HOW MUCH MOBILITY? CAREERS, PROMOTIONS, AND WAGES

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Abstract

The objective of this paper is to study the determinants of job mobility and the effect of mobility on wages, considering not only the workers' career between firms, but also within firms, using a longitudinal matching employer-employee data set. The results obtained show a negative relationship between tenure and the probability of exit and that the new jobs tend to end early. Moreover, the career advancement within the firm decreases the probability to exit. Concerning wages, job separations can have a positive impact on wage growth, especially for the younger workers. Movements to larger firms or another industry can also be associated with positive wage growth. This shows that the workers' movements between employers and industries are important to enhance their career prospects.

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1. Introduction

The workers' mobility is rarely studied within the firm. When a firm hires a worker, he is assigned to a certain hierarchical level, and then what happens? Has the worker more chances of progressing within a firm or by moving to another? How important are employer and industry changes at the beginning of the working life? What are the differences of career progression by gender? These are the main questions that we try to answer in the case of Portugal.

The data set used is *Quadros de Pessoal* (QP) from the Portuguese Ministry of Employment. The survey allows tracking firms and workers. In addition to the typical individual information found in this type of survey, the QP has information about the workers' job assignment, thereby, providing a way to reconstruct the workers' careers. Furthermore, there is information about promotions, which enable identifying several career events, namely, horizontal promotions, vertical promotions, and demotions.[1]

This type of information makes it possible to depart further from previous research, which in any case is not abundant. Typically, the applied work rests on information provided by single firm data (Baker, Gibbs and Holmstrom, 1994a,b, stands as the best example), and individual based surveys like the NLSY (e.g., Pergamit and Veum, 1999) or the PSID (e.g., McCue, 1996). The QP has features

[1] See Cabral and Mata (2003) and Lima and Pereira (2003) for recent papers using QP.

from both types of data sets, since it covers the entire workforce of multiple firms. Therefore, issues like mobility in the labour market from the perspective of the internal working of firms, which has been left much uncovered by past research can be studied. Moreover, the study of gender differentials in job assignment and promotions (Winter-Ebmer and Zweimüller, 1997; Booth, Francesconi and Frank, 2003) can be extended to other dimensions, namely, to the job mobility.[2]

The main objective is to study workers' mobility concerning not only wages, but also the career advancement within and between firms, using a longitudinal matching employer-employee data set. This subject is particularly important in the context of the Portuguese labour market, given the prevalence of numerous low-wage jobs, low qualifications, and several restrictions to the functioning of the market.

What have we reached so far? With the objective of assessing the impact of job mobility, the study started to look for the incidence of long and short-term employment relationships. The probability of job separation was estimated and in order to relate the job separation with the worker's internal career path, the promotion event and time since the previous promotion were introduced. The effect of job mobility on wages was analysed, and the main result is that job separation can have a positive impact on wage growth, especially for the younger workers and for those who move to larger firms or changes industry. This shows that the workers' movements between employers and industries are important to enhance their career prospects.

The paper is organized as follows. Section 2 presents the data set and characterizes several facts about job mobility, namely the importance of employment relationships with different durations. The third section provides the econometric results for the determinants of job mobility and wages. Section 4 discusses the main policy implications. The final section concludes the paper.

2.   Data and Overview

The data set used in this paper comes from *Quadros de Pessoal* (QP). This survey is gathered annually by the Portuguese Ministry of Employment and covers virtually all firms in the economy. It is a longitudinal matched employer-employee data set, given that both firms and workers can be followed from one year to the other. The sampling procedure constitutes on selecting 80 percent of all firms in each year from 1991 to 1999, stratified by firm size (number of workers). Thus, there are a total of 1,339,627 firm-years distributed as presented in Table 1. The share of firms with less than 10 employees is very high (80%), and this share increased during the 1990s, justifying the highest number of firms found in the sample. The QP have information about all the workers employed in these firms which corresponds to more than fourteen million worker-years in the data set.

Table 1

Several restrictions were needed in order to study job mobility. First, due to missing values and to the restriction of workers' age between 16 and 64 years old, the sample of workers is reduced to 12,698,312 worker-years (see Table 2). Second, in order to clearly identify the workers who leave the current employer,

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[2] The research on the internal working of firms has dealt with such issues as, for example: the effect of promotions on wages (Lazear, 1999); the relationship between careers and wages considering the effects of job assignment, human capital, and the learning about the employees' abilities (Lima and Pereira, 2003); the importance of the employer learning effect and the effect of education on wages (Bauer and Haisken-DeNew, 2001); and the fast-track effect (Ariga, Ohkusa and Brunello, 1999).

that is, the job separations, the firms observed in two consecutive years and the respective workforce were selected. Part of the analysis rests on this sub-sample of firms, which makes 80 percent of the original sample. Moreover, this procedure has the advantage of creating a suitable comparison group for those workers who terminate a job – the workers who remain in the former employer and the workers who are already in the new employer. Thirdly, the analysis is conducted separately for female and male workers.

Table 2

There are eight hierarchical levels defined by law in the QP: 1) apprentices, internships, trainees; 2) non-skilled professionals; 3) semi-skilled professionals; 4) skilled professionals; 5) higher-skilled professionals; 6) supervisors, team leaders; 7) intermediary management; 8) top management.[3] Table 3 shows summary statistics across hierarchical levels for selected individual characteristics. Age and tenure are increasing in the hierarchical level. Entry is concentrated on the bottom levels of the hierarchy across the board, but there is no evidence of unique ports-of-entry, and the same is true for exit.

Table 3

Concerning job mobility, there are three main facts that generally appear in applied work (Farber, 1999): (1) high incidence of long-term employment relationships; (2) new jobs are short lived; (3) the probability of job ending declines with tenure. To what extent are these facts also true for Portugal?

Table 4 presents the incidence of long-term employment relationships for workers with more than ten years of tenure and aged 35-64 years. In 1991, they represented more than half of the same age group and more than one quarter of the entire sampled workforce, showing the high incidence of this type of employment relationship (15 percentage points higher than the comparable figure in the CPS for the US).

Table 4

At the end of the decade, the incidence remains high, but there is a huge drop of more than 10 percentage points (pp.), which could represent a major increase in job instability (see discussion for the US, for example, in Farber, 1999; Jaeger and Steves, 1999; Neumark, Polsky, and Hansen, 1999; Bernhardt et al., 1999; and Gottschalk and Moffit, 1999). The incidence is higher for males than for females, and for workers with primary and secondary education.

The individuals working 20 years for the same employer and aged 45-64 are presented in Table 5. The figures confirm what was already apparent in Table 4, that is, the high frequency of long-term employment relationships. Even in 1991, they comprised 30 percent of the same age group. However, they only represent nine percent of all workers, a proportion that remain stable during the 1990s, and with a higher incidence for males.

Table 5

The second fact is that new jobs end early. As Table 6 shows, the fraction of workers who leave the firm within one year is more than 40 percent. Though the

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[3] As the hierarchical level increases, the task complexity, skill requirement, and the responsibility level also increase. See Lima and Pereira (2003) for a detailed description of the levels.

numbers of job separations are overestimated due to missing data, they clearly show the importance of job mobility early in the individuals' working life.

