of temporary workers has not

¹²We also tested whether our results are sensitive to the number of working conditions used by excluding different groups of working conditions from the model. Our main conclusions still hold. Results are available upon request.

¹³The use of a pseudo-panel is similar to an IV estimator in which the instruments are given by the variables (and all their possible interactions) used to define the cells. For more details see Verbeek (2008).

¹⁴ $F(8, 2147)=24.95$, with corresponding p -value=0.001

declined over time; this result is robust to all reported specifications. Turning to working conditions, our estimates partly confirm our hypothesis: first of all, exposure to harmful factors significantly reduces permanent workers' job satisfaction, while temporary workers are not significantly affected by this type of hazard. However, contrary to our predictions, both measures of involvement significantly increase job satisfaction also for temporary workers. This result suggests that, even if temporary workers are less likely to be formally or personally involved in the firm (see again Table 1), once they can enjoy such work practice they evaluate it as much as permanent workers do.

Overall these results confirm that job quality has been worsening more for permanent workers than for temporary ones, with negative consequences on the psychological side of workers' well being, while physical problems have been actually declining. Notice also that these changes bring permanent workers' job satisfaction closer to that of temporary workers, hence implying an overall welfare loss.

5.1 Cohort effects

As a last robustness check, we investigate cohort effects. As permanent workers are relatively older, they may find it harder to adjust to a fast changing environment and hence their dissatisfaction may be ultimately determined by their age.

We first define fourteen birth cohorts on the basis of the quinquennium in which the worker is born. The profile of the (average) job satisfaction across the (average) age is depicted for each cohort in the top left panel of Figure 3; as each cohort is normally observed in three

year (1995, 2000, 2005), we have three points for each cohort.

The figure suggests that job satisfaction of permanent workers is increasing with age but that the resulting profile is lower in 2005 than in 1995 across all age groups, with the exception of the extreme cohorts¹⁵.

While the profile of permanent workers' job satisfaction drives the overall profile for all workers (bottom left panel of Figure 3), the job satisfaction profile of temporary workers, in the top right panel of the same Figure, looks very different across age and, in particular, does not show any clear shift across years.

While the picture is quite suggestive, its bivariate nature may hide some important correlations. We then carry on to the regression analysis and estimate the probit model separately for old workers (born before 1950 in 1995), middle-age workers (born between 1950 and 1964) and young workers (born after 1964).

Table 6 summarizes the results of the main specifications. When main controls are all included (columns 1-3), the negative coefficient on the 2005 time dummy remains significant only for the old and the middle-aged, thereby confirming that part of the changes occurring across time affect job satisfaction of the old and middle-aged significantly more than that of the younger generations of workers.

The successive columns show the effect of controlling for labor market institutions (columns 4-6), for working conditions (columns 7-9) and for both (10-12). These final results show that employment protection legislation is particularly important for job satisfaction of young workers and its effect declines with age. As far as working conditions are concerned, the

¹⁵The figure shows the profile for the second to the 12th cohorts as the first and the last two are only observed once in time

middle-aged appear to be more hardly affected by psychological problems and deadlines, while young workers are relatively more affected by exposure to risky work-related factors and tiring positions. Finally, it is interesting to look at how the effects of the two measures of involvement change across cohorts: while the young seem to appreciate more individual involvement, the old evaluate more formal involvement.

6 Conclusions

This paper has brought together two different explanations of the declining trend in job satisfaction of permanent workers observed in several EU countries: labor market institutions and working conditions.

In order to clarify the role of these two potential factors and assess the extent to which the declining trend is a result of their interplay, we propose a simple model à la Mortensen-Pissarides (1999), adequately extended in order for labor effort to affect the utility from work and respond to both working conditions and labor market institutions.

We tested the main predictions of our model using data from three EWCS waves (1995, 2000 and 2005) and standard OECD indicators of labor market institutions. Our estimates show that the initial 1995-2000 drop in permanent workers' job satisfaction is explained by the business cycle, as captured by the rate of unemployment. Given the business cycle, labor market institutions seem to play a minor role in the further decline of permanent workers' job satisfaction, while working conditions, which are correctly signed and highly statistically significant, seem to capture most of the decline. Our findings also support the idea that

permanent worker's marginal effort increases as the relevant EPL declines (i.e. permanent worker's effort is a convex function of the probability of keeping the job); on the contrary, the easiness to transform a temporary contract into a permanent one, as well as unemployment benefits, are not relevant for permanent workers' job satisfaction.

We checked our results in many directions: sensitivity analysis to both variable definitions and potential unobserved heterogeneity confirmed the main results; the estimation of an analogous model for temporary workers confirmed that their job satisfaction, differently from that of the permanent workers, had not undergone any significant change. Furthermore, we tested the presumption that work changes, whether at the institutional or at the workplace level, have a potentially stronger effects on older workers, for whom it may be harder to adjust; indeed, when permanent workers are grouped by cohort, the declining trend in job satisfaction turns out to be typical of old and middle-aged workers; moreover, whereas labor market institutions account for the old permanent workers' job satisfaction drop, working conditions are essential in order to fully explain the middle-aged job dissatisfaction.

