

Elite institutions, fields of study and the gender wage gap: case study of a large firm*

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Abstract

In this paper, we study the gender gap in wages and promotions for executives working for a large firm in cosmetics located in France. We contrast workers with an Elite institution degree with those with a college degree. The gender gap is small for executives from the best Elite institutions at 2.6 percentage points compared to 6.8 percentage points for workers from college with at least a Master degree. Interestingly, controlling for the field of study increases the gender wage gap for the educational elite because females choose on average fields of study that are slightly more lucrative than males. Finally, we do not find evidence of any gender gap in promotions and wage growth for the educational elite. This suggests that the educational elite is a rather homogenous group with rather equal treatment across genders. By contrast, among college workers with at least a Master degree, females are more often promoted than males but experience lower wage growth.

Keywords: gender, discrimination, diplomas, wages, promotions, large firm, internal market.

JEL Classification: J16, J24, J31, J71

*We are grateful to the firm for giving us access to their payroll files. All remaining errors are ours.

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1 Introduction

The gender wage gap has decreased over time but remains even for some educational elites. A major reason is large penalties for career discontinuities and limited working hours for some high-paying jobs that require a continued presence to achieve high productivity. Women still bear family duties to a larger extent than men and are penalized when occupying these jobs (Goldin, 2014).

In this paper, we assess the importance of the gender gap in wages and promotions for individuals with Elite institution degrees who work in a large firm specialized in cosmetics. A specificity of this firm is its large proportion of females and its equal opportunity policy. We investigate whether gender differences remain even after taking into account the field of study on top of demographic characteristics, part-time and firm tenure. We contrast results with those obtained for workers with college degrees after taking into account their major. Our main contribution is to investigate a firm internal labor market whereas the literature considers only national markets. A key difference is that the proportion of females in occupations is controlled to a large extent by human resources through hiring and promotions.

Our work is closely related to recent studies that focus on cohorts of educational elites in the US. Goldin and Katz (2008) show for cohorts of Harvard former students that gender differences in earnings remain even after taking into account the usual control factors. Penalty for time off is the largest for MBAs. Bertrand, Goldin and Katz (2010) restrict their analysis to MBAs in Chicago Booth Business School and show that the gender wage gap can be explained by differences in prior courses, career interruptions and weekly hours worked. These studies follow previous alumni of specific places on the national market, whereas we rather evaluate the effect of various diplomas for workers employed by a single firm.

A growing strand of the literature puts an emphasis on the importance of gender selection across majors or fields of study to explain the gender wage gap. Majors often explain half of gender residual disparities for college-educated workers. Recent papers have shown their significant role in the US (Black et al., 2007; Altonji, Blom and Meghir, 2012) as well as in the UK and Germany (Machin and Puhani, 2003).¹ In our work, we take into account the field of study for elite institutions as well as the major for college graduates. As we restrict the analysis to a single firm, we measure their effect on the gender wage gap due to hiring, departures, promotions and bonuses, whereas their role in the sorting of workers across firms and industries is not investigated.

We are interested in the effect of firm tenure on the gender wage gap since it takes time for careers of men and women to diverge. As we have a within-firm perspective, careers depend on the path followed through promotions

¹Earlier significant studies include Daymont and Andrisani (1984), Paglin and Rufolo (1990), Brown and Corcoran (1997), Weinberger (1999). For a recent survey, see Altonji, Blom and Meghir (2012).

as analyzed by the literature in personnel economics (Baker, Gibbs and Holmstrom, 1994; Belzil and Bognanno, 2010). In particular, fast tracks allow some individuals to reach high-paying jobs quickly and access to these fast tracks may depend on gender. Ransom and Oaxaca (2005) show that in a large retail store, the gender pay gap is fully explained by job assignment of employees. Nevertheless, articles focusing on gender differences within firm remain scarce and the case of educational elite has not been investigated.

For our analysis, we rely on a unique panel dataset for a large French firm in cosmetics over the 2007-2013 period. These data are constructed from payroll files that include details on demographic characteristics, wages and bonuses. They are complemented with an additional dataset giving in plain text the institution/university as well as the diploma. This information is used to code the diploma and field of study/major in detailed categories. We focus on executives since executive positions are of particular interest for the educational elite. Our dataset contains around 4,000 executives in each year.

We find that workers from the best Elite institutions earn 14% more than workers from college with at least a Master degree even when controlling for demographic characteristics and variables related to career interruptions and hours worked. The gender gap is small for the educational elite at 2.6 percentage points compared to 6.8 percentage points for workers from college. However, the gender wage gap is larger for workers with at least 10 years of firm tenure consistently with diverging career paths and reaches 8.9 percentage points for the two groups. There are also large wage premia for workers from the best Elite Institutions studying in the fields Humanities/Law/Economics/Politics and Accounting/Management/Marketing rather than in Sciences. For those with 10 years of firm tenure, the premium is as large as 40 percentage points. Interestingly, controlling for the field of study decreases the gender wage gap for workers from college in line with the literature, but it increases the one for the educational elite because females choose on average more lucrative fields of study than males.

When adopting a dynamic perspective and controlling for the same characteristics as in wage regressions, we find that females are promoted as often as males but have a lower wage growth over a 5-year period. This is consistent with females experiencing more often early occupation transitions associated with lower wage increases. Interestingly, among workers from A+ Elite institutions, the gender gap in both promotions and wage growth are not significant, which suggests that these workers would constitute a rather homogenous group where the two genders are treated rather equally. By contrast, among workers from college with at least a Master degree, females are more often promoted than males, but their wage growth is lower.

In section 1, we present the dataset and the firm using information from discussions with the human resources department and descriptive statistics. Whereas section 2 is devoted to the empirical analysis of the gender wage gap, we investigate gender differences in promotions in Section 3. Finally, we summarize conclusions and propose avenues for future research in Section 4.

2 Institutional features and data

2.1 Background

2.1.1 General description of the firm

The firm studied here is the French branch of a large multinational company specialized in cosmetics. As every large firm, the company puts great care in conducting an efficient Human resources policy through recruitments and promotions as it is an important factor for competitiveness. A fair and non-discriminatory policy is regularly claimed to be a major component of its Corporate Social Responsibility (CSR). It is stated that having a diversified staff of employees is necessary for the development of the firm as consumers are predominantly women from all over the world. A quote of the chairman and CEO in their website underlines this approach: “A diversified workforce in every function and on all levels strengthens our creativity and our understanding of consumers and it enables us to develop and market products that are relevant”. In 2014, five women have a seat on the Board that gathers 13 directors (38.5%).

The company has been growing over the last years. The total number of employees increased by 7% in 2013 and by 6% in the French branch. It is a potential employer for highly qualified workers, especially in OECD countries. It appears to be an attractive employer as the firm is around the 10th rank for business students and around the 20th ranks for engineering students according to Universum which conducts a yearly survey on 700,000 students all over the world.² In France, the firm is very attractive for students in business/marketing/management and natural sciences/healthcare (in the three best ranks), a bit less for those in engineering (around the 20th ranks). It is thus likely that the French branch attracts the most talented qualified young graduates and may select among them the ones that are the most in accordance with their Human resources policy.

2.1.2 Elite institutions

In France, tertiary education can be divided into four branches: College, A+ Elite Institutions, other Elite Institutions and Other Institutions. Elite Institutions provide high-quality, long-track, higher vocational education. Their degrees are highly rewarded in the labour market. Admission relies on a competitive exam based on written and oral tests and only a very small share of candidates are admitted every year. Before taking the entrance exam, students usually follow preparation classes (*classes préparatoires*) for at least two years. As Elite Institutions are highly considered, most of the best high-school students prepare their entrance exam. When students are not admitted, they go to college. Institutions deliver a three-year degree so that the level of education when graduating from an Elite Institution is equivalent to a Master degree. Most Elite Institutions provide a degree in Engineering, or in Business and Marketing. However, college classes in some specific fields of study, such as Law or Medicine,

²<http://www.wmae.com/rankings>.

do not have any Elite Institution equivalent. In the firm we study, most workers are specialized in Engineering or Business so that considering the tertiary education branch is informative.

We classify as Elite Institutions the establishments belonging to the group named *Conférence des Grandes Ecoles* (which is the Elite Institutions' congress).³ This group is composed of 212 Elite Institutions which fulfill specific criteria such as an entry exam which is competitive enough, an international student exchange program and some support to students when entering the labor market. Although *Sciences Po* institutions do not belong to this group, we add them to the list as they are the top institutions in Political Sciences. They are highly rewarded in the labour market and the entrance is very competitive. However, the entrance exam is right after high school and not two years later. Among Elite Institutions, we distinguish the most prestigious ones which entrance exam is the most competitive and label them A+ Elite Institutions. We retain a list of 23 institutions in this group which are the French equivalent of the « Ivy League » colleges in the US or the “Russell Group” in the UK (except that the A+ Elite Institution label is not widely used).⁴ Tertiary non-elite institutions can be divided into colleges and the remaining establishments that often deliver short track higher vocational education degree.