Table 6

The negative relationship between tenure and job separation is another fact usually observed in the functioning of the labour market. As mentioned above, we only observe workers who separate from firms that are present two consecutive years, and there are some missing data problems. Bearing this in mind, Figure 1 graphs the empirical exit hazard rate by years of tenure computed from 1991 to 1999. There is a sharp decline in the probability of job ending as tenure increases, confirming the negative relationship between these two variables.[4] Note also that the probability of job separation increases at higher tenures, probably due to the proximity of the workers' retirement age.[5] Furthermore, Table 7 shows that workers who change jobs are younger and less experienced, on average, than those who stay in the current job.

Figure 1

Table 7

The overview of the data shows that job mobility follows the same type of behaviour found elsewhere (e.g. Farber, 1999). The following section will try to study the main determinants of job mobility and their effect on earnings. Given the descriptive results presented above, there is no doubt that this phenomenon needs to be analysed, moreover, when thinking about the workers' career achievement and the labour market policies that enhance it (or not).

3.   Econometric Results

The objective of this section is to study the determinants of job mobility and their effect on earnings. Given the longitudinal nature of the data set used in this paper, we can follow workers from 1991 to 1999, allowing us to reconstruct the individual career, even when the worker moves between firms.[6] Thus, there are several variables used here that are the result of the workers individual history.

3.1   The Determinants of Job Mobility

The worker during his career can be fired by his employer or can quit. In either case, the final outcome is a job separation and this event is the object of study in this subsection. The goal is to characterize its determinants, knowing in advance that there is no distinction between quits and layoffs in the data set, which can blur the true relationships to be found. Nevertheless, the main issue is that an expected bad quality match is terminated when a job separation occurs, whatever the

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[4] The monthly information on the date of hiring provided in the QP can be used to increase the frequency of the observation and thus capture the peak found previously (see Farber, 1999) in the hazard within the first year of tenure.

[5] The probability of job ending with age also shows the same pattern as the one presented by the relationship between job ending and tenure: a sharp decline early in life, and then rise again near the sixties.

[6] This section extends previous research on career determinants (Lima and Pereira, 2003; Lima and Centeno, 2003) by focusing on the importance of careers between firms, that is, the effect of job mobility on individual labour market outcomes.

reasons to the termination (see Jovanovic, 1979a,b). A probit model is applied and the tenure in the job terminated is introduced as an independent variable with an expected negative coefficient (a duration dependence).

The results of the estimation are presented in Table 8 and Table 9. As already mentioned, the sub-sample used corresponds to firms observed in two consecutive years. Given that the dependent variable is the job separation, we observe which workers exit the firms in year t and report that information in $t-1$.

Table 8

The first specification presented in Table 8 includes the human capital variables and dummies for the hierarchical levels. The coefficient on tenure is negative, as expected, as well as the coefficient on age. Given the positive signs of the respective coefficients on the squared terms, the negative effect is less pronounced later in (working) life, which can be related to Figure 1, where the hazard for mobility has a pronounced negative slope for the first years within a firm and then it becomes flatter.[7] More educated workers have a lower probability to move. In addition, the part-time status has a strong positive effect on the probability of leaving a firm. These effects are robust to the several specifications presented. The hierarchical levels are introduced to account for the workers' current position within the firm. The estimated results show that as the worker progresses inside the firm, the less probable he is to move to another one, but at the very top of the hierarchy there is a reverse in the tendency described. This reversion can be related with careers ending or more visible workers at the top, which males easier the search for a better match.

Concerning the firm characteristics, the results in Table 8 show that there are industries where the probability of job separation is higher (the comparison industry is Manufacturing, the most prevalent) like Agriculture, a declining sector, or Construction and Commerce, Hotel and Restaurants, two sectors with high turnover rates. Concerning firm location, all regions have lower job separations probabilities when compared with Lisbon, being the North the region with the more negative effect. The results also show that the largest the firm size is, the lowest the job separation probability is.

Knowing that the new jobs tend to end early (see previous section), the second specification for the exit probability considers two dummies for tenure less than one year and tenure equal to one year. In fact, the associated coefficients are positive, that is, if a female (male) worker is in her(his) first year within the firm, she (he) has a 15(16) pp. higher probability of leaving it (the highest direct marginal effect found across variables in all specifications), and 7(8) pp. if the female (male) worker has completed one year of tenure.

The first specification in Table 9 explicitly introduces the workers' career within the firm by considering the worker's promotion in the year just before separation. The effect is negative, that is, the promoted worker has a lower probability of moving. Apparently this effect is expected, but when the worker is promoted, he also becomes more visible to the external labour market as a high ability worker, which can lead other potential employers to bid him away from the current one (Bernhardt, 1995).

Table 9

The second specification adds time since last promotion. The effect is positive, though modest, which means that the more time the worker remains

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[7] And even increases later in the working life as shown in Figure 1.

without a promotion, the more prone he becomes to leave the firm. Either the employee leaves to find a better match, or the employer identified the worker as a low ability one and makes him exit the firm.

The promotions event is further separated between horizontal and vertical promotions across hierarchical levels in the third specification. Demotions are also considered. Both types of promotions decrease the probability of job separation, but demotions increase it by 8 pp. for both females and males, showing that a better career progression within a firm implies on average a lower probability of leaving the firm to pursue career in a different firm (or of moving to self-employment, unemployment or inactivity).

Summarizing, the main results for the determinants of job mobility are:

(i)   The more years the worker spends in a firm, lower is the probability of job separation, but this negative effect fades away with time, and the same is true for age.

(ii)   The new hires have a higher probability of leaving the current job, which conforms the result of new jobs end early and meaning that mobility is an important issue earlier in the working life.

(iii)   The part-time status has a strong positive effect on the probability of leaving a firm.

(iv)   Workers in larger firms have a lower probability of leaving it. Lisbon is the firm location where the workers have a higher probability of separation. Some industries – declining or with high turnover rates – also imply a higher separation probability.

(v)   As the worker progresses within the firm, lower is the probability of leaving it.

(vi)   Related with the previous result, if the worker is promoted, lower is his exit probability. In addition, the more time has passed since the last promotion, higher the exit probability is. The same is true for demotions. Thus, the better the career within the firm is, lower is the necessity to find a new career in another firm.

3.2   Mobility and Wages

The path of individual wages is probably the main variable of interest when analysing the workers' labour market outcomes. Thus, this section provides a first approximation to the effect of job mobility on individual wages. The first set of results presented concern the typical Mincerian wage equation extended to the workers' career path, not only within firms, but also between firms. At the end of the section, wage growth equations are also estimated. The sample is restricted to the years 1995-1999, because the change in the rules of the QP from 1994 to 1995 (change in the industry and education coding) can introduce a small amount of noise in the estimation. Furthermore, fewer years allowed lifting some processing restrictions imposed by the too high initial sample size.

