

# Quit Behavior and Job Protection

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## Abstract

Job protection reduces job turnover by changing firms' hiring and firing decisions. Yet the effect of job protection on workers' quit decisions and post-quit outcomes is still unknown. We present the first evidence using individual panel data from 12 European countries, which differ both in worker turnover rates and in the level of job protection. We find that workers are less likely to quit their job in countries with more job protection, but conditional on quitting they receive higher wages. This evidence can be explained by increased mobility costs associated with higher expected risk of post-quit layoff and job mismatch.

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# 1 Introduction

In the literature on Employment Protection Legislation (EPL) there is abundant evidence on the effect of EPL on job turnover, showing that firms respond to the presence of positive firing costs by reducing both hiring and firing (e.g. Nickell (1978), Bentolila and Bertola (1990) and Bertola (1990)). Job protection may not only affect firms decisions but may also alter workers job-to-job mobility decisions. However, we are not aware of any study that has paid attention to the link between job protection and workers quit behavior. This paper fills this void and is motivated by the fact that there are substantial cross-country differences in job-to-job mobility rates (e.g. OECD (2010)), which coexist with variation in the level of employment protection. Given the importance of mobility for the efficiency of the labor market, understanding how EPL relates to workers mobility has important policy implications.

Job protection may alter workers mobility decisions by affecting the mobility costs associated with a job quit by means of a higher expected risk of future layoff and job mismatch. When employment protection is strong, a job change implies a much higher future layoff risk due to the limited protection in the new job as a result of the probation period. In addition, hiring levels are lower so individuals face a higher risk of future job mismatch because of the reduced opportunities to find an alternative job. This implies that workers should be less likely to quit their job when job protection is strong because of the higher costs associated with the job change. Hence, for a given drop in the job quality, there should be fewer jobs quits with stringent EPL. Furthermore, mobility costs may also affect post-quit outcomes. Workers decide to change jobs if there is a gain in utility associated with this job change. However, the magnitude of these gains may vary across countries. When there is more job protection, the required gains associated with a quit are expected to be higher in order to balance the loss in job security that follows the job quit and the reduced opportunities for further mobility in the future.

This paper contributes to the literature on job quits by considering EPL as a potential determinant of job quit behavior. We present what we believe to be the first evidence on the relation between job protection and workers job-to-job mobility decisions, and post-quit

outcomes. Furthermore, we provide cross-country evidence for this relationship using individual panel data for 12 countries from the European Community Household Panel (ECHP) for the years 1994-2001.

Our empirical approach is implemented in three steps. First, we investigate the determinants of individual quit decision focusing on the sensitivity of job-to-job mobility with respect to changes in job quality in each country, which is measured using information on job satisfaction. Second, we consider labor market outcomes (e.g. wages) following a job quit. Exploiting the panel dimension of the data, we are able to identify the effects of interest taking into account the presence of unobserved heterogeneity. Finally, we relate our findings to the level of EPL for permanent jobs in each country.

We find that changes in the quality of the job affect the decision to quit in each country, but the magnitude of this effect differs substantially across countries and is negatively related to the strictness of EPL. Workers in countries with lower levels of job protection are more responsive to changes in the quality of their job, and hence are more likely to quit their job if their job satisfaction falls compared to workers in countries with high levels of job protection. Furthermore, we find that post-quit labor market outcomes are related to the strictness of employment protection legislation. Workers in countries with more job protection compensate the loss in job security following a job quit with higher wage gains. For workers in countries with less job protection, instead, the loss in job security is smaller and hence they require a smaller compensating wage gain. This evidence is robust to the inclusion of individual worker fixed effects, different definitions of the reference group (no quitters) and alternative measures of job protection. The setup of the paper is the following: section 2 discusses the theoretical foundations that can explain cross-country differences in job mobility rates and the related literature, section 3 discusses the data, our empirical strategy and presents some descriptive statistics, section 4 presents the results, and section 5 concludes.

## **2 Theoretical foundations and related literature**

Labor mobility is the result of both the decisions of individuals to change jobs (job quits) as well as the decisions of firms to adjust their workforce through hirings and firings. In order

to understand why quit rates differ across countries we focus on individual job quit behavior. However, the choices made by firms regarding their hiring and firing may implicitly affect workers' quit decision as we will discuss below.

### ***Job quit behavior***

The seminal studies of Burdett (1978) and Burdett and Mortensen (1998) show that job-to-job mobility in the presence of on-the-job search with wage posting occurs when individuals are offered a higher wage job offer than the current job, net of any mobility costs. In this setting, differences in quit rates can be explained by differences in job offer arrival rates and/or by different mobility costs across countries. Both differences may arise in the presence of differences in the level of EPL.

Studies by Nickell (1978), Bentolila and Bertola (1990) and Bertola (1990) show that firms may respond to the presence of positive firing costs by reducing both the level of hirings and firings. A lower hiring level is likely to reduce each workers' probability of receiving a better job offer and thus job-to-job mobility. Therefore, in countries with high levels of job protection workers are expected to be less likely to quit their job.

Alternatively, differences in EPL are also likely to affect the cost of changing jobs. There are at least two ways in which this might occur. First, in the presence of a high level of employment protection quitting implies leaving a protected job – due to the accumulated tenure – for a less protected one. The new job will initially have lower protection due to the existence of the probation period and because individuals have not accumulated tenure in the job yet.<sup>1</sup> Hence, the costs of a job quit in terms of future layoff risks are higher when there is more job protection. Although one may argue that workers prefer to be in a protected job, Clark and Postel-Vinay (2009) show that losing job protection after a job quit seems to be a significant risk since workers' perceived job security is negatively correlated with EPL strictness, i.e. the positive effect of being protected in the current job is outweighed by the negative effect of protection on future job finding possibilities. A second way in which EPL may affect the costs of a job quit has to do with ex-ante unobservable job quality. Workers may not know ex-ante whether the

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<sup>1</sup>Higher tenure also implies longer notice periods and higher severance pay in case of layoff.

new job offered is better than their current job in terms of non-monetary aspects (as assumed by Burdett (1978)), but they have to experience how the new job matches their skills and needs (Jovanovic (1979)). If the new job turns out to be a poor match, individuals in countries with a high level of employment protection may have more difficulties to find an alternative job due to the reduced level of hirings. Hence, in the presence of strong EPL, the costs of a job quit are not only higher in terms of future layoff risks but also in terms of a higher risk of future job mismatch.

### *Post-quit outcomes*

In the model with on-the-job search and wage posting, workers quit their job when they receive a higher wage offer. So we should expect a positive wage gain after a quit. The magnitude of the wage gain, however, might vary. Workers take into account not only the current wage but also the future value associated with continuing to look for a job while employed (Pfann (2001)). The higher the job offer arrival rate, the higher is the probability of a better job offer in the future. Given that employment protection reduces the hiring rate and the job offer arrival rate, this option value is expected to be lower in countries with strong protection. Therefore, workers in protected jobs will decide to quit for another job and face the increased layoff risk associated with lower job protection only if they get a higher current wage. In countries with less protection, instead, workers may accept jobs that offer lower current wage gains as they can obtain a better job from future moves.

Another way in which wage gains between quitters and stayers might differ across countries is by allowing contract renegotiation. Although wage posting models suggest that individuals only quit their job if they are being offered a higher wage, Postel-Vinay and Robin (2002) and Cahuc et al. (2006) show that job-to-job mobility might not necessarily lead to an instant wage gain. Relaxing the assumption that wages are equal within a firm and allowing wage negotiations by way of counter-proposals by firms to workers who might quit, workers may want to accept a current wage cut by moving to a new job that offers better future opportunities. Alternatively, they might stay in the job after receiving a wage increase which matches the higher outside wage offer option. These future opportunities are more likely to occur in countries with less stringent EPL due to a higher job offer arrival rate related to more hirings, which means that

moves with lower wage gains or even wage cuts are possible. In addition, given that stayers are more likely to experience wage gains, the difference in wage gains between quitters and stayers might be lower. In countries with more job protection, instead, job-to-job mobility with wage cuts is less likely to occur and stayers are less likely to experience wage increases due to lower job offer arrival rates. It is important to note, however, that the possibility to obtain a higher wage after a job quit may be limited by the fact that high employment protection leads to more wage compression (Koeninger et al. (2007)).

The interaction of job protection and quit decisions leads to two main hypotheses. First, for a given drop in the value of a job, there should be fewer quits and lower job-to-job mobility when EPL is more stringent due to higher mobility costs. Second, the theoretical predictions concerning the immediate wage gains associated with a job quit are ambiguous. On the one hand, they are expected to be higher when there is more job protection in order to balance the loss in job security that follows the quit decision and the reduced opportunities for further mobility in the future. On the other hand, in countries with high level of employment protection due to more wage compression the immediate wage gains are expected to be lower.

