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Education and Gender Wage Differentials in Portugal: What Can We Learn From an Age Cohort Analysis?

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Abstract

Deep changes characterize the evolution of the Portuguese labor market concerning the average schooling of workers, particularly since the 1980s.

The purpose of this paper is to investigate the consequences of those changes in the gender wage gap. In particular, we analyze and compare the way that this process has evolved in the groups of young workers and older workers.

Our findings suggest that the major part of the pay gap refers to employer discrimination practices for both age group cohorts: in the case of the younger workers, discrimination plays an increasing role in explaining the wage gap whereas for the older workers discrimination remains stable overtime. Furthermore, the attributes related to the characteristics of jobs are the major sources of the explained pay gap. In particular, the different way men and women are distributed among the sectors of industry is the main reason of the gap for both cohorts.

Key words: Labor market; discrimination; salary wage differentials.

JEL classification: J71; C50

1. Introduction

The Portuguese labor market may be considered an interesting case in the European Union context, namely, for two reasons: the low average schooling of workers and the high female participation rate. Regarding the former, average schooling is one of the lowest when compared with other European countries. In 2003, the working age population with nine years of education or less was 76.3% for Portugal whereas for the European Union (hereafter EU25) this percentage only stood at 34.8.[1] However, very significant efforts have been taken since the early 1970s towards an increase of the educational attainment of workers. The educational system has gone through profound changes, including an expansion of compulsory schooling (from six years, for individuals who entered the school system in 1969, to nine years, for those who entered in 1986), the reform of the secondary school curricula, and the extension of the university system. Also, non-formal education has had a more visible role in labor market policies namely through increasing investments in training, particularly after Portugal's entrance to the European Community in 1986.

These educational policies, although improving the average education of both men and women, have favored the latter, increasing the already existent gender educational gap. In 2003, among the population aged 15 to 64, 10.6% of females held a college degree whereas only 6.9% of males held such degree (in the EU25, for the same year, these percentages were 18.1 and 18.9, respectively).[2]

As to the second reason, Portugal is a country where the female participation rate is high as compared to the other EU member-states, and particularly, with the other

[1] European Commission (2004).
[2] *idem.*

southern European countries. In 2004, the female participation rate was 67.0%, five percentage points above the EU25, while the average value for Spain, Italy and Greece stood at 53.8%.[3]

Notwithstanding the notable investment in education made by females and their high engagement in the labor market, our research on gender wage differentials for Portugal reveals strong evidence of a persistent wage gap between male and female workers. (Kiker & Santos, 1991; González, Santos & Santos, 2005).

The role of discrimination as a source of male-female wage differentials is in line with an extensive body of literature on the issue. Following the seminal work of Oaxaca (1973), the most important feature of the numerous empirical studies on this matter has been the evidence of a certain extent of discrimination against female workers. This finding has been pervasive in most of the studies using different estimation methodologies and datasets, although the proportion attributed to discrimination differs and the sources of the gender gap vary (see for example Cotton, 1988; Neumark, 1988; Oaxaca & Ransom 1994; Plasman, Cortese, Krzeslo, Plasman, Rusinek, Rycx, & Vanheerswynghels, 2001; Rubery, Grimshaw, & Figueiredo, 2002).

Despite the robustness of our findings on the effective importance of wage discrimination practices, further investigation is needed on the effects of changes in the supply of educated workers to explain the gender wage gap. The investment in education made by females is perceived as inducing a wage gap reduction, especially felt among the younger generation as compared with the older one. It is expected that the profiles of younger males and females regarding their level of education will converge contributing to such reduction.

[3] European Commission (2005).

According to the above we can expect that the educational reforms affect diversely different cohorts of workers. Therefore, a deeper understanding of the reasons involved in the explanation of the gender wage gap requires a separate analysis of the extent of discrimination for the younger and older cohorts of workers. The use of global data, as is the usual procedure in this type of study, is somewhat limited since it can hide significant differences between the two referred to groups of workers, either regarding the part of the gap that can be explained by the diversity of characteristics of workers and jobs (endowment effect) or regarding the unexplained part of that gap (discrimination effect).

