GENDER DIFFERENCES IN WAGE GROWTH AND JOB MOBILITY OF YOUNG WORKERS IN SPAIN

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This paper analyzes the work histories of young workers, focusing on gender differences in work interruptions and job changes. I use the European Community Household Panel (Spanish section, 1994- 2001) to build a measure that considers heterogeneity in the accumulation of experience and to compare men's and women's mobility patterns. Returns to cumulated experience are greater than returns to potential experience, especially for women. Turnover rates are similar, but for males it is important to hold a position with responsability, to have a family or to live in economic poles whereas for females, to work part-time or the firm size.

Keywords: Gender wage gap, interruptions, job mobility.

(*JEL* J31, J63)

1. Introduction

Gender gaps in the labour market still persist today despite the efforts made for some governments and institutions towards equality between men and women in the work-place. Wage differences are the most noticeable and therefore the most studied, but there are also gender differentials in participation rates, unemployment rates, job mobility, etc.

It is a well-established fact that the gender wage gap grows with the age of the individuals, but it is less well-known that the gender gap also grows rapidly among young workers. In fact, descriptive evidence for the US and Italy states that, even in the first years of the professional

career, wage growth is smaller for women than for men[1]. Trying to understand why this difference arises is relevant given the evidence that in the early-career wages typically grow very fast[2].

Traditionally, male-female wage gaps are decomposed into one component due to differences in socio-economic characteristics and another component due to differences in returns, that remains unexplained, so-called discrimination (Oaxaca 1973)[3]. This decomposition compares similar men and women in a given point in time, but ignores dynamic aspects of their careers. Therefore, the starting point of this work is the idea that gender differences in labour market histories may help to better understand the male-female wage differential.

Focusing on young workers, two extremely prominent activities in their early-careers are interruptions and job changes. A wide range of arguments in the literature connects these dynamic aspects with the existence and persistence of the gender wage gap over time. With respect to interruptions, some authors (Mincer and Polachek 1974, Corcoran and Duncan 1979, Gronau 1988) have argued that discontinuities in women's labor market attachment may reduced their investment in human capital and thus their wages. Also, if employers expect women to stay less in their jobs than men, firms will be less willing to invest in their training (Donohue 1988, Sicherman 1996) or may assign women into occupations that require less skills and with lower capital intensity (Barron *et al.* 1993), resulting in lower female rates of pay and contributing to the existence of a gender wage gap. Regarding job changes, Topel and Ward (1992) find that job mobility represents a key factor on the wage growth of young workers. Consequently, differences in the labor mobility of young men and women may contribute to the differences in their wage growth. For instance, if women's job mobility is more restricted due to variables like husband's residence or children's care, wage gains predicted by matching and search models will be smaller (Johnson 1978, Burdett 1978, Jovanovic 1979, Keith

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[1] For the US, Loprest (1992) assigns a wage growth of 36 per cent to males *versus* a 29 per cent to women, in the first four years of the career; whereas for Italy, Del Bono and Vuri (2006) find that wages increases by 21 percent for men and 20.4 per cent for women three years after labour market entry, but the gap widens rapidly over time.

[2] Murphy and Welch (1990) state that two thirds of the wage growth that a worker accumulates throughout her working life concentrate in the first ten years.

[3] Or generalizations like Brown *et al.* (1980) and Neumark (1988).

and Williams 1995)[4]. Empirically, Altonji and Paxson (1992) find that women are more likely to make a major adjustment in their working hours also when they change jobs, as they face major family responsibilities. To the extent that wages are less important in the decision to change jobs for women than men, this may lead to lower wages over their careers too.

In this paper, I use the Spanish section of the European Community Household Panel (ECHP, hereafter)[5], to explore gender differences in interruptions and job changes, and the relation of those with wages. I focus exclusively on young workers, for whom it turns out feasible to construct complete labour market histories with the information available in the ECHP. Moreover, the Spanish case is interesting because the access of women to education and to labour market participation has increased importantly over the last three decades[6], but we know much less about dynamic aspects of their early careers in comparison to men.

In the first part of the paper, I propose the construction of an experience variable that takes into account discontinuities in the labour market profiles, and I show estimates of wage models in order to establish a comparison between this measure and the potential experience that often appears in the literature. To the best of my knowledge, this type of measure has not been used in empirical works for Spain before (for US see Corcoran and Duncan 1979, Sandell and Shapiro 1980, Mincer and Ofek 1982, Light and Ureta 1995)[7]. Secondly, I study the

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[4]In a matching model, job mobility is the consequence of a voluntary change to a better position in which the worker is more productive and receives a higher pay. Search models are based in the existence of imperfect information. In these models, jobs are experience goods. As time goes by, the firm acquires more information and it can adjust the salary better. Under this approach, job mobility is the result of a 'poor' matching looking for a better chance.

[5]The ECHP is a longitudinal annual survey, designed and coordinated by Eurostat. It includes comparable information among european countries on income, employment status, previous jobs, calendar of activities, education, health, and other demographic characteristics. Given its panel design, individual profiles can be followed over the duration of the survey.

[6]The participacion rate for women has increased dramatically in Spain since the late 70's, moving from around 30 per cent in 1977 to more than 60 per cent thirty years later. In the particular case of women with a college degree (proportion that is also growing relative to men), the difference with respect to the participation rate for males is almost zero.

[7]For U.S. data, some authors have implemented even more ambitious specifications that consider not only interruptions but also the moment when they take

relationship between job mobility and wage growth in two parts: on the one hand, gender differences on the early-career wage gains due to job changes; and, on the other hand, gender differences on the frequency and determinants of those transitions. Then, I obtain estimates for annual wage growth in years when job changes occur, and estimates for transition probabilities given personal and job characteristics[8].

Overall, the results of the paper point to the existence of both a gender wage penalty to interruptions and a gender wage penalty to mobility. Concerning to the first, I find that returns to accumulated experience are greater than returns to potential experience, especially for women, as work interruptions have a significant negative effect only for these latter. Regarding job changes, early-career wage growth is greater for men than for women, especially in years when job changes take place. Turnover rates are similar, but for males it is important to hold a position with responsability, to have a family or to live in economic poles whereas for females, to work part-time or the firm size.

The first empirical studies that consider gender wage differentials in Spain are Moltó (1984) and Peinado (1990), but for very small samples. Later, the availability of micro data and the development of the methodology associated to wage decompositions, pushed the diffusion of studies like De la Rica and Ugidos (1995), Hernández (1995) and Ugidos (1997a, 1997b)[9]. More recent works propose the analysis of these differences throughout all the distribution of wages (García *et al.* 2001, Gardeazabal and Ugidos 2005, De la Rica *et al.* 2008). On the contrary, references on gender differences in job mobility in Spain are relatively scarce. García-Crespo (2001) focuses on gender differences in promotions, and Caparrós *et al.* (2004) on mobility and wage discrimination[10]. On the relationship between job mobility and wage growth we have García-Pérez and Rebollo (2005) and Amuedo-Dorantes and

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place. In my case, the practical implementation of this idea was not possible due to limitations in the data.

[8] I consider a model of job-to-job and job-to-nonemployment changes. The approach is similar to Booth and Francesconi (2000) for UK data, but they only consider job-to-job changes. However taking into account flows to nonemployment is interesting, because it turns out that most of the gender differences arise precisely on those transitions.

[9] These studies estimate more general wage decompositions to consider self-selection issues using data from the Encuesta de Estructura de Conciencia y Biografía de Clase (1985) and the Encuesta sobre Discriminación Salarial de la Mujer (1988).

[10] García-Crespo uses data of the Encuesta de Estructura, Conciencia y Biografía de Clase (1991) and Caparrós et al. the Spanish section of the ECHP (1994-1997).