2.2 Datasets

We have established a long-lasting relationship with the French branch of the company which grants us access to their (anonymised) administrative data every year. Interactions with the human resources department have been very good so far, allowing us to better understand the organization of the firm and more specifically the process of promotions and the firm policy for gender equality. Indeed, we have frequent qualitative interviews with the human resources department and debates with their union representatives.

2.2.1 Payroll files

Our main data are the yearly payroll files over the 2007-2013 period. They form a panel as each worker has an anonymized ID number that allows her tracking over time. The panel contains information updated every year on socio-demographic characteristics (sex, year of birth, citizenship, marital status, number of children), job characteristics (year of recruitment, location, full-time or part-time status, part-time rate, occupation at a 3-digit level, hierarchical grade), monthly full-time equivalent base wage that we use as our main measure of earnings, premia, bonuses, number of sickness days including maternity leave.

The position held in the firm is characterized by the hierarchical grade and the occupation title. Because of agreements at the industry level, each worker must be attributed a “coefficient” that corresponds to her hierarchical

³<http://www.cge.asso.fr/>.

⁴The list of the 23 A+ Elite Institutions is: HEC, ESSEC, EDHEC, Ecole Polytechnique, ENSAM, Agro Paristech, ESPCI Paris, Centrale Paris, Ecole des Mines de Paris, ENPC Paris, Telecom Paris, Supélec, ENSAE, ENV Alfort, Supaéro, ENSTA, Chimie Paris, ENS (Ulm, Cachan, Lyon), Ecole Militaire de Saint Cyr, ENA, Sciences Po Paris.

grade. The firm has to pay a worker at least a minimum wage corresponding to her coefficient. Minimum wages are fixed through bargaining with unions at the industry level. The firm we study pays wages largely above the minimum wage and coefficients are rather used to define the pay scale at the firm level. A larger coefficient is associated with a larger pay especially for the highest coefficients (see Table 1), and thus changing coefficient clearly reflects a promotion. This is one definition of promotion we will use in our analysis.

Coefficients corresponds to broad categories of occupations. There are 9 coefficients for executives ranging from 350 to 880 (which is the top level). The usual career path for executives involves starting at coefficient 350, being promoted to coefficient 400 one year later, and then to coefficient 460 depending their productivity. Alternatively, careers in research rather involve coefficients 480 and 510. Most career paths for executives end at coefficient 550. There is a tough competition to be promoted to the top level jobs to which are associated the last three coefficients (660, 770 and 880). Only 3.5% of executives are attributed these coefficients.

[*Insert Table 1*]

Changing coefficient is not the only way to be promoted and get a wage increase. While keeping the same coefficient, it is possible to change occupation and be assigned to a position with more responsibilities to which is associated a higher wage. We thus also consider an alternative definition of promotion which is based on occupations. In our data, there are 593 occupation codes for executives (corresponding for instance to plant manager, customer care manager, chief accountant, human resources manager, director supply chain, etc.). We run a wage regression with occupation fixed effects, while controlling only for age, age squared, seniority, seniority squared and year fixed effects. An occupation fixed effect measures how well the occupation pays. We consider that a worker changing job within the firm is promoted if she occupies a position with a higher occupation fixed effect.

2.2.2 Diplomas

An additional dataset supplied by the firm lists all the degrees declared by workers in plain text. The inclusion of the ID number allows us to match this dataset with payroll files. The description of diplomas provides us with enough details to code the type of education, the degree and, in most cases, the field of study. For tertiary education, it also gives the name of the institution that delivered the degree and the year of deliverance. All the information is recovered by searching keywords in the description of diploma in plain text.

We characterize degrees with three variables: the level of education, the type of tertiary education and the field of study. Classifications are based on a French survey on education and professional qualification (the *Formation et Qualification Professionnelle* survey). The level of education is coded in 7 categories corresponding to the number of years of education: lower secondary school completion, low vocational degree, high school completion, two years after high school (short track higher vocational education), three years after high school (college graduates), four years after high school, five years after high school and more (Master graduates). The field of study describes

the major of degree coded in 7 categories: general education, Sciences, Humanities / Law / Economics / Political Sciences, Literature / Languages, Engineering Sciences, Business / Administration and finally a category including everything else among which Health, Secretariat and Aesthetic.

There are 35,053 diplomas described in the degrees dataset and 83% of the 14,353 workers in the firm have declared at least one degree, the average being 2.6 degrees per worker (see Table A.1 in Appendix). We are not able to characterize precisely 4,701 reported degrees from their description but this concerns only 3.5% of workers in the payroll dataset with at least one reported diploma. Sometimes, the field of study cannot be determined because there is no or not enough information in the diploma description. The field of study cannot be determined for 5.5% of workers with at least one reported diploma.

As many workers report several diplomas, we code all of them to determine the highest diploma and characterize the educational attainment. As workers tend to report their highest degree with more care, we are confident that even when some degrees are not characterized, the fully-characterized degrees include the highest degrees. The highest degree is determined using the following criteria in descending order. First, we consider only diplomas associated with the highest number of years of education. Second, we consider the type of tertiary education (A+ Elite, other Elite, college, other) and give precedence to degrees obtained in a A+ Elite Institution or, if there is none, in another Elite institution. Third, we give precedence to French degrees and, fourth, we consider the most recent degree.

We exclude Ph.D from the list of potential highest degrees as PhD can be viewed in France as research oriented only and are never required to apply to any position in firms. They are not rewarded in the labour market for non-research positions and the highest diploma considered by firms are Master degrees. However, in the firm we study, holding a Ph.D allows newly hired workers to start their career at a higher rank in the hierarchy. Consequently, we sometimes control for a binary variable indicating whether the worker has a Ph.D or not.

2.3 Descriptive statistics

We first motivate our choice of focusing on executives by showing that 1/ they are the most numerous and with a large proportion of females, 2/ their gender wage gap is by far the largest, and 3/ their diplomas and fields of study are the best reported as they have more significance for high-skill jobs.

Executives are the most numerous with 5,136 workers in 2013 among whom 55.5% are females (see Table 2). They are followed by technicians that gather 3,571 workers, whereas blue collars and clerks are less numerous (1,501 and 545 workers, respectively). Gender wage differences occur only for executives for whom it reaches 15.9% whereas it is very small for other categories. This is confirmed by a comparison of gender log-wage densities which are represented in Figure 1.

Diplomas and fields of study can be much better coded for executives and technicians than for employees and blue collars. Diplomas are reported for as much as 93.5% of executives where the corresponding figure is 87.1%

for technicians and is below 65% for employees and blue collars (see Table A.1 in Appendix). Among workers reporting at least one diploma, the field of study can be determined for as much as 95.1% of executives, 94.3% of technicians but below 90% of employees and blue collars. Overall, it is possible to fully characterize at least one degree for 86.0% of executives, 80.2% of technicians and below 55% of employees and blue collars.

[*Insert Table 2 and Figure 1*]

From now on, we focus on executives and provide stylized facts on the sorting of males and females across diplomas and fields of study. We then give descriptive statistics on the gender gap in positions along the job hierarchy, the gender wage gap and how it evolves with firm tenure.

The proportions of males and females in A+ Elite institutions is similar around 20% (Table 3). Females more often have a college Master degree but less often a diploma from other Elite schools and other institutions. Overall, their education attainment is higher than that of males as 83.9% of them have at least a Master degree or equivalent compared to 82.5% of males. Females choose slightly different fields of study as they are a bit more in Sciences and in our residual category that includes health, secretariat and aesthetic. By contrast, males are more often in Engineering. Interestingly, the field of study chosen by the two genders varies depending on tertiary education. When focusing on workers from A+ Elite institutions, females are never in our residual category but choose slightly more often Business/Management and Humanities/Law/Economics/Political Science (Table 4). By contrast, among workers from college with at least a Master degree, females are quite often in our residual category and choose slightly less often Business/Management and Humanities/Law/Economics/Political Science.

