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Gender gaps and the role of female bosses: evidence from matched employer-employee administrative data

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Abstract

While a large body of literature has focused on identifying the causes of female under-representation at hierarchical positions, we still know little about the effects of having more women with decision-making power at top positions. Using matched employer-employee administrative data for Uruguay, this paper investigates how the gender composition at hierarchical positions of the firms affects the wage gaps among male and female employees. Our results show that having a higher proportion of female bosses at the firms leads to lower pay gaps. Including workers' and bosses' fixed effects to account for unobserved heterogeneity, we find that working in a firm with increasing participation of female bosses reduces the gender pay gap by between 1.15 and 4.27 log points. The gender pay gaps are substantially lower among civil servants compared to those of private workers, but even in these large public firms having female bosses reduces the gender wage gaps. We present suggestive evidence that gender differences in the entrance wage offered to males compared to that offered to female workers partially explain these results. Moreover, women working in public firms are between 2.9% and 4.3% more likely to be promoted when working for female bosses.

JEL Classification: D10, J16, J22

Key words: gender gaps, firms, bosses, promotions

Resumen

Gran parte de la literatura se ha centrado en identificar las causas de la subrepresentación femenina en los puestos jerárquicos, sin embargo, todavía sabemos poco sobre los efectos de tener más mujeres con poder de decisión en los puestos superiores. Utilizando datos administrativos emparejados de empleador-empleado para Uruguay, este documento investiga cómo la composición de género en los puestos jerárquicos de las empresas afecta las brechas salariales entre empleados y empleadas. Nuestros resultados muestran que, tener una mayor proporción de mujeres jefas en las empresas conduce a menores brechas salariales. Cuando se incluyen efectos fijos de los trabajadores y los jefes para dar cuenta de la heterogeneidad no observada, encontramos que trabajar en una empresa con una participación creciente de jefas reduce la brecha salarial de género entre 1,15 y 4,27 puntos logarítmicos. Las brechas salariales de género son sustancialmente más bajas entre los funcionarios públicos en comparación con las de los trabajadores privados, pero incluso en estas grandes empresas públicas, tener jefas reduce las brechas salariales de género. Presentamos evidencia sugestiva de que las diferencias de género en el salario inicial ofrecido a los hombres en comparación con el ofrecido a las trabajadoras explican parcialmente estos resultados. Además, las mujeres que trabajan en empresas públicas tienen entre un $2.9\,\%$ y un $4.3\,\%$ más de posibilidades de ser promovidas cuando trabajan para jefas.

Clasificación JEL: D10, J16, J22

Palabras clave: brechas de género, firmas, jefes, promociones

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1 Introduction

Despite significant advancements in female education and labor force participation, persistent gender disparities in labor market outcomes continue to be a major concern. While the process of gender convergence in labor market outcomes had accelerated until the 1990s, it has since slowed down (Goldin et al., 2017; Olivetti and Petrongolo, 2017; Blau and Kahn, 2017; Goldin, 2014). In particular, women continue to earn less than men, and they are underrepresented at the hierarchical positions of the firms (Bertrand, 2018; Olivetti and Petrongolo, 2016). To address these disparities, a large body of literature has focused on identifying the causes of female under-representation at hierarchical positions and examining the effectiveness of policies that target these issues (Maida and Weber, 2022; Dalvit et al., 2021; Bertrand et al., 2019; Kunze and Miller, 2017). Such policies include gender quotas for board seats in large firms, which aim to break the glass ceiling, and can directly and indirectly affect women's salaries by providing them with access to decision-making positions and indirectly diminishing discrimination, improving matching productivity and providing a better working environment for female workers (Drechsel-Grau and Holub, 2020; Bertrand et al., 2019; Flabbi et al., 2019). Therefore, it is argued that a greater number of female bosses would decrease the gender gaps and thus contribute to overcoming the structural disadvantage for women (Niederle and Vesterlund, 2011, 2010, 2007).

With the increasing availability of databases connecting workers and companies over the years, there has been a focus on analyzing the role of bosses and firms in gender disparities, particularly in developed countries (Cardoso and Winter-Ebmer, 2010; Blau and Kahn, 2013; Hirsch, 2013; Bertrand, 2011). However, our understanding of the effects of increasing the number of women in decision-making positions at the firm hierarchy on gender wage gaps among employees is still limited. In this study, we aim to investigate the influence of gender representation in hierarchical positions within firms on the labor earnings of both male and female employees. To achieve this, we use matched employer-employee administrative data from Uruguay. Our primary objective is to investigate the relationship between the presence of female bosses in a firm and the gender gaps among employees. Furthermore, we analyze potential differences in these effects between private firms and the public sector. Additionally, we seek to identify the specific mechanisms through which these effects take place, shedding light on the underlying factors that contribute to changes in gender wage gaps.

We base our analysis on firms' declarations to the social security administration, spanning from 1997-2013, that include full employment histories of all formal workers, allowing us to identify each employee's coworkers and bosses at each firm.¹ We analyze separately the incidence of bosses in private and public sectors, as wage-setting in these areas can have legal and practical differences. We explore the impact of bosses on workers' earnings when they have different ranges of action to offer wages and exert their bargaining power.

We begin by documenting the role of bosses on the gender pay gap within firms. For that we estimate a two-way fixed effects AKM regression (Abowd et al., 1999), a method previously used in literature to analyze the role of firms in the gender wage gap (Casarico and Lattanzio, 2019; Sorkin, 2017; Card et al., 2016). In this paper we focus on the role of the group of bosses, finding that bosses' premiums account for 18 to 33 percent of the overall gender gap.