From the employers' perspective, our findings indicate that the observed changes in labor market institutions and particularly the decline in EPL for permanent workers, while having the advantages of allowing a higher numerical flexibility, of reducing firing costs and, as we showed, of inducing a higher work effort, also create, at least partly for this very reason, adverse effects on employees' job satisfaction, thus determining an ambiguous overall impact on firms' performance and profits. A further lesson to be drawn is that the worsening of those working conditions related to work intensification has a huge impact on workers' job satisfaction: in this perspective, policy makers should design incentives for firms to en-

hance 'good' working conditions and/or improve work-related health through, for example, measures to monitor work-related stress or counseling for employees with work-related psychological problems.

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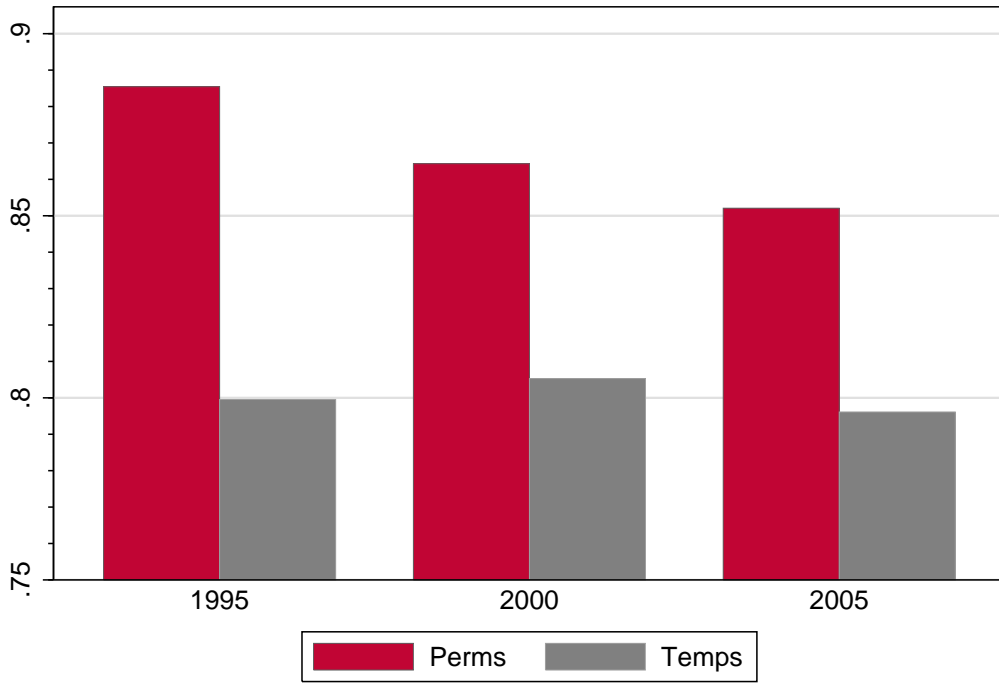
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Figure 1: Average Job satisfaction