### ***Related literature***

Using job satisfaction as a measure for the quality of a job, earlier studies have shown that workers quit their job if they are not satisfied with their current job (Freeman (1978), Clark et al. (1998), Clark (2001)), and that job quits typically lead to progress in workers' careers, pay and job satisfaction (e.g. Perez and Rebollo (2005), Connolly and Gottschalk (2008), Gielen (2008)). A typical pattern of satisfaction with the job is presented in Figure 1, which shows the poor situation in the year before the quit and the improvement the year after.

Although these patterns appear in studies for a number of countries, so far no attention has been paid to understanding the differences in quit rates across countries and the extent to which they can be related to differences in the level of employment protection. Earlier studies show that EPL reduces job turnover (Garibaldi (1998), Mortensen and Pissarides (1999), Gomez-Salvador et al. (2004)), especially in industries in which employment levels are intrinsically more volatile (e.g. Haltiwanger et al. (2006), Messina and Vallanti (2007), Micco and Pages (2006)). Some studies find similar negative effects for labor turnover (Kugler and Pica (2008), Boeri

and Jimeno (2005)), though this finding is not robust in all countries (Bauer et al. (2007))). Alternatively, we can expect to find positive effects of employment protection on labor mobility if firms try to circumvent strict dismissal regulations by changing to more flexible contracts (Schivardi and Torrini (2008), Kahn (2010)). Kahn (2011) shows that temporary workers search harder for a new job than workers on permanent jobs.

In this paper, we extend upon this literature by investigating the determinants of quit behavior for a number of countries that differ in their institutional arrangements regarding job protection. Furthermore, we consider post-quit labor market outcomes and their interaction with institutional differences.

### **3 Data and Descriptive Evidence**

We employ the European Community Household Panel (ECHP) longitudinal data set where we can follow individuals during the period 1994-2001 for 12 countries: Austria, Denmark, The Netherlands, Belgium, Finland, France, United Kingdom, Ireland, Italy, Greece, Spain, and Portugal. The questions in this dataset are harmonized to allow comparative studies across countries. Our sample consists of male workers aged between 25 and 55 years old, who are observed to be in permanent paid employment for at least two consecutive years. We focus on permanent employment because this is the most common form of employment in all countries. Considering both permanent and fixed-term jobs does not lead to any qualitative differences in our results. Due to differences, however, in the prevalence of fixed-term employment across countries, a separate analysis by type of contract is not feasible due to small sample sizes.

The data provide information about the start date of the current job and the end date of the previous job. Based on this information we define quits as those job changes that occurred in the past year for “obtaining a better or more suitable job”, which is based on a self reported information on the reasons of leaving the previous job. Our analysis is based on the comparison between job quitters and “job stayers”, which are those individuals who have not changed their job in the past year. The individuals who have changed their job for reasons other than for obtaining a better job (layoff, end of contract, sale or closure of own family business) are left out. However, this is a quite small fraction so including them in the control group of stayers

does not affect our results.

We use several variables to identify the quality of a job. First, we use information about job satisfaction, which is reported every year at the time of the interview for all the employed individuals in our sample. The typical question asked is the following: “How satisfied are you with your work or main activity... Using the scale 1 to 6, please indicate your degree of satisfaction. Position 1 means that you are not satisfied at all, and 6 that you are fully satisfied.” Another measure of job quality that we use is the hourly wage, which is obtained from the monthly earnings divided by the number of hours worked per month.

The information about employment protection legislation is taken from the OECD EPL-indicator for permanent jobs and varies from 0 (least stringent) to 6 (most restrictive).<sup>2</sup> The southern European countries are characterized by relatively strict EPL, along with France and Germany. The United Kingdom, at the far other extreme, is characterized by the least restrictive EPL.

Table 1 presents some summary statistics. The first row of Table 1 shows average quit rates for the 12 countries in our sample. It appears that there are substantial differences in annual quit rates ranging from 1.8 percent in Italy to 10.7 percent in the UK. Figure 2 shows how these cross-country differences in quit rates are correlated with the strictness of employment protection in a country. We observe a negative correlation, which suggests that countries with strong job protection are associated with low quit rates. The highest quit rates are observed for the U.K. and Denmark, which are also the countries with the lowest levels of job protection. This is suggestive evidence in favor of our first hypothesis that EPL increases the costs associated with job quits, therefore the number of job quits is expected to be lower in high EPL countries. The other rows in Table 1 present averages for the other control variables that are included in our estimations in the next section.<sup>3</sup>

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<sup>2</sup>For more details see [www.oecd.org/employment/protection](http://www.oecd.org/employment/protection).

<sup>3</sup>Note that firm size is not included here, because firm size information is missing for France. However, the results do not change if firm size is added in all the other countries.



## 4 Empirical Analysis and Results

The empirical analysis is implemented in three steps. First, we investigate the determinants of the individual quit decision focusing on the sensitivity of job-to-job mobility with respect to changes in the value of the current job. Second, we focus on labor market outcomes following a job quit. The analysis in both cases is implemented separately by country, which provides individual estimates of the relevant effects for each country. Exploiting the panel dimension of the data we are able to identify the effects taking into account the presence of unobserved heterogeneity. Third, we associate the country marginal effects of job value changes on quit decisions and the marginal effects of quits on post-quit labor market outcomes with the EPL indicator for permanent jobs. Therefore, we are able to provide evidence on the correlation between the individually identified effects and the institutional differences, which has not been done in the past.

### 4.1 Quit behavior

We start by investigating the determinants of the decision to quit and in particular the extent to which changes in the value of the job affect job changes. For each of the 12 countries, we estimate the following linear probability model using as a measure of the value of a job the level of job satisfaction:

$$Pr(Quit_{i,t+1} = 1) = \beta_1 F(X_{i,t} + \beta_2 JS_{i,t} + \nu_i^q + \epsilon_{i,t}^q), \quad (1)$$

where  $Quit$  is a dummy variable equal to 1 if the individual  $i$  quits his job between the year  $t$  and  $t + 1$ . The vector  $X$  includes individual and job characteristics and the variable  $JS$  captures the level of job satisfaction. All these variables are measured in year  $t$  before the quit occurred. Individual unobserved heterogeneity which is time-invariant is denoted by  $\nu^q$ , while  $\epsilon^q$  denotes the time-variant error term.

Table 2 presents the results from the estimation of equation (1) with fixed effects. The estimates of the coefficient  $\beta_2$  indicate that in general employed individuals are less likely to quit their job if their job satisfaction is higher. In addition, there is substantial variation in the

response to job satisfaction across countries. For example, workers in Greece and Portugal are the least responsive to changes in job satisfaction: if their job satisfaction drops by one unit the quit probability does not change significantly. This implies that they are more likely to have a one unit drop in their job satisfaction before they decide to quit compared to workers in countries like Denmark, Finland and the UK. In these northern European countries, individuals are much more responsive to changes in the value of their job as measured by the level of job satisfaction: when their job satisfaction drops by one unit the quit probability increases by about 3 percentage points, which implies an increase in the quit probability of 26 percent in the UK, and 59 and 77 percent in Denmark and Finland, respectively.

In order to understand these differences in quit behavior, Figure 3 plots the absolute value of the coefficients (multiplied by 100) from the fixed effects model against the strictness of EPL in each country. We observe that there is a negative relationship between the sensitivity of the quit decision with respect to changes in job quality and EPL. This result suggests that in countries with strict EPL workers are less likely to quit their job even if job quality is lower. As we discussed in Section 2, there are two ways to interpret these findings. First, it is possible that the costs associated with the decision to quit are higher in countries with strict employment protection. Second, because the job offer arrival rate due to a lower hiring rate is lower in high EPL countries, workers have to wait longer before a good job offer arrives.

## 4.2 Sensitivity Analysis

One concern might be that the distributions of job satisfaction differ across countries, so one might not want to compare the effect of a one unit change in job satisfaction, but rather the effect of a one standard deviation change in job satisfaction. This is presented in Figure 4. It appears that we obtain a relationship very similar to the one we presented in Figure 3. Further sensitivity analysis shows that excluding public sector workers does not affect this negative relationship.