Then, the main set of results focuses on investigating the specific incidence of having female bosses on the gender wage gap among employees. In the absence of quotas legislation, we examine the effects by observing changes in the sex composition of a boss's group when a member of the group changes. We employ two strategies to analyze these effects. First, we estimate the differential impact on male and female employees working at a firm where a significant proportion of bosses are females. As in previous studies (Drechsel-Grau and Holub, 2020), we do this in a difference-in-difference framework, by estimating regression models where we see the effect of the worker's gender and the interaction between the worker's gender and the gender of the bosses on salaries and wages. We include workers' and bosses fixed effects in our main specification to account for the unobserved heterogeneity, identifying by how much the gender wage gap changes when bosses at the firm are females rather than males. We use six thresholds to assess whether there is a relationship between female participation in boards and the workers' gender earnings gap. Second, we consider a dynamic analysis and analyze whether a change in the gender composition within the bosses' group changes the gender gap through an event study analysis. We define the event when a female boss enters a firm with an entire masculine bosses group.

Our results show that having a higher representation of female bosses at private firms correlates with a lower gender pay gap. The adjusted pay gap in firms with only male bosses is 23.3 log points. Both men and women working in firms with females among the group of bosses earn, on average lower salaries than those in firms where all bosses are male. This suggests that the sorting of bosses across firms seems to play some role. However, the gender salary gap in firms with female boss representation is always smaller than in those with only male bosses accounting for unobserved heterogeneity of bosses and employees. These differences increase with female

¹We identify the group of bosses in each private firm and public institution by the declaration in the social security agency, and to each firm j we assign a bosses' group at time t.

representation, from 1.15 log points when there is at least one female to 4.27 log points when representation is above three-quarters. Gap narrowing is less pronounced when taking hourly wages instead of salaries: women earn between 0.69 and 1.92 log points with representation between one-third and three-quarters of the group of bosses. In the public sector, there is less room for bosses to decide on wages. Thus, we would expect lower gender gaps and smaller impacts of the bosses' group on wages. Our results show smaller gender gaps in the public sector and a similar pattern to that found in the private sector, with lower earnings in firms with female bosses. However, we found that the gender gap when working for female bosses is reduced between 0.6 and 1.8 log points in salaries and hourly wages only when female participation is below one-third and decreases in representation. These results differ from those of Magda and Cukrowska-Torzewska (2019) who also analyzes differential effect of bosses between the public and private sector in Poland, finding that a greater share of women managers is associated with an increased advantage for women only in the public sector.

Moreover, performing a dynamic approach in which we observe the effects of a change in the gender composition of the bosses group, we find that the entry of a female boss reduces the wage gap in the private sector. However, no significant effects were observed in the public sector. This could be explained by the legal and practical limitations that would reduce the room for the action of the bosses to offer wages and impose their bargaining power.

We evaluate two mechanisms that could be driving our results. First, gender composition of bosses could affect the initial wage that workers receive at their entrance in the firm. Lower entrance wages for female workers in firms with (mostly) male bosses could be explained for instance by gender bias against females' abilities or discrimination. Second, the gender of bosses might affect the salary growth. That is, female workers could be more likely to experience wages increases when working for female bosses. This could happen for instance if women are more likely to be promoted when working for a feminized group of bosses. Previous studies found that there are narrower gender gaps in promotions for those who have more female bosses, suggesting that policies that increase female representation in corporate leadership can have positive spillover effects for women in lower ranks (Kunze and Miller, 2017; Dalvit et al., 2021; Drechsel-Grau and Holub, 2020). For Uruguay, we find that the monthly entrance salary gender gap is reduced between 1.6 and 3.8 log points in private firms with female boss representation. In the public sector, the female political representation of up to one-third of the total bosses impacts the entrances monthly salaries and hourly wages for female workers between 1.8 and 7.2 log points. On the other hand, we find evidence that female workers are more likely to be

promoted when working for female bosses, but only when the proportion of female bosses is up to 50%.

This paper contributes to a vast literature investigating the causes of the persistent gender inequalities in the labor market (Goldin, 2014; Blau and Kahn, 2017). Part of this literature has benefited from the recent availability of large matched employer-employee data to analyze the role of firms in explaining the gender wage gap. Based on an AKM model (Abowd et al., 1999), different studies show that firm-specific pay premiums can explain a significant portion of the gender wage gap, which can vary around 20-30% (Casarico and Lattanzio, 2019; Card et al., 2016). The gap can be due to two main factors: first, women are less likely to work at firms that pay higher premiums (sorting), and second, female workers receive only 90% of the firm-specific pay premiums earned by men, which could be attributed to gender differences in bargaining or discrimination. Exploiting a gender quota policy as an exogenous variation in the board of directors, Casarico and Lattanzio (2019) find that gender balance in leadership positions reduces the gender gap in bargaining component of the pay premium.

More specifically, we add to a strand of literature on the role of having women at top hierarchical positions in explaining gender differences in wage and promotions at firms. Using cross-country survey data from 15 European countries, Lucifora and Vigani (2022) find that female bosses are associated with reduced gender discrimination and with positive spillovers mainly on female subordinates and in jobs where female presence is also higher. Dalvit et al. (2021) focus on a French reform that imposed gender representation quotas in the board of directors and find that increasing female representation at the top of a firm's organization successfully reduced gender wage gaps and representation only at the upper layers of the firm. In the same line, using employer-employee matched data for private sector workplaces in Norway, Kunze and Miller (2017) find narrower gender gaps in promotions for women with more female bosses. This result is also confirmed by Cullen and Perez-Truglia (2023), which through an event-study analysis of manager rotation find that male employees assigned to male managers are promoted faster. Their study suggests that social interactions are the mechanisms that drive this effect. Our paper is closely related to the study by Drechsel-Grau and Holub (2020), who relying on data from a large firm, find that the sorting of men and women to different managers can explain a significant share of pay gaps. They show that performance ratings are more favorable to men if handled out by a male manager and present suggestive evidence that the relevance of manager's gender for pay gaps is driven by discrimination rather than samegender complementarities in productivity. We use administrative data from social security in

which we can link each worker with a bosses' group in each firm they work for, and analyze their working path in the firm and when switching to other firm in the formal labor market.