In this study we apply wage decomposition techniques to analyze the gender wage gap in Portugal, following the Oaxaca methodology and employing the Neumark decomposition method. To distinguish the impact of the policy reforms across cohorts of workers, we analyze, separately, young workers (defined as those aged from 15 to 34 years) and older ones (workers aged 35 and above) using a large dataset of Portuguese workers for the period 1991-2000. The focus of the paper on this period allows us to investigate more deeply the effects of educational reforms on the evolution of the gender wage gap in the Portuguese labor market.

In section 2, we briefly present the data and point out some major changes regarding educational attainment that characterized the Portuguese labor market during the 90s. In section 3, we present the model used. In section 4, we present and discuss the results of the decomposition of the gender pay gap for the two age group cohorts using the Neumark methodology. In section 5, we present our concluding remarks.

2. The data

In the present work we use data from the Personnel Records database (*Quadros de Pessoal*), an administrative dataset collected annually by the Portuguese Ministry of Employment. Response to the questionnaire is mandatory for all private-sector firms with at least one employee. This dataset provides information on workers' attributes such as gender, age, education, occupation, qualification level, years with the firm, hours worked and earnings, and job related attributes such as type of industry, geographic location and plant size. Information about employees in public administration, the self-employed and military personnel is not included in the dataset.

Table 1 summarizes the educational workforce characteristics for the whole population and for the two age groups considered. According to the data, there is a high incidence of young workers amongst the Portuguese employees since almost half (49.1%) of the workers were aged less than 35 years in 2000 and 50.8% in 1991.[4] As expected, the share of women is higher in the younger cohort than in the older one (46.9% against 39.6% in 2000 and 43.3% against 31.0% in 1991). Also, the relative weight of women increased in the two age groups between 1991 and 2000, being more pronounced in the group of older workers.

[Insert Table 1 here]

There are visible educational changes in the Portuguese workforce over the decade as the average years of education of the employees increased by 25% from 1991 to 2000.

[4] This appears to be a particular characteristic of the Portuguese labor market as compared with other EU countries. According to the EUROSTAT data (*Labour Force Statistics*) and despite the different information source and the different scope of the considered age group, in 2000 the percentages of employees aged 15 to 39 was 54.6 in the EU25, 55.1 in the EU15 and 60.0 in Portugal.

Still, the average schooling remains low: on average each employee had 6.07 years of school in 1991 and 7.56 years in 2000.

The improvement of the workforce educational attainment is more noticeable for the younger cohort since the average years of schooling increased by about two years whereas it only increased by one year for the older one. In particular, the percentage of the younger employees having 12 years of education or more increased substantially, through the decade (from 17.3 % to 33.6 %), while the percentage of older workers with that same level of education had a less pronounced increase (from 13.1% to 17.1%). On the other hand, the percentage of younger employees with 4 years of education or less declined more drastically than that of the older ones.

These figures also show the considerable investment in education made by women more pronounced among the younger ones, especially at the highest qualification levels. Women were already more educated than men in 1991 and the educational gap increased during the period. In 2000, 8.0 % of young females had a college degree, whereas only 6.1% of the men had such a degree, overcoming their disadvantage among the older workers (4.1% and 5.1% for females and males, respectively).

3. Model specification

The empirical estimation of overall gender wage gap and its decomposition in the portion of the wage differential imputable to differences in workers and job traits (endowment or attribute effect) and to differences in the returns for those traits (price or discrimination effect) was introduced by Oaxaca (1973) and Blinder (1973) and latter developed by other authors, namely Cotton (1988) and Neumark (1988).

To analyze and decompose the gender wage gap in the Portuguese labor market we started by estimating Mincerian-type wage equations (Mincer, 1974).

Let $\ln W_m = X_m \hat{\beta}_m + v_m$ represent the estimated male wage equation, and (1)

$\ln W_f = X_f \hat{\beta}_f + v_f$ represent the estimated female wage equation

where $\ln W_m$ and $\ln W_f$ are the natural logarithms of the male and female wages, X_m and X_f are the appropriate vectors of regressors for the relevant males and females attributes and $\hat{\beta}_m$ and $\hat{\beta}_f$ represent the corresponding vectors of estimated coefficients; v_m and v_f are residual terms.