We also investigate the sensitivity of our main findings with respect to the quit definition. In order to confirm that our results are indeed related to a voluntary job quit, we consider the effect of job satisfaction on the probability to change jobs for other reasons (layoff or other

separations). Table 5 shows that for most countries higher job satisfaction does not only reduce the probability to quit but also the probability to lose a job. For some countries, also the probability of having a separation due to other reasons reduces. Note, however, that these effects are much smaller than the effects on job quit behavior. Figure 7 illustrates how these results are associated with EPL. We find in the top right graph of Figure 7 that the effect of job satisfaction on the layoff probability is also negatively correlated with the EPL index but the correlation is much weaker compared to the quit decision. This negative relationship is not surprising given that a higher level of employment protection is associated with fewer layoffs. Interestingly, although the effect of job satisfaction on other separations is also negative, the variation across countries is not correlated with the level of employment protection as can be seen in the bottom right graph of Figure 7. We consider this as a form of falsification test, which suggests that differences in EPL are affecting the decision to quit but do not affect other types of separations.

We also investigate the sensitivity of the relationship between the quit decision and EPL with respect to different indexes of EPL. In particular, we consider a number of sub-indexes which are part of the general EPL index: the index for procedural inconvenience, the index of notice and severance payments, and the index for the difficulty of dismissal. According to our hypothesis stated in section 2, we expect the index for the difficulty of dismissal to explain most of the differences in quit behavior across countries. Figure 8 shows the correlation of the effects of job satisfaction on quit behavior with the different indexes of EPL, with the top left graph being the general EPL index for comparison. It is evident that all graphs display a negative relationship of the quit decision with EPL, with the strongest one for the index related to the difficulty of dismissal (based on the reported  $R^2$ ).

### 4.3 Post-quit outcomes

We now turn to the second part of our empirical analysis to investigate whether the differences in quit behavior affect labor market outcomes once the job quit has been realized. We consider both subjective job satisfaction and a more objective measure of job quality like the hourly wage.

### 4.3.1 Job satisfaction following a quit

We start by looking at potential differences across countries in job satisfaction after the job quit. On the one hand, individuals in countries with high levels of employment protection may exhibit lower levels of post-quit job satisfaction since their pre-quit job satisfaction was also lower. In addition, the layoff risk after the move to a new job is higher, which might also affect the level of job satisfaction negatively. On the other hand, individuals in countries with high EPL may face a higher risk of future job mismatch and, therefore, they may only decide to accept a new job if they are certain this will be a good match. Hence, due to these offsetting effects, post-quit job satisfaction levels might differ across countries but the differences are not expected to be related in a systematic way to differences in EPL. For each of the 12 countries we estimate the following model:

$$JS_{i,t}^* = \gamma_1 X_{i,t} + \gamma_2 Q_{i,t} + \nu_i^{JS} + \epsilon_{i,t}^{JS} \quad (2)$$

$$\text{with } JS_{it} = j \Leftrightarrow JS_{it}^* \in [\mu_{ij}, \mu_{i,j+1})$$

where  $JS^*$  is latent job satisfaction,  $JS$  is the level of observed job satisfaction in a given year,  $X$  is a vector of individual and job characteristics,  $Q$  is a dummy variable equal to 1 if the individual has quit his job between the year  $t - 1$  and  $t$ ,  $\mu_{ij}$  is the individual threshold level (increasing in  $j$ ), and  $\nu^{JS}$  and  $\epsilon^{JS}$  are a time-invariant and a time-varying error term, respectively.

Table 3 presents the results from estimating equation (3) with fixed effects. The estimates of the parameter  $\gamma_2$  for the quit dummy suggest that a quit leads to a gain in job satisfaction, which is significant in most countries. Figure 5 plots the estimated effects from the fixed effects model against the strictness of EPL in each country. The results indicate that there is cross-country variation in the post-quit job satisfaction levels, but this is not related in a systematic way to the level of EPL. This suggests that, conditional on quitting, individuals are ultimately able to find a good quality job, although this might take a bit longer in high EPL countries (as shown in section 4.1.) However, there might be differential effects on the various job quality

domains (i.e. wages and job security) for the different countries, which do not show in overall job satisfaction if they offset each other. We consider this possible offsetting effect below.

### 4.3.2 Post-quit wages

Job satisfaction levels following a job quit are different across countries, but not systematically related to cross-country differences in EPL. However, this does not necessarily imply that there are no country differences in post-job quit outcomes. For example, individuals might look for wage gains to compensate for the loss in job security after a quit. Since the loss in job security is positively related with EPL (Clark and Postel-Vinay (2009)), the observed wage gains following a job quit might also vary with the level of employment protection. If this is the case, then the drop in job security following a quit might be offset by wage gains, which leads us in finding no effect on overall job quality by looking on job satisfaction.

In order to disentangle the two effects, we consider the effect of job quits on wages by estimating for each country the following equation:

$$\log W_{i,t} = \delta_1 X_{i,t} + \delta_2 Q_{i,t} + \nu_i^W + \epsilon_{i,t}^W \quad (3)$$

where  $W$  is the hourly wage,  $Q$  is a dummy variable equal to 1 if the individual has quit his job between the year  $t - 1$  and  $t$ , and  $\nu^W$  and  $\epsilon^W$  are a time-invariant and time-varying error term, respectively.

Table 4 presents the results of estimating equation (4) with fixed effects. The estimates of the coefficient  $\delta_2$  show that in most countries there are positive wage gains from quitting a job. The largest wage gains (nearly 7 percent) are found for Portugal, which is also the country with the strongest employment protection for permanent jobs. Note that the wage gains for workers in the UK and Denmark, the countries with the least strict EPL, are not significant. Figure 6 plots the coefficients against the EPL strictness. The Figure shows an upward sloping trend. This suggests that individuals in countries with high level of employment protection, who experience larger losses in job security after a job quit, end up in jobs in which they realize a larger wage gain than workers in countries with low level of protection. This is likely to compensate for the loss in job security.

Although we find a positive slope of wage gains with the level of EPL across countries, the effect is not significant for many countries and there are no significant differences across countries. This might be due to the fact that employment protection policies and wage compression policies are often implemented together (Bertola and Rogerson (1997)), which means that wage gains following a job quit will be lower when protection is high. This might reduce the higher wage gains in high EPL countries, which are necessary in order to compensate for the loss in job security.

## 5 Conclusion

This paper investigates the relationship between employment protection legislation and workers' labor market behavior. In particular, we examine the extent to which cross-country differences in individual quit behavior can be explained by the existing differences in the level of employment protection across countries. By focusing on workers' quit decision we contribute to the existing literature, which has mainly focused on the effect of EPL on firms' hiring and firing decisions.

We use individual panel data from 12 European countries, which differ in their level of job protection. We find that the effect of changes in the quality of a job match, as measured by the level of job satisfaction, on the decision to quit differs across countries and is negatively related to the level of employment protection. These findings suggest that in countries with strict EPL workers are less likely to quit their job even if job quality is low, which results in the negative relationship between quit rates and EPL across countries that we observe in the data. This individual behavior can be explained by increased mobility costs associated with higher expected risk of post-quit layoff and job mismatch when the level of job protection is high.

Furthermore, we find that post-quit labor market outcomes are also related to EPL. Individuals in countries with a high level of employment protection, who experience larger losses in job security after a job quit, end up in jobs in which they realize a larger compensating wage gain than workers in countries with low level of protection.

These correlations between individual quit behavior and EPL that we report should not be interpreted as a causal effect of EPL. Giving a causal interpretation would require sufficient

exogenous variation in EPL for all the countries simultaneously during the period 1994-2001, for which panel data are available. In the absence of such variation, the analysis presented in this paper is a first step towards understanding the role of EPL in individual job quit behavior. The analysis of the causal effect of changes in EPL on the decision to quit and post-quit outcomes is left for future research.