[*Insert Tables 3 and 4*]

Descriptive statistics on the gender composition along the job hierarchy for executives show that the proportion of females is above 55% up to coefficient 510, but then declines sharply and becomes less than 25% at the two highest coefficients (see Table 1). Females are thus under-represented in top-level jobs. Interestingly though, females are more often promoted than males whether promotions are measured as coefficient changes or transitions to occupations which are on average better paid (see Table 5). For instance, the frequencies of promotions within 5 years for executives are around 40%. Coefficient changes occur for 48.0% of females but only 38.8% of males, and occupation transitions occur for 46.1% of females but only 42.7% of males. Executives from A+ Elite institutions are more often promoted than those from college with a Master degree. Within each of these two categories of tertiary educations, females are more often promoted than males. Nevertheless, promotions occur at a similar rate when considering only males and females at the beginning of their career within the firm. Indeed, gender gaps of promotions decrease and sometimes even change sign when considering only workers with a firm seniority of 10 years or less.

[*Insert Table 5*]

We then assess how the gender gap varies across tertiary educations. The gap is large for all categories, between 15 and 19 points, except for the “other” category for which it is 12.5 points (see Figure 2 and Table A.2). In particular, the gap is 17.4 points for workers from A+ Elite institutions and 15.6 points for those from college with at least a Master degree. Overall, the gap increases with firm tenure in all categories. For workers in A+ Elite institutions, it is close to zero until 9 years within the firm, but it then becomes positive and increases to 14 points after 15 years. For workers from college with at least a Master degree, the gap is initially negative at the entrance in the firm with females earning more than males, but it rapidly becomes positive and reaches 15 points after 15 years. Firm tenure captures both cohort effects and divergences in careers. In the next section, we will distinguish the gender gap due to divergences in careers by focusing on the wage evolution of a cohort of workers.

[*Insert Figure 2*]

3 Gender wage gap

We quantify the gender wage gap for executives and assess to what extent it is related to demographic characteristics, work time, type of tertiary education, diplomas and field of study. To establish a baseline, the logarithm of wage is first regressed on gender, age and its square, firm tenure and its square, as well as year dummies, and the gender gap is found to be 9.8 percentage points (Table 6). We then add variables capturing possible career interruptions and hours worked that include the family status, the number of children, full-time status and part-time rate. The gender gap decreases significantly to 6.9 percentage points. Adding also the type of tertiary education, diplomas and field of study affect only very marginally the gender gap. Interestingly, studying in a A+ elite institution has a sizable effect on wages since it involves a pay larger by 14 percentage points than for college graduates in the full specification. The field of study has somewhat the expected impact with workers in the categories Humanities/Law/Economics/Politics and Accounting/Management/Marketing having wage premium of 13.0 and 9.9 percentage points respectively compared to those in Sciences.

[*Insert Table 6*]

We then study separately executives from A+ Elite Institutions and those from college with at least a Master degree. There is a stark contrast between these two groups, the gender gap being much smaller for the educational elite in the full specification at 2.6 percentage points compared to 6.8 percentage points for workers from college (Table 7). There are other interesting differences with the full-time status and part-time rate having a much larger effect for the educational elite consistently with them occupying better jobs that require full participation. Their returns for the fields of study Humanities/Law/Economics/Politics and Accounting/Management/Marketing are also much larger than that of Sciences.

[*Insert Table 7*]

To assess the effect of time spent within the firm on the gender gap, we repeat the same exercise for the two groups restricting the sample to workers with a firm tenure of at least 10 years. Gender gaps are now much larger and very close for the educational elite and college graduates with a Master degree in the full specification at 8.9 percentage points (Table 8). Interestingly, the differences in the effects of hours worked and field of study between the two groups still exist and the one for the field of study is even more important than before. For the educational elite, the wage premia for the fields of study Humanities/Law/Economics/Politics and Accounting/Management/Marketing compared to Sciences are now around 40 percentage points. In line with the literature, taking into account the sorting of workers across fields of study decreases the gender gap for college workers. By contrast, it increases the one for the educational elite because females choose on average more lucrative fields of study than males.

[*Insert Table 8*]

There are two reasons why the gender gap is larger for longer firm tenure: cohort effects and career evolutions. We can measure the specific effect of career evolutions by restricting the analysis to white collars in the firm both in 2007 and 2013, and measuring the evolution of gender gap between the two dates. In order to avoid mixing different stages of careers and to focus only on early career evolutions, we consider only workers entering the firm between 2000 and 2007 and we end up with a sample of around 1000 workers. The gender gap is found to be rather small but increases from 2.8 percentage points to 5.2 percentage points (Table 9). Disparities between types of tertiary education and fields of study tend to increase although time variations are not always significant. In particular, the wage premia Accounting/Management/Marketing compared to Sciences climbs from 6.1 to 12.6 percentage points.

[*Insert Table 9*]

4 Gender differences in promotions

Before turning to promotions, we first conduct a descriptive exercise to check that most of the gender wage gap can be explained by the sorting of workers across firm departments, occupations and coefficients according to their gender. We consider a regression benchmark where only gender, firm tenure and its square (as wages are indexed on this tenure), age and its square (to capture residual experience effects for transferred workers), year dummies, full-time status and part-time rate are introduced. We then progressively introduce dummies for firm establishments, pay grades and occupations. Whereas the gender gap is 8.7 percentage points in the benchmark case, it remains rather stable when controlling for the place of work decreasing only to 8.1 percentage points (Table 10). When adding pay grades, it drops to 2.7 percentage points. This is expected as pay grades structure the way workers are remunerated. The gender gap decreases slightly more when adding dummies for occupations to 2.3 percentage points. We are not able to explain the residual gender wage gap but it could be due some leeway of the

firm when fixing wages for some types of diplomas.

[*Insert Table 10*]

We then repeat the exercise separately for workers from a A+ elite institution and those from college with at least a Master degree. Interestingly, the gender gap is better explained than for the whole sample (Table 11). When introducing all variables including firm establishments, pay grades and occupations, the residual gender wage gap is only 1.2 percentage points for the educational elite and 1.0 percentage points for college graduates. The decrease in the residual gender wage gap can be explained by some sorting of workers across tertiary teaching branches and residual variations in pay across these branches. Note that taking into account pay grades plays a major role for both groups.

[*Insert Table 11*]

Overall, we have seen that the gender gap can be largely explained by gender differences in the assignment of workers to coefficients and occupations. We now adopt a dynamic perspective and examine gender differences in promotions whether they are measured by coefficient changes or transitions to occupations that are better paid. We run logit regressions for being promoted for each type of promotions, adding successively control variables as in the case of our wage regressions. We find that whatever the type of promotions and controls, there is no significant gender difference in the probability of being promoted (see Tables 12 and 13). This result may first look surprising as we have found evidence of a gender wage gap growing with seniority and a small proportion of females at top positions. However, we consider together all kinds of promotions, and these include automatic coefficient changes with seniority at the beginning of the career and early occupation transitions characterized by small wage increases. These early-career promotions often occur for females who are more numerous at the lowest coefficients.

[*Insert Tables 12 and 13*]

Our interpretations are corroborated with results on the gender difference in wage growth over a 5-year period as it turns out to be negative even when running linear regressions in which the full set of controls is introduced (see Table 14). It is possible to conduct similar separate analyses for workers from A+ Elite institutions and those from college with at least a Master degree. There are stark differences in the gender gap of promotions within 5 years between the two groups: whereas this gap is not significant for workers from A+ Elite institutions when introducing our full set of controls, females are significantly more often promoted than males among workers from college with at least a Master degree. Interestingly, the gender gap in wage growth is not significant either for workers from A+ Elite institutions whereas females have a significantly lower wage growth than males among workers from college with at least a Master degree. This suggests that, whereas workers from A+ Elite institutions can be considered as a rather homogenous group where the two genders are treated rather equally, it is not the case for workers from

college with at least a Master degree.

[*Insert Table 14*]

5 Conclusion

In this paper, we studied the gender gaps in wages and promotions for executives in a large French firm in cosmetics over the 2007-2013 period. An emphasis was put on the comparison between workers educated in the best Elite institutions and those from college with at least a Master degree. We found that the gender wage gap is small for the educational elite whereas it is larger for college workers. Interestingly, when controlling for the field of study, the gap increases for the educational elite because females sort themselves in fields of study that are slightly more lucrative than those of males. Moreover, for the educational elite, we did not find any evidence of gender differences in promotions and wage growth over 5-year periods, which suggests a rather homogenous group and a rather equal treatment across gender. By contrast, among college workers, females are more often promoted but experience a smaller wage growth than males. This is consistent with females making more frequent early occupation transitions yielding small wage increases.

Several extensions of our work can be considered. First, we focused on gender differences in base wage but analyses could also be carried out for bonuses which are available in our dataset. One could also investigate arbitrages for the firm between promotions and bonuses. Second, it should be possible to construct an accurate description of the occupational hierarchy using a classification such as O*Net. This would make it easier to identify promotions towards jobs with more supervision of other workers and more responsibilities. Third, transitions between occupations could be used to identify fast tracks and they could then be related to the degree of supervision inherent to jobs and the diversity of jobs that need to be supervised. This step towards personal economics would enrich the analysis of gender differences within the firm.