The average wage gap (in logarithms) between males and females is given by

$$\overline{\ln W}_m - \overline{\ln W}_f = \overline{X}_m \hat{\beta}_m - \overline{X}_f \hat{\beta}_f . \quad (2)$$

Considering β^* an estimated non-discriminating wage structure, the average wage gap can be rewritten as

$$\overline{\ln W}_m - \overline{\ln W}_f = (\overline{X}_m - \overline{X}_f)\beta^* + \overline{X}_m(\hat{\beta}_m - \beta^*) + \overline{X}_f(\beta^* - \hat{\beta}_f). \quad (3)$$

On the right-side of this equation, the first term represents the endowment effect (the wage gap that would prevail if groups differed only in their observable attributes), while the two other terms represent the price or discrimination effect (the second term measures the so-called male-advantage due to labor market discrimination computed as

the wage males receive above what would be due if their characteristics were to be rewarded at the non-discriminating wage structure β^*; the third term measures the female disadvantage due to labor market discrimination and so computes the difference between the wage women should receive if the non-discriminating wage structure was enforced and the wage they actually receive).

Oaxaca & Ransom (1994) showed that equation (3) can be re-written as:

$$\overline{\ln W}_m - \overline{\ln W}_f = \ln(Q_{mf}+1) + [\ln(\partial_{m*}+1) + \ln(\partial_{*f}+1)] \qquad (4)$$

where $Q_{mf} = (W_m^*/W_f^*)-1$ reflects the wage gap that would exist if there were only differences in attributes between males and females, $\partial_{m*} = (W_m/W_m^*)-1$ expresses the male wage advantage due to labor market discrimination and $\partial_{*f} = (W_f^*/W_f)-1$ expresses the female wage disadvantage due to discrimination (W_m^* and W_f^* denote the male and female wages in the absence of discrimination in the labor market).

The sum of the last two terms of (4), $[\ln(\partial_{m*}+1) + \ln(\partial_{*f}+1)]$ equals $\ln(D_{mf}+1)$, where $D_{mf} = (W_m/W_f - W^*_m/W^*_f)/(W^*_m/W^*_f)$ is the market discrimination coefficient, the summary measure of the intensity of gender discrimination in the labor market most frequently used in the literature (Becker, 1957). The values of the discrimination coefficient allow us to evaluate, shortly, the effect of both the dimension of the gender wage gap and the relative importance of discrimination practices towards its explanation. The discrimination coefficient measures the penalty that, in average terms, employers associate to recruiting a woman as compared to a man with identical productive characteristics.

At this point two major questions emerge: the choice of both the variables to be used in the wage regressions and of the non-discriminating wage structure. Regarding the factors that must be considered to explain the gender wage gap (vectors X_m and X_f), we used human capital variables (six schooling levels, experience and its square, tenure and its square), and variables to control for characteristics of jobs, sectors, and firms (dummy variables for establishment size, region, occupation, sector of activity, and part-time job); cross-terms between education and experience and education and tenure were also included. The definition of variables used in the study is reported in the Appendix.

As to the choice of the non-discriminating wage structure we followed the Neumark (1988) methodology[5] obtaining β^* from the estimation of a wage equation similar to (1) with a pooled sample of male and female workers.

To analyze the eventual existence of relevant differences between the group of younger workers (defined as those aged from 15 to 34 years) and older workers (aged 35 and above), wage equations were estimated separately for these two groups.

Estimations of the gender pay gap and its decomposition were made for the years 1991, 1995 and 2000. We excluded observations with incomplete or inconsistent data and of a number of categories of individuals for whom reported earnings may impart a bias upon correct evaluation of labor income (we excluded from the analysis individuals who were simultaneously owners and executives, unpaid family workers, individuals under 14 years of age, farmers and farm laborers).

[5] Of all the alternative methodologies this is usually considered the one that better captures the wage structure that would prevail if employers were gender-blind (Oaxaca & Ransom 1994). For the discussion of other alternative methodologies see González *et al.* (2005)

All the equations were estimated by OLS using the White heteroscedasticity-consistent standard errors (the Cook-Weisberg test for heteroscedasticity rejects, in all the equations, the null hypothesis of equal variance).