Source: Eurofound

Figure 2: Effort functions

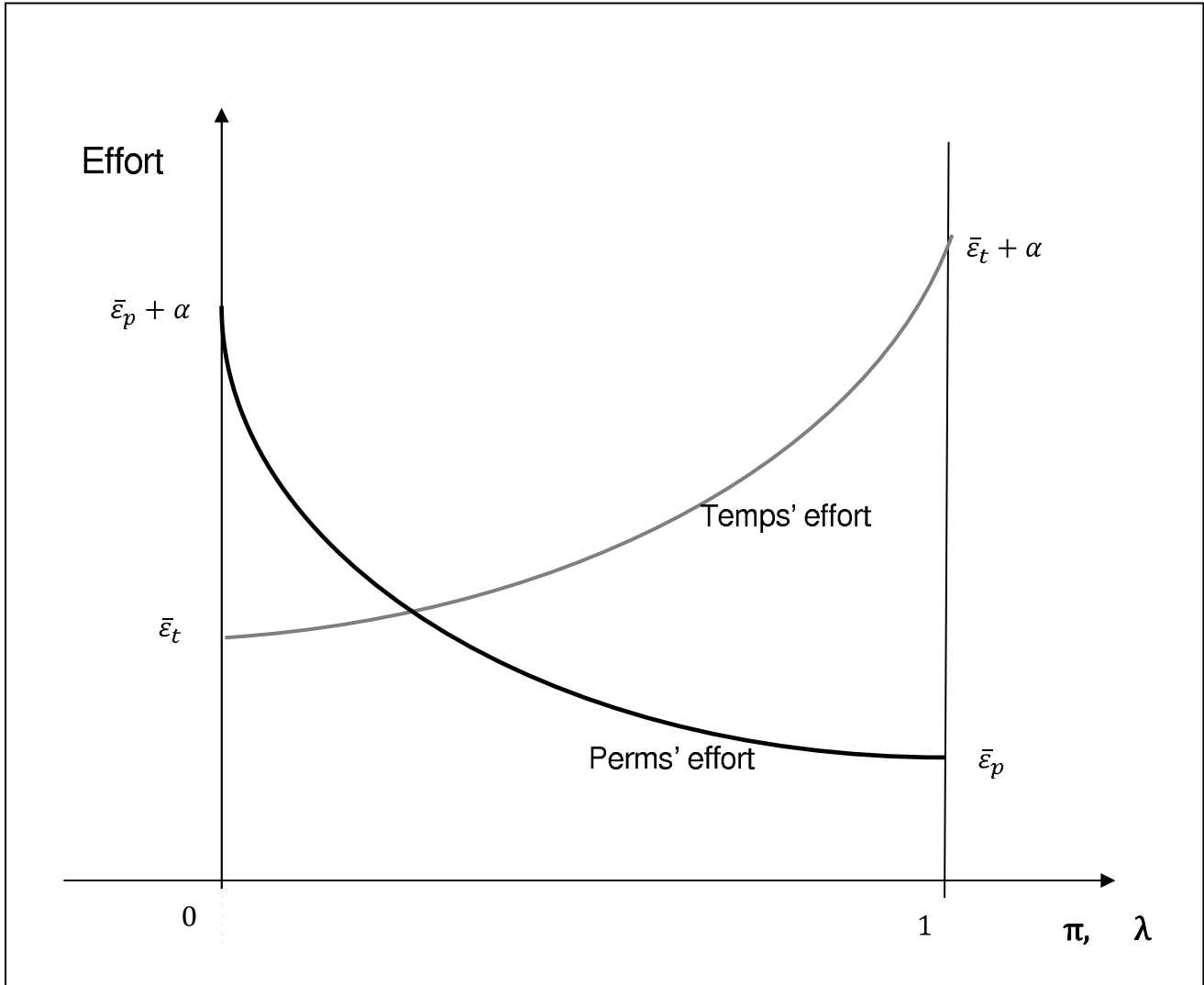


Figure 3: Job satisfaction profiles

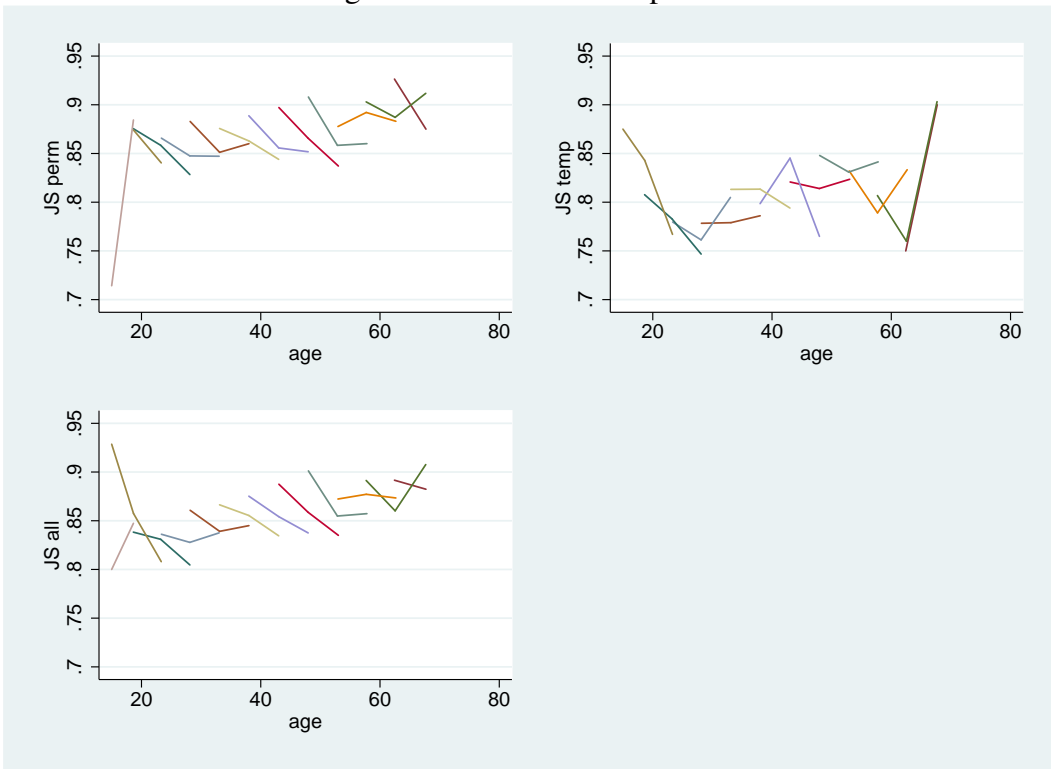


Table 1: Average working conditions by type of contract and year

| year | Working conditions | | | | | Working time | | | Involvement | | Health Problems | |
|-------------------|--------------------|----------|----------|-----------|------------|--------------|----------|------------|-------------|----------|-----------------|--|
| | exposure | position | speed | deadlines | flex hours | no std hours | formal | individual | body | mind | | |
| Permanent workers | | | | | | | | | | | | |
| 1995 | 0.185 | 0.414 | 0.564 | 0.563 | 0.463 | 0.273 | 0.523 | 0.775 | 0.095 | 0.140 | | |
| 2000 | 0.181 | 0.452*** | 0.592*** | 0.579** | 0.453** | 0.286*** | 0.785*** | 0.763** | 0.108*** | 0.146* | | |
| 2005 | 0.170*** | 0.443*** | 0.633*** | 0.633*** | 0.335*** | 0.267 | 0.536* | 0.784*** | 0.096 | 0.154*** | | |
| Average | 0.178 | 0.439 | 0.601 | 0.596 | 0.409 | 0.275 | 0.619 | 0.774 | 0.100 | 0.147 | | |
| Temporary workers | | | | | | | | | | | | |
| 1995 | 0.206 | 0.490 | 0.549 | 0.472 | 0.416 | 0.292 | 0.394 | 0.706 | 0.095 | 0.126 | | |
| 2000 | 0.190** | 0.487 | 0.581** | 0.526*** | 0.398** | 0.286 | 0.682*** | 0.685** | 0.108*** | 0.133 | | |
| 2005 | 0.176*** | 0.481 | 0.589*** | 0.562*** | 0.277*** | 0.285 | 0.412 | 0.679*** | 0.087* | 0.123 | | |
| Average | 0.187 | 0.485 | 0.578 | 0.531 | 0.346 | 0.287 | 0.498 | 0.687 | 0.096 | 0.127 | | |

Source: EWCS

Notes: Stars refer to the t-test on the difference between each year and the base one (i.e., 1995). *** Significant at 1% level; ** Significant at 5% level; * Significant at 10% level. Differences in mean values between permanent and temporary workers are all statistically significant at the 5% level

Table 2: Average labor market institutions by year

| year | mean(epl_perm) | mean(epl_temp) | mean(ub) | mean(almp) |
|------|----------------|----------------|----------|------------|
| 1995 | 2.40 | 2.66 | 32.55 | 1.06 |
| 2000 | 2.37 | 2.11** | 34.15 | 0.97 |
| 2005 | 2.32 | 1.98** | 30.75 | 0.89 |

Source: OECD