6 Data appendix

This appendix contains additional information on data and variables. The level of education is based on a detailed classification in 56 categories mixing both the number of years of education and whether education is vocational or not. The classification is the one used in the *Formation et Qualification Professionnelle* (FQP) survey of the French Institute of Statistics (INSEE).⁵ We use a more aggregate version of the classification in 7 categories.

For the field of study, we follow as much as possible the detailed classification in 93 categories of the same survey and aggregate it in 7 categories.⁶ The description of degrees in plain text makes it possible to be as specific as

⁵See http://www.insee.fr/fr/themes/detail.asp?ref_id=ir-fqp03&page=irweb/fqp03/dd/doc/var/DIPDET.htm.

⁶See the dictionary pp. 144-145 given at the address: http://www.cmh.ens.fr/adisp/documents/lil-0321/fqp03fd_dicocodes.pdf.

required by the classification for most of degrees. When the description is not accurate enough, we attribute to the degree the closest aggregate category. For example, business schools are all classified in “business” although some students might specialize in administration.

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Table 1: Frequency and gender mean wage along the job hierarchy

Coefficient	Number of observations			Mean wage		
	Frequency	% column	% females	Males	Females	Gap (%)
350	660	13.4	59.8	3,351	3,370	0.6
400	1,106	23.6	62.6	4,268	4,214	-1.3
460	2,222	44.8	59.2	5,887	5,523	-6.2
480	149	3.5	69.8	4,646	4,711	1.4
510	110	2.2	59.1	5,553	5,380	-3.1
550	543	8.9	48.1	7,910	7,414	-6.3
660	205	2.7	38.0	11,697	12,052	3.0
770	93	0.7	23.7	17,541	17,620	0.4
880	23	0.2	21.7	25,273	26,117	3.3
Total	5,111	100.0	57.5			

Note: Information on coefficient is missing for 25 observations.

Table 2: Descriptive statistics by socio-professional category

	All	Executives	Technicians and foremen	Clerks	Blue Collars
Number of workers	10,753	5,136	3,571	545	1,501
Proportion of females (%)	60.6	55.5	67.6	71.0	50.8
Male mean wage	4541	6374	2867	2262	2244
Female mean wage	3903	5360	2913	2235	2232
Gender wage gap (%)	-14.0	-15.9	1.6	-1.2	-0.5

Table 3: Descriptive statistics on diplomas of executives in 2013

	All	Males	Females
Type of tertiary education			
A+ Elite Schools	21.5	21.8	21.2
Other Elite Schools	35.1	35.7	34.6
College (Master and more)	12.5	10.0	14.4
College (less than Master)	7.0	6.8	7.1
Other institutions	24.0	25.7	22.7
Educational attainment			
Master degree and more	83.3	82.5	83.9
Graduate	7.2	6.3	8.0
Some College	6.3	7.4	5.5
High school completion or less	3.2	3.8	2.6
Field of studies			
Sciences	14.1	12.4	15.5
Humanities, Law, Economics, Political Science	7.4	6.9	7.7
Literature, Art, Languages	3.1	2.5	3.6
Engineering	27.0	31.6	23.4
Business and management	42.6	42.7	42.5
Others (among which: health, secretary, aesthetic)	5.8	3.9	7.4
N	6405	2807	3598

Note: XXX

Table 4: Field of studies for executives in 2013, A+ Elite institution and college graduates with at least a Master degree

	All	Males	Females
A+ Elite Schools			
Sciences	9.4	9.2	9.6
Humanities, Law, Economics, Political Science	14.2	13.1	15.0
Literature, Art, Languages	0.7	0.3	0.9
Engineering	23.3	25.5	21.5
Business and management	52.4	51.9	52.8
Others (among which: health, secretary, aesthetic)	0.1	0.0	0.1
N	1374	613	761
College - Master degree and more			
Sciences	30.3	32.0	29.4
Humanities, Law, Economics, Political Science	14.8	16.0	14.2
Literature, Art, Languages	2.0	0.5	2.8
Engineering	19.7	19.6	19.7
Business and management	23.5	25.6	22.3
Others (among which: health, secretary, aesthetic)	9.8	6.4	11.6
N	801	282	519

Note: XXX

Table 5: Frequency of promotions

	All Executives			A+ Elite			College with Master degree		
	All	Males	Females	All	Males	Females	All	Males	Females
Within one year									
Promotion (coefficients)	11.39	10.23	12.3	14.44	13.51	15.22	11.06	9.33	11.97
Promotion (occupations)	13.4	12.94	13.76	18.48	17.5	19.29	10.7	9.9	11.13
N	20622	9073	11549	4140	1880	2260	2541	879	1662
Within two years									
Promotion (coefficients)	22.9	20.36	24.9	23.31	19.86	26.15	21.73	18.12	23.65
Promotion (occupations)	24.69	23.81	25.38	29.32	26.62	31.54	19.87	17.97	20.88
N	15491	6804	8687	3080	1390	1690	1988	690	1298
Within five years									
Promotion (coefficients)	43.93	38.81	47.99	51.87	48.11	54.9	43.55	35.81	47.91
Promotion (occupations)	44.6	42.68	46.12	58.5	52.97	62.96	39.94	37.55	41.28
N	4321	1912	2409	829	370	459	636	229	407
Firm tenure ≤ 10 years									
	All Executives			A+ Elite			College with Master degree		
	All	Males	Females	All	Males	Females	All	Males	Females
Within one year									
Promotion (coefficients)	16,02	15,35	16,46	18,57	18,55	18,58	15,06	13,12	15,99
Promotion (occupations)	16,59	16,9	16,38	20,99	21,05	20,95	12,5	12,13	12,68
N	12161	4846	7315	2892	1202	1690	1560	503	1057
Within two years									
Promotion (coefficients)	32,36	30,66	33,48	37,6	36,84	38,14	29,48	24,51	31,9
Promotion (occupations)	30,54	31,18	30,11	38,34	38,19	38,45	23,69	21,81	24,61
N	9205	3659	5546	2170	893	1277	1245	408	837
Within five years									
Promotion (coefficients)	58,9	55,01	61,47	65,12	66,67	64,06	57,87	46,26	64,29
Promotion (occupations)	53,12	53,07	53,16	66,15	64,14	67,54	46,49	42,86	48,5
N	2579	1027	1552	582	237	345	413	147	266

Table 6: Gender gap for executives

Variables	(1)	(2)	(3)	(4)	(5)
Female	-0.098 (0.004)***	-0.069 (0.004)***	-0.070 (0.003)***	-0.065 (0.003)***	-0.067 (0.003)***
Age	0.088 (0.002)***	0.080 (0.002)***	0.096 (0.002)***	0.103 (0.002)***	0.103 (0.002)***
Age squared	-0.001 (0.000)***	-0.001 (0.000)***	-0.001 (0.000)***	-0.001 (0.000)***	-0.001 (0.000)***
Firm tenure	0.003 (0.001)***	0.002 (0.001)***	-0.001 (0.001)	-0.003 (0.001)***	-0.002 (0.001)***
Firm tenure squared	-0.000 (0.000)***	-0.000 (0.000)***	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Couple		0.036 (0.005)***	0.024 (0.005)***	0.020 (0.005)***	0.021 (0.005)***
Sep., div., wid.		-0.040 (0.009)***	-0.028 (0.008)***	-0.032 (0.008)***	-0.033 (0.008)***
One child		-0.007 (0.006)	0.007 (0.005)	0.008 (0.005)	0.011 (0.005)**
Two children		0.046 (0.006)***	0.044 (0.005)***	0.044 (0.005)***	0.048 (0.005)***
Three children		0.124 (0.007)***	0.100 (0.007)***	0.091 (0.007)***	0.089 (0.006)***
Four children and more		0.230 (0.012)***	0.195 (0.011)***	0.187 (0.011)***	0.186 (0.010)***
Full-time		0.417 (0.083)***	0.501 (0.077)***	0.421 (0.075)***	0.443 (0.074)***
Part-time rate		0.003 (0.001)***	0.004 (0.001)***	0.003 (0.001)***	0.004 (0.001)***
High-School +4			-0.122 (0.007)***	-0.059 (0.007)***	-0.061 (0.007)***
High-School +3			-0.236 (0.015)***	-0.171 (0.015)***	-0.155 (0.015)***
High-School +2			-0.323 (0.006)***	-0.254 (0.007)***	-0.247 (0.007)***
High-School			-0.369 (0.011)***	-0.305 (0.012)***	-0.287 (0.012)***
Lesser tech. diploma			-0.444 (0.015)***	-0.379 (0.015)***	-0.370 (0.015)***
Secondary school			-0.188 (0.028)***	-0.119 (0.028)***	-0.084 (0.028)***
A+ Elite School				0.180 (0.005)***	0.140 (0.006)***
Other Elite School				0.094 (0.005)***	0.072 (0.005)***
Other				0.007 (0.005)	-0.011 (0.005)**
PhD					-0.022 (0.006)***
Hum., Law, Eco., Pol.					0.130 (0.007)***
Lit., Arts, Languages					-0.047 (0.010)***
Sciences Engineer					0.012 (0.005)**
Acc., Man., Marketing					0.099 (0.005)***
Secre., Health., Aesth.					0.020 (0.007)***
Constant	6.320 (0.038)***	6.029 (0.091)***	5.640 (0.085)***	5.476 (0.083)***	5.427 (0.082)***
R^2	0.43	0.45	0.53	0.55	0.57
N	26,506	26,506	26,506	26,506	26,506

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Year dummies included.