In this study we did not use a specific variable to control for the femaleness (% of females) within sectors, occupations or firms/ establishments as we use dummy variables that take into account the different job characteristics of men and women which already capture the effect of their different distribution within jobs and firms.[6] In general terms, those two possibilities (to include variables of the percent of females by sector, occupation and firm or to include dummy variables for sectors, occupations and firms) must be considered as alternatives, as discussed by Bayard, Hellerstein, Neumark, & Troske, (1999) who pointed out the benefits and costs associated with both procedures and who suggested that similar results could be expected by using dummies or the femaleness variable.[7]

4. Results

Table 2 presents the gender wage gap for the total sample of workers and for each of the two considered age groups for the years 1991, 1995 and 2000.

[Insert Table 2 here]

[6] For a deeper discussion on this issue see, among others, Groshen (1991) and Bayard *et al.* (1999).
[7] The results of the estimation of the wage equations using, simultaneously, the dummy variables and the proportion of women show clear signs of multicolinearity, suggesting that those variables must, in effect, be used as an alternative.

The figures show that, as expected, the gender wage gap for the younger employees is lower than that for the older ones. This result is in line with international evidence illustrating that the difference of earnings among individuals with different school attainment increases with age. (Mincer, 1974; Filer, Hammermesh & Rees, 1996).

Still, the magnitude of this difference is particularly striking: in 2000, the wage gap of the younger workers is only about one half of that for the older workers. The figures also show that, through the 90s, the gender wage gap remained quite stable for the older cohort of workers but decreased substantially for the younger one. These results suggest that the policy reforms contributing to the reduction of the observed gender educational attainment differential were felt mostly among the younger workers.

The results of the decomposition of the overall wage gap for both groups of employees are presented in Table 3 showing that, for both age groups and through the decade, the wage differential is mainly explained by discrimination. However, its relative contribution to explain the gap is larger for the younger cohort leaving a smaller role to the endowment factors (20% for the young workers and 42% for the older ones in 2000). Additionally, for this group of workers, discrimination plays an increasing role in explaining the wage gap, contributing to 67% of the gap in 1991, 69% in 1995, and 80% in 2000. In regards to the older workers, discrimination remains stable overtime since it explains around 60% of the gap in the three periods.

For both cohorts, discrimination is due mainly to female disadvantage, this share being relatively more important for the older cohort.

[Insert Table 3 here]

Figures on table 3 show that the difference in the discrimination coefficient between the younger and the older workers is lower than the difference in the overall wage gap of the two groups. The penalty associated by employers to recruiting a female, measured by the discrimination coefficient and according to the obtained results, being smaller for the younger cohort than for the older. Still it is important to stress that, in 2000, the gap in the discrimination coefficient for the two cohorts was lower than the wage gap observable for the same groups.[8]

Through the 90s this coefficient (as it occurred with the gender wage gap) remained quite stable for the older cohort of workers but decreased, rather slightly, for the younger one contrasting with the substantial decrease that characterizes the evolution of the gender wage gap in this age cohort.

So we can conclude that the referred to changes in the Portuguese education system contributed to the reduction of the discrimination coefficient in the younger group of workers, but that this effect has been rather slight. This fact indicates that education is only one of the sources of the gender discrimination existing in the Portuguese labor market and that the other sources have retained an important influence on its maintenance.

The analysis of the contribution of the different attributes, related to either worker or job characteristics, to the explained part of the wage gap allows us to deepen our knowledge of these sources. Results on this issue are presented in Table 4 and show that the role of human capital variables varies sensibly between cohorts. For younger workers these variables contributed, increasingly during the decade, to the reduction of the gender pay gap. While for older workers, human capital variables contributed to increasing that

[8] The discrimination coefficient of the group of the youngest represented 65% of the one that applied to the group of the eldest quite above the ratio of the wage differentials of the same two groups, 49%.

gap, despite the reduction of its relative weight during the decade. As expected, the significant investments in education and training had a key effect on the evolution of the explained part of the gender pay gap.

It is also worth noting that education, experience, and tenure play a different role in explaining the wage gap for the two groups of workers.[9] Among younger workers, education, mainly the highest levels of education, emerges as the most important factor contributing to the decreasing of the wage gap during the 90s. These results suggest that women invested in education, as a means of increasing their productive characteristics recognizable by employers.