Notes: Stars refer to the t-test on the difference between each year and the base one (i.e., 1995).

*** Significant at 1% level; ** Significant at 5% level; * Significant at 10% level.

Table 3: Marginal effects of the probability of being satisfied. Permanent workers

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|------------------------|---------------------|--------------------|---------------------|------------------|---------------------|---------------------|---------------------|
| y2000 | -0.022*** (0.01) | -0.005 (0.01) | -0.008 (0.01) | 0.003 (0.01) | -0.008 (0.01) | -0.005 (0.01) | -0.015 (0.01) |
| y2005 | -0.033*** (0.01) | -0.019** (0.01) | -0.026*** (0.01) | -0.008 (0.01) | -0.023* (0.01) | -0.003 (0.01) | -0.014 (0.01) |
| ub | | | | 0.001 (0.00) | 0.001 (0.00) | | 0.000 (0.00) |
| epl_perm | | | | 0.033 (0.04) | 0.492*** (0.15) | | 0.570*** (0.14) |
| epl_perm2 | | | | | -0.090*** (0.03) | | -0.107*** (0.03) |
| epl_temp | | | | 0.009 (0.01) | -0.002 (0.03) | | -0.009 (0.02) |
| epl_temp2 | | | | | 0.001 (0.00) | | 0.001 (0.00) |
| exposure | | | | | | -0.056*** (0.01) | -0.055*** (0.01) |
| position | | | | | | -0.039*** (0.01) | -0.038*** (0.01) |
| speed | | | | | | -0.022*** (0.01) | -0.020*** (0.01) |
| deadlines | | | | | | -0.020*** (0.00) | -0.021*** (0.00) |
| flex hours | | | | | | 0.041*** (0.01) | 0.044*** (0.01) |
| no std hours | | | | | | -0.006 (0.01) | -0.004 (0.01) |
| individual involvement | | | | | | 0.083*** (0.01) | 0.083*** (0.01) |
| formal involvement | | | | | | 0.043*** (0.00) | 0.044*** (0.00) |
| body | | | | | | -0.118*** (0.03) | -0.117*** (0.03) |
| mind | | | | | | -0.208*** (0.01) | -0.212*** (0.01) |
| country | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| un rate | No | Yes | Yes | Yes | Yes | Yes | Yes |
| personal contr | No | No | Yes | Yes | Yes | Yes | Yes |
| occupation sector size | No | No | Yes | Yes | Yes | Yes | Yes |
| Pseudo R2 | 0.027 | 0.028 | 0.042 | 0.043 | 0.043 | 0.155 | 0.156 |
| N | 34238 | 34238 | 33946 | 32705 | 32705 | 33946 | 32705 |

Notes: Clustered standard errors in parenthesis; ***Significant at the 1% level **Significant at the 5% level *Significant at the 10% level.