Table 7: Gender gap for executives, A+ Elite institution and college graduates with at least a Master degree

Variables	A+ Elite			College with Master degree		
	(1)	(2)	(3)	(1)	(2)	(3)
Female	-0.048 (0.007)***	-0.022 (0.007)***	-0.026 (0.007)***	-0.100 (0.009)***	-0.073 (0.009)***	-0.068 (0.009)***
Age	0.115 (0.005)***	0.116 (0.005)***	0.123 (0.005)***	0.090 (0.005)***	0.081 (0.005)***	0.081 (0.005)***
Age squared	-0.001 (0.000)***	-0.001 (0.000)***	-0.001 (0.000)***	-0.001 (0.000)***	-0.001 (0.000)***	-0.001 (0.000)***
Firm tenure	0.009 (0.002)***	0.008 (0.002)***	0.007 (0.002)***	-0.007 (0.002)***	-0.007 (0.002)***	-0.007 (0.002)***
Firm tenure squared	-0.000 (0.000)***	-0.000 (0.000)***	-0.000 (0.000)**	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Couple		0.013 (0.010)	0.010 (0.010)		-0.008 (0.012)	-0.010 (0.011)
Sep., div., wid.		-0.060 (0.022)***	-0.083 (0.021)***		-0.008 (0.022)	-0.015 (0.021)
One child		0.031 (0.012)**	0.033 (0.012)***		-0.007 (0.014)	-0.009 (0.013)
Two children		0.011 (0.012)	0.012 (0.012)		0.075 (0.013)***	0.079 (0.013)***
Three children		0.093 (0.015)***	0.069 (0.015)***		0.147 (0.016)***	0.139 (0.016)***
Four children and more		0.238 (0.023)***	0.226 (0.022)***		0.069 (0.026)***	0.056 (0.025)**
Full-time		0.792 (0.218)***	0.787 (0.206)***		0.171 (0.139)	0.146 (0.137)
Part-time rate		0.006 (0.003)**	0.007 (0.002)***		0.000 (0.002)	0.000 (0.002)
PhD			-0.044 (0.014)***			-0.038 (0.010)***
Hum., Law, Eco., Pol.			0.234 (0.015)***			0.134 (0.014)***
Sciences Engineer			0.112 (0.013)***			-0.019 (0.013)
Acc., Man., Marketing			0.237 (0.012)***			0.008 (0.013)
Secre., Health., Aesth.						-0.003 (0.015)
Constant	5.720 (0.088)***	4.895 (0.236)***	4.570 (0.223)***	6.226 (0.101)***	6.203 (0.170)***	6.213 (0.169)***
R^2	0.65	0.67	0.71	0.52	0.55	0.57
N	5,364	5,364	5,364	3,156	3,156	3,156

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Year dummies included.

Table 8: Gender gap for executives, A+ Elite institution and college graduates with at least a Master degree, seniority ≥ 10

Variables	A+ Elite			College with Master degree		
	(1)	(2)	(3)	(1)	(2)	(3)
Female	-0.146 (0.018)***	-0.069 (0.019)***	-0.089 (0.017)***	-0.156 (0.016)***	-0.110 (0.016)***	-0.089 (0.016)***
Age	0.039 (0.020)*	0.071 (0.020)***	0.121 (0.018)***	0.067 (0.016)***	0.062 (0.016)***	0.069 (0.015)***
Age squared	-0.000 (0.000)	-0.001 (0.000)***	-0.001 (0.000)***	-0.001 (0.000)***	-0.001 (0.000)***	-0.001 (0.000)***
Firm tenure	0.054 (0.011)***	0.038 (0.011)***	0.014 (0.010)	-0.002 (0.009)	-0.003 (0.009)	-0.008 (0.009)
Firm tenure squared	-0.001 (0.000)***	-0.001 (0.000)***	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Couple		-0.081 (0.034)**	-0.073 (0.030)**		-0.021 (0.025)	-0.034 (0.024)
Sep., div., wid.		-0.206 (0.049)***	-0.261 (0.044)***		-0.045 (0.035)	-0.071 (0.034)**
One child		0.218 (0.040)***	0.188 (0.035)***		0.024 (0.030)	0.016 (0.029)
Two children		0.114 (0.034)***	0.097 (0.030)***		0.119 (0.024)***	0.135 (0.024)***
Three children		0.210 (0.036)***	0.137 (0.032)***		0.167 (0.028)***	0.173 (0.027)***
Four children and more		0.339 (0.044)***	0.304 (0.039)***		0.086 (0.038)**	0.089 (0.037)**
Full-time		1.153 (0.357)***	1.042 (0.317)***		0.097 (0.184)	0.052 (0.180)
Part-time rate		0.010 (0.004)**	0.010 (0.004)***		-0.001 (0.002)	-0.001 (0.002)
PhD			-0.000 (0.029)			-0.034 (0.017)**
Hum., Law, Eco., Pol.			0.397 (0.029)***			0.191 (0.024)***
Sciences Engineer			0.142 (0.024)***			-0.045 (0.024)*
Acc., Man., Marketing			0.432 (0.023)***			0.010 (0.028)
Secre., Health., Aesth.						-0.063 (0.027)**
Constant	7.194 (0.399)***	5.365 (0.524)***	4.305 (0.471)***	6.823 (0.326)***	6.778 (0.368)***	6.652 (0.366)***
R^2	0.22	0.29	0.44	0.23	0.28	0.33
N	1,867	1,867	1,867	1,403	1,403	1,403

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Year dummies included.

Table 9: Gender gap cohort of executives with 0-7 years of firm tenure in 2007 and 2013

Variables	2007			2013		
	(1)	(2)	(3)	(1)	(2)	(3)
Female	-0.028 (0.012)**	-0.021 (0.012)*	-0.028 (0.011)**	-0.055 (0.015)***	-0.037 (0.015)**	-0.052 (0.014)***
Age	0.049 (0.010)***	0.044 (0.010)***	0.055 (0.010)***	0.023 (0.015)	0.024 (0.015)	0.038 (0.014)***
Age squared	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)
Firm tenure	-0.009 (0.010)	-0.009 (0.010)	-0.016 (0.009)*	0.076 (0.032)**	0.081 (0.032)**	0.067 (0.029)**
Firm tenure squared	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	-0.004 (0.002)**	-0.004 (0.002)**	-0.003 (0.002)**
Couple		0.010 (0.015)	-0.003 (0.015)		0.024 (0.020)	0.001 (0.019)
Sep., div., wid.		-0.014 (0.035)	-0.033 (0.033)		0.060 (0.041)	0.023 (0.038)
One child		0.006 (0.017)	0.015 (0.017)		-0.000 (0.023)	0.014 (0.021)
Two children		0.032 (0.018)*	0.038 (0.017)**		0.005 (0.023)	0.014 (0.021)
Three children		0.088 (0.027)***	0.084 (0.025)***		0.068 (0.031)**	0.065 (0.029)**
Four children and more		0.114 (0.055)**	0.091 (0.051)*		0.087 (0.063)	0.060 (0.058)
Full-time		-0.467 (0.568)	0.180 (0.543)		0.619 (0.306)**	0.610 (0.283)**
Part-time rate		-0.007 (0.007)	0.001 (0.007)		0.006 (0.004)	0.006 (0.003)*
High-School +4			-0.045 (0.027)*			-0.072 (0.033)**
High-School +3			-0.176 (0.071)**			-0.161 (0.088)*
High-School +2			-0.119 (0.035)***			-0.142 (0.044)***
High-School			-0.291 (0.072)***			-0.233 (0.089)***
Secondary school			0.067 (0.121)			0.155 (0.150)
A+ Elite School			0.072 (0.018)***			0.100 (0.023)***
Other Elite School			0.056 (0.017)***			0.069 (0.021)***
Other			-0.005 (0.020)			0.000 (0.025)
PhD			-0.049 (0.019)**			-0.045 (0.024)*
Hum., Law, Eco., Pol.			0.078 (0.026)***			0.135 (0.033)***
Lit., Arts, Languages			-0.031 (0.041)			-0.001 (0.051)
Sciences Engineer			-0.002 (0.016)			-0.008 (0.020)
Acc., Man., Marketing			0.061 (0.016)***			0.126 (0.020)***
Secre., Health., Aesth.			0.052 (0.030)*			0.094 (0.037)**
Constant	6.895 (0.166)***	7.442 (0.592)***	6.499 (0.570)***	7.411 (0.302)***	6.738 (0.429)***	6.358 (0.402)***
R^2	0.61	0.62	0.67	0.31	0.34	0.45
N	972	972	972	972	972	972