Serrano-Padial (2007), who also use data from the ECHP. García-Pérez and Rebollo focus on the effects of an unemployment spell on subsequent wages while Amuedo-Dorantes and Serrano-Padial on the wage growth implications of fixed-term employment of varying duration. Although these authors consider in their corresponding specifications a dummy if female worker (and restrict the remain parameters to be the same for men and women), gender differences are not the main concern.

The rest of the paper is developed as follows. Section 2 explains the proposed measure of accumulated experience, and describes the data and the results from the wage regressions. Section 3 estimates annual wage growth by gender with and without job changes, and analyzes gender differences in conditional job transitions. Finally, Section 4 concludes with some remarks on a future research agenda.

2. Interruptions and wage growth

In this section, I propose a measure of accumulated experience that takes into account interruptions in the labour market careers. Then, I estimate wage models in order to compare this measure with the commonly used potential experience.

2.1 Building the accumulated experience measure

Let *potential experience* be defined for a given individual i and time t as

$$POTEX_{it} = age_{it} - years\ of\ schooling_i - 6,$$

that is, current age minus age when leaving school. This standard measure of experience, however, relies on an unlikely assumption. The assumption implicit under this variable is that individuals work continuously since they finish their studies. This means, for instance, that two individuals with the same amount of potential experience and the same years of education begin working at the same age and do not suffer any interruption from that moment. In practice, potential experience may have problems as a measure to control for the capacities acquired by different individuals throughout their professional careers.

These problems would be especially worrisome for females, as women seem more willing to interrupt their careers due to family matters, like care giving activities, both for children and for aging parents. However, discontinuities can be also common among young male workers, due to periods of job-shopping or fixed-term contract ends (this second reason

is especially relevant among young workers in Spain nowadays[11]). As young workers tend to spend some time engaged in those nonwork activities, potential experience will act as an inaccurate control for early-career work experience in an earnings function.

Only as an illustration, if we consider workers from the Spanish section of the ECHP, aged between 25 and 29 years[12], and we calculate the fraction of time that these individuals spend working in those five years, we observe that many of them are not continuously employed. Table 1 shows the empirical distribution function (or, more precisely, 1 minus the cumulative distribution function) of the fraction of time worked between ages 25 and 29, separately for males and females.

TABLE 1
Individuals that work more than # months (1997-2001)

	6 months	18 months	30 months	42 months	54 months
Males	90.65	84.17	71.22	62.59	38.13
Females	81.17	63.64	46.10	33.70	22.08

We can see how being continuously employed is not so common, and it is even less likely for women. In fact, the proportion of individuals that during this period work more than the 90 per cent of the time is only 38 per cent for men and 22 per cent for women.

Given the problems inherent in the traditional measure of potential experience, I build an alternative variable that takes into account the heterogeneity in the early-careers of workers. Therefore, the so-called *accumulated experience*, $ACCEX_{it}$, is built as the sum of a set of variables that measure the fraction of time (number of months in a year) that an individual i has spent working in the last year, $X_{i(t-1)}$, two years ago, $X_{i(t-2)}$, three years ago, $X_{i(t-3)}$, ... until the beginning of her professional career, X_{i1}. That is,

$$ACCEX_{it} = X_{i(t-1)} + X_{i(t-2)} + X_{i(t-3)} + \ldots + X_{i1} = \sum_{s=1}^{t-1} X_{i(t-s)}.$$

[11] According to the Encuesta de Población Activa, in 2001 the rate of temporality was 30.6 for men and 34.7 for women. The corresponding figures in 2006 were 32.0 and 36.7, respectively. For young workers, the numbers are even greater, ranging from 27.3 (30.4) for males (females) aged between 30-39 years in 2001 to 82.1 (83.5) for those aged 16-19. The corresponding figures in 2006 were 35.6 (35.1) and 81.9 (82.5).

[12] This age window allows me to consider a quite large number of individuals over a relevant and fixed period of their working lifes. In total, I consider 2,184 observations from 1997 to 2001.

With this measure we can easily take into account the existence of interruptions on individual labour market histories.

2.2   Accumulated experience vs. potential experience

Next, I compare the two measures of experience through estimates of wage equations and using data from eight annual waves (1994-2001) of the Spanish section of the ECHP.

Since the goal is to construct complete labour market histories, the analysis is based on a sample of young workers. Specifically, the sample contains all non-self employed workers aged from 16 to 39, who are observed from their first job after leaving school until their last interview[13]. In total, it contains 3,263 observations corresponding to 543 males and 577 females. Although it is a rather homogeneous sample, there exist still some differences.

–Differences in characteristics

Table 2 shows the main descriptive statistics of the sample. The first panel (Panel I) provides a summary of the personal characteristics of the individuals in the sample, and the second (Panel II) of the work characteristics for the observations that enter in the wage regressions[14].

Among young people in the sample, few individuals are married (6 per cent of men and 21 per cent of women) and even fewer have children (2 and 9 per cent, respectively). Although women are more educated than men (50 per cent of females have a college degree), the former receive a 6 per cent lower hourly wage. We can see also significant differences in hours worked per week (40 hours for men and 37 for women), mainly due to different proportions of part-time jobs (6 and 18 per cent, respectively). Men and women accumulate similar amounts of tenure, on average below one year, due to the very high incidence of fixed-term contracts in both groups (around 60 per cent). However, the difference between years of potential experience and years of accumulated experience is significantly higher for women meaning that they spend a bigger fraction of time not working (17 per cent higher). Finally, men and women differ also in terms of working conditions. In fact,

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[13] Appendix A.1 contains a detailed description of the sample selection filters.

[14] A brief explanation of the variables used in the analysis and, not described in the text, is offered in Appendix A.2.

women are overrepresented with respect to men among civil servants, in small firms (from 1 to 4 employees) and in clerical occupations.

TABLE 2
Sample characteristics. Period: 1994-2001
(observations individual-year)

I. WHOLE SAMPLE	Males		Females		Difference
Married	0.06		0.21		-0.15***
Children	0.02		0.09		-0.07***
Primary Education	0.27		0.19		0.08***
Graduate Education	0.33		0.28		0.05***
College Education	0.40		0.53		-0.13***
Years of Schooling	11.60	(3.40)	12.20	(3.49)	-0.60***
Age	22.68	(3.77)	24.44	(4.14)	-1.76***
	N	%	N	%	TOTAL
Individuals	543	48.48	577	51.52	1,120
Observations	1,537	47.10	1,726	52.90	3,263
II. WAGE REGRESSIONS	Males		Females		Difference
Real Hourly Wage (pta. 1992)	672.15	(277.94)	632.727	(327.85)	39.42***
Hours per week	40.22	(7.31)	37.26	(9.80)	2.96***
Years of Tenure	0.82	(1.22)	0.79	(1.12)	0.02
Years of Potential Experience	3.92	(2.69)	4.37	1.22	-0.49**
Years of Accumulated Experience	1.23	(1.38)	1.23	(1.31)	0.01
Difference Potential - Accumulated	2.69	(2.18)	3.15	(3.45)	-0.46***
Years from school until entry	1.61	(0.06)	1.86	(0.10)	-0.25*
Part-time	0.06		0.18		-0.12***
Fixed-term contract	0.62		0.60		0.02
Civil servant	0.09		0.13		-0.04***
More than 50 employees	0.32		0.32		-0.00
Between 5-49 employees	0.52		0.42		0.10***
Between l-4 employees	0.16		0.26		-0.10***
Managers and Professionals	0.22		0.30		-0.07***
Clerical and Services	0.17		0.47		-0.30***
Agriculture and Manufacture	0.37		0.09		0.28***
Unskilled workers	0.24		0.14		0.10***
	N	%	N	%	TOTAL
Individuals	425	48.08	459	51.92	884
Observations	973	48.33	1,040	51.67	2,013
III. TRANSITIONS	Males		Females		Difference
No change	0.46		0.42		0.04*
Job change: Promotion	0.08		0.11		-0.03*
Job-to-job: Layoff	0.19		0.23		-0.04*
Job-to-job: Quit	0.10		0.09		0.01
Job-to-nonemployment: Layoff	0.12		0.12		-0.00
Job-to-nonemployment: Quit	0.05		0.03		0.02*
	N	%	N	%	TOTAL
Transitions	738	49.53	752	50.47	1,490

Notes: Standard deviations of non-binary variables in parentheses. ***, **, * indicates statistical significance at the 1%, 5%, 10% level, respectively.