Table 4: Marginal effects of the probability of being satisfied. Pseudo panel

| | (1) | (2) | (3) | (4) |
|------------------------|---------------------|---------------------|---------------------|---------------------|
| y2000 | -0.027*** (0.01) | -0.020* (0.01) | -0.011 (0.01) | -0.015 (0.01) |
| y2005 | -0.049*** (0.01) | -0.038*** (0.01) | -0.021** (0.01) | -0.024* (0.01) |
| ub | | 0.000 (0.00) | | -0.000 (0.00) |
| epl_perm | | 0.250 (0.15) | | 0.400*** (0.15) |
| epl_perm2 | | -0.046 (0.03) | | -0.081*** (0.03) |
| epl_temp | | -0.021 (0.03) | | -0.022 (0.03) |
| epl_temp2 | | 0.005 (0.00) | | 0.004 (0.00) |
| exposure | | | -0.035 (0.04) | -0.033 (0.04) |
| position | | | -0.043* (0.02) | -0.052** (0.02) |
| speed | | | 0.006 (0.02) | 0.007 (0.02) |
| deadlines | | | -0.031** (0.02) | -0.034** (0.02) |
| flex hours | | | 0.051** (0.02) | 0.054** (0.02) |
| no std hours | | | -0.059** (0.02) | -0.064*** (0.02) |
| individual involvement | | | 0.098*** (0.02) | 0.103*** (0.02) |
| formal involvement | | | 0.028** (0.01) | 0.030** (0.01) |
| body | | | -0.188*** (0.06) | -0.171*** (0.06) |
| mind | | | -0.273*** (0.04) | -0.281*** (0.04) |
| cons | 0.849*** (0.04) | 0.522*** (0.19) | 0.820*** (0.05) | 0.374** (0.19) |
| un rate | Yes | Yes | Yes | Yes |
| personal contr | Yes | Yes | Yes | Yes |
| occupation sector size | Yes | Yes | Yes | Yes |
| within R2 | 0.045 | 0.052 | 0.137 | 0.144 |
| N | 4126 | 3892 | 4126 | 3892 |

Notes: Clustered standard errors in parenthesis; ***Significant at the 1% level **Significant at the 5% level *Significant at the 10 % level.

Table 5: Marginal effects of the probability of being satisfied. Temporary workers

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|------------------------|-----------------|-----------------|-----------------|---------------------|--------------------|---------------------|---------------------|
| y2000 | 0.010 (0.01) | 0.021 (0.01) | 0.008 (0.01) | 0.005 (0.01) | -0.004 (0.01) | 0.006 (0.01) | -0.016 (0.01) |
| y2005 | 0.002 (0.01) | 0.013 (0.01) | 0.004 (0.01) | -0.011 (0.02) | -0.024 (0.02) | 0.023* (0.01) | -0.017 (0.02) |
| ub | | | | -0.001 (0.00) | -0.001 (0.00) | | -0.001 (0.00) |
| epl_perm | | | | -0.111*** (0.04) | 0.379* (0.22) | | 0.415* (0.23) |
| epl_perm2 | | | | | -0.091** (0.04) | | -0.098** (0.04) |
| epl_temp | | | | -0.005 (0.01) | -0.013 (0.05) | | -0.024 (0.04) |
| epl_temp2 | | | | | 0.001 (0.01) | | 0.001 (0.01) |
| exposure | | | | | | -0.026 (0.03) | -0.030 (0.03) |
| position | | | | | | -0.086*** (0.01) | -0.090*** (0.01) |
| speed | | | | | | -0.027** (0.01) | -0.025** (0.01) |
| deadlines | | | | | | -0.035*** (0.01) | -0.033*** (0.01) |
| flex hours | | | | | | 0.063*** (0.02) | 0.067*** (0.02) |
| no std hours | | | | | | -0.035** (0.01) | -0.036** (0.01) |
| individual involvement | | | | | | 0.114*** (0.02) | 0.109*** (0.02) |
| formal involvement | | | | | | 0.059*** (0.01) | 0.060*** (0.01) |
| body | | | | | | -0.114*** (0.03) | -0.100*** (0.03) |
| mind | | | | | | -0.250*** (0.03) | -0.256*** (0.03) |
| _cons | | | | | | | |
| country | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| un rate | No | Yes | Yes | Yes | Yes | Yes | Yes |
| personal contr | No | No | Yes | Yes | Yes | Yes | Yes |
| occupation sector size | No | No | Yes | Yes | Yes | Yes | Yes |
| Pseudo R2 | 0.055 | 0.055 | 0.083 | 0.085 | 0.085 | 0.162 | 0.165 |
| N | 9000 | 9000 | 8840 | 8677 | 8677 | 8840 | 8677 |

Notes: Clustered standard errors in parenthesis; ***Significant at the 1% level **Significant at the 5% level *Significant at the 10 % level.