This paper makes three main contributions. First, having information of the full population of formal workers and firms allows us to provide an empirical characterization of female bosses' role for the general labor market, overcoming the issues about the lack of representativeness of specific companies. Moreover, we expand upon existing research by analyzing gender differences of having different female participation among bosses, in both private firms and the public sector. Second, we contribute to understanding the mechanisms behind the role of bosses on gender gaps by focusing on how bosses' gender affects entrance wages and promotions within firms. We also observe that these two channels differ between public and private sectors. Third, while most of previous studies focus on rich countries, our paper provides evidence of the effect of having a higher proportion of female bosses in a middle-income country. Our findings may differ from those in developed countries, particularly European ones, due to lower prevalence of gender equality practices compared to those in rich countries' firms. While working with administrative data is challenging in most developing countries, where informality rates are high, the large proportion of workers registered in social security in Uruguay allows us to use reliable administrative data to study the role of bosses' gender in explaining gender gaps in the labor market.

Lastly, our findings offer important considerations for the ongoing policy debate regarding the benefits of promoting a higher representation of women in hierarchical positions. This study complements a growing literature that suggests that policies that increase female representation in corporate leadership would have spillover benefits to women in lower ranks, thus contributing to overcoming the structural disadvantage for women, and reducing the gender gaps in the labor market.

The remainder of the paper is organized as follows. Section 2 presents the database and main variables used in the analysis. Section 3 presents evidence of the role of bosses in gender gaps. Section 4 describes the empirical approach. Section 5 discusses the results on the effect of having female bosses on the gender outcomes at the firm, exploring some mechanisms that explain those results. Finally, Section 7 concludes.

2 Data and main variables

This study uses data from social security administrative records provided by *Banco de Previsión Social (BPS)*, the public agency in charge of social security affairs in Uruguay. This large

administrative dataset consists of monthly individual-level observations based on mandatory notifications made by employers to social security over the period 1997 to 2013.

This database provides information about the characteristics of the workers' jobs and some of their personal characteristics. In particular, it contains information on monthly wages, the number of hours worked per week, gender, and year of birth. Also, each worker has a firm identifier to match the firm's database, such as the industry code.

Our sample comprises male and female workers aged between 18 and 80, employed in private and public firms of at least five individuals. We worked with the subsample of private and public firms separately.²

In our main estimates, for private firms we define bosses as those declared in social security as directors, owners, and managers who work in the company. In other words, we exclude those on the board of directors who have no activity. We call this definition the registered position. In the case of the public sector, the reported position for bosses includes those declared in social security as political office holders, political position. Additionally, we consider a second boss's definition for robustness exercises. Since our database describes the type of contract each individual has and their monthly income, we also identify the bosses in the company by their relative salary. In our second approach, we define bosses as those whose income is in the top 1% of the company's wages. We use this second definition for both sectors when we stay with companies with at least 100 employees. We call this definition the relative position.

Then, we identify a group of bosses at each time for each firm. Finally, using these definitions we construct different thresholds of female representation among bosses: at least one woman in the boss group, and at least 25 %, 33 %, 40 %, 50 %, and 75 % of women in the boss group.

Table 1 presents some descriptive statistics of the subsample for private workers, registered position bosses, bosses groups, and firms. In this case, we have 695,628 workers over 17 years, i.e., 5,158,468 observations, of which 36% are female workers. The average age (+3%) and tenure (+8%) are slightly higher among men. Hourly wage is significantly higher among men (+18%), and monthly hours worked are close similar (+3%). In addition, a total of 53,203 individuals hold hierarchical positions and women make up 31.5% of the bosses. Like workers, men bosses are older (+1%), have longer tenure (+17%), receive significantly higher hourly wages (+44%); working similar hours (+0.3%). The proportion of women in bosses groups averages 30%,

²In our database, we can identify public organizations, which can be: ministries, the parliament, municipalities, health services, elementary and high schools, universities, and proper public firms. All of them share similar restrictions to hiring and fixing wages. In order to simplify, we mention them as public firms.

³Note the hourly wage for bosses and workers are pretty similar, this is because the data came from social security and the income from utilities are no considering.

although the number of firms with more than $75\,\%$ women in hierarchical positions reaches only $20\,\%$.

Table 2 shows descriptive statistics of workers, political bosses, bosses groups, and firms in public firms. Public workers are older, have higher tenure, higher hourly wages, and work longer hours than private workers on average. Gender differences remain in age (+7%), tenure (+36%), hourly wages (+24%), and working hours (+5%). When we consider bosses by the political position, gender differences are: age (4%), tenure (-4%), hourly wage gap (+1%), working hours (+7%). On average, 19% of the bosses are women, and 17.5% within bosses groups of the public firms, half of the firms have at least one female boss, but only in 4.2% of the firms there more than 75% of women at the top of the hierarchy. 4

Figure 1 shows the participation of women among the group of bosses by thresholds in private and public firms. We can observe that the bin that accumulates the higher percentage for private and public firms is the first one, suggesting that women have a very low representation within the bosses' group. However, for private firms, the second bin which accumulates the higher density is the one where at least 90% of the bosses are women. Figure 2 shows the rotation of bosses' groups supporting our empirical strategy. We find in private firms between 5% and 10% of firms changing at least one of the members of their boards using the registered position, representing between 10% and 20% of workers. In the public sector, these rates are around 60% with peaks of almost 100% in 2005 when there was a change of ideological orientation in the government.⁵

In Figure 3, we show a first spot about gender gaps in the private and public sectors in Uruguay. We regress the monthly and hourly salaries on the worker's gender without and with controls. First, the raw without controls are larger in the public sector. Female workers in the public sector earn between 20 and 25 log points lower than men. However, whether we include controls for age, tenure, working part-time, industry, and kind of contract, the gaps remain practically constant in the private sector but fall to less than 5 log points in the public one. These suggest that the unexplained part of the gap is higher in private firms, and the potential room of action for bosses is higher. These estimates are similar to those found by Colacce et al. (2020) from the National Household Survey for Uruguay and Marchionni et al. (2019) for Latin America.