–Differences in returns

In this section I estimate by OLS wage equations as proposed by Mincer (1974). The dependent variable for individual i at time t, y_{it}, is the log of real hourly wages[15], computed as the ratio of monthly wages to weekly hours of work. In addition to experience measures, I consider a set of explanatory variables, W_{it}, which contains: the intercept; individual characteristics as birth cohort, marital status, presence of children in the household, and education; characteristics related to the job position as tenure, type of contract, working-time, working in the public sector, firm size and occupation; and aggregate factors by means of time and regional dummies. Only the birth variables are not commonly included in empirical wage equations. I include them because there proves to be a marked decline in wages for successive birth cohorts. Because I estimate each equation for a pool of men and women, the regressors also include a dummy variable of female respondent, FEM_i, and interactions between this dummy and each regressor. Formally,

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\begin{aligned}
y_{it} &= \alpha_1 ACCEX_{it} + \alpha_2 FEM_i ACCEX_{it} + \alpha_3 ACCEX_{it}^2 \\
&\quad + \alpha_4 FEM_i ACCEX_{it}^2 + \alpha_5' W_{it} + \alpha_6' FEM_i W_{it} + u_{it}, \quad [1] \\
y_{it} &= \beta_1 POTEX_{it} + \beta_2 FEM_i POTEX_{it} + \beta_3 POTEX_{it}^2 \\
&\quad + \beta_4 FEM_i POTEX_{it}^2 + \beta_5' W_{it} + \beta_6' FEM_i W_{it} + v_{it}, \quad [2]
\end{aligned}
$$

where the error terms, u_{it} and v_{it}, are assumed to be white noises.

Table 3 shows the estimates for the accumulated experience and the potential experience specifications (columns 1, 4, 7, and 2, 5, 8, respectively). Columns 1 and 2 provide estimates of the coefficients for males, columns 4 and 5 estimates of the coefficients for the females' interaction terms, and columns 7 and 8 the statistics of the significativity tests for the coefficients corresponding to females (total effects and the p-values).

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[15] Hourly wages are deflated using the consumer price index.

TABLE 3
OLS estimates of wage equations using alternative experience measures

	Coefficients and SEs for Males		Coefficients and SEs for FEM interactions		Total effect and p-values for Females	
	ACCEX	POTEX	ACCEX	POTEX	ACCEX	POTEX
Experience	0.061*** (0.022)	0.035*** (0.012)	-0.002 (0.031)	-0.022* (0.013)	0.059*** [0.008]	0.015* [0.092]
Experience squared	-0.005 (0.004)	-0.002* (0.001)	-0.002 (0.006)	0.001 (0.001)	-0.007 [0.126]	-0.001* [0.057]
Interruptions		0.005 (0.015)		-0.055* (0.031)		-0.050** [0.013]
Late Entry		-0.004 (0.011)		-0.003 (0.015)		-0.007 [0.507]
Tenure < 1 year	-0.039 (0.037)	-0.079** (0.038)	-0.005 (0.053)	0.031 (0.052)	-0.044 [0.230]	-0.048 [0.184]
Tenure 1-2 years	-0.011 (0.031)	-0.041 (0.032)	-0.022 (0.044)	0.014 (0.045)	-0.033 [0.293]	-0.027 [0.380]
Fixed-term	-0.062** (0.025)	-0.059** (0.025)	0.057 (0.036)	0.052 (0.036)	-0.005 [0.835]	-0.007 [0.776]
Part-time	0.118** (0.050)	0.111** (0.051)	-0.016 (0.057)	-0.013 (0.058)	0.102*** [0.000]	0.098*** [0.001]
Civil servant	0.210** (0.052)	0.212*** (0.052)	-0.003 (0.073)	-0.014 (0.073)	0.207*** [0.000]	0.198*** [0.000]
> 50 employees	0.234*** (0.041)	0.234*** (0.041)	-0.028 (0.052)	-0.033 (0.052)	0.206*** [0.000]	0.201*** [0.000]
5-49 employees	0.126*** (0.036)	0.127*** (0.037)	0.021 (0.046)	0.016 (0.046)	0.147*** [0.000]	0.143*** [0.000]
Managers & Professionals	0.154*** (0.045)	0.164*** (0.045)	0.152** (0.063)	0.134** (0.065)	0.306*** [0.000]	0.298*** [0.000]
Clerical & Services	-0.045 (0.034)	-0.043 (0.034)	0.076 (0.047)	0.066 (0.048)	0.031 [0.353]	0.023 [0.499]
Agriculture & Manufacture	0.024 (0.027)	0.036 (0.027)	0.011 (0.048)	0.003 (0.049)	0.035 [0.384]	0.039 [0.349]
Married	-0.042 (0.053)	-0.026 (0.054)	0.087 (0.065)	0.081 (0.066)	0.045 [0.222]	0.056 [0.140]
Children	0.194** (0.097)	0.202** (0.101)	-0.205* (0.108)	-0.190* (0.111)	-0.011 [0.814]	0.013 [0.785]
Graduate Education	0.078** (0.034)	0.085*** (0.033)	-0.033 (0.045)	-0.064 (0.047)	0.045 [0.129]	0.021 [0.477]
College Education	0.171*** (0.034)	0.199*** (0.033)	-0.031 (0.047)	-0.084 (0.053)	0.140*** [0.000]	0.115*** [0.002]
Birth year: 1974-1977	-0.037 (0.045)	-0.030 (0.045)	-0.072 (0.055)	-0.090 (0.056)	-0.109*** [0.001]	-0.120*** [0.000]
Birth year: 1978-1985	-0.117*** (0.044)	-0.093** (0.047)	-0.040 (0.059)	-0.089 (0.064)	-0.157*** [0.000]	-0.182*** [0.000]
Intercept	6.339*** (0.102)	6.304*** (0.103)	-0.195 (0.131)	-0.046 (0.143)	6.144*** [0.000]	6.259*** [0.000]
Observations	2,013	2,013	2,013	2,013		
R²	0.46	0.45	0.46	0.46		

Notes: ***, **, * significant at 1%, 5%, 10%. Robust standard errors clustered by individual in parentheses, and p-values in squared brackets. Year and regional dummies included. Omitted group: Birth year<1974, primary education, tenure>2 years, 1-4 employees, unskilled worker.

As we would expect, variables related with human capital acquisition, as education and experience, have a positive and significant effect on wages both for men and women. Working part-time, working as a civil servant, in bigger firms, or in a better occupation (as managers and professionals), implies higher wages as well. With the potential experience measure, having higher values of tenure also has a positive and significant effect on wages. On the contrary, those born more recently have lower wages. Regarding gender differences, the most salient points are related with the presence of children at home and the type of contract. Both are not significant for females, whereas for males having children has a positive effect on wages and the opposite for a fixed-term contract.

Although these estimates are informative, the main objective here is to see how the estimated returns to experience change when we use the accumulated measure instead of the potential one. To facilitate this comparison, that is not easy from the mere inspection of the previous coefficients, Table 4 presents computations based on those coefficients. In particular, I compute the estimated ratios of men's and women's wages with varying levels of work experience to the wages of those with no experience.