Table 10 provides the results for wage levels. Several specifications are presented because there are internal and external paths to consider (Table A1 presents the basic specifications). The first regression presented is a typical wage equation with the hierarchical levels added. Tenure and age have a quadratic influence on wages. The coefficients on tenure are within the range usually found for other countries. Better-educated workers earn more. These set of results

conform the expected positive impact of human capital on earnings. The two dummies for lower tenure are capturing the workers' entry and the associated coefficients are negative, showing that new hires generally receive lower wages. The set of dummies for hierarchical levels show that climbing the job ladder translates into higher wages. The workers' promotion is added in the second specification. In spite of this effect appearing significant, it must be interpreted carefully, given that the main effect of a promotion shows up in wage growth and not in wage levels (Lima and Pereira, 2003).

Table 10

The worker's job separation is also introduced in Table 10. In order to capture what happens before and after separation, two dummies are introduced. The first dummy is for job separation in the previous year, which means that the associated coefficient captures the wage of a new worker. This coefficient is positive for both females and males and higher than the coefficient on entry (*Tenure = 0*), which means that the job move yields positive returns.[8] The second dummy is for contemporaneous job change, that is, the negative coefficient separations imply that those workers who are about to leave the firm earn less on average than those who stay.

The main results concerning wage levels are:

(i)   Tenure and age have the standard effect on wages.
(ii)   Wages are increasing with the hierarchical level.
(iii)   Promotions have a positive affect on wages
(iv)   The workers who exit the firm earn lower wages on average before the job separation (old firm), but earn higher wages after the job separation (new firm).

The results presented in Table 10 for the wage level show the importance of the wage dynamics for the study of mobility. Therefore, the wage growth is estimated in Table 11 and Table 12 as a first-difference wage equation. In this way, not only it is possible to determine the wage premiums associated with the worker's career within the firm (Lima and Pereira, 2003), but also the worker's career between firms – the earnings effect of job mobility.

Table 11

The first specification in Table 11 includes promotion and job separation. Concerning job separation, the timing of the variable is such that the wage growth is the wage after separation minus the wage before separation. The results of this first specification show positive wage premiums both for promotions and for job change, and especially for male workers, the effect for job change is close to the effect for promotion, three percent against four percent. The second specification considers the type of promotion and demotions and, as expected, the vertical promotion yields the highest effect, 8 percent for females and 10 percent for males. Demotions have a negative wage premium associated of one percent for both type of workers. The third and final specification of the wage growth regression in Table 11 adds the workers' education in order to capture possible wage-tenure profiles

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[8] The variable *Tenure = 0* captures entry of job movers and also entry of previous unemployed or inactive.

with respect to the level of education. In fact, more educated workers experience higher wage growth.

The next set of results considers several individual and firm attributes and its relationship with wage growth and job separation (Table 12). Column (1) and (2) accounts for the possible differences of the job separation effect across worker's age. For each age group there is a binary variable that interacts with the job separation variable. The results show a clear pattern: the gains from job change are higher for the younger workers; as the workers get older, the positive effect decreases; by the age of thirty-five it starts to be negative; and by the age of fifty it clearly becomes negative for male workers. These results show the importance of job movements earlier in the workers' career and the benefits of those movements (Topel and Ward, 1992).

The level of education upon job move is considered in the third specification (Bernhardt et al., 1999). The estimated coefficients on education show that the gains from moving are higher for the more educated workers and almost null for the workers with the primary education, the lowest level. The gains are higher for males than females at the lower levels of education.

Finally, the change of firm characteristics is considered in the last two columns, namely the change in industry, location, and size. The job change that also implies a change in industry holds a positive premium, which is not expected provided that specific capital is considered.[9] This means that on average the workers do not loose from changing industry. The study of mobility between industries can clarify if there are career matches and employer matches, that is, if the young workers follow a job search strategy with two stages: first search for a career and second search for an employer (Neal, 1999). If there is a high proportion of industry changes, then it is more than merely searching for an employer within a given career path. The high wage premium associated with job change for the younger workers in the first specification of Table 12 seems to confirm this argument of career search before looking for an employer. The change in firm location holds on average a not significant effect meaning that workers do not suffer a negative effect for geographic mobility.[10]

Table 12

The change in form size upon job change is separated in changes to larger firms and to smaller ones. As expected, given the usual wage-firm size positive relationship (see Table 10), the movements to larger firms have an associated positive wage premium, showing the alternative to a career within a firm is a change to another firm with a larger workforce, and therefore on average with higher potential gains from career progression. The reverse is apparently true: the move to smaller firms carries a negative premium for both females and males.

Concerning wage growth, the following main results were obtained:

(i)   Promotions, and especially vertical promotions, have a positive effect on wage growth. The reverse is true for demotions.

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[9] The change in industry was calculated with the two digit codes and not considering possible differences in the similarity between industries, and this fact calls for a finer definition of the variable. The change of industry can be used to tackle different rewards individual attributes, namely education and labour market experience, that is, make wage comparisons of industry movers and stayers (McLaughlin and Bils, 2001). The above results seem to indicate that some movement hold positive gains, and these movements can be from industries that are declining to industries that are growing.
[10] As with industry changes, the region changes can be further detailed.

(ii)   Job separation yields a positive wage premium for both female and male workers.

(iii)   The positive job change effect on wage growth is higher for the younger workers. As the workers get older, the positive effect decreases and may become negative.

(iv)   The gains from job change are higher for more educated workers. The workers with the lowest level of education – primary – have no significant gains from changing employer.

(v)   The change of industry upon job separation has a positive effect on wage growth. This result can be linked to the gains of job change for young workers, indicating a search for a career across sectors of activity before searching for a specific employer.

(vi)   Geographical mobility does not have a significant impact on wage growth.

(vii)   Moving to larger firms holds a positive wage premium, but the reverse is true for movements to smaller ones.

4.   Policy Implications

What are the policy implications? Firstly, the negative job separation-tenure relationship and the related negative job separation-age relationship shows the importance of having a more flexible labour market in order to allow workers and firms to find the better quality match. At the same time, given the prevalence of long-term employment relationships, it also shows the danger of an emergence of a "segmented" labour market: one where workers are protected and can be considered insiders; and another where workers at the beginning of the working life do not have the conditions to find a stable career, given that employers face an asymmetrical labour market legislation that leads them to use the unprotected side of the market as a buffer stock to respond to product market shocks. The strong positive effect associated with the part-time status seems to corroborate this view, showing a high job volatility associated with this stage.

The results on the relationship between wages and job separation show that job mobility can have a positive effect on wages, especially for the younger workers. This fact reinforces the need for a flexible labour market that allows the workers at the beginning of their working lives to search not only for a high quality employer-employee match, but also a high quality industry-employee match, meaning that the young worker can engage in a career search – sector of activity – before searching for best employer.

In addition, the results also show that job mobility can be a way of moving up in the wage scale and reducing the weight of dead-end low wage jobs.[11] However, the modest or no gains from mobility for the less educated workers call for a special concentration on policies concerning training and the associated accumulation of human capital. The analysis did not focus on the distinction between specific and general human capital (Topel, 1991; Farber, 1999), however the results on industry change seem to indicate that this is not the main issue concerning the Portuguese reality, but rather a lack of human capital, irrespective of its nature. Thus, if human capital portability is not the main issue, the policies promoting workers' human capital accumulation gain especial relevance.