Table 10: Gender gap for all executives, sorting across occupations

Variables	(1)	(2)	(3)	(4)
Female	-0.087 (0.004)***	-0.081 (0.004)***	-0.027 (0.002)***	-0.023 (0.002)***
Age	0.090 (0.002)***	0.090 (0.002)***	0.063 (0.001)***	0.051 (0.001)***
Age squared	-0.001 (0.000)***	-0.001 (0.000)***	-0.001 (0.000)***	-0.000 (0.000)***
Firm tenure	0.004 (0.001)***	0.004 (0.001)***	-0.009 (0.001)***	-0.009 (0.000)***
Firm tenure squared	-0.000 (0.000)***	-0.000 (0.000)***	0.000 (0.000)***	0.000 (0.000)***
Full-time	0.273 (0.084)***	0.304 (0.083)***	0.225 (0.052)***	0.170 (0.041)***
Part-time rate	0.002 (0.001)*	0.003 (0.001)**	0.002 (0.001)***	0.002 (0.000)***
Firm department 2		-0.033 (0.008)***	-0.009 (0.005)*	-0.053 (0.004)***
Firm department 3		-0.190 (0.025)***	0.019 (0.015)	-0.040 (0.015)**
Firm department 4		-0.050 (0.007)***	-0.008 (0.004)*	-0.051 (0.004)***
Firm department 5		-0.064 (0.006)***	-0.009 (0.003)***	-0.043 (0.004)***
Firm department 6		-0.065 (0.008)***	0.024 (0.005)***	-0.021 (0.005)***
Firm department 7		-0.033 (0.007)***	0.003 (0.004)	-0.045 (0.004)***
Firm department 8		-0.124 (0.005)***	-0.101 (0.004)***	-0.052 (0.005)***
Coef. 400: white collars			0.061 (0.005)***	0.045 (0.004)***
Coef. 460: white collars			0.264 (0.005)***	0.187 (0.004)***
Coef. 480: researchers			0.213 (0.008)***	0.212 (0.007)***
Coef. 510: researchers			0.313 (0.010)***	0.260 (0.008)***
Coef. 550: before managerial			0.540 (0.007)***	0.385 (0.006)***
Coef. 660: managerial			0.957 (0.007)***	0.652 (0.007)***
Coef. 770: managerial			1.309 (0.011)***	0.922 (0.010)***
Coef. 880: managerial			1.636 (0.015)***	1.099 (0.014)***
Constant	5.998 (0.092)***	6.014 (0.091)***	6.620 (0.058)***	6.858 (0.083)***
Occupation code incl.	N	N	N	Y
R^2	0.43	0.44	0.79	0.88
N	26,506	26,506	26,506	26,505

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Year dummies included.

Table 11: Gender gap for executives, A+ Elite institution and college graduates with at least a Master degree, sorting across occupations

Variables	A+ Elite			College with Master degree		
	(1)	(2)	(3)	(1)	(2)	(3)
Female	-0.028 (0.007)***	-0.002 (0.005)	-0.012 (0.004)***	-0.086 (0.009)***	-0.029 (0.006)***	-0.010 (0.005)*
Age	0.120 (0.005)***	0.106 (0.004)***	0.085 (0.003)***	0.093 (0.005)***	0.088 (0.004)***	0.062 (0.004)***
Age squared	-0.001 (0.000)***	-0.001 (0.000)***	-0.001 (0.000)***	-0.001 (0.000)***	-0.001 (0.000)***	-0.001 (0.000)***
Firm tenure	0.011 (0.002)***	-0.004 (0.001)***	-0.004 (0.001)***	-0.006 (0.002)***	-0.012 (0.002)***	-0.011 (0.001)***
Firm tenure squared	-0.000 (0.000)***	0.000 (0.000)	0.000 (0.000)*	0.000 (0.000)	0.000 (0.000)***	0.000 (0.000)***
Full-time	0.536 (0.220)**	0.185 (0.144)	0.009 (0.118)	0.069 (0.140)	-0.049 (0.097)	-0.074 (0.075)
Part-time rate	0.003 (0.003)	0.001 (0.002)	-0.000 (0.001)	-0.000 (0.002)	-0.001 (0.001)	-0.001 (0.001)
Firm department 2		0.034 (0.010)***	-0.037 (0.009)***		0.009 (0.016)	-0.006 (0.016)
Firm department 3		0.134 (0.048)***	-0.016 (0.036)		0.131 (0.050)***	0.019 (0.052)
Firm department 4		0.031 (0.009)***	-0.023 (0.009)**		-0.015 (0.016)	-0.043 (0.016)***
Firm department 5		0.023 (0.007)***	-0.006 (0.008)		-0.037 (0.011)***	-0.067 (0.013)***
Firm department 6		0.071 (0.010)***	0.005 (0.010)		-0.013 (0.016)	-0.039 (0.016)**
Firm department 7		0.026 (0.009)***	-0.018 (0.009)**		-0.005 (0.016)	-0.049 (0.016)***
Firm department 8		-0.113 (0.009)***	-0.052 (0.013)***		-0.096 (0.009)***	-0.064 (0.013)***
Coef. 400: white collars		0.052 (0.009)***	0.033 (0.007)***		0.015 (0.014)	0.023 (0.011)**
Coef. 460: white collars		0.199 (0.012)***	0.115 (0.010)***		0.129 (0.015)***	0.119 (0.012)***
Coef. 480: researchers		0.103 (0.020)***	0.106 (0.016)***		0.100 (0.018)***	0.146 (0.015)***
Coef. 510: researchers		0.209 (0.023)***	0.169 (0.020)***		0.159 (0.021)***	0.167 (0.017)***
Coef. 550: before managerial		0.386 (0.016)***	0.262 (0.014)***		0.320 (0.018)***	0.247 (0.016)***
Coef. 660: managerial		0.750 (0.017)***	0.495 (0.015)***		0.678 (0.021)***	0.494 (0.020)***
Coef. 770: managerial		1.100 (0.022)***	0.807 (0.020)***		1.109 (0.046)***	0.768 (0.054)***
Coef. 880: managerial		1.418 (0.025)***	0.993 (0.024)***		1.377 (0.034)***	0.819 (0.059)***
Constant	5.090 (0.237)***	5.818 (0.159)***	6.389 (0.180)***	6.088 (0.172)***	6.386 (0.123)***	7.122 (0.121)***
Occupation code incl.	N	N	Y	N	N	Y
R^2	0.66	0.86	0.93	0.53	0.78	0.90
N	5,364	5,364	5,363	3,156	3,156	3,156

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Year dummies included.