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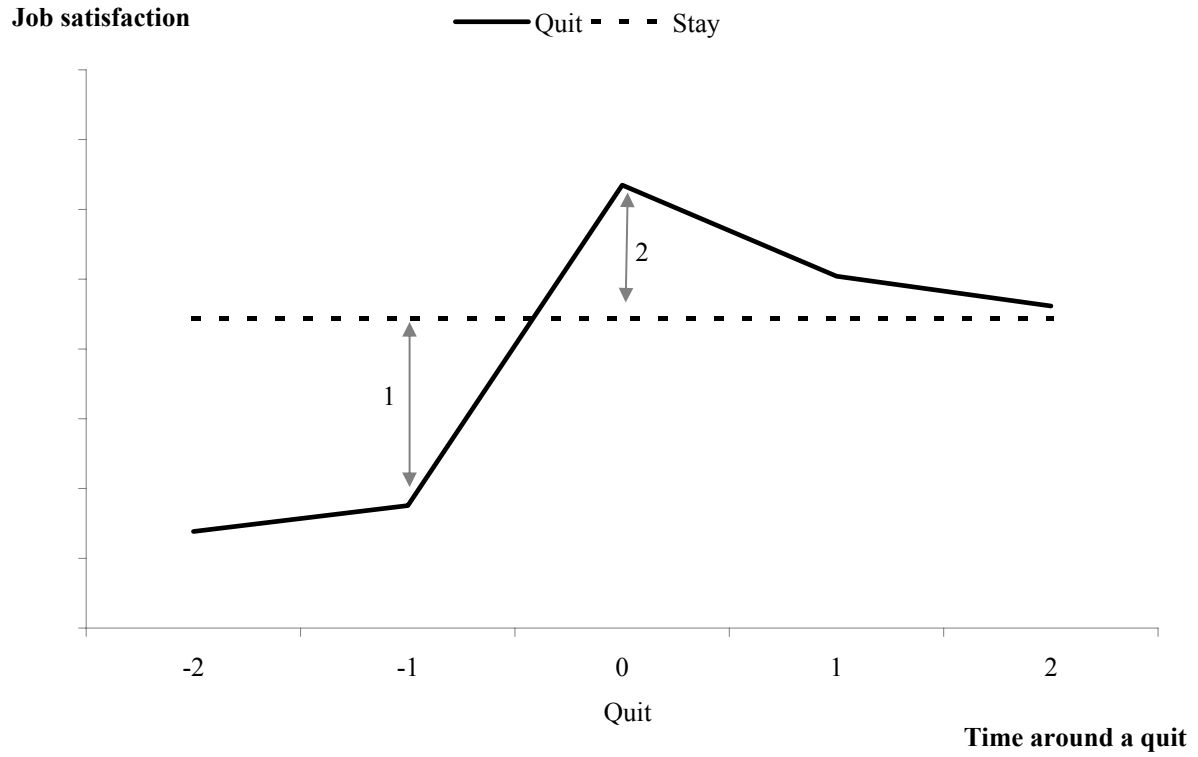
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Figure 1: Stylized figure of job satisfaction around a job quit



Source: Based on Gielen (2008).

Figure 2: Average country quit rates and EPL

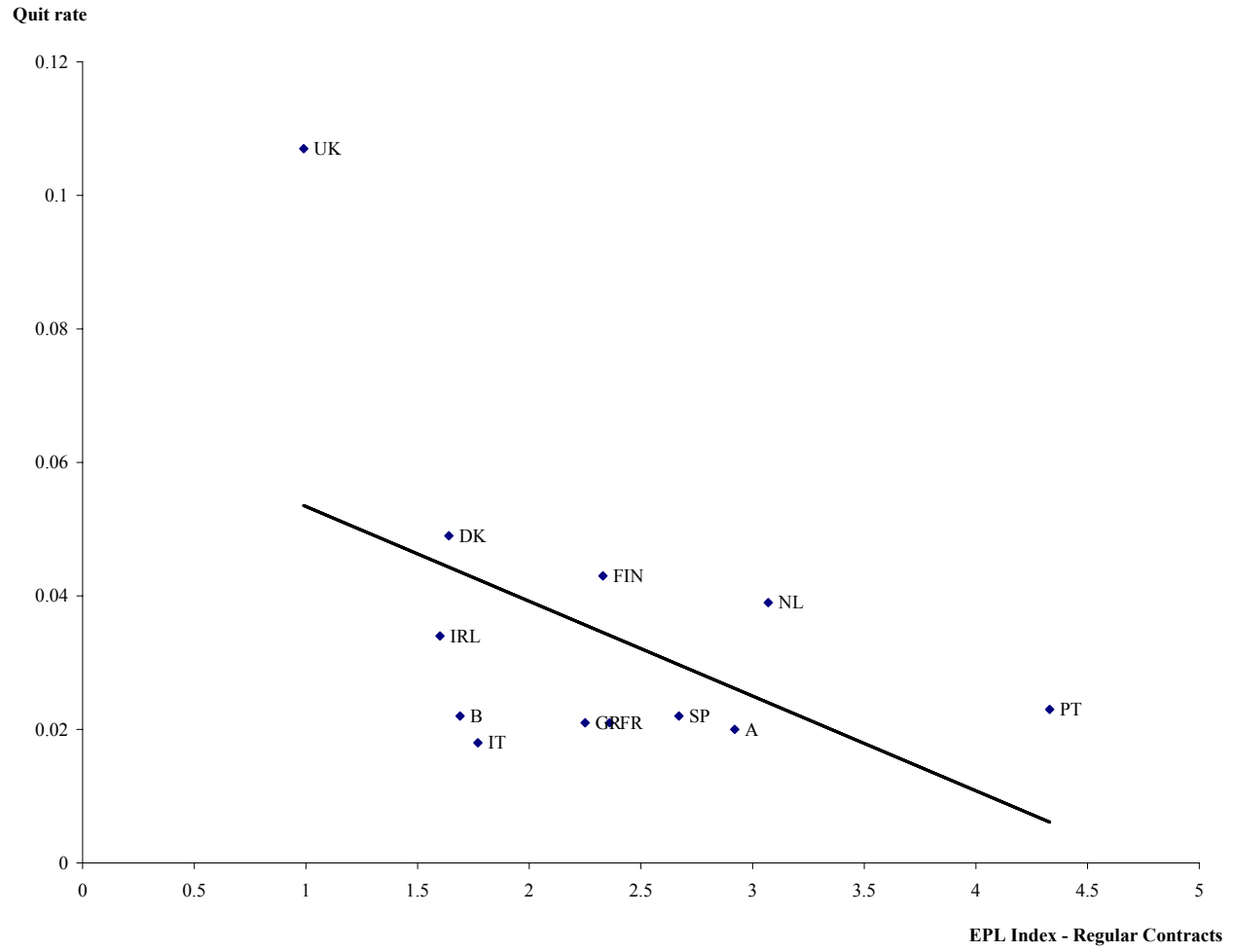
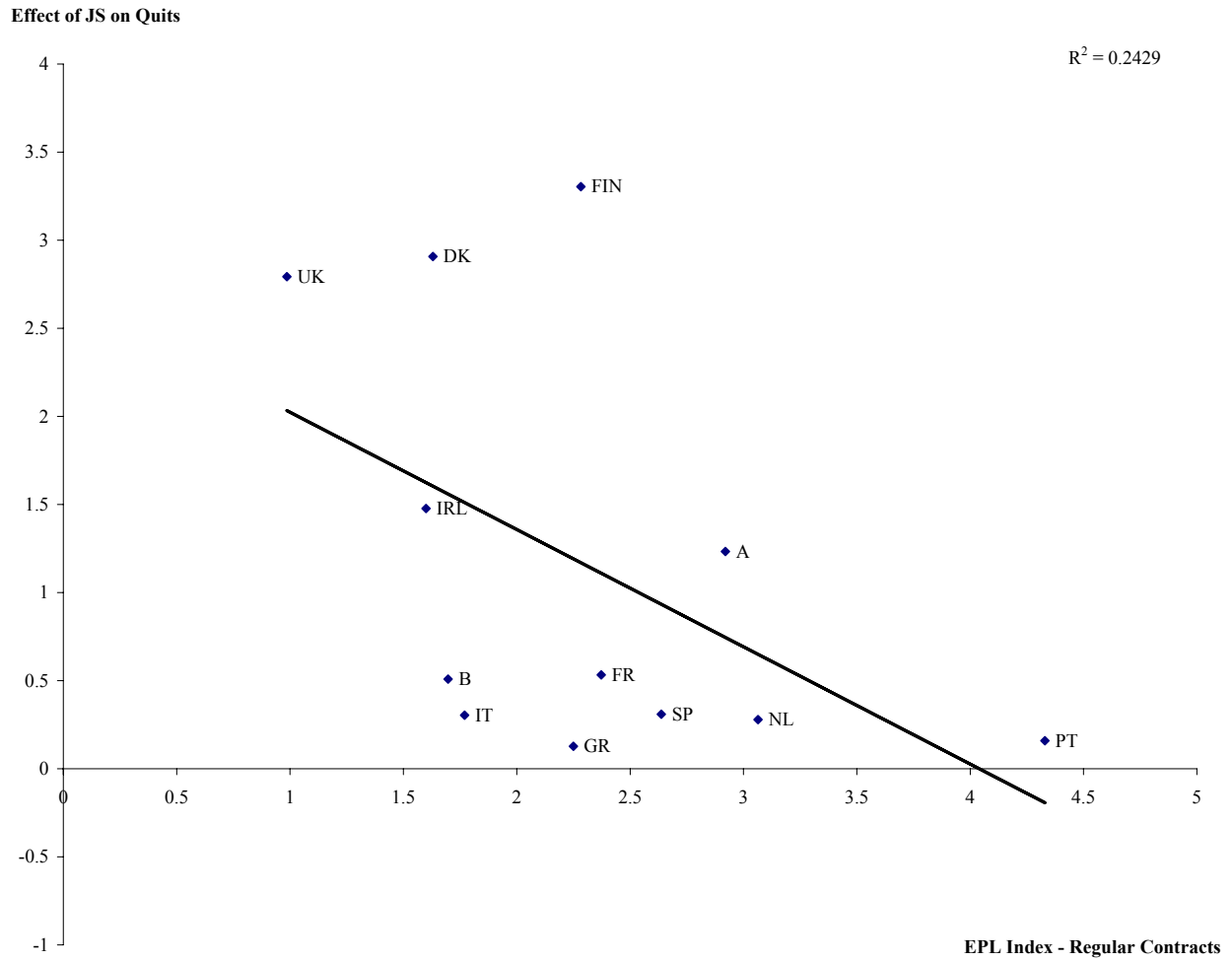
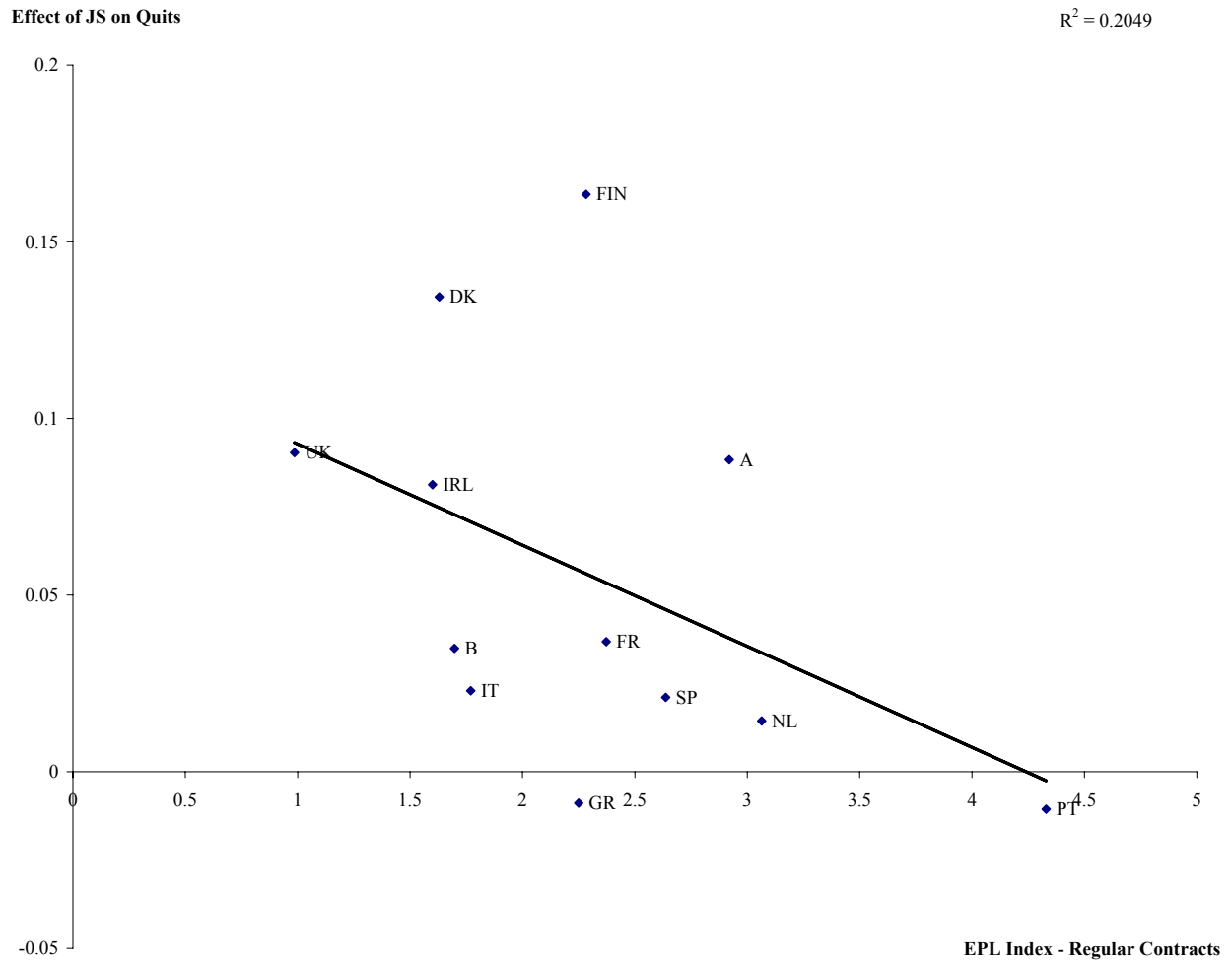