TABLE 4

Ratios of estimated (Geometric mean) wages: workers with different years of experience vs. workers with no experience

Years of Experience	Accumulated Experience			Potential Experience		
	Males	Females	Difference	Males	Females	Difference
1	1.057	1.053	0.004	1.032	1.010	0.022
2	1.105	1.093	0.012	1.061	1.019	0.042
3	1.142	1.118	0.024	1.087	1.026	0.062
4	1.168	1.128	0.040	1.110	1.031	0.080
5	1.182	1.122	0.060	1.130	1.034	0.096

We can see in the table that the estimated returns to experience are higher with the accumulated experience than with the potential experience specification, both for males and females. For instance, with the accumulated experience specification a young man who worked for three years earns 14 per cent more than a new entrant to the labour market, whereas with the potential measure the corresponding number is only 9 per cent. For a women the difference would be even higher, from 12 to 3 per cent. In fact, the main result from this computation is that the gender differential in the returns to experience diminishes

when we used accumulated experience[16]. Figure 1 shows this result in terms of the gender gap[17].

FIGURE 1

Gender gap in returns to potential experience by years of experience
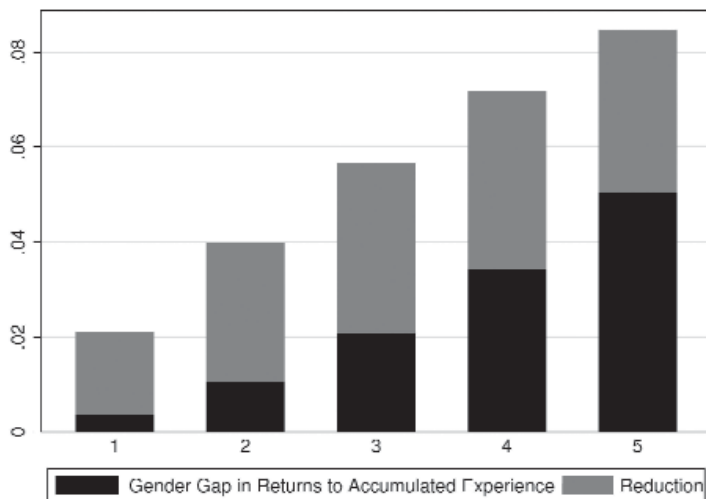
Using the accumulated measure implies a substantial reduction in the gender gap due to differences in the returns to experience, that is, in the part corresponding to experience of the gap due to differences in prices, commonly attributed to discrimination. Again for three years of experience, with the potential experience specification the gender gap is 5.67 per cent whereas with the accumulated measure the corresponding differential drops to 2.09 per cent. Thus the estimated reduction would be more than a half.

One possible explanation behind this result would be that continuous work experience is more equally rewarded in the market than potential experience. In other words, males and females are similarly rewarded in terms of actual experience but women are more penalized due to periods non working. To check this hypothesis, I consider an alternative specification that captures the difference between potential experience and accumulated experience in one single equation. This model adds

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[16] At least this is the case for low levels of experience. In the sample, many of the observed labour market histories do not last more than three or four years. Due to the lack of observations, estimates for far away horizons are based mainly on extrapolations.

[17] Gender gap defined as the ratio $\frac{\bar{Y}_M - \bar{Y}_F}{\bar{Y}_M}$ where $\bar{Y}_M$ is the average of real hourly wages for males and $\bar{Y}_M$ for females.

two additional variables: late entry to the labour market and interruptions, which represent the two reasons why accumulated and potential experience would differ. As shown in Table 3 (columns 3, 6, and 9), delaying the entry to the job market has no significant effect on wages, whereas subsequent interruptions has a significant negative effect only for women [18].

−Checking Endogeneity

Since the proposed measure of experience considers worker heterogeneity in the accumulation of human capital, it might arise an endogeneity problem due to correlation between accumulated experience and unobservable wage determinants, as ability. In such a case, OLS estimates would be inconsistent. Next, I take advantage of the panel structure of the data to assess this possibility.

The error term in [1] can be decomposed into a fixed individual component possibly correlated with the regressors, η_i, and a random component, ϵ_{it}, both with zero mean and constant variance. As before, the transitory error term is assumed to be uncorrelated with any other variable. Under this assumption, a fixed effects estimator will give us consistent estimates even in case of endogeneity.

As we can see in Table 5, the estimated coefficients for accumulated experience and its square are only slightly lower than in the previous section, more for women, but the difference is not significant. With respect to other time-varying variables, the estimates are similar but now less precise, mainly due to the short time variability in the sample. The conclusion of this exercise is that previous result seem robust given that the estimates regarding accumulated experience do not change much[19].

---

[18] When those interruptions correspond to periods of unemployment the effect for women is -0.039 and hardly significant, but in case of inactivity the effect is -0.065 and strongly significant.

[19] A second approximation, that represents an intermediate solution between OLS and fixed effects, would be the method proposed by Hausman and Taylor (1981). The approach consists on considering that the $\eta_i's$ would be correlated with some of the explanatory variables but uncorrelated with the rest, and on using the variables that are uncorrelated as instruments for the variables that do are correlated. A disadvantage of this methodology is that we need to impose which are the variables that are correlated with the individual effects and which are not. Only if the assumption is correct, the estimator would be consistent. I tried alternative specifications assuming, as Booth *et al.* (2002), that birth cohort, the regional unemployment rate or children are variables uncorrelated with the individual effects.

TABLE 5
Fixed effects estimates of wage equations

	Coefficients and SEs for Males	Coefficients and SEs for interactions	Total effect and p-values for Females
Accumulated Experience	0.060**	-0.008	0.052*
	(0.031)	(0.031)	[0.100]
Experience squared	-0.005	-0.002	-0.007**
	(0.004)	(0.006)	[0.027]
Tenure < 1 year	-0.034	0.009	-0.025
	(0.038)	(0.051)	[0.479]
Tenure 1-2 years	-0.013	-0.037	-0.024
	(0.032)	(0.044)	[0.404]
Fixed-term	0.011	-0.020	-0.009
	(0.025)	(0.035)	[0.740]
Part-time	0.102*	0.044	0.146***
	(0.050)	(0.064)	[0.000]
> 50 employees	0.124***	-0.025	0.099***
	(0.039)	(0.054)	[0.010]
5-49 employees	0.075**	-0.002	0.073**
	(0.035)	(0.047)	[0.020]
Managers & Professionals	-0.021	-0.016	-0.037
	(0.061)	(0.086)	[0.525]
Clerical & Services	-0.039	-0.017	-0.056
	(0.047)	(0.069)	[0.273]
Agriculture & Manufacture	0.036	-0.021	0.015
	(0.034)	(0.064)	[0.778]
Children	0.549***	-0.548***	0.001
	(0.110)	(0.137)	[0.994]
Intercept	6.339***		6.339***
	(0.073)		[0.000]
Individuals	884		
Observations	2,013		
R^2	0.27		

Notes: ***, **, * significant at 1%, 5%, 10%. Robust standard errors in parentheses, and p-values in
    squared brackets. Year dummies included. Omitted group: tenure>2 years,
    1-4 employees, unskilled worker.

To sum up, from the comparison between the two measures of experience, it turns out that returns to accumulated experience are greater than returns to potential experience, especially for women. In fact, using the accumulated measure implies a substantial reduction in the gender gap. The explanation behind this result would be that males and females are similarly rewarded in terms of actual experience but

Given that the qualitative results are quite similar, I prefer to report only the fixed effects estimates that do not depend on any additional assumption.

women are more penalized due to periods non working. In addition to this gender wage penalty to interruptions, next section studies whether there exists a gender wage penalty to job changes as well.

## 3. Job changes and wage growth

In this section, I investigate gender differences both on the wage growth associated with job changes, and on the determinants of those changes. Then, I obtain estimates for annual wage growth in years when job changes occur, and estimates for transition probabilities given personal and job characteristics

3.1 Wage growth with job changes

As mentioned in the introduction, the early career concentrates a substantial amount of the wage growth that individuals accumulate throughout their working life. In some economies, this early wage growth turns out to be greater for men than women. If job mobility plays an important role on wage dynamics, job changes will also have influence on this gender differential.