The prevalence of small and medium size firms, in face of the results obtained, adds another field of possible action. The policies that promote flexibility

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[11] Similar to the analysing the conditional probability of transiting up or down the earnings distribution given the worker's past history (Finnie and Gray, 2002).

and the accumulation of skills are not real effective if they do not take in account this reality, namely, that in smaller firms the human resources practices are incipient and highly dependent on external labour market performance, as opposed to its own internal labour market, which can be considered almost inexistent.

5. Conclusion

This paper studies several issues related with job mobility for the case of Portugal. The data set used is largely representative of the national labour market and provides enough information to follow firms and workers, namely to reconstruct the worker career path within and between firms. Given the current discussion in the European Union about the functioning of the labour market and of the several institutions that affect it, the issues treated here are of special relevance.

The main objective was first to identify the determinants of job movements between firms. The results obtained show a negative relationship between tenure and the probability of job separation and that new job tend to end early. Moreover, the career advancement within the firm decreases the probability of job change. The second main objective was to analyse the impact of job change on wages. The impact was found to be positive, although higher for the younger workers and for the more educated. As the workers get older, the positive effect decreases and can even become negative. These results were obtained controlling for the workers' career progression within the firm.

Overall, the results show the importance of having a labour market that allows workers to move between firms in order to find a better match. Institutions that harm this aspect of the labour market functioning can have a negative consequence on the final individual outcomes.

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TABLE 1. Distribution of firm size

Survey year	Number of Firms	Firm size						
		<10	10-19	20-49	50-99	100-199	200-499	>=500
1991	115,091	87,313	13,818	8,796	2,919	1,276	696	273
1992	123,225	94,469	14,513	9,102	2,897	1,282	700	262
1993	128,532	99,995	14,672	8,861	2,858	1,247	653	246
1994	142,359	113,541	15,111	8,949	2,747	1,174	618	219
1995	149,071	120,319	15,124	8,841	2,782	1,168	614	223
1996	153,458	124,819	15,172	8,765	2,699	1,186	577	240
1997	165,578	135,104	16,295	9,323	2,846	1,186	597	227
1998	174,371	143,025	16,777	9,564	2,886	1,284	604	231
1999	187,942	154,147	18,414	10,142	3,055	1,305	632	247
Total	1,339,627	1,072,732	139,896	82,343	25,689	11,108	5,691	2,168

The total number of firms corresponds to an 80 percent sample of all firms covered by the QP stratified by firm size (number of workers).

TABLE 2. Number of workers by gender, 1991-1999

Survey year	Gender		Total
	Male	Female	
1991	796,129	494,300	1,290,429
1992	821,160	525,972	1,347,132
1993	832,337	528,239	1,360,576
1994	803,385	534,067	1,337,452
1995	838,374	572,309	1,410,683
1996	818,390	568,475	1,386,865
1997	874,174	622,097	1,496,271
1998	869,976	642,215	1,512,191
1999	885,062	671,651	1,556,713
Total	7,538,987	5,159,325	12,698,312

TABLE 3. Workers' characteristics and the hierarchy, 1991-1999 (mean and std dev)

	Hierarchical levels								
	1	2	3	4	5	6	7	8	Total
Age	37.519	23.106	36.903	36.055	36.394	38.895	42.825	40.416	41.006
	(11.043)	(6.048)	(12.390)	(11.221)	(10.723)	(10.073)	(10.041)	(10.305)	(10.016)
Tenure	2.025	4.895	8.744	8.309	11.311	13.267	11.373	9.609	7.977
	(2.454)	(6.492)	(8.743)	(8.492)	(9.822)	(10.556)	(10.415)	(9.435)	(8.650)
Tenure < 1	0.246	0.224	0.111	0.115	0.078	0.058	0.088	0.090	0.130
	(0.431)	(0.417)	(0.314)	(0.319)	(0.269)	(0.233)	(0.284)	(0.286)	(0.337)
Tenure = 1	0.289	0.184	0.110	0.114	0.084	0.065	0.096	0.104	0.132
	(0.453)	(0.387)	(0.313)	(0.318)	(0.277)	(0.246)	(0.294)	(0.305)	(0.338)
Primary	0.280	0.564	0.534	0.432	0.171	0.429	0.100	0.045	0.413
Education	(0.449)	(0.496)	(0.499)	(0.495)	(0.376)	(0.495)	(0.300)	(0.208)	(0.492)
Secondary	0.423	0.169	0.218	0.345	0.585	0.366	0.497	0.297	0.326
Education	(0.494)	(0.375)	(0.413)	(0.475)	(0.493)	(0.482)	(0.500)	(0.457)	(0.469)
Tertiary	0.010	0.001	0.003	0.014	0.128	0.042	0.317	0.598	0.051
Education	(0.098)	(0.032)	(0.050)	(0.118)	(0.334)	(0.200)	(0.465)	(0.490)	(0.221)
Job	0.359	0.259	0.255	0.217	0.221	0.244	0.264	0.276	0.099
Separation	(0.480)	(0.438)	(0.436)	(0.412)	(0.415)	(0.429)	(0.441)	(0.447)	(0.299)

Age and *Tenure* are defined in years. *Job separation* is identified with the firms that remain at least two consecutive years in the sample. *Job Separation*, *Tenure < 1*, *Tenure = 1*, and the variables for education are defined as binary variables.

TABLE 4. Long-term employment, more than 10 years of tenure (ages 35-64)

Survey year	Total	Female	Male	Primary Education	Secondary Education	Tertiary Education	N
Fraction of the age group 35-64							
1991	0.554	0.540	0.560	0.532	0.604	0.478	634.962
1992	0.548	0.532	0.556	0.528	0.598	0.486	671.984
1993	0.546	0.512	0.564	0.527	0.600	0.498	693.454
1994	0.510	0.472	0.530	0.479	0.605	0.485	663.993
1995	0.486	0.457	0.503	0.468	0.561	0.444	697.716
1996	0.473	0.441	0.491	0.453	0.556	0.442	690.798
1997	0.458	0.426	0.477	0.436	0.543	0.440	760.288
1998	0.435	0.402	0.456	0.423	0.502	0.428	777.042
1999	0.423	0.391	0.445	0.418	0.479	0.410	803.063
Total	0.490	0.457	0.508	0.473	0.560	0.452	6.393.300
Fraction of all workers (all age groups)							
1991	0.272	0.224	0.302	0.311	0.202	0.273	1,290,429
1992	0.273	0.228	0.302	0.322	0.202	0.270	1,347,132
1993	0.279	0.225	0.312	0.333	0.212	0.276	1,360,576
1994	0.253	0.205	0.285	0.304	0.248	0.250	1,337,452
1995	0.241	0.199	0.269	0.303	0.223	0.225	1,410,683
1996	0.235	0.195	0.264	0.301	0.222	0.213	1,386,865
1997	0.233	0.196	0.259	0.298	0.220	0.204	1,496,271
1998	0.224	0.189	0.249	0.301	0.198	0.193	1,512,191
1999	0.218	0.185	0.244	0.302	0.187	0.178	1,556,713
Total	0.246	0.204	0.276	0.309	0.211	0.222	12,698,312