Figure 3: Effect of job satisfaction on quit decision and EPL



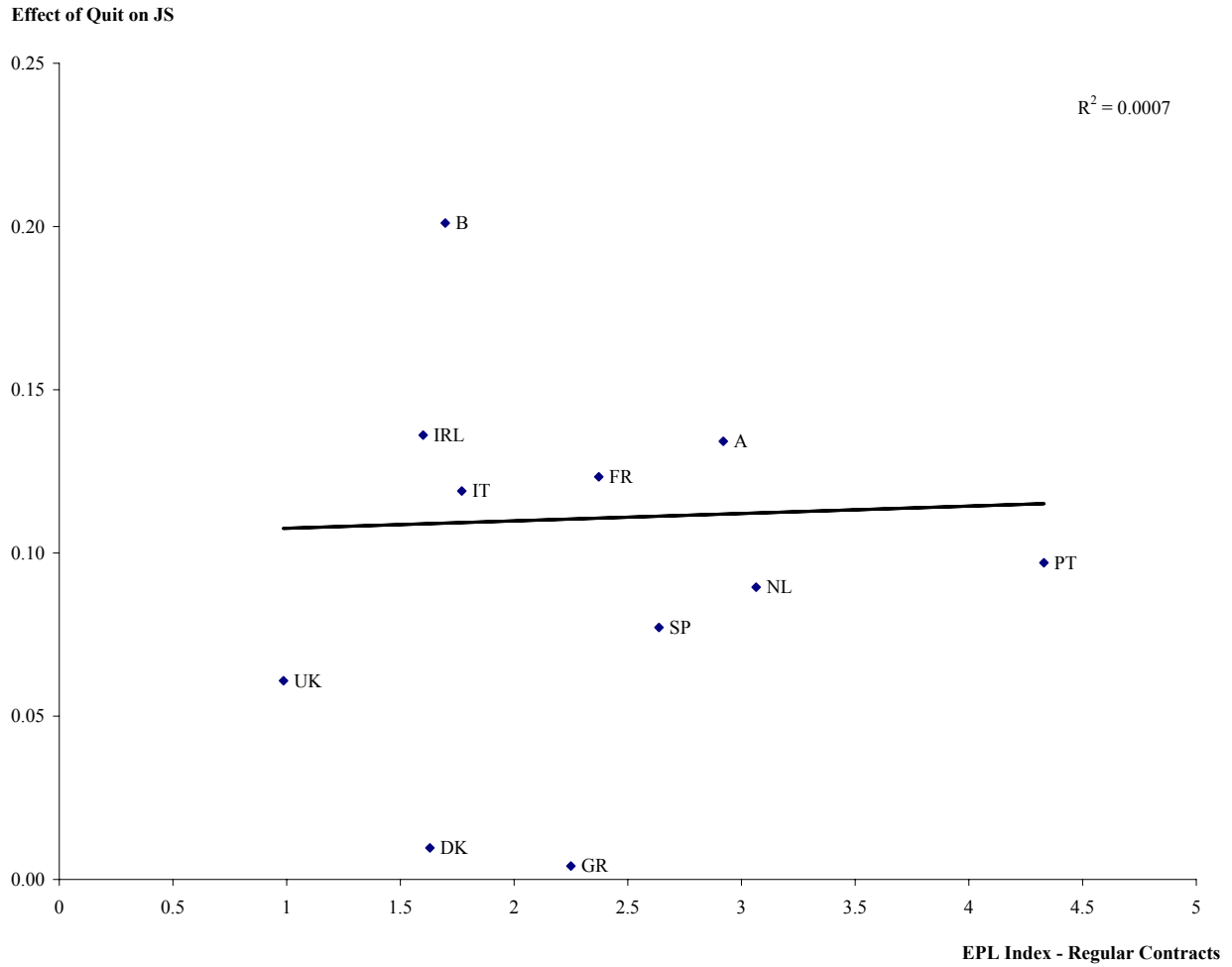
Note: Figure presents the absolute value of each estimate (x 100).