Table 6: Marginal effects of the probability of being satisfied. Permanent Workers by birth cohorts

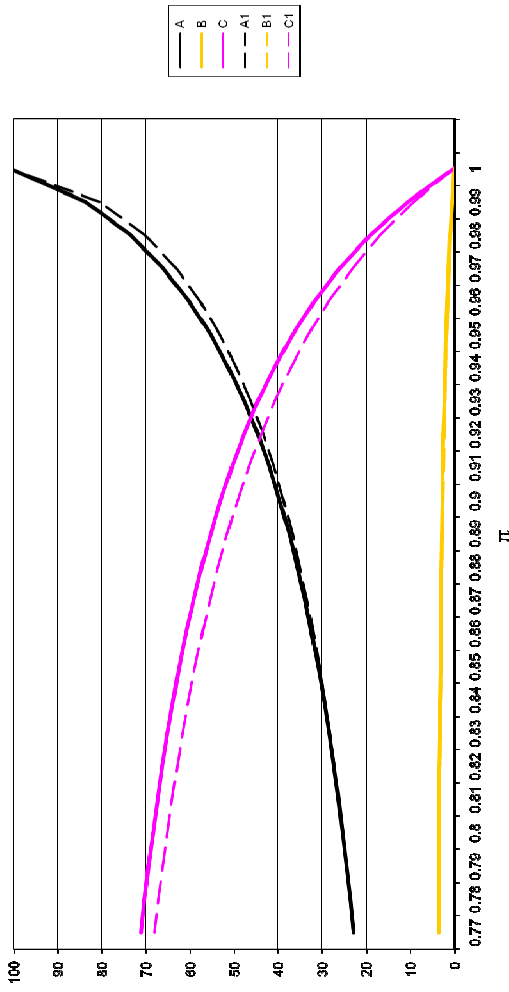
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
|------------------------|------------------|---------------------|--------------------|---------------------|--------------------|------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | young | mid | old | young | mid | old | young | mid | old | young | mid | old |
| y2000 | -0.001 (0.01) | -0.013 (0.01) | -0.009 (0.02) | -0.008 (0.01) | -0.009 (0.01) | 0.009 (0.02) | 0.005 (0.01) | -0.007 (0.01) | -0.018 (0.02) | -0.012 (0.01) | -0.013 (0.01) | -0.013 (0.02) |
| y2005 | -0.015 (0.02) | -0.045*** (0.01) | -0.031** (0.01) | -0.015 (0.02) | -0.037** (0.01) | -0.011 (0.02) | 0.010 (0.01) | -0.014 (0.01) | -0.009 (0.01) | -0.006 (0.02) | -0.023 (0.02) | -0.001 (0.02) |
| ub | | | | 0.001 (0.00) | 0.001 (0.00) | -0.001 (0.00) | | | | 0.000 (0.00) | 0.000 (0.00) | 0.001 (0.00) |
| epl_perm | | | | 0.730*** (0.16) | 0.257 (0.20) | 0.082 (0.17) | | | | 0.813*** (0.12) | 0.419** (0.21) | 0.247* (0.13) |
| epl_perm2 | | | | -0.136*** (0.03) | -0.044 (0.04) | -0.018 (0.04) | | | | -0.156*** (0.02) | -0.076* (0.04) | -0.055* (0.03) |
| epl_temp | | | | -0.057 (0.04) | 0.004 (0.03) | 0.081* (0.05) | | | | -0.054 (0.03) | 0.004 (0.02) | 0.034 (0.04) |
| epl_temp2 | | | | 0.009 (0.01) | 0.000 (0.00) | -0.009 (0.01) | | | | 0.008 (0.01) | -0.001 (0.00) | -0.003 (0.01) |
| exposure | | | | | | | -0.069*** (0.01) | -0.056*** (0.01) | -0.057*** (0.01) | -0.068*** (0.01) | -0.057*** (0.01) | -0.054*** (0.01) |
| position | | | | | | | -0.047*** (0.01) | -0.037*** (0.01) | -0.028** (0.01) | -0.044*** (0.01) | -0.037*** (0.01) | -0.027* (0.01) |
| speed | | | | | | | -0.022** (0.01) | -0.018** (0.01) | -0.018*** (0.01) | -0.020** (0.01) | -0.016** (0.01) | -0.018** (0.01) |
| deadlines | | | | | | | -0.016** (0.01) | -0.026*** (0.01) | -0.011 (0.01) | -0.017** (0.01) | -0.027*** (0.01) | -0.010 (0.01) |
| flex hours | | | | | | | 0.034** (0.02) | 0.050*** (0.02) | 0.043*** (0.01) | 0.040*** (0.02) | 0.048*** (0.02) | 0.043*** (0.01) |
| no std hours | | | | | | | -0.010 (0.01) | -0.003 (0.01) | 0.001 (0.01) | -0.010 (0.01) | -0.001 (0.01) | 0.005 (0.01) |
| individual involvement | | | | | | | 0.100*** (0.01) | 0.076*** (0.01) | 0.050** (0.02) | 0.096*** (0.01) | 0.076*** (0.01) | 0.053** (0.02) |
| formal involvement | | | | | | | 0.035*** (0.01) | 0.046*** (0.01) | 0.049*** (0.01) | 0.037*** (0.01) | 0.047*** (0.01) | 0.048*** (0.01) |
| body | | | | | | | -0.115*** (0.04) | -0.101*** (0.03) | -0.118*** (0.04) | -0.114*** (0.04) | -0.095*** (0.03) | -0.121*** (0.04) |
| mind | | | | | | | -0.204*** (0.02) | -0.226*** (0.02) | -0.168*** (0.02) | -0.211*** (0.01) | -0.230*** (0.02) | -0.169*** (0.02) |
| _cons | | | | | | | | | | | | |
| country | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| un rate | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| personal contr | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| occupation sector size | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Pseudo R2 | 0.042 | 0.046 | 0.061 | 0.044 | 0.047 | 0.065 | 0.139 | 0.180 | 0.169 | 0.143 | 0.178 | 0.172 |
| N | 11938 | 14517 | 6604 | 11460 | 13926 | 6449 | 11938 | 14517 | 6604 | 11460 | 13926 | 6449 |

Notes: Clustered standard errors in parenthesis; ***Significant at the 1% level **Significant at the 5% level *Significant at the 10 % level.