Figure 2 shows the time evolution for the raw wage gap in the sample. In general, early-career wage growth is greater for men than for women. Although at labour market entry the gender wage gap is hardly perceivable, in a few years this differential become noticeable. In two years, we have an accumulated growth of 15.94 per cent for males and 14.28 for females; in four years, the corresponding numbers are 26.09 and 17.68; and in six years, 44.66 and 29.28, respectively.

FIGURE 2
Mean hourly wage by gender (pta 1992)
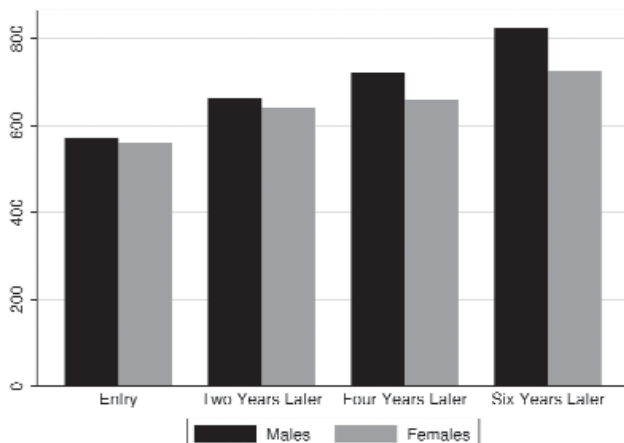
To shed some light on the relation between job mobility and wage dynamics, I take advantage of the framework already presented in the previous section, and reinterpret potential experience as the sum of an individual specific constant, c_i, plus time, t. Formally,

$$
\begin{aligned}
POTEX_{it} &= age_{it} - years\ of\ schooling_i - 6 \\
&= (age_{i0} - years\ of\ schooling_i - 6) + t = c_i + t,
\end{aligned}
$$

with age_{i0} denoting age at which individuals enter the sample. If we omit second order terms[20] and consider, just for simplicity of exposition, y_{it} as the part of the logwages unexplained by the remaining explanatory variables, we can rewrite [2] as

$$
\begin{aligned}
y_{it} &= \beta_1 POTEX_{it} + \beta_2 FEM_i POTEX_{it} + v_{it} \\
&= \beta_1 (c_i + t) + \beta_2 FEM_i (c_i + t) + v_{it},
\end{aligned}
$$

or, in terms of growth rates[21],

$$
\Delta y_{it} = \beta_1 + \beta_2 FEM_i + \Delta v_{it}.
$$

That is, we can interpret the estimated coefficient corresponding to the potential experience variable, $\hat{\beta}_1$, as the estimate of the mean wage growth for males and, analogously, $\left(\hat{\beta}_1 + \hat{\beta}_2\right)$ for females. If we add interactions of potential experience and job changes, we would obtain estimates of the corresponding mean wage growth with job change[22].

Table 6 shows that the estimated mean annual wage growth in years with job change is 4.5 per cent for males and statistically insignificant for females, whereas without job change the numbers are 3.0 and 1.4 per cent for men and women, respectively[23]. According to these estimates, the early-career wage growth is significantly favoured by job mobility only in the case of males.

[20] The order of magnitude of the squared terms is relatively very small and hardly significant as showed in Table 3.
[21] Notice that I use potential experience here because, by construction, $POTEX_{it} - POTEX_{it-1} = 1\ \forall i, t$, whereas this is not necessarily the case with accumulated experience as stressed in previous section.
[22] It might be more appropriate to consider a joint model for wages and job changes since, if there exists correlation between the unobservable determinants of wages and those of job mobility, we would have a sample selection problem. Given the size of the sample, a model with self-selection is however out of the scope of this paper, but constitutes an interesting point for future research.
[23] Estimates corresponding to all variables and female interaction terms are available on Table 7.

TABLE 6
Estimates of mean wage growth

	Males		Females	
	Coefficients	p-values	Coefficients	p-values
Without job change	0.030**	0.013	0.014*	0.091
With job change	0.045**	0.014	0.005	0.678
TESTS: Null hypothesis			values	p-values
- Equal wage growth without job change: $\hat{\beta}_1 - (\hat{\beta}_1 + \hat{\beta}_2) = 0$			0.016	0.273
- Equal wage growth with job change: $\hat{\beta}_1 \times$ job change $- (\hat{\beta}_1 + \hat{\beta}_2) \times$ job change $= 0$			0.040*	0.082

Notes: ***, **, * significant/rejection at 1%, 5%, 10%, respectively.

TABLE 7
OLS Estimates of wage equations with job changes interactions

	Males		FEM interactions	
	Coefficients	SE	Coefficients	SE
Potential Experience	0.030**	0.012	-0.016	0.015
Potential Experience × Job change	0.015	0.019	-0.024	0.024
Experience squared	-0.001	0.001	0.000	0.001
Experience squared Job change	-0.001	0.002	0.002	0.002
Job change	-0.032	0.053	0.042	0.070
Tenure < 1 year	-0.082**	0.034	-0.005	0.049
Tenure 1 - 2 years	-0.046	0.030	-0.012	0.043
Fixed-term	-0.056**	0.025	0.045	0.036
Part-time	0.109**	0.051	-0.014	0.058
Civil servant	0.211***	0.052	-0.012	0.073
> 50 employees	0.233***	0.041	-0.031	0.052
5 - 49 employees	0.127***	0.036	0.017	0.046
Managers and Professionals	0.165***	0.045	0.132**	0.065
Clerical and Services	-0.042	0.034	0.066	0.048
Agriculture and Manufacture	0.037	0.026	0.001	0.048
Married	-0.024	0.054	0.084	0.066
Children	0.199**	0.101	-0.201*	0.112
Graduate Education	0.086**	0.033	-0.056	0.047
College Education	0.199**	0.037	-0.079	0.052
Birth year: 1974-1977	-0.029	0.045	-0.091	0.056
Birth year: 1978-1985	-0.093**	0.047	-0.094	0.065
Intercept	6.314	0.101	-0.053	0.139
Observations	2,013			
R2	0.46			

Notes: ***, **, * significant at 1%, 5%, 10%. Robust standard errors clustered by individual in parentheses. Year and region dummies included. Omitted group: Birth year<1974, primary education, tenure>2 years, 1-4 employees, unskilled worker.

Next section addresses whether there are gender differences in the determinants of job mobility, differences that would help to explain why males and females wages do not grow at the same rate.

3.2 Determinants of job changes

In this section, I study gender differences in mobility patterns of young workers, that is, probabilities of different types of job changes and the factors that affect those transitions. For undertaking this task, I consider all transitions from the first job of every individual[24], distinguishing among reasons of change (promotion, layoff or quit) and direction of the change (job-to-job or job-to-nonemployment).

–*Definitions*

TO STAY: transition job to job, without change of employer nor duties.

PROMOTION: transition job to job, without change of employer but to a better position.

LAYOFF: transition job to job - with change of employer - or job to nonemployment, if the reason for changing is forced by the employer, end of a fixed-term contract or by business closing.

QUIT: transition job to job - with change of employer - or job to nonemployment, if the decision to leave the job is made by the employee (change to a better position, marriage, studies, military service, illness or own inability, care giving, etc).

–*Estimation Results*

In this section, I consider a multinomial logit to model the pool of transitions across jobs and from employment to nonemployment[25].

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[24] I should clarify that if a worker changes her job more than once in a given year, in practice I only observe one, given that the reason for changing is available for only one transition each wave. Notice that this is quite restrictive since the temporality rate among the individuals in the sample is very high. In fact, if we compute the cases for which two or more job changes occur in a year, they represent around a 30 per cent of total transitions. In any case, this is a limitation imposed by the own nature of the information available.