TABLE 5. Long-term employment, more than 20 years of tenure (ages 45-64)

Survey year	Total	Female	Male	Primary Education	Secondary Education	Tertiary Education	N
Fraction of the age group 45-64							
1991	0.329	0.277	0.348	0.304	0.415	0.305	313,013
1992	0.340	0.304	0.354	0.319	0.419	0.283	334,086
1993	0.356	0.308	0.374	0.334	0.438	0.316	351,635
1994	0.362	0.304	0.387	0.332	0.464	0.346	330,015
1995	0.376	0.333	0.395	0.356	0.461	0.328	344,125
1996	0.372	0.328	0.393	0.348	0.466	0.333	344,421
1997	0.369	0.330	0.388	0.339	0.475	0.336	379,413
1998	0.343	0.307	0.363	0.318	0.443	0.319	388,435
1999	0.326	0.292	0.344	0.301	0.420	0.306	399,513
Total	0.352	0.310	0.372	0.328	0.443	0.320	3,184,656
Fraction of all workers (all age groups)							
1991	0.080	0.047	0.100	0.088	0.056	0.076	1,290,429
1992	0.084	0.054	0.104	0.099	0.058	0.067	1,347,132
1993	0.092	0.057	0.114	0.112	0.064	0.077	1,360,576
1994	0.089	0.056	0.112	0.112	0.078	0.078	1,337,452
1995	0.092	0.061	0.113	0.124	0.072	0.071	1,410,683
1996	0.092	0.062	0.114	0.128	0.076	0.069	1,386,865
1997	0.093	0.066	0.113	0.131	0.078	0.067	1,496,271
1998	0.088	0.064	0.106	0.131	0.069	0.062	1,512,191
1999	0.084	0.062	0.100	0.127	0.065	0.056	1,556,713
Total	0.088	0.059	0.108	0.116	0.067	0.068	12,698,312

TABLE 6. Fraction of new jobs that end within 1 year, 1991-1999

Survey year	Total	Female	Male	Primary Education	Secondary Education	Tertiary Education	N (Tenure≤1)
1991	0.448	0.409	0.472	0.460	0.436	0.392	214,112
1992	0.454	0.431	0.468	0.462	0.451	0.384	210,612
1993	0.526	0.506	0.539	0.537	0.519	0.468	189,920
1994	0.419	0.399	0.432	0.440	0.402	0.340	234,474
1995	0.414	0.397	0.426	0.436	0.392	0.333	255,378
1996	0.407	0.392	0.417	0.430	0.390	0.347	262,601
1997	0.407	0.398	0.414	0.418	0.408	0.343	295,224
1998	0.389	0.389	0.389	0.392	0.399	0.328	324,791
Total	0.427	0.410	0.439	0.444	0.427	0.354	1,987,112

Data for job separations of workers with one year of tenure at most as a fraction of all workers with one year of tenure at most. Separations identified with firms observed two consecutive years in the sample. The year reported corresponds to the last year before separation.

TABLE 7. Mean (std. dev.) age and tenure for job stayers and movers, 1991-1999

	Age			Tenure		
	Total	Female	Male	Total	Female	Male
Job Stayer	36.745	34.815	38.043	9.006	8.112	9.607
	(11.200)	(10.488)	(11.473)	(8.774)	(8.117)	(9.140)
Job Mover	34.755	33.436	35.607	6.179	5.692	6.493
	(11.911)	(11.058)	(12.356)	(8.247)	(7.551)	(8.653)

Data for firms observed two consecutive years in the sample.

TABLE 8. Job separation – individual and firm characteristics: marginal effects (probit), 1991-1999

	(1) Female	(2) Male	(3) Female	(4) Male
Tenure < 1	--	--	0.1526***	0.1606***
	--	--	(0.0011)	(0.0009)
Tenure = 1	--	--	0.0702***	0.0756***
	--	--	(0.0010)	(0.0008)
Tenure	-0.0229***	-0.0228***	-0.0112***	-0.0122***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Tenure^2 x 10^{-2}	0.0644***	0.0585***	0.0319***	0.0321***
	(0.0004)	(0.0003)	(0.0005)	(0.0003)
Age	-0.0088***	-0.0133***	-0.0102***	-0.0141***
	(0.0002)	(0.0001)	(0.0002)	(0.0001)
Age^2 x 10^{-2}	0.0108***	0.0163***	0.0125***	0.0173***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Secondary education	-0.0129***	-0.0150***	-0.0115***	-0.0129***
	(0.0006)	(0.0005)	(0.0006)	(0.0005)
Tertiary education	-0.0196***	-0.0195***	-0.0166***	-0.0151***
	(0.0015)	(0.0012)	(0.0014)	(0.0012)
Part-time	0.1221***	0.1430***	0.1207***	0.1393***
	(0.0008)	(0.0008)	(0.0008)	(0.0008)
Hierarchical Levels				
Level 1	0.0265***	-0.0002	0.0161***	-0.0047***
	(0.0011)	(0.0010)	(0.0010)	(0.0010)
Level 2	0.0425***	0.0454***	0.0387***	0.0411***
	(0.0010)	(0.0008)	(0.0010)	(0.0008)
Level 3	0.0101***	0.0146***	0.0076***	0.0141***
	(0.0007)	(0.0007)	(0.0007)	(0.0007)
Level 5	-0.0027**	-0.0083***	-0.0026**	-0.0073***
	(0.0013)	(0.0010)	(0.0013)	(0.0010)
Level 6	0.0094***	-0.0104***	0.0088***	-0.0082***
	(0.0020)	(0.0010)	(0.0019)	(0.0010)
Level 7	0.0248***	0.0125***	0.0261***	0.0150***
	(0.0021)	(0.0014)	(0.0021)	(0.0013)
Level 8	0.0352***	0.0391***	0.0382***	0.0443***
	(0.0023)	(0.0015)	(0.0023)	(0.0015)
Log number of workers	-0.0045***	-0.0078***	-0.0054***	-0.0093***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Industry				
Agriculture	0.0598***	0.0019	0.0496***	0.0012
	(0.0024)	(0.0017)	(0.0023)	(0.0017)
Extraction	0.0342***	0.0233***	0.0345***	0.0240***
	(0.0081)	(0.0023)	(0.0080)	(0.0023)
Electricity, gas, and water	-0.0896***	-0.1112***	-0.0954***	-0.1117***
	(0.0038)	(0.0016)	(0.0037)	(0.0015)
Construction	0.0513***	0.0362***	0.0488***	0.0320***
	(0.0024)	(0.0007)	(0.0023)	(0.0007)
Commerce, Hotels, and Restaurants	0.0388***	0.0199***	0.0352***	0.0189***
	(0.0008)	(0.0007)	(0.0008)	(0.0006)
Transports and Communications	0.0163***	-0.0045***	0.0147***	-0.0072***
	(0.0016)	(0.0009)	(0.0015)	(0.0008)
Banking and Insurance	0.0274***	-0.0001	0.0210***	-0.0053***
	(0.0011)	(0.0009)	(0.0011)	(0.0009)
Collective, Social, and Personal Services	-0.0068***	-0.0107***	-0.0075***	-0.0105***
	(0.0009)	(0.0012)	(0.0009)	(0.0011)
Region				
North	-0.0432***	-0.0479***	-0.0409***	-0.0448***
	(0.0007)	(0.0005)	(0.0007)	(0.0005)
Centre	-0.0345***	-0.0299***	-0.0325***	-0.0275***
	(0.0008)	(0.0007)	(0.0008)	(0.0007)
Alentejo	-0.0103***	-0.0234***	-0.0127***	-0.0237***
	(0.0018)	(0.0013)	(0.0017)	(0.0013)
Algarve	-0.0029*	-0.0124***	-0.0081***	-0.0150***
	(0.0017)	(0.0015)	(0.0016)	(0.0015)
Islands	-0.0168***	-0.0366***	-0.0183***	-0.0369***
	(0.0016)	(0.0012)	(0.0016)	(0.0011)
Observations	3,191,103	4,798,522	3,191,103	4,798,522
Wald chi2	157,119.25	297,774.63	187,203.78	346,710.20
Log Likelihood	-1,771,340.7	-2,666,817.2	-1,760,617.3	-2,649,009.9
Pseudo R-squared	0.0496	0.0611	0.0554	0.0674