Tenure also acted towards the reduction of the gap through the period but with a lower and rather constant effect as compared to education. In contrast, differences in experience of male and female workers acted towards increasing the wage gap in this age group. As for the older workers, education, tenure and experience contributed to the increase of the gap.

[Insert Table 4 here]

For the two cohorts of workers, Industry is the variable that has the highest importance in explaining the pay gap during the decade; however, its relative importance increased for the younger workers and decreased for the older ones. Also, the contribution of the different sectors to explain the wage gap does not vary significantly in the two groups of workers. Textiles (with the highest percentage of female workers) and Transportation (with the highest share of male workers) contributed to widening the gap, whereas Finance (the sector with the lowest level of gender segregation) was the only sector that

[9] Detailed results are available upon request.

acted towards its reduction. These results are not unexpected since the structure of male and female jobs by industry does not show relevant changes amongst the older and the younger workers.[10] In 2000 textiles kept the leading role in terms of female employment, especially among the younger cohort.

Occupation, accounting for a small portion of the wage gap for both cohorts in 1991, had an increasing influence to its explanation during the decade.

The other considered factors (part-time, location, and plant size) play a minor role in the explanation of the wage gap for both groups of workers, exception made for the fact that having employment in a large firm (more than 100 employees) acts towards decreasing of the wage gap among the younger group.

In sum, investments in human capital, in particular in education, favoring the younger Portuguese female workers acted to decrease the gender wage gap for the younger cohort through the decade; however the different distribution across sectors of activity and occupations of younger females as compared with younger males and, especially, discrimination practices, have surmounted these effects.

5. Concluding remarks

This analysis of the gender wage gap in the Portuguese labor market has followed the Neumark methodology of decomposing the gap into workers and jobs effects and discrimination effects. We assess the relative importance of investment of workers in human capital characteristics and the role of workplace factors such as industry and occupation in the explained part of the gap. Further, we study the extent of the gap

[10] Detailed results are available upon request.

separately for the younger and older cohorts of workers to better evaluate the impact of educational reforms and changes in the workplace structure that have taken place in the Portuguese labor market since the early 1970s.

Our results suggest that most of the pay gap, for both cohorts, refers to discrimination practices by the employers. In the case of the younger workers, discrimination plays an increasing role in explaining the wage gap, contributing to 67% of the gap in 1991, 69% in 1995, and 80% in 2000. In regards to the older workers, discrimination remains stable over time since it explains around 60% of the gap in the three periods. The discrimination coefficient, that is the penalty associated by employers to female wages, is higher amongst older workers than amongst younger ones. During the 90s its evolution did not show any strong tendency towards decreasing: it remained rather stable amongst the older and reduced, but only slightly, amongst the younger.

As expected, the gender wage gap for the younger employees is lower than that of the older ones, although somewhat surprisingly such a gap is, in 2000, only about one half of that of the older workers. Through the 90s the gender wage gap remained quite stable for the older cohort of workers but decreased substantially for the younger workers. These results suggest that the effects of the educational reforms were felt mainly among the younger group of workers and reflect the larger investment on education made by younger women, especially at the highest qualification levels. It is likely that the gender wage gap among the younger workers will further decrease in the future as the full effects of the reforms are felt and the gap among the older ones will tend also to decrease as the new workers will be substitute for the older ones in the labor market.

Although the improvement of the productive characteristics of workers has been important to the reduction of the explained part of the gender pay gap, the attributes related to the characteristics of jobs appear as its major sources. In particular, the

different way men and women are distributed among the sectors of industry emerges as the main reason of the persistence of the wage gap for both cohorts. The observed persistence of the wage differential over time, in spite of the investment in human capital especially amongst women, suggests that a different allocation of men and women by jobs and sectors of activity is required in order to change the prevailing rigidity of worker placement. Any further attempt to analyze the gender wage gap should more deeply address this issue.