[25] In the empirical analysis of job mobility, discrete choice models and duration models have been used. Both methodologies constitute alternative ways of mod-

This model allows me to determine how *ceteris paribus* changes in the elements of a set of variables affect the probabilities of each type of job transition. Let probabilities be denoted by $\Pr(transition = j|characteristics)$, where

$$
j = \begin{cases}
0 & \text{if} \quad \text{staying at the same position,} \\
1 & \text{if} \quad \text{promotion,} \\
2 & \text{if} \quad \text{change job-to-job through layoff,} \\
3 & \text{if} \quad \text{change job-to-job through quit,} \\
4 & \text{if} \quad \text{change job-to-nonemployment through layoff,} \\
5 & \text{if} \quad \text{change job-to-nonemployment through quit.}
\end{cases}
$$

The multinomial logit assumes a logistic form for those probabilities, given personal and job characteristics. The model is estimated by maximum likelihood, separately for men and women[26].

In a first specification, I include as explanatory variables age, education, family, living in economic poles, tenure, accumulated experience, holding a position which involves supervision, working part-time and the size of the firm[27]. The second specification adds type of occupation[28]. Although these variables may introduce endogeneity problems, it may be of interest to take into account that men and women are concentrated in different occupations and, moreover, they can change differently due to occupational segregation.

The sample contains 1,490 transitions, 738 corresponding to men and 752 to women. Of those transitions, a 54 per cent in case of males and a 58 per cent in case of females imply moving to a different status. By type of change, there are some significant gender differences as

elling the same underlying process. Duration models consider the probability that a given job ends in a certain time interval conditioned on having lasted until then. Discrete choice models consider a sequence of successes or failures that are observed in each time interval, understanding by success the job change and failure, to stay in the same position. Royalty (1998) points as a main advantage of the continuous duration models the fact that the results do not depend on the considered time interval (Heckman and Singer, 1984), problem that can arise with the discrete duration and discrete choice models, in which we need to choose a given point in time when the decision takes place. Nevertheless, a model as the multinomial logit, equivalent to a discrete duration model with constant hazard rates, may have a simpler interpretation in terms of how the variables affect the probabilities of each event. For this reason, and also because many variables in the data are measure annually, I use here a discrete framework with annual intervals.

[26] For a description of the multinomial logit see Wooldridge (2001).

[27] Notice that I consider the characteristics of the original position.

[28] A detailed explanation of all these variables is included in Appendix A.2.

stated in Panel III of Table 2. Graphically, we can see in Figure 3 that transitions job-to-job through layoff are higher for women and transitions job-to-nonemployment through quit are higher for men, although very small in absolute terms.

FIGURE 3
Sample proportions by gender
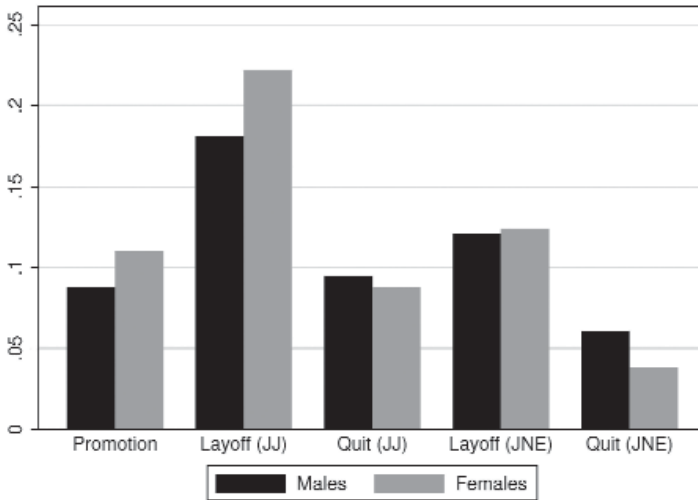
Since the interpretation of the multinomial logit coefficient estimates is not direct[29], I comment results on the marginal effects displayed in Tables 8, 9 and 10. Those marginal effects were computed first at the individual level, and then I calculate the average among males and the corresponding average for females. Moreover, in the discussion that follows, I focus mainly on the results for the specification without occupation variables, since the general conclusions are quite similar[30].

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[29] Even the direction of the partial effect of one variable is not determined entirely by the corresponding coefficient.

[30] In fact, adding type of occupation becomes statistically relevant only in two cases: the probability of layoff for women moving to another job, that is lower if they work in managerial occupations or related to university degrees instead of unskilled occupations (Table 9), and the probability of quit moving to unemployment or inactivity, that is lower for men in fishing, agriculture or manufacture (Table 10), than for men in unskilled positions.

TABLE 8
Means of individual marginal effects by gender
Same employer

| | To stay | | | | Promotion | | | |
| | Males | | Females | | Males | | Females | |
	[I]	[III]	[II]	[III]	[II]	[III]	[II]	[III]
Experience	-0.224* (0.116)	-0.235* (0.125)	-0.266** (0.111)	-0.257** (0.111)	0.056*** (0.021)	0.066*** (0.022)	0.088*** (0.024)	0.088*** (0.024)
Tenure	0.328** (0.123)	0.333** (0.131)	0.386*** (0.116)	0.381*** (0.116)	-0.022 (0.020)	-0.024 (0.019)	-0.039 (0.023)	-0.039 (0.021)
Age	0.001 (0.017)	0.003 (0.019)	0.010 (0.013)	0.010 (0.014)	-0.002 (0.004)	-0.004 (0.004)	-0.007* (0.004)	-0.007* (0.004)
Graduate	0.115 (0.145)	0.120 (0.158)	0.003 (0.119)	-0.005 (0.123)	0.000 (0.029)	-0.003 (0.029)	0.025 (0.041)	0.011 (0.040)
College	0.117 (0.159)	0.100 (0.167)	-0.001 (0.116)	-0.031 (0.136)	0.066** (0.037)	0.055 (0.037)	0.077** (0.039)	0.047 (0.042)
Family	-0.053 (0.170)	-0.046 (0.174)	-0.039 (0.101)	-0.038 (0.101)	0.085 (0.063)	0.089 (0.063)	0.063 (0.040)	0.063 (0.040)
Economic poles	0.004 (0.095)	0.009 (0.101)	-0.019 (0.083)	-0.028 (0.085)	0.025 (0.022)	0.031 (0.022)	0.052** (0.025)	0.049* (0.026)
Part time	0.001 (0.286)	0.010 (0.302)	-0.057 (0.109)	-0.052 (0.109)	-0.051 (0.035)	-0.051 (0.035)	-0.055* (0.029)	-0.054* (0.029)
Supervisor	-0.102 (0.108)	-0.075 (0.125)	-0.091 (0.104)	-0.101 (0.105)	0.021 (0.034)	0.013 (0.034)	0.057 (0.045)	0.045 (0.044)
>50 employees	-0.012 (0.132)	-0.033 (0.136)	0.058 (0.104)	0.062 (0.110)	-0.009 (0.035)	-0.025 (0.035)	-0.053 (0.034)	-0.050 (0.036)
5-49 employees	0.029 (0.126)	0.027 (0.131)	0.046 (0.101)	0.050 (0.104)	-0.024 (0.029)	-0.030 (0.029)	-0.061* (0.031)	-0.060* (0.032)
Managers and Professionals		0.052 (0.199)		0.054 (0.186)		0.061 (0.056)		0.049 (0.061)
Clerical and Services		-0.031 (0.159)		0.024 (0.149)		0.024 (0.044)		0.005 (0.046)
Agriculture and Manufacture		0.058 (0.146)		-0.055 (0.169)		0.027 (0.035)		-0.029 (0.052)

Notes: ***, **, * significant at 1%, 5%, 10%, respectively. Standard errors in parentheses. Omitted group: primary education, 1-4 employees, unskilled workers.