Dependent variable is the job separation identified with firms observed in two consecutive years. *Tenure, Time since last promotion* and *Age* are measured in years. Hierarchical levels are defined as binary variables, from apprentices, internships, and trainees (Level 1) and non-skilled professionals (Level 2) to top management (Level 8). Manufacturing and Lisbon are the comparison group in the industry and region dummies, respectively. All specifications include dummies for year. Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

TABLE 9. Job separation and promotions: marginal effects (probit), 1991-1999

	(1) Female	(2) Male	(3) Female	(4) Male	(5) Female	(6) Male
Tenure < 1	0.1607***	0.1714***	0.1610***	0.1724***	0.1469***	0.1551***
	(0.0012)	(0.0010)	(0.0012)	(0.0010)	(0.0011)	(0.0009)
Tenure = 1	0.0710***	0.0731***	0.0718***	0.0747***	0.0554***	0.0604***
	(0.0010)	(0.0009)	(0.0010)	(0.0009)	(0.0010)	(0.0008)
Tenure	-0.0112***	-0.0121***	-0.0124***	-0.0132***	-0.0106***	-0.0119***
	(0.0002)	(0.0001)	(0.0002)	(0.0001)	(0.0001)	(0.0001)
Tenure^2 x 10^{-2}	0.0321***	0.0319***	0.0361***	0.0354***	0.0311***	0.0318***
	(0.0005)	(0.0003)	(0.0006)	(0.0004)	(0.0004)	(0.0003)
Age	-0.0103***	-0.0145***	-0.0103***	-0.0145***	-0.0103***	-0.0144***
	(0.0002)	(0.0001)	(0.0002)	(0.0001)	(0.0002)	(0.0001)
Age^2 x 10^{-2}	0.0127***	0.0178***	0.0127***	0.0179***	0.0127***	0.0175***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Secondary education	-0.0114***	-0.0131***	-0.0113***	-0.0129***	-0.0119***	-0.0133***
	(0.0007)	(0.0006)	(0.0007)	(0.0006)	(0.0006)	(0.0005)
Tertiary education	-0.0180***	-0.0169***	-0.0178***	-0.0167***	-0.0176***	-0.0157***
	(0.0015)	(0.0013)	(0.0015)	(0.0013)	(0.0014)	(0.0012)
Part-time	0.1199***	0.1359***	0.1197***	0.1357***	0.1205***	0.1380***
	(0.0009)	(0.0009)	(0.0009)	(0.0009)	(0.0008)	(0.0008)
Promotion	-0.0160***	-0.0245***	-0.0121***	-0.0197***	--	--
	(0.0008)	(0.0006)	(0.0009)	(0.0007)	--	--
Vertical Promotion	--	--	--	--	-0.0267***	-0.0318***
	--	--	--	--	(0.0024)	(0.0020)
Horizontal Promotion	--	--	--	--	-0.0296***	-0.0384***
	--	--	--	--	(0.0014)	(0.0011)
Demotion	--	--	--	--	0.0830***	0.0831***
	--	--	--	--	(0.0006)	(0.0005)
Time since last promotion	--	--	0.0023***	0.0026***	--	--
	--	--	(0.0002)	(0.0001)	--	--
Time since last promotion^2 x 10^{-2}	--	--	-0.0090***	-0.0094***	--	--
	--	--	(0.0007)	(0.0005)	--	--
Hierarchical Levels						
Level 1	0.0172***	-0.0028***	0.0170***	-0.0028***	0.0110***	-0.0089***
	(0.0011)	(0.0010)	(0.0011)	(0.0010)	(0.0010)	(0.0010)
Level 2	0.0383***	0.0411***	0.0379***	0.0407***	0.0327***	0.0351***
	(0.0010)	(0.0008)	(0.0010)	(0.0008)	(0.0009)	(0.0008)
Level 3	0.0076***	0.0134***	0.0076***	0.0134***	0.0042***	0.0109***
	(0.0008)	(0.0007)	(0.0008)	(0.0007)	(0.0007)	(0.0007)
Level 5	-0.0045***	-0.0067***	-0.0046***	-0.0064***	-0.0035***	-0.0085***
	(0.0014)	(0.0011)	(0.0014)	(0.0011)	(0.0013)	(0.0010)
Level 6	0.0112***	-0.0085***	0.0111***	-0.0086***	0.0064***	-0.0090***
	(0.0021)	(0.0011)	(0.0021)	(0.0011)	(0.0019)	(0.0010)
Level 7	0.0270***	0.0158***	0.0266***	0.0156***	0.0210***	0.0103***
	(0.0022)	(0.0014)	(0.0022)	(0.0014)	(0.0020)	(0.0013)
Level 8	0.0390***	0.0470***	0.0389***	0.0469***	0.0360***	0.0418***
	(0.0024)	(0.0015)	(0.0024)	(0.0015)	(0.0022)	(0.0014)
Log number of workers	-0.0044***	-0.0080***	-0.0043***	-0.0079***	-0.0043***	-0.0079***
	(0.0002)	(0.0001)	(0.0002)	(0.0001)	(0.0001)	(0.0001)
Observations	2,831,157	4,205,729	2,831,157	4,205,729	3,191,103	4,798,522
Wald chi2	171,656.15	303,937.91	171,887.85	304,582.15	216,424.45	391,241.61
Log Likelihood	-1,556,603.6	-2,317,785.4	-1,556,513.6	-2,317,569.9	-1,748,442.3	-263,0701.6
Pseudo R-squared	0.0569	0.0668	0.0570	0.0669	0.0619	0.0738