 $^{^4}$ In Table A.2, there are the descriptive statistics of the *relative position* bosses. Hourly wages are lower than those of the *registered position* bosses, working similar hours and last in the position at a similar time. Registered bosses rotate among firms more than the top 1%, the latter, who spend some years as employees and others as bosses. Firms with at least one female boss are about half in the registered definition and more than 80% in the top 1%, although those with more than 75% are around 4%

⁵In Figure A.1, we show the rotation by firms and workers of the bosses' groups using the *relative position*. We find a higher level of rotation for both workers and firms, above 70 % yearly in the private and public sectors.

3 Role of bosses in gender gaps

We begin by assessing the contribution of the bosses' group to explain the gender earnings gap. For that, we estimate a two-way fixed effects AKM regression (Abowd et al., 1999) using individual and bosses' groups fixed effects. Specifically, we estimate the following regression:

$$w_{ijt} = \theta_i + \psi_j^g + X_{it}\beta^g + \varepsilon_{ijt} \tag{1}$$

where w_{ijt} is the log of wage for individual i who works for group of bosses j at time t; θ_i are individual fixed effects and ψ_j^g are the bosses' group fixed effects which are specific for each gender $g \in \{M, F\}$. X_{it} is a vector of observable time-variant characteristics, and ε_{ijt} represents the unexplained residual component.

The estimated coefficients for the bosses' group fixed effect ψ_j^g capture the wage premium of working for an specific group of bosses. These premiums can be interpreted as the wage policy for each gender of an specific group of bosses, conditional on unobserved individual characteristics (ability, experience, etc).

In Table 3, we use the normalized bosses fixed effects for men and women to quantify the effect of bosses-specif pay premiums on the gender wage gap. The top row shows that the gender log salary gap between 1997 and 2013 varied from 27.3 % to 32.8 %. On the second row, we have the difference in male and female wage premiums, which are the overall contribution of bosses-specific pay premiums to the gender wage gap. The bosses' premiums account for 18 % to 33 % of the overall gender gap (third row).

We decompose the bosses' fixed effects into a sorting and a bargaining channel. The first contributes to explaining the gender gap if female workers are more likely to be employed with bosses paying lower salaries compared to those of male workers. The bargaining channel measures whether female workers receive lower wage premiums than male colleagues within the same group of bosses.

We find that the sorting channel is the main explanatory factor of bosses' role in explaining the gender wage gap.⁶ This would imply that comparable female workers tend to work with bosses that pay lower wages on average compared to those that employ male workers. On the other hand, the bargaining channel plays a minor and even negative role in explaining the gender

⁶The portion attributable to the sorting channel is estimated by evaluating the difference in the average of the male wage premiums weighted by the share of men vs. women working for each bosses' group or considering the female wage premiums. On the other hand, the contribution of the bargaining channel can be calculated either by considering the average difference in the male and female premiums, weighted by the share of men working for each bosses group, or by weighting the difference in the wage premiums by the fraction of women working for each bosses groups.

pay gap. This suggests that within the group of bosses paying worse, female workers obtain better wages. This decomposition documents the relevance of bosses on the gender gap, but it gives no insights about the role of gender within bosses groups. In the following sections, we explore how having female bosses impact on the gender pay gaps and which are the mechanisms behind it.

4 Empirical approach

To estimate the change in the gender gap when working for female bosses, we run a difference in difference estimation for outcome Y_{ijt} for the worker i in the firm j at time t, as in Drechsel-Grau and Holub (2020):

$$Y_{ijt} = \delta_0 + \delta_1 \times female_i + \delta_2 \times femBoss_{ijt} + \omega \times female_i \times femBoss_{ijt} + X_{it}\beta_1 + Z_{jt}\beta_2 + \nu_t + \epsilon_{ijt}$$
 (2)

where Y_{ijt} is the log monthly pay or the log hourly wage received by the worker i in firm j at the year t. $female_i$ is a dummy taking value 1 if worker i is female. Its coefficient represents the gender gap in firms with only male bosses. $femBoss_{ijt}$ takes values 1 when the bosses' group variable of worker i at time t complies with the different thresholds in the firm j. We estimate six specifications considering thresholds of female representation among the bosses: At least one, 25%, 33%, 40%, 50%, and 75%. Then we can analyze whether a higher proportion of female heads has a different effect on wage gaps. The coefficient δ_2 is the difference in earnings for working in a firm with female participation in the bosses' group instead of those with a completely masculinized group. X_{it} are controls for age, tenure, part-time, and social security regime, and Z_{jt} includes the number of workers in the firm, female participation in the firm, and industry. Finally, ν_t are time-fixed effects.

We are interested in the difference-in-difference coefficient ω on the interaction of $female_i$ with $femBoss_{ijt}$. This product is 1 if worker i is a woman, who is working for a bosses group that has female representation and 0 otherwise. ω is the difference in gender gaps between female and male bosses. A positive ω indicates that the gender gaps move in favor of women when there are women in the boss group.

In this initial specification, we can only quantify the extent to which the gender gap changes, but we are unable to determine whether male or female bosses are responsible. That is, if workers are sorted to bosses based on these unobserved characteristics, the estimate of ω is biased. To control for unobserved heterogeneity of both, bosses and workers, we introduce workers (α_i) and group of bosses fixed effects $(\psi_{B(j,t)})$.

⁷We prefer to include group of bosses fixed effect instead of firms, given that bosses group changes any time

$$Y_{ijt} = \gamma + \omega \times female_i \times femBoss_{ijt} + \alpha_i + \psi_{B(j,t)} + X_{it}\beta_1 + Z_{jt}\beta_2 + \nu_t + \xi_{ijt}$$
 (3)

 $\psi_{B(j,t)}$ is a fixed effect of the composition of bosses at the firm j at time t, and it changes each time that the composition of the group of bosses changes, due to exit or entry of at least one boss. As the worker fixed effects fully absorb the absolute level of the gender gaps, we identify by how much the gender wage gap changes when a relevant proportion of bosses at the firm are females rather than males.

The identification of ω comes from *switchers*, that is, workers who interact with different groups of bosses. There are two possible scenarios: a worker who switches firms or a worker who experiences a change in the composition of their boss group within the same firm. As bosses' group change when even only one member does it, we observe that the level of bosses rotation is higher among large firms compared to the whole group of private firms (between 5 % and 20 % in the period).