The two main factors that determine the probability of staying in the same position are tenure and experience (Table 8, columns 1-4). The sign of the effect is the same for males and females in both cases. As we could expect, the effect is positive for tenure. The higher the tenure the higher the probability of remaining in the same job. This result goes in line with the idea that accumulating specific human capital makes the individual more valuable for the firm. With regard to experience, in principle it is not clear why having greater experience, for a given level of tenure and age, diminishes the probability of staying. However, if we compared this effect with the effect that more experience has on the probability of promotion or voluntary job change, positive in both cases, it seems due to the fact that turnover increases with experience. These effects, therefore, would be compatible with the acquisition of general human capital.

The probability of promotion is higher for college people, again both for males and females; although the effect disappears once we control for occupation (Table 8, columns 5-8). Regarding gender differences, other factors such as working part-time, working in firms of medium size or age, have a negative impact on the probability of promotion for women, whereas for men are not significant. These effects may be caused by the fact that women face non-professional restrictions that are limiting their possibilities of promoting, as mentioned on the introductory section. On the contrary, living in regions with high economic activity has a significant positive effect on the probability of promotion for women, as in those areas opportunities may be more frequent or, at least, more accessible.

TABLE 9
Means of individual marginal effects by gender
Change job-to-job

| | Layoff | | | | Quit | | | |
| | Males | | Females | | Males | | Females | |
	II	III	II	III	II	III	II	III
Experience	0.097**	0.092**	0.138***	0.130***	0.087***	0.089***	0.038*	0.041*
	(0.038)	(0.041)	(0.040)	(0.041)	(0.029)	(0.031)	(0.023)	(0.023)
Tenure	-0.181***	-0.175***	-0.223***	-0.217***	-0.100***	-0.096***	-0.049**	-0.051**
	(0.042)	(0.044)	(0.047)	(0.050)	(0.028)	(0.029)	(0.021)	(0.021)
Age	0.015**	0.016**	0.004	0.003	-0.001	-0.002	-0.003	-0.003
	(0.007)	(0.008)	(0.006)	(0.007)	(0.005)	(0.005)	(0.004)	(0.004)
Graduate	-0.066	-0.068	-0.013	0.023	-0.021	-0.019	0.008	-0.007
	(0.041)	(0.044)	(0.053)	(0.061)	(0.029)	(0.031)	(0.033)	(0.033)
College	-0.083	-0.076	-0.043	0.033	0.026	0.033	0.004	-0.028
	(0.051)	(0.055)	(0.056)	(0.067)	(0.040)	(0.044)	(0.033)	(0.039)
Family	0.089	0.082	-0.010	-0.003	-0.023	-0.029	-0.005	-0.007
	(0.105)	(0.106)	(0.053)	(0.055)	(0.052)	(0.051)	(0.032)	(0.031)
Economic poles	0.057	0.049	-0.035	-0.030	-0.033	-0.037	0.039	0.036
	(0.037)	(0.039)	(0.042)	(0.043)	(0.025)	(0.026)	(0.025)	(0.024)
Part time	-0.072	-0.073	0.049	0.045	-0.009	-0.009	0.057	0.056
	(0.069)	(0.072)	(0.062)	(0.062)	(0.053)	(0.055)	(0.041)	(0.041)
Supervisor	-0.112***	-0.103**	0.061	0.088	-0.045	-0.041	0.015	0.006
	(0.039)	(0.044)	(0.077)	(0.087)	(0.030)	(0.034)	(0.042)	(0.040)
>50 employees	-0.005	0.017	0.029	-0.011	-0.017	-0.006	0.047	0.051
	(0.052)	(0.056)	(0.050)	(0.053)	(0.033)	(0.036)	(0.035)	(0.039)
5-49 employees	-0.012	-0.006	0.064	0.045	-0.007	-0.006	0.004	0.012
	(0.050)	(0.050)	(0.054)	(0.056)	(0.035)	(0.036)	(0.027)	(0.028)
Managers and Professionals		-0.046		-0.127*		-0.029		0.060
		(0.063)		(0.074)		(0.040)		(0.066)
Clerical and Services		0.005		-0.118		-0.007		0.054
		(0.060)		(0.079)		(0.037)		(0.044)
Agriculture and Manufacture		0.001		0.007		-0.022		-0.034
		(0.050)		(0.095)		(0.030)		(0.043)

Notes: ***, **, * significant at 1%, 5%, 10%, respectively. Standard errors in parentheses. Omitted group: primary education, 1-4 employees, unskilled workers.

If the change is job-to-job, the probability of layoff diminishes with higher values of tenure (Table 9, columns 1-4). As before, it turns out costly for the employer to dismiss the worker and to hire another for replacing the previous one. For men holding a position of responsibility also reduces the probability of layoff, whereas for women, working in occupations that require high qualification. For the two groups, greater experience increases the probability of layoff. Given the high temporality rate of the workers in the sample, a plausible explanation for this result would be that accumulating experience by means of fixed-term contracts is not valuable for the employers.

In case of transition job-to-job through quit, tenure and experience are important both for men and women (Table 9, columns 5-8). Just as opposed to staying, now individuals with higher values of tenure have a lower probability of quitting; and individuals with higher general experience are more likely to change job.

When the change is job-to-nonemployment through layoff, several characteristics become relevant (Table 10, columns 1-4). For men, having a family or living in regions with a high economic activity, reduces the probability of layoff to nonemployent. Any of these factors is significant in the sample for women. For females, the probability of this transition is lower for high values of tenure.

If the move from employment to nonemployment is voluntary, again the variables that matter for each group are different (Table 10, columns 5-8). For men, occupation and education degree are important factors. They quit less if they are in a medium-skill than in an unskilled occupation, or if they have a college degree with respect to those with only primary education. However, holding a position that involves responsibility increases the probability of quit. Since in the sample we have young workers who have finished their studies, some of these quits may be due to periods of inactivity dedicated to complete their professional formation. For women, the probability of quit is lower if they work in bigger firms. It seems reasonable that in those big firms labour conditions would be more flexible.

TABLE 10
Means of individual marginal effects by gender
Change job-to-nonemployment

| | Layoff | | | | Quit | | | |
| | Males | | Females | | Males | | Females | |
	II	III	II	III	II	III	II	III
Experience	0.037	0.031	-0.006	-0.008	-0.053	-0.043	0.008	0.006
	(0.032)	(0.032)	(0.034)	(0.035)	(0.028)	(0.028)	(0.012)	(0.013)
Tenure	-0.026	-0.035	-0.064**	-0.064**	0.001	-0.003	-0.010	-0.009
	(0.030)	(0.031)	(0.031)	(0.032)	(0.024)	(0.025)	(0.012)	(0.013)
Age	-0.005	-0.005	-0.003	-0.003	-0.008	-0.008	-0.001	-0.001
	(0.006)	(0.006)	(0.005)	(0.005)	(0.005)	(0.005)	(0.002)	(0.002)
Graduate	-0.022	-0.035	-0.036	-0.033	-0.007	0.004	0.014	0.010
	(0.033)	(0.032)	(0.036)	(0.037)	(0.023)	(0.025)	(0.017)	(0.017)
College	-0.066*	-0.061	-0.013	0.001	-0.055**	-0.050*	-0.024	-0.022
	(0.036)	(0.039)	(0.039)	(0.045)	(0.023)	(0.027)	(0.016)	(0.017)
Family	-0.080*	-0.079*	-0.018	-0.020	-0.017	-0.017	0.005	0.005
	(0.045)	(0.044)	(0.040)	(0.040)	(0.052)	(0.051)	(0.022)	(0.021)
Economic poles	-0.058**	-0.056*	-0.032	-0.026	0.006	0.004	-0.005	0.000
	(0.028)	(0.029)	(0.030)	(0.031)	(0.020)	(0.021)	(0.014)	(0.014)
Part time	0.099	0.092	0.009	0.008	0.041	0.036	-0.003	-0.003
	(0.103)	(0.097)	(0.040)	(0.040)	(0.057)	(0.054)	(0.018)	(0.018)
Supervisor	0.037	0.033	-0.023	-0.018	0.200**	0.172**	-0.020	-0.020
	(0.057)	(0.060)	(0.046)	(0.049)	(0.081)	(0.081)	(0.017)	(0.018)
>50 employees	0.076*	0.079*	-0.036	-0.041	-0.033	-0.031	-0.046***	-0.031
	(0.044)	(0.044)	(0.034)	(0.037)	(0.029)	(0.030)	(0.018)	(0.020)
5-49 employees	0.055	0.059	0.000	-0.001	-0.040	-0.044	-0.053***	-0.046***
	(0.037)	(0.037)	(0.039)	(0.041)	(0.028)	(0.029)	(0.017)	(0.017)
Managers and Professionals		-0.016		-0.028		-0.022		-0.009
		(0.051)		(0.056)		(0.032)		(0.037)
Clerical and Services		0.040		-0.005		-0.032		0.041
		(0.049)		(0.052)		(0.022)		(0.031)
Agriculture and Manufacture		-0.003		0.051		-0.060***		0.060
		(0.036)		(0.083)		(0.022)		(0.081)

Notes: ***, **, * significant at 1%, 5%, 10%, respectively. Standard errors in parentheses. Omitted group: primary education, 1-4 employees, unskilled workers.