Dependent variable is the job separation identified with firms observed in two consecutive years. *Tenure*, *Time since last promotion* and *Age* are measured in years. Hierarchical levels are defined as binary variables, from apprentices, internships, and trainees (Level 1) and non-skilled professionals (Level 2) to top management (Level 8). All specifications include dummies for region, industry and year. Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

TABLE 10. Wages, job separation, and promotions: wage regression, 1995-1999

	(1) Female	(2) Male	(3) Female	(4) Male
Tenure < 1	-0.0061***	-0.0176***	-0.0061***	-0.0175***
	(0.0011)	(0.0011)	(0.0011)	(0.0011)
Tenure = 1	-0.0069***	-0.0201***	-0.0127***	-0.0207***
	(0.0020)	(0.0019)	(0.0021)	(0.0019)
Tenure	0.0142***	0.0092***	0.0143***	0.0092***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Tenure^2 x 10^{-2}	-0.0238***	-0.0133***	-0.0239***	-0.0133***
	(0.0006)	(0.0005)	(0.0006)	(0.0005)
Age	0.0164***	0.0300***	0.0165***	0.0301***
	(0.0003)	(0.0002)	(0.0003)	(0.0002)
Age^2 x 10^{-2}	-0.0159***	-0.0307***	-0.0161***	-0.0307***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Secondary education	0.2347***	0.1950***	0.2345***	0.1950***
	(0.0010)	(0.0010)	(0.0010)	(0.0010)
Tertiary education	0.5534***	0.5106***	0.5532***	0.5106***
	(0.0028)	(0.0027)	(0.0028)	(0.0027)
Part-time	0.1423***	0.1820***	0.1425***	0.1820***
	(0.0022)	(0.0025)	(0.0022)	(0.0025)
Job Separation (t-1)	0.0159***	0.0266***	0.0158***	0.0266***
	(0.0021)	(0.0019)	(0.0021)	(0.0019)
Job Separation (t)	-0.0135***	-0.0092***	-0.0135***	-0.0092***
	(0.0011)	(0.0010)	(0.0011)	(0.0010)
Promotion	--	--	0.0183***	0.0017**
	--	--	(0.0010)	(0.0009)
Hierarchical Levels				
Level 1	-0.1343***	-0.1711***	-0.1349***	-0.1712***
	(0.0013)	(0.0014)	(0.0013)	(0.0014)
Level 2	-0.2078***	-0.2430***	-0.2073***	-0.2429***
	(0.0013)	(0.0012)	(0.0013)	(0.0012)
Level 3	-0.1165***	-0.1134***	-0.1163***	-0.1133***
	(0.0009)	(0.0010)	(0.0009)	(0.0010)
Level 5	0.2990***	0.2375***	0.2992***	0.2375***
	(0.0021)	(0.0017)	(0.0021)	(0.0017)
Level 6	0.2658***	0.2438***	0.2659***	0.2438***
	(0.0031)	(0.0017)	(0.0031)	(0.0017)
Level 7	0.4686***	0.4828***	0.4689***	0.4829***
	(0.0035)	(0.0024)	(0.0035)	(0.0024)
Level 8	0.6194***	0.6753***	0.6193***	0.6753***
	(0.0041)	(0.0030)	(0.0041)	(0.0030)
Log number of workers	0.0588***	0.0661***	0.0585***	0.0661***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Constant	0.2992***	0.2211***	0.2950***	0.2207***
	(0.0049)	(0.0046)	(0.0049)	(0.0046)
Observations	1,257,565	1,828,897	1,257,565	1,828,897
R-squared	0.65	0.64	0.65	0.64
F(df)	F(36;662900) =28840.70	F(36;947067) =48357.82	F(37;662900) =28097.89	F(37;947067) =47104.58

Dependent variable is the log real wage (Constant 1999 Euros). *Tenure* and *Age* are measured in years. *Job Separation (t-1)* and *Job Separation (t)* are binary variables equal to one in the moment of separation, respectively, in the year before (worker already in the new employer) and in the year of the separation (worker still in the previous employer). Hierarchical levels are defined as binary variables, from apprentices, internships, and trainees (Level 1) and non-skilled professionals (Level 2) to top management (Level 8). All specifications include dummies for region, industry and year. Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

TABLE 11. Wage growth, job separation, and promotions: first-difference wage regressions, 1995-1999

	(1) Female	(2) Male	(3) Female	(4) Male	(5) Female	(6) Male
Promotion	0.0356***	0.0409***	--	--	--	--
	(0.0007)	(0.0006)	--	--	--	--
Job Separation (t-1)	0.0197***	0.0303***	0.0222***	0.0312***	0.0202***	0.0300***
	(0.0019)	(0.0017)	(0.0019)	(0.0017)	(0.0019)	(0.0017)
Vertical Promotion	--	--	0.0835***	0.0963***	0.0818***	0.0931***
	--	--	(0.0017)	(0.0017)	(0.0017)	(0.0017)
Horizontal Promotion	--	--	0.0263***	0.0322***	0.0248***	0.0308***
	--	--	(0.0008)	(0.0007)	(0.0008)	(0.0007)
Demotion	--	--	-0.0125***	-0.0130***	-0.0152***	-0.0158***
	--	--	(0.0012)	(0.0011)	(0.0012)	(0.0011)
Secondary education	--	--	--	--	0.0086***	0.0097***
	--	--	--	--	(0.0004)	(0.0004)
Tertiary education	--	--	--	--	0.0269***	0.0268***
	--	--	--	--	(0.0009)	(0.0008)
Constant	0.0563***	0.0487***	0.0426***	0.0451***	0.0526***	0.0457***
	(0.0004)	(0.0004)	(0.0002)	(0.0002)	(0.0005)	(0.0004)
Observations	1,215,124	1,788,735	1,215,124	1,788,735	1,215,124	1,788,735
R-squared	0.01	0.01	0.01	0.01	0.01	0.01
F(df)	$F_{(5;644354)}$ = 1136.58	$F_{(5;929140)}$ = 2060.20	$F_{(4;644354)}$ = 965.98	$F_{(4;929140)}$ = 1628.96	$F_{(9;644354)}$ = 874.55	$F_{(9;929140)}$ = 1504.32

Dependent variable is the log real wage in year t minus log real wage in year $t-1$ (Constant 1999 Euros). All specifications include dummies for year. Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

TABLE 12. Wage growth, job separation, individual attributes, and firm characteristics: first-difference wage regressions, 1995-1999