5 Results

5.1 Private firms workers

The panels a) and b) of Figure 4 present the results of estimating difference-in-difference equation 2 on log salary and log hourly wages in private firms using the registered position (more details in Tables A.3 and A.4). In the six thresholds of female participation in bosses groups, we find a gender salary gap under male bosses between 22 and 23 log points (p-value=0.000). Earnings in firms with female bosses are between 6 and 16 log points (p-value=0.000) lower than those with male bosses. The difference depends on the threshold considered, in firms with higher female representation in the bosses group, workers have lower salaries. These differences are less pronounced when taking hourly wages as the outcome. The gender hourly wage gaps under male bosses are between 17 and 18 log points (p-value=0.000). Again, there are lower hourly wages when working in firms with female participation in the bosses groups, with 5 log points in firms with at least one female boss to 11 log points (p-value=0.000) in firms in which more than 75 % of bosses are females. Although we condition our monthly estimation on the part-time jobs, there is a lower effect on the hourly wage by around 5 log points.

A possible concern is that most productive workers are sorted with bosses that pay higher wages. To deal with that, in Equation 3, we include bosses' and workers' fixed effects, to control

that one new boss is included in the group or someone exits. We perform a robustness check in the public sector with workers, bosses and firms fixed-effects finding similar results, see Figure A.7

for unobserved heterogeneity of workers and bosses, ensuring that they are comparable and the estimated coefficients are unbiased (more details are shown in Tables A.5 and A.6). As shown in Figure 5, we find that female employees working for a female boss increase their pay between 1.2 and 4.3 log points (p-value=0.000) relative to men when controlling for workers' and bosses' fixed effects. This narrowing in the gender gap when working for female bosses increases when considering higher thresholds of female representation in the bosses group. When considering hourly wages instead of salaries, we observe the same trend, that is, gender gaps are reduced as we increase the thresholds of female representation in the bosses group, reaching 2 log point (p-value=0.000) when most of the bosses are females.

Our findings suggest that the gender in hierarchical positions have an influence on firm behavior, (Bertrand and Schoar, 2003; Kunze and Miller, 2017). Our results are in line with those observed by Drechsel-Grau and Holub (2020) for a firm in a developed country. However, there is no previous evidence of female bosses impacting the reduction of wage gaps in a large sample of private firms (Magda and Cukrowska-Torzewska, 2019; Bertrand et al., 2019). We propose that two factors contribute to this divergence. Firstly, compared with previous studies we examine different thresholds, finding that the impact becomes more substantial as the number of female bosses increases. Secondly, the initial wage gaps in our specific context are larger, allowing for a greater potential for female heads to effect change.

5.2 Public firms workers

As wage-setting procedures are more standardized in the public sector, there is less room for discretionary decisions. Therefore, we expect lower gender gaps and more minor impacts of the bosses' group on wages compared to the private sector. Using the political position definition, we estimate first the difference-in-difference equation 2 on log salary and log hourly wages in public firms as we show in the panels of Figure 6 (more details in Tables A.7 and A.8). The monthly salary gender gap is significantly smaller than in private firms, between 3.5 and 5 log points (p-value=0.000) in the six thresholds considered. As in the private sector, in those firms with female participation in bosses groups, the average earnings are lower, between 5 and 12 log points (p-value=0.000), but in this case, there is no clear trend with increasing female participation. The gender gap and the influence of the female bosses in the groups are quite different when considering the hourly wage as the outcome. We find a smaller but negative gender gap between 1.5 and 5 log points (p-value=0.000) and an unclear pattern in the effect of female participation in bosses groups.

As for private workers, we include bosses' fixed effects and workers' fixed effects to control for

unobserved heterogeneity, and we show these results in Figure 7 and with more details in Tables A.9 and A.10). Working for a female boss increases women's monthly payment between 0.5 (p-value =0.017) and 1.8 (p-value =0.000) log points relative to men. We find similar quantitative and significant impacts with the hourly wage as the outcome. There is a decreasing effect when female participation increases, and there are no statistically significant coefficients for bosses groups with more than 40% female participants. As we discussed before, there are only 16% of groups with more than 40% female bosses and only 4% with more than 75%, then the statistical power for those thresholds is weak.

The lower incidence of the gender of bosses in the public sector compared to the private sector is not surprising. The gender pay gap is significantly smaller in the public sector than in the private sector. Moreover, salary determination in the public sector is subject to stricter regulations, and salary information is publicly available, which restricts the discretion of bosses. Therefore, the fact that we observe an impact of the gender of bosses on the gender gaps even in the public sector adds further value to our results. This demonstrates the significance of bosses in this framework and their influence on the personnel behavior of the organizations.

5.3 Dynamic analysis

We then turn to investigate the correlation of female participation in a dynamic approach. In particular, we analyze whether a change in the gender composition within the bosses group changes the gender gap through an event study analysis. We estimate the change when a firm has an entire masculine bosses group for at least two years, and there is a female entrance which remains for at least three years, indicating that this firm would have a bosses group with at least one female. We fix t=0 at the year when the change in the gender composition in the bosses group occurs.

$$\Delta Y_{ijt} = \delta_1 \text{female}_i + \delta_{2k} \sum_{k=-2}^{k=3} I_k(FemBoss_j = 1) + \omega_k \sum_{k=-2}^{k=3} \text{female}_i \times I_k(FemBoss_j = 1) + \alpha_i + \gamma_j + X_{it}\beta_1 + Z_{jt}\beta_2 + \epsilon_{ijt}$$
(4)

 ΔY_{ijt} is the log hourly wage growth rate; female_i takes value one if the worker i is a female; $I_k(FemBoss_j = 1)$ is an indicator function that takes value one if there is at least one female in the bosses' groups. α_i and γ_j are the worker and firm's fixed effects, and X_{it} and Z_{jt} are time-variant worker and firm characteristics.