Figure 4: Standardized effect of job satisfaction on quit decision and EPL



Note: Figure presents the absolute value of the standardized effect (x 100).

Figure 5: Effect of quits on job satisfaction and EPL



Note: Figure presents the absolute value of each estimate (x 100).

Figure 6: Effect of quits on log hourly wage and EPL

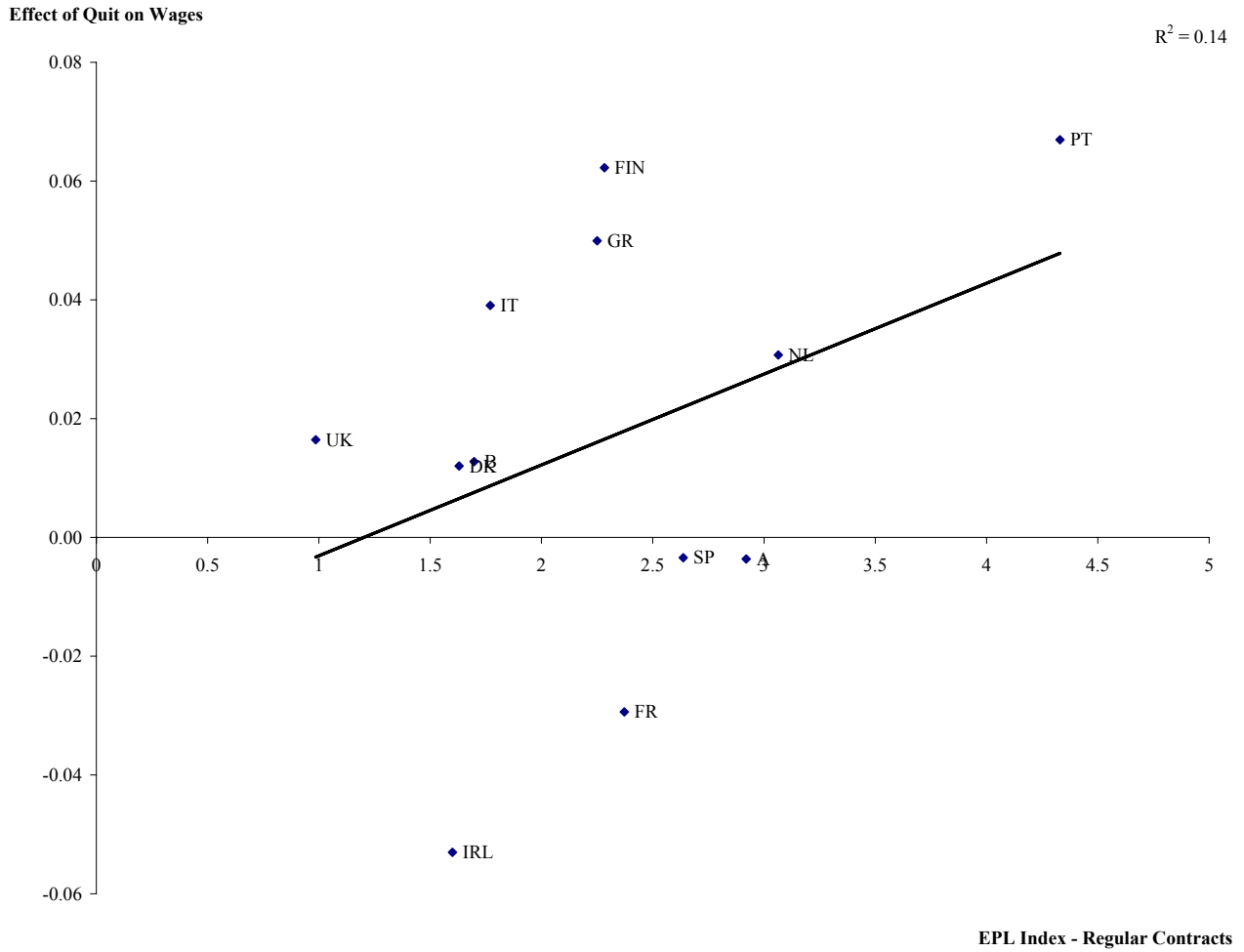
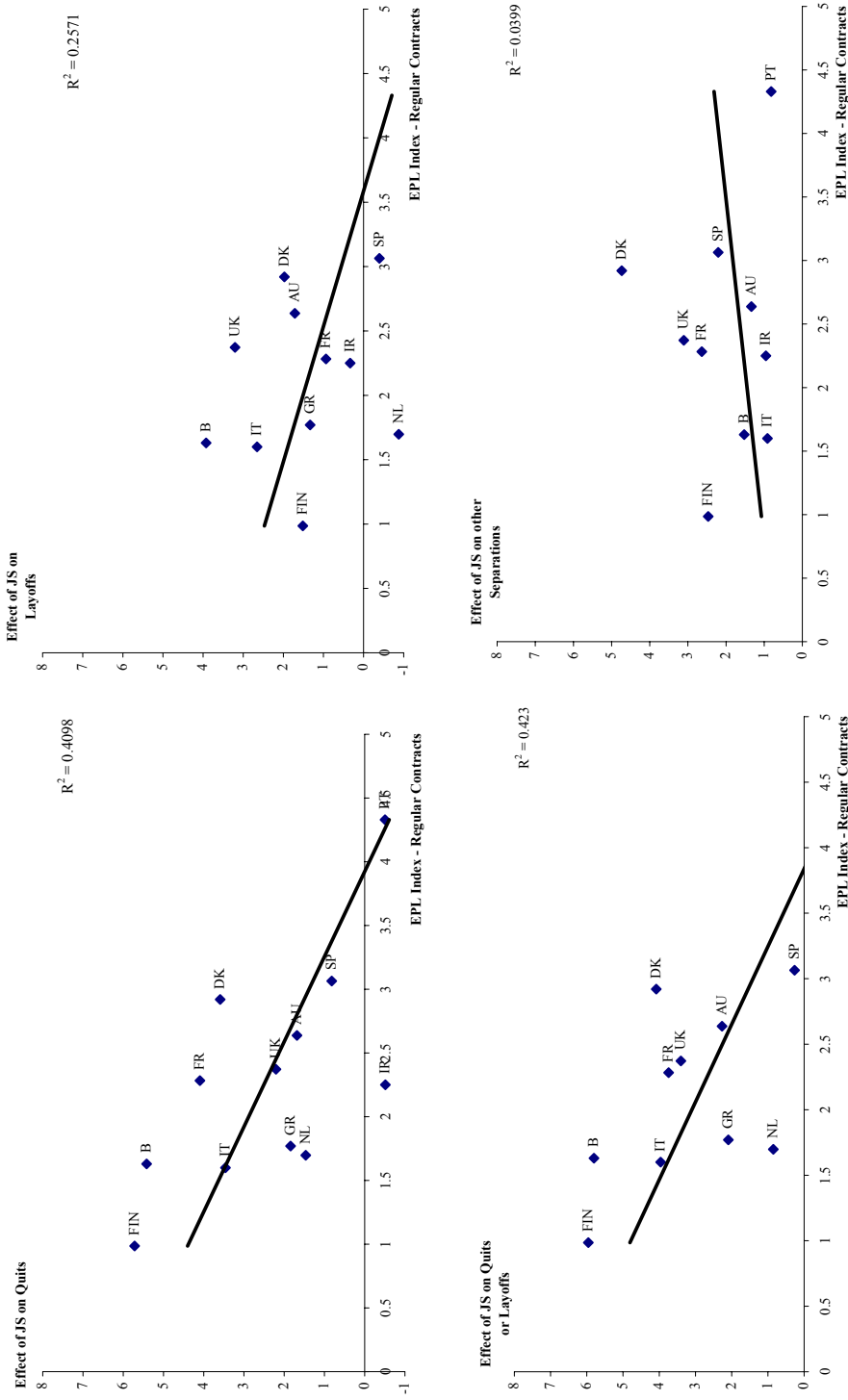