Appendix A - Definition of variables

Variable	Description
ln W	Natural logarithm of hourly earnings: hourly earnings were computed dividing total monthly earnings (wages + seniority bonuses + overtime premium + other premia) by the total number of hours worked per month.
ED0	Dummy variable, 1 if years of schooling is <4
ED4	Dummy variable, 1 if years of schooling is =4
ED6	Dummy variable, 1 if years of schooling is =6
ED9	Dummy variable, 1 if years of schooling is =9
ED12	Dummy variable, 1 if years of schooling is =12
ED14	Dummy variable, 1 if years of schooling is =14
ED16	Dummy variable, 1 if years of schooling is >14
TENURE	Number of years of tenure in the current job
$TENURE^2$	TENURE squared
EXPER	Number of years of presumed work experience in firms other than the current one (age-education-tenure -6)
$EXPER^2$	EXPER squared
ED4TEN	Interaction term ED4×TENURE
ED4EXP	Interaction term ED4×EXPER
ED6TEN	Interaction term ED6×TENURE
ED6EXP	Interaction term ED6×EXPER
ED9TEN	Interaction term ED9×TENURE
ED9EXP	Interaction term ED9×EXPER
ED12TEN	Interaction term ED12×TENURE
ED12EXP	Interaction term ED12×EXPER
ED14TEN	Interaction term ED14×TENURE
ED14EXP	Interaction term ED14×EXPER
ED16TEN	Interaction term ED16×TENURE
ED16EXP	Interaction term ED16×EXPER
PLANT10	Dummy variable, 1 if number of employees in the plant is <10
PLANT99	Dummy variable, 1 if number of employees in the plant is ≥10 and ≤99
PLANT499	Dummy variable, 1 if number of employees in the plant is ≥100 and ≤499
PLANTBIG	Dummy variable, 1 if number of employees in the plant is ≥500
NORTH	Dummy variable, 1 if job is in the Northern region
CENTER	Dummy variable, 1 if job is in the Central region
LISBON	Dummy variable, 1 if job is in the Lisbon-and-Tagus-Valley region
ALENT	Dummy variable, 1 if job is in the Alentejo region
ALGAR	Dummy variable, 1 if job is in the Algarve region
OCC0	Dummy variable, 1 if employees are *Executive* or *Directors*
OCC1	Dummy variable, 1 if employees are *Professionals* or *Scientists*

OCC2	Dummy variable, 1 if employees are *Technicians* or in *Management Occupations at Intermediate Level*
OCC3	Dummy variable, 1 if employees are in *Administrative* or in *Related Occupations*
OCC4	Dummy variable, 1 if employees are in *Service* or *Sales Occupations*
OCC5	Dummy variable, 1 if employees are *Laborers*
PRIMSECT	Dummy variable, 1 if job is in *Primary Sector*
MANUF	Dummy variable, 1 if job is in *Manufacturing*
TEXTILE	Dummy variable, 1 if job is in *Textiles*
UTIL	Dummy variable, 1 if job is in *Utilities*
CONSTRU	Dummy variable, 1 if job is in *Construction*
WHOLE	Dummy variable, 1 if job is in *Whole Trade*
RETAIL	Dummy variable, 1 if job is in *Retail Trade*
RESTHOT	Dummy variable, 1 if job is in *Restaurants and Hotels*
TRANSP	Dummy variable, 1 if job is in *Transportation*
FINANCE	Dummy variable, 1 if job is in *Finance*
SERVICE	Dummy variable, 1 if job is in *Services*
PARTIME	Dummy variable, 1 if it is a part-time job

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TABLES

Table 1. Educational workforce characteristics, by age group

Year 1991	Less than 35			35 and above			Pooled		
	Male	Female	All	Male	Female	All	Male	Female	All
School (average, in years)	6,46	6,81	6,61	5,54	5,48	5,52	5,96	6,26	6,07
Educational attainment (%)									
Less than 4 years	2,1	1,5	1,8	7,7	10,0	8,4	5,1	5,0	5,1
4 years	43,0	38,3	41,0	62,3	59,1	61,3	53,4	46,8	51,0
6 years	26,9	27,3	27,1	10,0	9,7	9,9	17,8	20,1	18,6
9 years	12,3	13,7	12,9	6,5	9,1	7,3	9,2	11,8	10,1
12 years	13,4	17,3	15,1	10,7	10,4	10,6	11,9	14,5	12,9
14 years	0,7	0,6	0,7	0,8	0,5	0,7	0,8	0,6	0,7
College degree	1,6	1,3	1,5	2,0	1,2	1,8	1,8	1,2	1,6
Obs. (nº of workers)	397.541	304.149	701.690	469.470	211.082	680.552	867.011	515.231	1.382.242
Obs. (% from total)	28,8	22,0	50,8	34,0	15,3	49,2	62,7	37,3	100,0
Obs. (% of women)		43,3			31,0			37,3	