We first present the overall effect for private firms in Figure 8 and Table A.11.8 We find that

$$\Delta Y_{ijt} = \delta_1 \text{female}_i + \delta_2 \text{Event}_t + \omega \text{female}_i \times \text{Event}_t + \alpha_i + \gamma_j + X_{it}\beta_1 + Z_{jt}\beta_2 + \epsilon_{ijt}$$

⁸We also perform a before-after regression:

the entrance of a female boss in a group with only male bosses positively affects the female wage growth rates. This change positively impacts about 2 p.p. (p-value=0.001) in female workers' wage growth rate. In the left panel of Figure 8, we include all workers in the firms over the seven-year period, while in the right panel, we only consider workers who remained in the firm for the entire duration. The effects of the event in both samples show similarities in the years following the event. We observe an increase of approximately 6 percentage points (p-value=0.000) in the first year after a female enters the group of bosses, and around 2 percentage points (p-value \approx 0.07) in the second year. This suggests that there is no immediate adjustment when a woman initially joins the leadership position (t = 0), but rather the effects appear with a delay and diminish over time.

In the case of public firms, we obtained negative coefficients. However, when we include individual and firm fixed effects, these coefficients do not appear to be significant in any of the samples, see Table A.12 and Figure 9.

5.4 Channels

In the previous section, we find two main results: a general reduction of the gender pay gap among employees working for a group of bosses with female representation, which for private firms, this reduction increases as representation does. This section investigates two main mechanisms that could explain these findings. On the one hand, female workers can receive higher entrance wages in a firm with female bosses than when entering a firm with male bosses. For instance, gender differences in wages when entering the firm can document bias or discrimination from male bosses against female workers' abilities. On the other hand, female employees could be more likely to experience wages increases when working for female bosses, for example if women are more likely to be promoted.

First, we analyze if female bosses pay higher entrance wages to female workers than male bosses do. Private gender gaps are around 20% for the average pay and between 5 and 7 p.p. lower for the entrance wage. The opposite trend is observed in the public sector, where the gap for the average pay is around 3% and at the entrance rise to around 6% (see Figures 3 and A.2). Again, gender gaps and the feminization of bosses in the private sector have the same trend at the entrance as for the average pay, but with lower incidence. In the case of the public sector, gaps and the feminization of bosses are higher at the entrance, although the trend for the hourly wage is not so clear.

We estimate the Equation 3 and present the coefficient ω . In the left panel of Figure 10, the

gender gap in monthly entrance salary is reduced between 1.6 and 3.8 log points (p-values=0.000) as we increase the proportion of females in the bosses group. In the right panel, the impact on hourly wage shows a reduction of around 1 log point if the female representation in hierarchical positions is higher than 50%. However, the gender gap at the entrance is lower than in the main estimation, the effect of having female bosses increases as the representation does. The hourly wage gap reduction only arises with female representation above 50% (more detailed information in Tables A.13 and A.14).

In the public sector, there is a decreasing effect on the entrance monthly salaries and hourly wages that female workers receive in the first year, as female political representation increases. We observe that the threshold matters again but in this case, with representations below 40 % in wages and 33 % in salaries. In Figure 11, there are between 1.8 (p-value=0.047) and 4.9 (p-value=0.000) log points higher monthly salaries and 2.1 (p-value=0.028) and 7.2 log points (p-values=0.000) in hourly wages (more information in Tables A.15 and A.16). The role of female bosses is more relevant in raw gaps that are about the double than in the average pay (see in Figure A.2).

Casarico and Lattanzio (2019) do not find effect of the introduction of board quotas in Italy on new hires' wages. In our estimations for private sector, the entrance conditions are more egalitarian than in the following years, that is the gender gap tend to rise with the worker's tenure. In the case of new hires, the role of female bosses is similar to that previously found for the whole sample. On the contrary, the public sector gaps are more unequal in the initial years, but they partially revert over time.

Given this, we investigate whether female bosses are more likely to promote female workers than male bosses do. For instance, if male bosses are biased about the abilities of female workers or discriminate against them, they would not promote female workers based on their abilities or performance. We run similar regressions to that of Equation 3, but in this case, the dependent variable takes value one if the individual receives a promotion in that year and zero otherwise. Following the approach of Bronson and Skogman-Thoursie (2019), we define a worker's promotion if she has an increase in nominal pay at least 30 % higher than the average salary increase in the firm that year. We found that 17 % of private sector workers and 18.5 % of public sector workers were promoted.

Both panels of Figure 12 show the main results for the coefficient ω (detailed information in Tables A.17 and A.18). In the left panel, we show the results for the private firms, where

 $^{^9\}mathrm{We}$ restrict the sample of those workers working for the firm for at least 12 months.

we find that the interaction between being a female worker and having female bosses is non-significant for receiving a promotion for any of the thresholds we consider. That is, there is no evidence of differential effects of the female representation among bosses and the gender differential promotion rate for workers in private firms.

Then, we analyze if the promotion mechanism explains the results previously presented for the public sector. In the right panel of Figure 12, we observe how the promotions mechanism help to narrow the gender wage gaps in those firms where there are females among the group of bosses. There is a rise between 0.3 and 0.8 p.p. in the probability of being promoted (p-values between 0.077 and 0.002). These effect imply an increase between 2.9% and 4.3% in the probability of being promoted. These latter results are compatible with our findings about the entrance wage. In the public sector the gender gap is reducing in time, partially by the action of promotions. For the Norway private sector, (Kunze and Miller, 2017) find that a std increase in female boss share increases women relative promotion rate by 0.5 p.p. that means a 7% of promotion rate. In a big company of the Southeast Asia, (Cullen and Perez-Truglia, 2023) find that after change from female to male manager, a male employee is promoted quicker with an increase of 14.6% in salary 10 quarters in relation with a change female-female.

6 Heterogeneities and Robustness check

6.1 Heterogeneities

In this section we explore some dimensions along which the estimated parameter associated with having female bosses can vary. In particular, we analyze heterogeneities in the effect of having female bosses for workers in feminized firms and industries. We define as feminized a firm or industry in which female workers are more than 50% of the total, and we explore whether the role of female bosses is different. We estimate the Equation 3 and present the parameter ω for monthly and hourly earning in those feminized and not feminized firms and industries, respectively.