Table 12: Effect of gender on promotion measured by a coefficient change within 5 years

	(1)	(2)	(3)	(4)	(5)
Female	0.044 (0.076)	-0.010 (0.081)	0.029 (0.081)	0.027 (0.081)	0.067 (0.084)
Age	-0.648*** (0.043)	-0.392*** (0.059)	-0.445*** (0.059)	-0.455*** (0.060)	-0.480*** (0.062)
Age squared	0.006*** (0.001)	0.003*** (0.001)	0.004*** (0.001)	0.004*** (0.001)	0.004*** (0.001)
Firm tenure		-0.135*** (0.020)	-0.135*** (0.020)	-0.133*** (0.020)	-0.125*** (0.020)
Firm tenure squared		0.005*** (0.001)	0.004*** (0.001)	0.004*** (0.001)	0.005*** (0.001)
Couple		0.129 (0.113)	0.169 (0.114)	0.174 (0.114)	0.161 (0.116)
Sep., div., wid.		-0.247 (0.192)	-0.273 (0.193)	-0.266 (0.193)	-0.223 (0.196)
One child		-0.165 (0.128)	-0.225* (0.129)	-0.228* (0.129)	-0.239* (0.131)
Two children		-0.273** (0.122)	-0.293** (0.123)	-0.297** (0.123)	-0.297** (0.126)
Three children		-0.243 (0.149)	-0.217 (0.151)	-0.213 (0.151)	-0.164 (0.154)
Four children and more		-0.480* (0.253)	-0.410 (0.257)	-0.411 (0.257)	-0.349 (0.259)
Full-time		-0.434*** (0.155)	-0.478*** (0.157)	-0.478*** (0.157)	-0.314* (0.161)
High-School +4			-0.061 (0.161)	-0.116 (0.166)	0.003 (0.172)
High-School +3			-0.394 (0.433)	-0.460 (0.436)	-0.290 (0.440)
High-School +2			0.808*** (0.135)	0.759*** (0.153)	1.001*** (0.162)
High-School			1.046*** (0.239)	1.005*** (0.255)	1.154*** (0.261)
Lesser tech. diploma			0.544 (0.348)	0.500 (0.359)	0.782** (0.370)
Secondary school			-0.864 (0.671)	-0.913 (0.678)	-1.082 (0.750)
A+ Elite School				-0.127 (0.123)	0.097 (0.132)
Other Elite School				-0.124 (0.108)	0.077 (0.117)
Other				-0.034 (0.120)	0.160 (0.129)
PhD					1.103*** (0.131)
Sciences					-0.675*** (0.192)
Hum., Law, Eco., Pol.					0.201 (0.287)
Lit., Arts, Languages					-0.073 (0.112)
Sciences Engineering					-0.270** (0.111)
Acc., Man., Marketing					-0.529*** (0.178)
Year 2008	-0.127* (0.074)	-0.137* (0.075)	-0.140* (0.076)	-0.139* (0.076)	-0.129* (0.077)
Constant	14.668*** (0.833)	10.806*** (1.092)	11.801*** (1.107)	12.094*** (1.132)	12.588*** (1.169)
N	4,321	4,321	4,321	4,321	4,321

Table 13: Effect of gender on promotion measured by an occupation change within 5 years

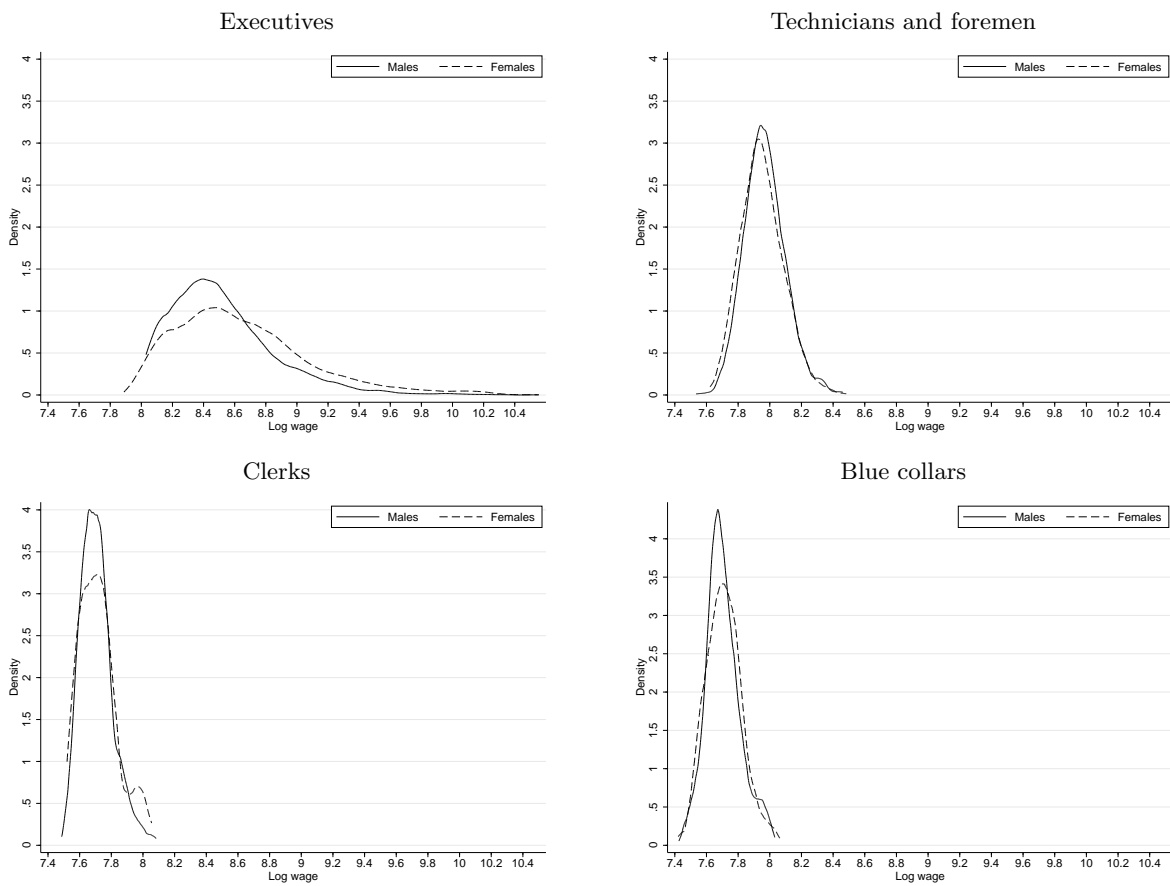
	(1)	(2)	(3)	(4)	(5)
Female	-0.051 (0.065)	0.002 (0.068)	0.003 (0.069)	0.014 (0.069)	0.028 (0.070)
Age	-0.077** (0.034)	-0.121*** (0.046)	-0.099** (0.047)	-0.070 (0.047)	-0.081* (0.047)
Age squared	0.000 (0.000)	0.001 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
Firm tenure		0.032* (0.018)	0.029 (0.018)	0.021 (0.018)	0.023 (0.019)
Firm tenure squared		-0.001 (0.001)	-0.001 (0.001)	-0.000 (0.001)	-0.001 (0.001)
Couple		0.192** (0.095)	0.191** (0.095)	0.168* (0.096)	0.167* (0.096)
Sep., div., wid.		0.218 (0.160)	0.215 (0.161)	0.188 (0.161)	0.194 (0.162)
One child		-0.303*** (0.109)	-0.283*** (0.109)	-0.272** (0.110)	-0.271** (0.110)
Two children		-0.029 (0.106)	-0.027 (0.106)	-0.020 (0.107)	-0.015 (0.107)
Three children		-0.101 (0.129)	-0.131 (0.130)	-0.146 (0.130)	-0.136 (0.131)
Four children and more		-0.289 (0.213)	-0.329 (0.214)	-0.345 (0.215)	-0.333 (0.215)
Full-time		0.354** (0.147)	0.378** (0.148)	0.391*** (0.148)	0.407*** (0.149)
High-School +4			-0.303** (0.139)	-0.143 (0.144)	-0.121 (0.145)
High-School +3			-0.527 (0.357)	-0.343 (0.359)	-0.179 (0.366)
High-School +2			-0.253** (0.125)	-0.005 (0.140)	0.065 (0.145)
High-School			-0.695*** (0.259)	-0.427 (0.269)	-0.364 (0.273)
Lesser tech. diploma			-0.358 (0.333)	-0.084 (0.342)	0.040 (0.349)
Secondary school			-2.650** (1.035)	-2.362** (1.038)	-2.333** (1.042)
A+ Elite School				0.486*** (0.104)	0.450*** (0.110)
Other Elite School				0.165* (0.092)	0.144 (0.098)
Other				-0.128 (0.104)	-0.118 (0.111)
PhD					0.204* (0.111)
Sciences					0.042 (0.150)
Hum., Law, Eco., Pol.					-0.500* (0.257)
Lit., Arts, Languages					0.078 (0.095)
Sciences Engineering					0.135 (0.093)
Acc., Man., Marketing					-0.117 (0.156)
Year 2008	0.043 (0.064)	0.048 (0.064)	0.046 (0.064)	0.046 (0.065)	0.046 (0.065)
Constant	2.539*** (0.640)	2.901*** (0.853)	2.481*** (0.862)	1.721* (0.884)	1.833** (0.889)
N	4,321	4,321	4,321	4,321	4,321