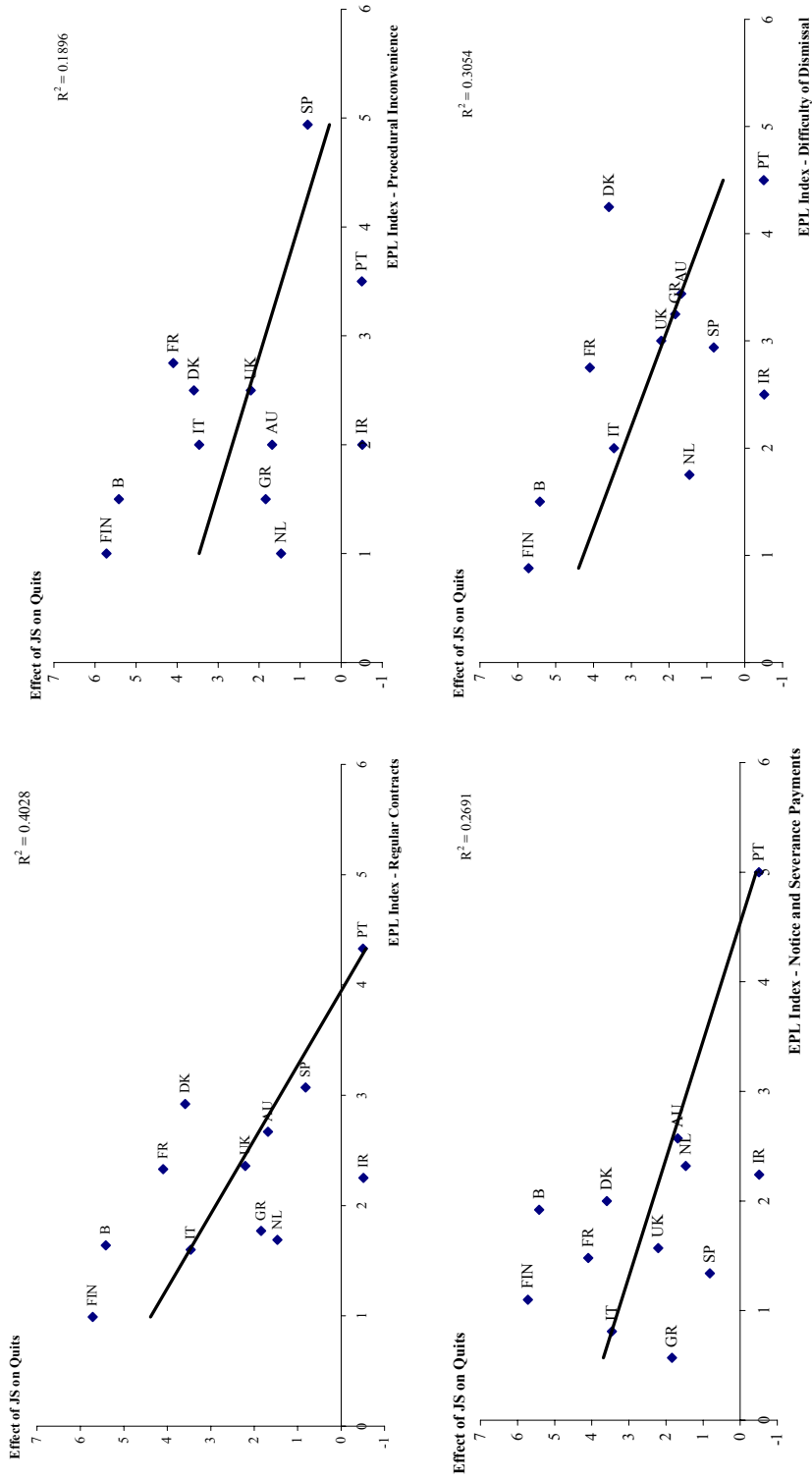
Figure 7: Effect of job satisfaction on separations and EPL



Note: Figure presents the absolute value of each estimate (x 100).



Figure 8: Effect of job satisfaction on quits and various sets of EPL



Note: Figure presents the absolute value of each estimate (x 100).



Table 2: Individual Fixed Effects Regression Results for Quit Decision.

	Austria		Belgium		Denmark		Finland		France		Greece	
	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.
Job Satisfaction	-0.012	0.003 ***	-0.005	0.003	-0.029	0.005 ***	-0.033	0.008 ***	-0.005	0.002 **	0.001	0.002
Tenure	0.001	0.000 ***	0.000	0.000 ***	0.001	0.000 ***	0.002	0.000 ***	0.001	0.000 ***	0.000	0.000 ***
Age	-0.002	0.009	0.028	0.014 **	0.011	0.013	-0.086	0.030 ***	0.028	0.006 ***	-0.013	0.008
Age Squared	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000 **	0.000	0.000 ***	0.000	0.000
Couple	-0.016	0.016	-0.023	0.022	-0.024	0.024	0.008	0.038	0.026	0.014 *	-0.002	0.017
Number of Children	0.007	0.010	-0.010	0.010	0.032	0.016 **	0.081	0.027 ***	0.011	0.009	0.010	0.010
Private Job	-0.011	0.016	0.038	0.021 *	0.044	0.038	0.058	0.032 *	0.031	0.029	0.007	0.013
Industry	-0.069	0.041 *	-0.001	0.054	-0.062	0.102	0.195	0.050 ***	0.072	0.065	-0.265	0.065 ***
Services	-0.050	0.039	-0.001	0.053	-0.141	0.103	0.066	0.031 **	0.004	0.065	-0.274	0.063 ***
Regional Unemployment Rate <sup>(a)</sup>	-0.076	0.041 *	0.000	0.018	-0.140	0.081 *	0.002	0.024	-0.007	0.006	0.000	0.000
Time dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Number of Groups	1,298	1,146			1,047	1,047	1,131	1,131	1,844	1,844	1,384	1,384
Number of Observations	4,328	3,313			3,597	3,597	2,203	2,203	7,204	7,204	4,564	4,564
	Ireland		Italy		Netherlands		Portugal		Spain		UK	
	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.
Job Satisfaction	-0.015	0.004 ***	-0.003	0.002 *	-0.003	0.003	0.002	0.003	-0.003	0.002 *	-0.028	0.005 ***
Tenure	0.000	0.000 **	0.000	0.000 **	0.001	0.000 ***	0.001	0.000 ***	0.000	0.000 ***	0.001	0.000 ***
Age	-0.008	0.014	0.017	0.006 ***	0.004	0.009	0.002	0.007	0.015	0.007 **	-0.006	0.016
Age Squared	0.000	0.000	0.000	0.000 ***	0.000	0.000	0.000	0.000 **	0.000	0.000 **	0.000	0.000
Couple	0.035	0.030	-0.027	0.012 **	-0.004	0.018	-0.022	0.013 *	-0.056	0.016 ***	-0.023	0.025
Number of Children	-0.004	0.018	0.007	0.007	-0.003	0.011	-0.003	0.007	0.004	0.008	0.005	0.020
Private Job	-0.013	0.029	0.011	0.010	-0.007	0.014	0.007	0.010	0.012	0.011	0.012	0.039
Industry	0.010	0.053	0.038	0.021 *	-0.003	0.056	-0.048	0.027 *	0.024	0.026	-0.045	0.068
Services	0.010	0.053	0.034	0.020 *	-0.022	0.055	-0.070	0.027 **	0.018	0.026	-0.017	0.070
Regional Unemployment Rate <sup>(a)</sup>	-0.048	0.041	0.009	0.003 ***			0.002	0.024	0.003	0.004	-0.011	0.016
Time dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Number of Groups	983	2,640			2,296	2,296	1,872	1,872	2,096	2,096	1,466	1,466
Number of Observations	2,981	9,483			8,143	8,143	6,682	6,682	6,836	6,836	5,350	5,350

(a) Estimates for the regional unemployment rate are missing for The Netherlands and for Greece. For The Netherlands overall unemployment rates are available, but regional information is not available in ECHP. For Greece there is not sufficient regional variation in local unemployment rates to be identified in a fixed effects model.

Notes: A \*\*\*/\*\*/\* indicates that the coefficient is different from zero at a 1%/5%/10% level of significance.

Table 3: Individual Fixed Effects Regression Results for Job Satisfaction.