	Job Separation and Age		Job Separation and Education		Job Separation and Firm Characteristics	
	(1) Female	(2) Male	(3) Female	(4) Male	(5) Female	(6) Male
Job Separation (t-1)	0.0436***	0.0843***	--	--	0.0440***	0.0196
	(0.0116)	(0.0090)	--	--	(0.0135)	(0.0122)
Vertical Promotion	0.0809***	0.0912***	0.0814***	0.0926***	0.0832***	0.0940***
	(0.0017)	(0.0017)	(0.0017)	(0.0017)	(0.0017)	(0.0016)
Horizontal Promotion	0.0247***	0.0308***	0.0251***	0.0312***	0.0258***	0.0321***
	(0.0008)	(0.0007)	(0.0008)	(0.0007)	(0.0008)	(0.0007)
Demotion	-0.0154***	-0.0160***	-0.0150***	-0.0155***	-0.0138***	-0.0144***
	(0.0012)	(0.0011)	(0.0012)	(0.0011)	(0.0012)	(0.0011)
Secondary education	0.0085***	0.0094***	0.0077***	0.0080***	--	--
	(0.0004)	(0.0004)	(0.0004)	(0.0004)	--	--
Tertiary education	0.0269***	0.0270***	0.0221***	0.0218***	--	--
	(0.0009)	(0.0008)	(0.0009)	(0.0008)	--	--
16 ≤ Age < 20 x Separation	0.0567***	0.0454***	--	--	--	--
	(0.0070)	(0.0052)	--	--	--	--
20 ≤ Age < 30 x Separation	-0.0135	-0.0323***	--	--	--	--
	(0.0120)	(0.0093)	--	--	--	--
30 ≤ Age < 35 x Separation	-0.0197	-0.0620***	--	--	--	--
	(0.0125)	(0.0098)	--	--	--	--
35 ≤ Age < 40 x Separation	-0.0520***	-0.0742***	--	--	--	--
	(0.0129)	(0.0101)	--	--	--	--
40 ≤ Age < 50 x Separation	-0.0373***	-0.0754***	--	--	--	--
	(0.0126)	(0.0099)	--	--	--	--
50 ≤ Age < 60 x Separation	-0.0474***	-0.0956***	--	--	--	--
	(0.0144)	(0.0107)	--	--	--	--
60 ≤ Age < 65 x Separation	-0.0392	-0.1177***	--	--	--	--
	(0.0270)	(0.0182)	--	--	--	--
Primary Ed. x Separation	--	--	0.0010	0.0089***	--	--
	--	--	(0.0024)	(0.0021)	--	--
Secondary Ed. x Separation	--	--	0.0283***	0.0503***	--	--
	--	--	(0.0032)	(0.0029)	--	--
Tertiary Ed. x Separation	--	--	0.1136***	0.1130***	--	--
	--	--	(0.0080)	(0.0070)	--	--
Change Industry x Separation	--	--	--	--	0.0065*	0.0247***
	--	--	--	--	(0.0039)	(0.0033)
Change Region x Separation	--	--	--	--	-0.0086	-0.0002
	--	--	--	--	(0.0054)	(0.0043)
Move to:						
Larger Firm	--	--	--	--	0.0319**	0.0670***
	--	--	--	--	(0.0137)	(0.0125)
Smaller Firm	--	--	--	--	-0.0800***	-0.0619***
	--	--	--	--	(0.0137)	(0.0124)
Constant	0.0525***	0.0457***	0.0532***	0.0465***	0.0569***	0.0498***
	(0.0005)	(0.0004)	(0.0005)	(0.0004)	(0.0004)	(0.0004)
Observations	1,215,124	1,788,735	1,215,124	1,788,735	1,215,124	1,788,735
R-squared	0.01	0.01	0.01	0.01	0.01	0.01
F(df)	F(16;644354) = 500.92	F(16;929140) = 869.90	F(11;644354) = 718.96	F(11;929140) = 1233.59	F(11;644354) = 692.75	F(11;929140) = 1208.30

Dependent variable is the log real wage in year t minus log real wage in year $t-1$ (Constant 1999 Euros). Move to larger or smaller firm are dummy variables computed using the number of employees. All specifications include dummies for year. Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

TABLE A1. Basic wage regressions, 1995-1999

	(1) Female	(2) Male	(3) Female	(4) Male
Tenure < 1	--	--	-0.0107***	-0.0251***
	--	--	(0.0008)	(0.0008)
Tenure = 1	--	--	-0.0322***	-0.0473***
	--	--	(0.0010)	(0.0009)
Tenure	0.0171***	0.0129***	0.0144***	0.0092***
	(0.0001)	(0.0001)	(0.0002)	(0.0001)
Tenure^2 x 10^{-2}	-0.0310***	-0.0216***	-0.0236***	-0.0121***
	(0.0004)	(0.0003)	(0.0005)	(0.0004)
Age	0.0178***	0.0301***	0.0181***	0.0303***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Age^2 x 10^{-2}	-0.0183***	-0.0314***	-0.0186***	-0.0316***
	(0.0003)	(0.0002)	(0.0003)	(0.0002)
Secondary education	0.2224***	0.1879***	0.2224***	0.1876***
	(0.0008)	(0.0008)	(0.0008)	(0.0008)
Tertiary education	0.5477***	0.5199***	0.5472***	0.5187***
	(0.0022)	(0.0021)	(0.0022)	(0.0021)
Part-time	0.1463***	0.1729***	0.1474***	0.1760***
	(0.0015)	(0.0017)	(0.0015)	(0.0017)
Hierarchical Levels				
Level 1	-0.1429***	-0.1888***	-0.1407***	-0.1867***
	(0.0009)	(0.0010)	(0.0009)	(0.0010)
Level 2	-0.2022***	-0.2407***	-0.2013***	-0.2392***
	(0.0009)	(0.0009)	(0.0009)	(0.0009)
Level 3	-0.1184***	-0.1185***	-0.1179***	-0.1185***
	(0.0007)	(0.0007)	(0.0007)	(0.0007)
Level 5	0.3072***	0.2382***	0.3072***	0.2381***
	(0.0017)	(0.0014)	(0.0017)	(0.0014)
Level 6	0.2714***	0.2428***	0.2717***	0.2424***
	(0.0026)	(0.0014)	(0.0026)	(0.0014)
Level 7	0.4806***	0.4793***	0.4803***	0.4785***
	(0.0028)	(0.0019)	(0.0027)	(0.0019)
Level 8	0.5913***	0.6405***	0.5909***	0.6394***
	(0.0032)	(0.0024)	(0.0032)	(0.0024)
Log number of workers	0.0577***	0.0658***	0.0580***	0.0663***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Constant	0.2605***	0.1968***	0.2717***	0.2175***
	(0.0035)	(0.0033)	(0.0035)	(0.0033)
Observations	2,498,050	3,589,965	2,498,050	3,589,965
R-squared	0.62	0.62	0.62	0.62
F (df)	F(33;1089573) =45808.79	F(33;1519621) =78750.03	F(35;1089573) =43274.53	F(35;1519621) =74444.52

Dependent variable is the log real wage (Constant 1999 Euros). *Tenure* and *Age* are measured in years. Hierarchical levels are defined as binary variables, from apprentices, internships, and trainees (Level 1) and non-skilled professionals (Level 2) to top management (Level 8). All specifications include dummies for region, industry and year. Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

FIGURE1. Empirical exit hazard for job separation by years of tenure, 1991-1999 (N = 7,989,649)