Overall, experience, tenure and - sometimes - education, have a relevant influence on transition probabilities both for males and females. On the other hand, differences arise from factors, related to the job position or the social environment, that affect differently to each group. For men holding a position with responsibility, having a family or living in economic poles turns out to be important when changing job. On the contrary, for women it is relevant the working time or the size of the firm.

4. Conclusion

This paper analyzes gender differences in labour market histories of young workers in Spain. In particular, the study focuses on two key features of their early-careers: interruptions and job changes. Several theoretical hypothesis have suggested that differences in those dynamic aspects of the profiles may have implications on the gender wage gap that we observe, through gender differences in the accumulation of human capital, training investments, and job matches.

In the first part of the paper, I propose an experience measure that, as opposed to the conventional potential experience variable, considers the existence of discontinuities in the professional careers of workers. In the second part, I analyze gender differences in job mobility patterns among young workers.

Overall, the results of the paper point to the existence of both a gender wage penalty to interruptions and a gender wage penalty to mobility. From the comparison between the two measures of experience, it turns out that returns to accumulated experience are greater than returns to potential experience, especially for women, as work interruptions have a significant negative effect only for these latter. Regarding job changes, I find that early-career wage growth is greater for men than for women, especially in years when job changes take place. Although turnover rates are similar by gender, behind this wage growth gap may be factors that affect differently the mobility of males and females. In fact, in the empirical analysis I find that for men's mobility it is important holding a position with responsability, having a family or living in economic poles whereas for women, working part-time or the size of the firm. How much of the gender differential in wage growth is due to the different characteristics of the jobs to which men and women move is, however, a question that remains open for future research.

What would be the policy implications of these results? In Spain, since the transition to democracy, policy makers have been enacting gender equality policies[31], but only in the most recent years gender equality has emerged as a priority on the political agenda. Although it is difficult to determine how much of the difference in male-female pay is due to discrimination and how much is due to differences in choices or preferences between women and men, according to the results here, a good policy option would be measures that help families to reconcile working and childbearing, avoiding undesired work interruptions that penalize all women in terms of wages.

Appendix

A1. Construction of variables

A1.1. Sample selection

The ECHP user files are provided separately for each wave, from 1994 to 2001, and in five different types: household files, individual files, members of the household, longitudinal connection and relationship files. The empirical analysis in this paper is based mainly on the variables included in the individual files, but in addition I merge them with the remaining files to obtain relevant information on some family aspects. This is the case, for instance, of region of residence (included in the household files) or presence of children at home (obtained as a combination of individual, household and relationship files).

After adding these variables, I append the eight waves to construct the panel. This is the unfiltered dataset that represents the starting point. Then I apply successive filters until obtaining a panel in which the construction of completed individual labour markets histories turns out to be feasible. The steps to select individuals are the following:

1. Young: I keep those individuals aged 16 to 39 over the period.

2. Employees: I drop those individuals with a spell of self-employment, since the information regarding earnings will often be unreliable.

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[31] In particular, the 1978 Constitution explicitly states that women and men are all equal before the law, and that sex discrimination is prohibited.

    3. Labour market profile: I keep those individuals who are observable from the beginning of their professional careers, once they have left school.

Lastly, I drop observations before the first job which are uninformative with respect to wages and job transitions. The final sample is an unbalanced panel with 1,120 individuals (543 males and 577 females) and 3,263 observations. Table 2 provides a summary of the main characteristics of these individuals.

A1.2. Definition of variables

Real hourly wage: the ECHP includes information on gross and net average monthly income for employees. If an individual has more than one job, only the amount corresponding to the main position is included. Additionally, the ECHP provides information on the number of hours worked per week in the main job. I impose a maximum of 60 hours that an individual can work per week. The wage variable is obtained as the gross monthly wage multiplied by 12/52, to have an average weekly wage, and divided by the number of hours per week, to have an average hourly wage. Then, wages are deflated using the consumer price index. This is the national CPI series using 1992 as the base year from the Instituto Nacional de Estadística. Finally, I eliminate the observations corresponding to individuals whose hourly wage is below the minimum wage[32].

Personal characteristics: age, gender, marital status (married as opposed to other situation), presence of children at home (dummy variable), family (as a summary of the previous two variables, takes value 1 if the dummy *married* or the dummy *children* is also one).

Education level: dummies defined for the highest degree obtained by the individual (primary, graduate, or college education).

Tenure: it is constructed from the reported date the individual began to work with the present employer. Therefore, it is obtained as the difference between the current year and the year the individual began to work with the employer. It is used as a continuous variable, or as dummies of less than 1 year, from 1 to 2 years, and more than 2 years of tenure.

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[32]This correction affects 3.7 per cent of men and 5.2 percent of women.

Type of contract: fixed-term or permanent contract.

Working time: part-time or full-time job.

Civil servant: dummy variable whether the individual works for the public sector.

Firm size: small (1-4 employees), medium (5-49 employees), or big (50 or more employees) firms.

Degree of responsibility: dummy variable whether a position involves supervision duties.

Occupation: grouped into the following four categories, based on similar requirements on qualification and responsibility,

- Managers and professionals: Directors of the Public Administrations, Professions associated to college degrees in the fields of pure and natural sciences, health and education, Professionals of the Law, Social sciences and humanities, Technical experts on pure and natural sciences, health and education and Professionals of support in financial, commercial ope-rations and in the administrative management.

- Clerical and services: Clerical employees and workers of personal services, protection and security, and sales workers.

- Agriculture and manufacture: Qualified workers in fishing, agriculture, building, extractive industries, food, drinks and tobacco, wood and textile industry, qualified craftsmen and workers in the metallurgy, operators and fitters of industrial machinery, and transport.

- Unskilled workers: Non-qualified services and commerce workers, far-ming and fishing labourers, labourers of mining industry, manufacturing construction, industries and transport.

Economic Poles: a dummy variable that takes the value 1 if an individual lives in Madrid, Catalonia or Basque Country, regions with a higher economic activity. According to the division that the ECHP does at the NUTS1 level, I consider the following regions in Spain:

- Northwest: Galicia, Asturias and Cantabria.

- Northeast: Basque Country, Navarra, Rioja, and Aragon.

- Madrid.

- Centre: Castilla - Leon, Castilla la Mancha, Extremadura.

- East: Catalonia, Valencia, The Balearics Islands.

- South: Andalusia, Murcia, Ceuta and Melilla.

- The Canary Islands.

Late Entry to the Market: this variable measures, in years, the time since individuals leave school until they start working.

Interruptions: indicator variable that takes value 1 if the individual at a given year has worked less than 12 months (amount assumed by the potential experience measure).

Job changes: categorical variable that takes values according with the definitions in section 3.2, and combines information regarding tenure with present employer, employment status and reason of job change.

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