	Austria		Belgium		Denmark		Finland		France		Greece	
Quit	0.134	0.072 *	0.201	0.076 ***	0.010	0.056	0.274	0.089 ***	0.123	0.053 **	0.004	0.077
Tenure	-0.001	0.000 ***	-0.001	0.000 ***	-0.001	0.000 ***	0.000	0.001	-0.001	0.000 ***	0.000	0.000
Age	0.071	0.040 *	-0.154	0.116	0.022	0.043	0.290	0.091 ***	0.033	0.031	0.030	0.041
Age Squared	0.000	0.000	0.000	0.000	0.000	0.000	-0.004	0.001 ***	0.000	0.000 *	-0.001	0.000 ***
Couple	0.066	0.064	-0.136	0.081 *	0.043	0.056	0.019	0.111	-0.082	0.052	0.077	0.072
Number of Children	-0.009	0.039	-0.030	0.037	-0.042	0.039	-0.226	0.095 **	-0.032	0.033	-0.041	0.042
Private Job	-0.001	0.066	-0.071	0.071	-0.134	0.101	0.129	0.104	0.074	0.096	-0.002	0.047
Industry	-0.128	0.195	-0.096	0.191	0.428	0.302	0.092	0.464	-0.272	0.262	-0.067	0.402
Services	-0.131	0.185	-0.146	0.189	0.445	0.307	0.139	0.464	-0.106	0.254	-0.100	0.393
Regional Unemployment Rate <sup>(a)</sup>	-0.056	0.119	0.044	0.049	-0.084	0.253	-0.163	0.173	-0.002	0.019		
Time dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Number of Groups	1,276	1,143	1,014	966	1,815	1,268						
Number of Observations	4,310	3,120	3,562	1,665	7,149	4,360						
	Ireland		Italy		Netherlands		Portugal		Spain		UK	
Quit	0.136	0.072 *	0.119	0.059 **	0.090	0.041 **	0.097	0.056 *	0.077	0.080	0.061	0.028 **
Tenure	-0.001	0.000 **	-0.001	0.000 ***	-0.001	0.000 ***	0.000	0.000	-0.001	0.000 *	-0.002	0.000 ***
Age	0.002	0.057	0.045	0.030	-0.019	0.033	-0.005	0.030	0.055	0.037	0.048	0.035
Age Squared	0.001	0.001 *	0.000	0.000	0.001	0.000 *	0.000	0.000	-0.001	0.000 **	0.000	0.000
Couple	0.168	0.097 *	-0.033	0.050	0.014	0.049	0.056	0.048	-0.028	0.071	-0.088	0.045 **
Number of Children	0.043	0.051	-0.023	0.027	0.003	0.028	-0.019	0.023	-0.013	0.034	0.016	0.033
Private Job	-0.163	0.079 **	-0.032	0.037	0.014	0.036	-0.040	0.034	-0.022	0.045	0.027	0.064
Industry	-0.031	0.163	0.169	0.083 **	-0.137	0.125	-0.040	0.095	-0.103	0.112	0.030	0.112
Services	-0.053	0.159	0.187	0.080 **	-0.047	0.124	-0.024	0.093	-0.062	0.112	-0.005	0.114
Regional Unemployment Rate <sup>(a)</sup>	-0.125	0.101	0.022	0.016			-0.019	0.113	-0.027	0.017	-0.005	0.031
Time dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Number of Groups	947	2,512	2,265	1,769	1,934	1,470						
Number of Observations	2,903	9,098	7,986	6,340	6,607	5,464						

(a) Estimates for the regional unemployment rate are missing for The Netherlands and for Greece. For The Netherlands overall unemployment rates are available, but regional information is not available in ECHP. For Greece there is not sufficient regional variation in local unemployment rates to be identified in a fixed effects model.

Notes: A \*\*\*/\*\*/\* indicates that the coefficient is different from zero at a 1%/5%/10% level of significance.

Table 4: Individual Fixed Effects Regression Results for Log Hourly Wages.

	Austria		Belgium		Denmark		Finland		France		Greece						
Quit	-0.004	0.021	0.013	0.023	0.012	0.013	0.062	0.024	**	-0.029	0.021	0.050	0.029	*			
Tenure	0.0003	0.0001	**	0.0001	0.0001	0.0001	*	-0.001	0.0002	***	0.0001	0.0001	-0.001	0.0002	***		
Age	0.090	0.010	***	0.085	0.011	***	0.109	0.008	***	0.218	0.025	***	0.093	0.009	*		
Age Squared	-0.0003	0.0001	**	-0.0003	0.0001	**	-0.001	0.0001	***	-0.002	0.0003	***	-0.0002	0.0001	**		
Couple	0.005	0.019		-0.014	0.025		0.025	0.013	***	-0.053	0.033		-0.016	0.020	*		
Number of Children	0.037	0.011	***	0.010	0.011	0.011	0.009	-0.010	0.027	0.042	0.013	**	0.050	0.016	***		
Private Job	-0.013	0.020		0.022	0.021	0.023	0.023	-0.033	0.030	-0.038	0.037		-0.045	0.018	***		
Industry	0.135	0.058	**	0.029	0.058	0.132	0.072	0.067	0.108	0.096	0.117		-0.136	0.151			
Services	0.135	0.055	**	0.018	0.057	0.100	0.073	-0.012	0.106	0.107	0.116		-0.183	0.148			
Regional Unemployment Rate <sup>(a)</sup>	0.031	0.035		-0.013	0.015	-0.010	0.060	0.074	0.045	-0.014	0.008						
Time dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
Number of Groups	1,274		1,147		1,018		1,036		1,796		1,267						
Number of Observations	4,303		3,131		3,584		1,841		6,544		4,361						
	Ireland		Italy		Netherlands		Portugal		Spain		UK						
Quit	-0.053	0.022	*	0.039	0.018	**	0.031	0.024	0.067	0.019	***	-0.003	0.028	0.016	0.011		
Tenure	-0.0004	0.0002	**	-0.0005	0.0001		-0.0002	0.0002	-0.0002	0.0001		-0.0002	0.0002	0.00004	0.0001		
Age	0.176	0.013	***	0.082	0.007	***	0.108	0.015	***	0.087	0.008	***	0.095	0.010	***		
Age Squared	-0.001	0.000	***	-0.0002	0.0001	***	-0.0005	0.0002	***	-0.00005	0.0001		-0.0002	0.0001	***		
Couple	0.007	0.033		0.038	0.015	**	0.041	0.029	**	0.050	0.016	***	0.028	0.025	0.067	0.017	***
Number of Children	-0.013	0.016		0.022	0.008	**	-0.001	0.017		0.010	0.008		0.010	0.012	0.008	0.013	
Private Job	-0.016	0.023		0.017	0.011		0.005	0.021		0.012	0.011		-0.007	0.016	-0.020	0.025	
Industry	0.159	0.047	***	0.030	0.026		-0.047	0.074		0.020	0.032		0.002	0.040	-0.043	0.044	
Services	0.147	0.046	***	0.040	0.025		-0.022	0.074		-0.008	0.031		-0.016	0.040	-0.070	0.045	*
Regional Unemployment Rate <sup>(a)</sup>	0.018	0.035		0.011	0.005		-0.011	0.038		-0.009	0.006	*	-0.007	0.012	-0.007	0.012	
Time dummies	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Number of Groups	1,079		2,501		2,265		1,770		1,941		1,471						
Number of Observations	3,605		8,963		7,986		6,336		6,649		5,465						

Table 5: Individual Fixed Effects Regression Results for Job Satisfaction by Type of Separation. - Sensitivity Analysis.

	Austria		Belgium		Denmark		Finland		France		Greece	
	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.
Dependent Variable: Quit												
Job Satisfaction	-0.012	0.003 ***	-0.005	0.003	-0.029	0.005 ***	-0.033	0.008 ***	-0.005	0.002 **	0.001	0.002
Dependent Variable: Layoff												
Job Satisfaction	-0.005	0.002 **	0.002	0.003	-0.014	0.003 ***	-0.004	0.004	-0.004	0.001 ***	-0.0005	0.001
Dependent Variable: Quit or Layoff												
Job Satisfaction	-0.015	0.004 ***	-0.003	0.004	-0.033	0.006 ***	-0.032	0.009 ***	-0.009	0.003 ***	0.0005	0.003
Dependent Variable: Other Separation												
Job Satisfaction	-0.011	0.002 ***	0.002	0.002	-0.006	0.004	-0.009	0.003 **	-0.003	0.001 ***	-0.001	0.002
	Ireland		Italy		Netherlands		Portugal		Spain		UK	
	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.
Dependent Variable: Quit												
Job Satisfaction	-0.015	0.004 ***	-0.003	0.002 *	-0.003	0.003	0.002	0.003	-0.003	0.002 *	-0.028	0.005 ***
Dependent Variable: Layoff												
Job Satisfaction	-0.005	0.002 ***	-0.001	0.001	0.001	0.001	0.002	0.001	-0.002	0.001 *	-0.004	0.003
Dependent Variable: Quit or Layoff												
Job Satisfaction	-0.017	0.004 ***	-0.004	0.002 **	-0.001	0.003	0.003	0.003	-0.004	0.002 **	-0.029	0.005 ***
Dependent Variable: Other Separation												
Job Satisfaction	-0.002	0.002	0.001	0.001	-0.006	0.003 **	-0.002	0.002	-0.002	0.001	-0.007	0.003 ***

Notes: A \*\*\*/\*\*/\* indicates that the coefficient is different from zero at a 1%/5%/10% level of significance.