Figure 4: Simulated coefficients

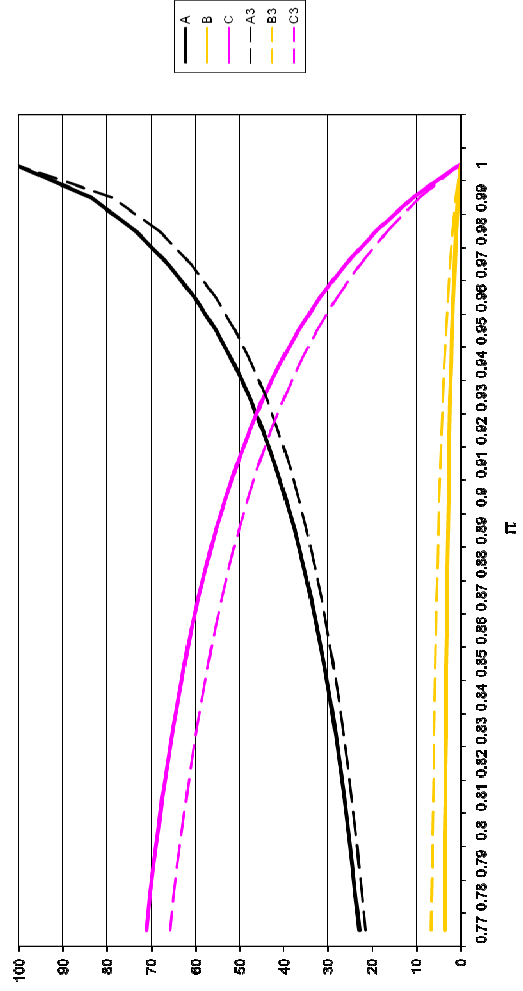
Coefficients of utility from work: basic calibration vs calibration 1

calibration 1: $\lambda = 0.6$, $\tau = 0.05$, $\gamma = 0.0$



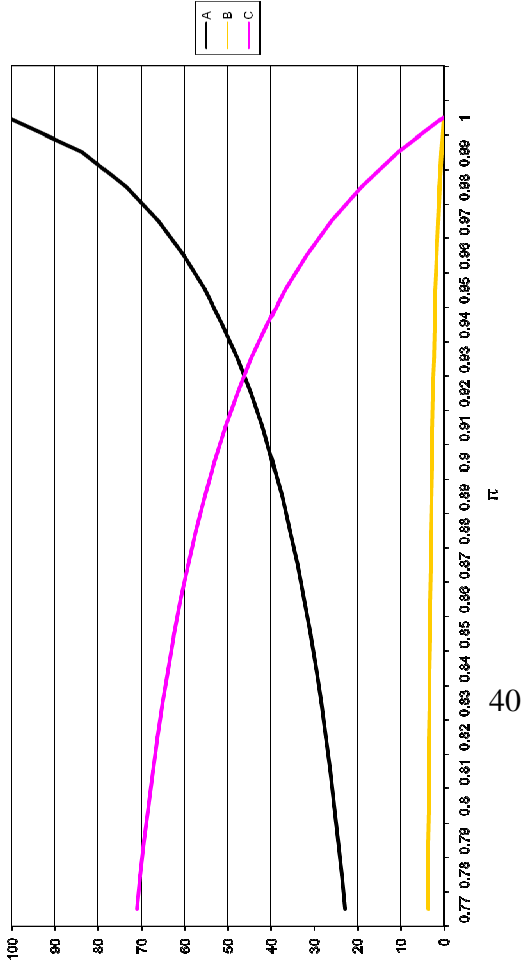
Coefficients of utility from work: basic calibration vs calibration 3