Table 14: Gender gap in promotion and wage evolution by tertiary education

	All Executives			A+ Elite			College with Master degree		
	Age, Firm tenure	+ Family and Full-time	+ Diploma and field of study	Age, Firm tenure	+ Family and Full-time	+ Diploma and field of study	Age, Firm tenure	+ Family and Full-time	+ Diploma and field of study
<i>Within one year</i>									
Promotion (coefficients)	0.036	0.031	0.033	-0.065	-0.067	-0.058	0.152	0.178	0.173
Promotion (occupations)	-0.048	-0.011	-0.003	-0.020	-0.003	-0.017	0.070	0.042	0.057
Wage growth	-0.0029***	-0.0021***	-0.0023**	-0.0002	0.0004	-0.0005	-0.0043***	-0.0033**	-0.0032**
<i>Within two years</i>									
Promotion (coefficients)	0.038	0.028	0.036	-0.034	-0.027	-0.019	0.190	0.246*	0.240*
Promotion (occupations)	-0.064	-0.026	-0.012	0.009	0.019	0.001	0.117	0.105	0.132
Wage growth	-0.0052***	-0.0037***	-0.0041***	0.0001	0.0017	-0.0002	-0.0079***	-0.0058***	-0.0058**
<i>Within five years</i>									
Promotion (coefficients)	0.044	-0.010	0.067	-0.199	-0.245	-0.137	0.353*	0.458**	0.496**
Promotion (occupations)	-0.051	0.002	0.028	0.146	0.172	0.158	0.059	0.095	0.143
Wage growth	-0.0097***	-0.0066**	-0.0082***	-0.0003	0.0040	-0.0042	-0.0159**	-0.0106	-0.0088
<i>Tenure ≤ 10 years</i>									
	All Executives			A+ Elite			College with Master degree		
	Age, Firm tenure	+ Family and Full-time	+ Diploma and field of study	Age, Firm tenure	+ Family and Full-time	+ Diploma and field of study	Age, Firm tenure	+ Family and Full-time	+ Diploma and field of study
<i>Within one year</i>									
Promotion (coefficients)	0.019	0.014	0.005	-0.067	-0.034	-0.025	0.179	0.116	0.090
Promotion (occupations)	-0.078	-0.065	-0.061	-0.062	-0.050	-0.062	0.029	-0.021	0.003
Wage growth	-0.0041***	-0.0039***	-0.0041***	-0.0006	-0.0005	-0.0012	-0.0075***	-0.0065***	-0.0064***
<i>Within two years</i>									
Promotion (coefficients)	0.035	0.038	0.031	-0.056	0.013	0.019	0.287**	0.230	0.202
Promotion (occupations)	-0.115**	-0.096**	-0.097**	-0.069	-0.046	-0.067	0.130	0.063	0.107
Wage growth	-0.0081***	-0.0072***	-0.0079***	-0.0004	-0.0001	-0.0016	-0.0132***	-0.0110***	-0.0110***
<i>Within five years</i>									
Promotion (coefficients)	0.156	0.049	0.103	-0.527**	-0.355	-0.350	0.560**	0.538**	0.730***
Promotion (occupations)	-0.128	-0.088	-0.098	0.040	0.106	0.058	0.152	0.065	0.085
Wage growth	-0.0153***	-0.0117***	-0.0155***	.0011	.0032	-0.0057	-0.0263***	-0.0193**	-0.0173*

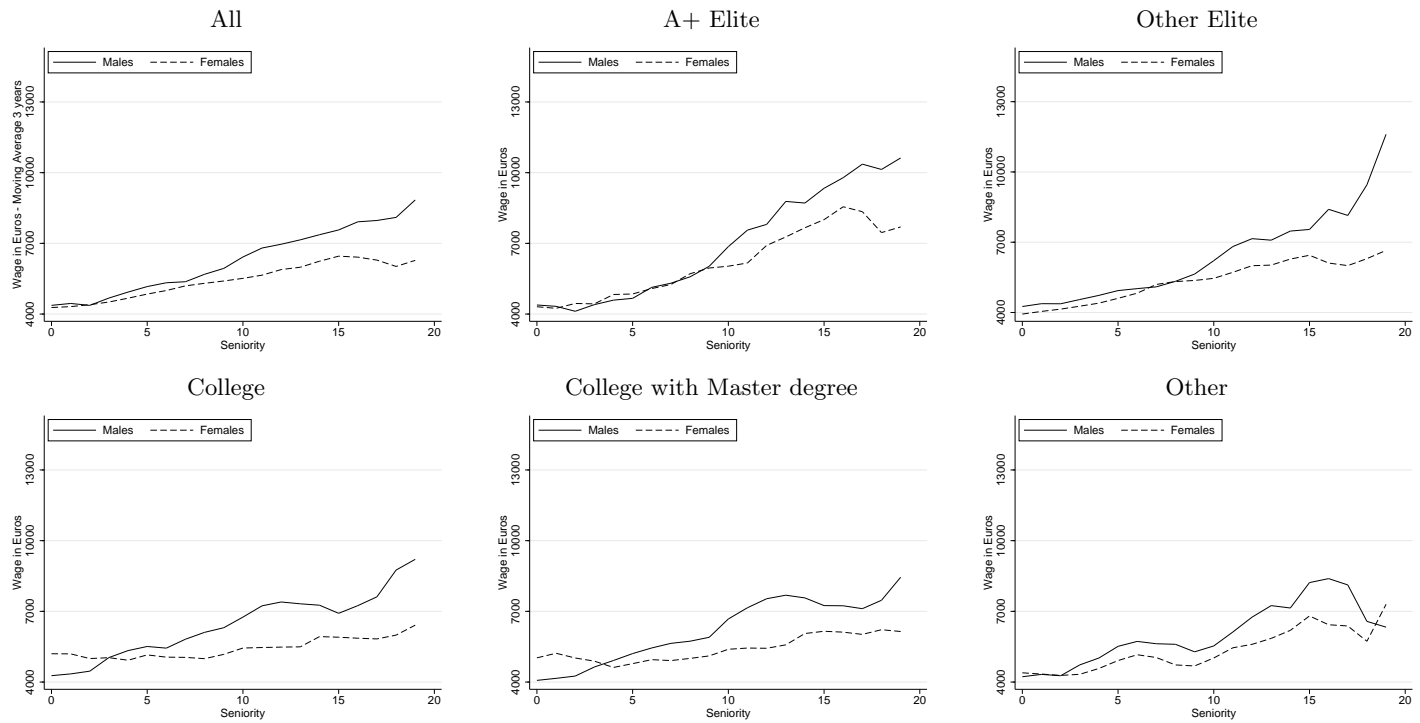
Note: The gender gap is reported in each column when controlling in the first column for year dummies, age, age squared, firm tenure, firm tenure squared; in the second column by the same variables plus couple, sep., div., wid., one child, two children, three children, four children and more, full-time; in the third column by the same variables plus secondary school, lesser tech. diploma, high-school, high-school +2, high-school +3, high-school +4, A+ Elite School, other Elite School, other, PhD, sciences, hum., law, eco., pol., lit., arts, languages, sciences engineering, acc., man., marketing.

Figure 1: Gender wage densities by socio-professional category by type of tertiary education



Note: XXX

Figure 2: Gender wage gap as a function of firm seniority for executives, by type of tertiary education



Note: For firm tenure larger than one, gender average wage is computed as a moving average over three years.

Table A.1: Coding of diplomas and fields of study

	Executives			Clerks			Blue collars			Technicians and foremen		
	All	Males	Females	All	Males	Females	All	Males	Females	All	Males	Females
% without any reported degree	6.5	6.9	6.1	38.8	39.8	38.4	50	46.2	53.4	12.9	16.7	11.4
% with at least 1 reported degree without any coded level of education	3.3	4.1	2.7	4.6	6.3	4.0	7.9	8.0	7.8	2.3	2.5	2.3
% with at least 1 coded level degree without any coded field of study	4.9	4.7	5.1	12.9	12.9	12.9	11.6	13.8	9.3	5.7	6.4	5.5
% without any fully characterized degree	14.0	14.9	13.3	49.2	50.1	48.5	59.3	57.4	61.1	19.8	23.9	18.1
Average number of reported degrees	2.0	1.9	2.1	1.1	1.0	1.2	0.8	0.9	0.7	1.9	1.8	2.0
Average number of reported fully characterized degrees	1.5	1.4	1.5	0.8	0.7	0.8	0.5	0.6	0.5	1.5	1.4	1.5
XXX												

Table A.2: Gender wage gap (F-W) in percentage points by tertiary education and firm tenure

Firm seniority	All	A+ Elite	Other Elite	College	College with Master degree	Others
All	-18.9	-17.4	-17.3	-18.5	-15.6	-12.5
0 year	-2.1	-1.6	-7.5	21.7	23.4	-3.6
5 years	-4.8	3.9	-6.6	-6.5	-8.2	-14.1
10 years	-13.2	-12.1	-19.4	-12.0	-19.2	-12.1
15 years	-15.1	-14.2	-16.1	-14.7	-15.0	-13.3