Year 2000	Less than 35			35 and above			Pooled		
	Male	Female	All	Male	Female	All	Male	Female	All
School (average, in years)	8,23	8,95	8,57	6,56	6,63	6,59	7,33	7,87	7,56
Educational attainment (%)									
Less than 4 years	1,0	0,6	0,8	2,9	3,3	3,1	2,0	1,8	1,9
4 years	19,3	15,2	17,4	49,0	46,9	48,2	35,3	30,0	33,1
6 years	29,7	26,4	28,2	17,6	17,6	17,6	23,2	22,3	22,8
9 years	21,1	19,1	20,2	13,9	14,5	14,1	17,2	16,9	17,1
12 years	21,0	27,6	24,1	10,2	12,2	11,0	15,2	20,5	17,5
14 years	1,9	3,1	2,5	1,4	1,5	1,4	1,6	2,3	1,9
College degree	6,1	8,0	7,0	5,1	4,1	4,7	5,5	6,2	5,8
Obs. (nº of workers)	515.352	454.267	969.619	607.273	398.505	1.005.778	1.122.625	852.772	1.975.397
Obs. (% from total)	26,1	23,0	49,1	30,7	20,2	50,9	56,8	43,2	100,0
Obs. (% of women)		46,9			39,6			43,2	

Table 2 - Gender wage gap (ln) by age group

	Pooled	<35 years	>=35 years
1991	0.279	0.199	0.299
1995	0.255	0.170	0.292
2000	0.241	0.149	0.307

Table 3 - Decomposition of the gender wage gap (ln) and discrimination coefficient, by age group and year

Workers aged less than 35 years						
	1991		1995		2000	
Total gender gap	0,199		0,170		0,149	
Endowment differential		33%		31%		20%
Discrimination differential		67%		69%		80%
Male advantage	0,057		0,053		0,055	
Female disadvantage	0,075		0,064		0,063	
Discrimination coefficient (Dmf)		0,141		0,124		0,126

Workers aged 35 years and above						
	1991		1995		2000	
Total gender gap	0,299		0,292		0,307	
Endowment differential		40%		42%		42%
Discrimination differential		60%		58%		58%
Male advantage	0,056		0,060		0,070	
Female disadvantage	0,124		0,109		0,108	
Discrimination coefficient (Dmf)		0,196		0,184		0,195

Table 4 - Contribution of variables to the gap due to endowment differential, by age group and year

Workers aged less than 35 years						
	1991		1995		2000	
Contribution Source	Value (ln)	%	Value (ln)	%	Value (ln)	%
Human capital	-0,0010	-1,6%	-0,014	-25,7%	-0,0220	-72,9%
Plant size	-0,0085	-12,8%	-0,013	-24,0%	-0,0049	-16,1%
Location	0,0011	1,6%	0,001	1,3%	-0,0003	-1,1%
Occupation	0,0010	1,5%	0,008	15,4%	0,0110	36,1%
Industry	0,0760	114,6%	0,074	140,4%	0,0495	163,0%
Part-time	-0,0022	-3,4%	-0,004	-7,3%	-0,0027	-8,9%
Gap due to attribute differential	0,0663	100%	0,0527	100%	0,0304	100%
Workers aged 35 years and above						
	1991		1995		2000	
Contribution Source	Value (ln)	%	Value (ln)	%	Value (ln)	%
Human capital	0,0228	19,0%	0,0198	16,1%	0,0185	14,3%
Plant size	0,0013	1,1%	-0,0016	-1,3%	0,0061	4,7%
Location	-0,0009	-0,7%	-0,0019	-1,6%	-0,0029	-2,2%
Occupation	0,0098	8,2%	0,0267	21,8%	0,0307	23,8%
Industry	0,0918	76,6%	0,0852	69,5%	0,0765	59,3%
Part-time	-0,0050	-4,2%	-0,0055	-4,5%	0,0001	0,1%
Gap due to attribute differential	0,1198	100%	0,1226	100%	0,1290	100%