In Figures 13 and 14, we show the estimation for monthly and hourly wage in those feminized and non feminized firms and industries. We do not find any differences between them. We observe the same positive trend, that is, when the female participation in the bosses group rises, the gender gap closes.

In Figure 15 the feminized firms in the public sector which have at least one female boss pay a differential premium of 1 log points in monthly and hourly wages, but this is not observed for higher thresholds. Analyzing the feminized industries (Figure 16), we find a differential premium

of having a feminized group of bosses close to 2 log points as the proportion of female bosses were between 25% and 40%. Then, in the public sector we find that our hypothesis were confirmed but in private sector the expected heterogeneity is no observed.

Finally, we tested an additional exercise, estimating the effect of the bargaining power of female bosses within the bosses group (average income of female bosses/average income of male bosses). We define different thresholds: 0.25, 0.5, 0.75, and 1. In this case, 0.25 means the relative average female wage is at least 25 % of male average wage. At the other extreme, 1 means that all female bosses have higher average wages than males in a given group. Once again, we focus on the parameter ω of the Equation 3.

We expect that those firms with fewer female bosses with *good* earnings have no impact on female workers' conditions, and once they reach a higher percentage, they gain bargaining power impacting the female workers. However, for the private sector, we find something similar to an inverted U-shape effect (Figures 17 and 18). Female bosses' bargaining power has a positive spillover on female workers when their relative average wage respect to male bosses is between 50% and 75%. In the case of the public sector, Figure 18 shows that as the relative earnings of female bosses rise, they can impact more on the female workers' earnings conditions, as we would expect.

6.2 Robustness check

A possible concern is that for large firms the definition of bosses using the *registered* or the *political* occupation is not the most adequate one to capture those who are actually taking the decisions. While for small firms it is clear that the owners or directors are also managers and direct bosses, this might not happen at large companies. In large firms the managers are those who might play the main role in personnel decisions, including wages paid to male and female workers (Lucifora and Vigani, 2022; Cullen and Perez-Truglia, 2023).

To address this possible issue, in this section we perform a robustness analysis defining bosses as those workers in the top 1% of earnings for each firm with more than 100 employees. We perform Equation 3 and show the main results in Figures A.5 and A.6 and Tables B.1 to B.4, considering the same six thresholds. 10

For private sector firms with more than 100 employees, we found results very similar to the main ones. There is a positive and significant effect for all the thresholds considered and for both monthly and hourly wages. Also, the effect is smaller the lower the number of female heads, according to the definition of earnings. Our results suggest a gender gap against women

¹⁰Descriptive statistics are shown in Tables A.1 and A.2 for private and public firms respectively.

in large firms of between 16 and 29 log points. There are smaller gaps when the outcome is the hourly wage instead of the monthly salary, as for the whole sample (Tables B.1 and B.2).

In the case of public sector firms, the results indicate that working in a company with female managers would reduce the pay gender gap in favor of female employees. However, there is no positive correlation between the proportion of female managers and the effect of the gap (Table B.3 and B.4). On the contrary, when the hourly wage is considered and the proportion of female managers is greater than 75%, the effect on the gap disappears. Additionally, we perform a similar estimation as before, but also including firm fixed-effects and we get similar results (see Figure A.7). These results are in line with those observed for the definition of female heads according to a political position.

7 Conclusions

Using a large matched employer-employee dataset of Uruguayan firms for the period 1997-2013, we investigate the effect of the gender composition at the firm's hierarchy on the gender pay gaps.

Our analysis contributes to the understanding of the role of bosses in influencing the level and dynamics of the gender pay gap, yielding three main findings. First, we show that the gender composition of bosses matters, and having female bosses reduces the gender pay gaps. This reduction increases as the female participation does it, duplicating the coefficient when female bosses are at least the majority of the group with respect to the lowest participation. This result is novel in the literature, which is strengthened by the differential effect on those firms in which female bosses have more bargaining power within the bosses group. Second, this is also the case for the public sector, where gender discrimination is relatively low. Although among public sector workers, the gender pay gaps are pretty small (around 2 log points), having female bosses significantly reduces the gender pay gap.

Thirdly, we explore the mechanisms behind these results, finding that, compared to the whole sample, the wage gaps on new hires are smaller in the private sector and larger for the public one. However, for both private and public sector we find significant effects of having female bosses on the narrowing of gender wage gaps. Additionally, having female bosses increases the probability of being promoted between 3 % and 4 %. Then, our results suggest that female public employees are more likely to be promoted when working for female bosses, while having female bosses does not affect promotions in private firms. Magda and Cukrowska-Torzewska (2019) is one of the few references that also studies private and public sectors separately. However, while they find an

association between female bosses and gender gap shirking in Poland; they do not find anything in promotions. Finally, the other main difference between sectors that we find for public workers is a differential impact of the interaction between female workers and female bosses in the the more feminized industries.

Other mechanisms may drive differences in bosses-related inequality beyond those analyzed in this study. For instance, gender differences in wage growth among private workers could be more related to firm-to-firm transitions than promotions within firms. Moreover, a differential transition pattern can be related to working and wage patterns after maternity; the penalty is well documented for Uruguay (Querejeta and Bucheli, 2023). However, we know little about the role of gender bosses in workers' transitions between firms. Adding to this, in 2005 government introduced a massive wage policy through collective bargaining agreements, which could have had differential gender effects Blanchard et al. (2021), and for which the role of bosses has not been considered. Future research on those issues would allow us to understand better the mechanisms through which the gender composition of bosses affects the gender pay gap and inform of most adequate policies for promoting gender equity in the labor market.