calibration 3: $\lambda = 0.3$, $\tau = 0.10$, $\gamma = 0.06$



Coefficients of utility from work: basic calibration

$\lambda = 0.3$, $\tau = 0.05$, $\gamma = 0.06$



Coefficients of utility from work: basic calibration vs calibration 2

calibration 2: $\lambda = 0.3$, $\tau = 0.05$, $\gamma = 0.12$

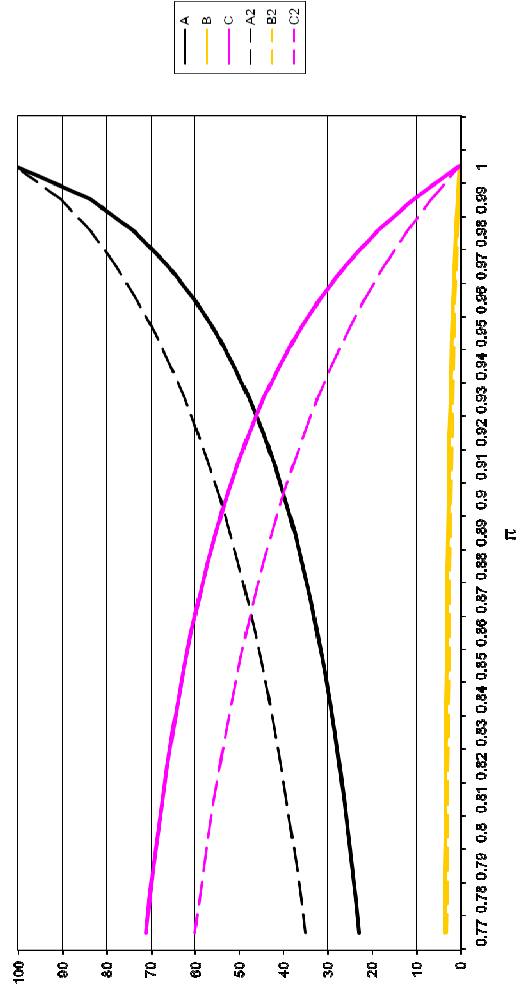


Table A-7: Definitions and descriptive statistics

| Variables | Definition | Mean | Std. Dev. |
|------------------------|---|-------|-----------|
| satisfied | 1 if very satisfied or satisfied with working conditions in main paid job | 0.865 | 0.342 |
| ub | unemployment benefit replacement rate | 32.43 | 11.35 |
| epl_perm | EPL permanent workers (from 1 to 6) | 2.355 | 0.774 |
| epl_temp | EPL temporary workers (from 1 to 6) | 2.173 | 1.205 |
| almp | expenditure on ALMPs (% GDP) | 0.974 | 0.522 |
| exposure | mean of dummies related to exposure to risky factors | 0.178 | 0.236 |
| position | mean of dummies related to uncomfortable positions, loads and movements | 0.439 | 0.359 |
| deadlines | 1 if works to tight deadlines | 0.596 | 0.491 |
| speed | 1 if works at high speed | 0.601 | 0.490 |
| flex hours | mean of dummies related to flexible working hours | 0.409 | 0.315 |
| no std hours | mean of dummies related to non-standard working time | 0.275 | 0.318 |
| formal involvement | 1 if consulted about changes | 0.619 | 0.486 |
| individual involvement | mean of dummies related to personal involvement | 0.774 | 0.296 |
| body | mean of dummies related to physical work-related health problems | 0.100 | 0.157 |
| mind | mean of dummies related to mental work-related health problems | 0.147 | 0.248 |
| female | 1 if female | 0.487 | 0.500 |
| age | age | 39.67 | 11.02 |
| familysize | household size | 3.106 | 1.314 |
| tenure | years of tenure | 10.89 | 9.57 |
| hours | weekly hours worked | 36.94 | 9.91 |
| secondjob | 1 if holds a second job regularly | 0.053 | 0.224 |
| une | unemployment rate | 7.370 | 2.924 |
| occupation | 10 dummies | | |
| economic sector | 11 dummies | | |
| firm size | 6 dummies | | |

Notes: For precise definitions of working conditions see Section 2

Table A-8: Marginal effects of the probability of being satisfied. Permanent workers. Alternative definitions of working conditions

| | (1) | (2) |
|------------------------|---------------------|---------------------|
| y2000 | -0.009 (0.01) | -0.017* (0.01) |
| y2005 | -0.008 (0.01) | -0.017 (0.01) |
| ub | | 0.000 (0.00) |
| epl_perm | | 0.571*** (0.15) |
| epl_perm2 | | -0.108*** (0.03) |
| epl_temp | | 0.001 (0.02) |
| epl_temp2 | | -0.000 (0.00) |
| exposureb | -0.051*** (0.01) | -0.049*** (0.01) |
| positionb | -0.039*** (0.01) | -0.038*** (0.01) |
| speedb | -0.026*** (0.01) | -0.024*** (0.01) |
| deadlinesb | -0.018*** (0.00) | -0.019*** (0.00) |
| flex hours | 0.044*** (0.01) | 0.047*** (0.01) |
| no std hoursb | -0.022** (0.01) | -0.017* (0.01) |
| individual involvement | 0.080*** (0.01) | 0.079*** (0.01) |
| formal involvement | 0.042*** (0.00) | 0.043*** (0.00) |
| body | -0.130*** (0.03) | -0.128*** (0.03) |
| mind | -0.209*** (0.01) | -0.213*** (0.01) |
| _cons | | |
| country | Yes | Yes |
| un rate | Yes | Yes |
| other contr | Yes | Yes |
| Pseudo R2 | 0.155 | 0.156 |
| N | 33766 | 32532 |

Notes: Clustered standard errors in parenthesis; ***Significant at the 1% level **Significant at the 5% level *Significant at the 10% level.