Figures and Tables

Cuadro 1: Descriptive Statistics for Private firms: Bosses defined by their registered position

| | Workers | | Bosses | | Bosses groups | Firms |
|-------------------------------------|-------------------|-------------------|------------------|------------------|------------------|-----------------|
| | Men | Women | Men | Women | | |
| Age | 36.34 (12.20) | 35.56 (11.54) | 48.29 (12.32) | 47.61 (12.47) | | |
| Tenure | 4.662 (6.615) | 4.329 (5.939) | 11.36 (10.09) | 9.696 (8.350) | | |
| Hourly wage | 30.76 (52.85) | 26.18 (50.59) | 35.59 (362.4) | 24.70 (142.2) | | |
| Hours worked per month | 158.5 (54.68) | 153.5 (58.94) | 208.5 (37.58) | 207.8 (40.04) | | |
| Num. of years as Boss | | | 11.93 (9.107) | 9.705 (6.240) | | |
| Num. of years as Boss in firm | | | 9.435 (5.104) | 8.792 (5.015) | | |
| Num. of firms as Boss in the period | | | 1.520 (1.012) | 1.229 (0.601) | | |
| Mean age by group | | | | | 46.21 (11.90) | |
| Mean tenure by group | | | | | 8.440 (8.675) | |
| Mean hourly wage by group | | | | | 30.49 (300.8) | |
| Total number of bosses by group | | | | | 6.469 (7.637) | |
| Prop. female boss by group | | | | | 0.297 (0.412) | |
| Prop. female boss in firm | | | | | , | 0.274 (0.399) |
| At least one female boss | | | | | | 0.359 |
| One quarter female bosses | | | | | | 0.352 (0.478) |
| One third female bosses | | | | | | 0.352 (0.478) |
| Fourty female bosses | | | | | | 0.331 (0.471 |
| Mostly female bosses | | | | | | 0.211 |
| Three Quarters female bosses | | | | | | 0.195 |
| Observations N of individuals | 3305876 425878 | 1852592 269750 | 283762 36447 | 114994 16756 | 61644 63169 | 27250 79259 |

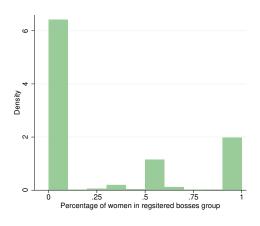
Note: We compute the descriptive statistic in private firms using matched employer-employee social security administrative records from 1997-2013. Using the social security information, we identify those registered as directors, owners and managers in companies and who actually work in the company (Columns 3 and 4); for those, we can show information about age, tenure, monthly working hours, wage, and their role as bosses in the same firm and the period. The first two columns show information about age, tenure, monthly working hours, and wages. The fifth column shows information about the bosses groups, and the sixth column shows female participation in bosses groups by different thresholds.

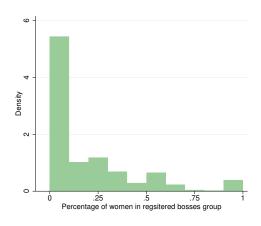
Cuadro 2: Descriptive Statistics for Public sector: Bosses defined by their political position

| | Workers | | Bosses | | Bosses groups | Firms |
|---|--------------------|-------------------|------------------|--------------------|------------------|------------------|
| | Men | Women | Men | Women | 0 1 | |
| Age | 45.54 (11.18) | 42.75 (10.91) | 53.67 (10.40) | 51.68 (9.638) | | |
| Tenure | $15.82 \\ (11.41)$ | 11.60 (10.42) | 4.386 (7.326) | 4.470 (7.615) | | |
| Hourly wage | 49.67 (47.76) | 39.58 (53.46) | 187.4 (149.8) | 185.4 (210.0) | | |
| Hours worked per month | $168.1 \\ (44.59)$ | 160.5 (55.67) | 150.5 (59.23) | 140.8 (61.37) | | |
| Num. of years as Political Boss | | | 7.331 (4.608) | $6.961 \\ (4.671)$ | | |
| Num. of years as Political Boss in firm | | | 5.658 (3.173) | 5.534 (3.103) | | |
| Num. of firms as Political Boss in the period | | | 1.530 (0.786) | 1.426 (0.753) | | |
| Mean age by group | | | | | 53.35 (5.593) | |
| Mean tenure by group | | | | | 5.603 (6.481) | |
| Mean hourly wage by group | | | | | 149.0 (93.13) | |
| Total number of bosses by group | | | | | 16.40 (29.77) | |
| Prop. female boss by group | | | | | 0.186 (0.236) | |
| Prop. female boss in firm | | | | | ` , | 0.175 (0.250) |
| At least one female boss | | | | | | 0.490 (0.500) |
| One quarter female bosses | | | | | | 0.276 (0.447) |
| One third female bosses | | | | | | 0.234 (0.423) |
| Fourty female bosses | | | | | | 0.165 (0.371) |
| Mostly female bosses | | | | | | 0.0811 (0.273) |
| Three Quarters female bosses | | | | | | 0.0424 (0.202) |
| Observations N of individuals | 1239126 103268 | 1513076 121412 | 8273 1189 | 1830 229 | 616 628 | 1061 118 |

Note: We compute the descriptive statistic in public sector using matched employer-employee social security administrative records from 1997-2013. Using the social security information, we identify those registered in a political position (Columns 3 and 4); for those, we can show information about age, tenure, monthly working hours, wage, and their role as bosses in the same firm and the period. The first two columns show information about age, tenure, monthly working hours, and wages. The fifth column shows information about the bosses groups, and the sixth column shows female participation in bosses groups by different thresholds.

Figura 1: Distribution of female participation in bosses groups

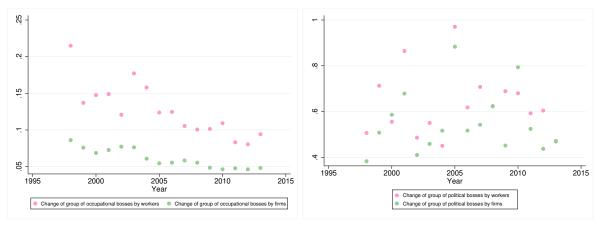




- (a) Private firms' bosses with registered occupation
- (b) Public sector's bosses with political occupation

Note: We use the matched employer-employee social security administrative records from 1997-2013. In the left panel, we show a histogram of female participation in the bosses groups in private firms as directors, owners, and managers in companies and who work in the company. In the right panel is a histogram with the female participation in the bosses groups in the public sector with a political position.

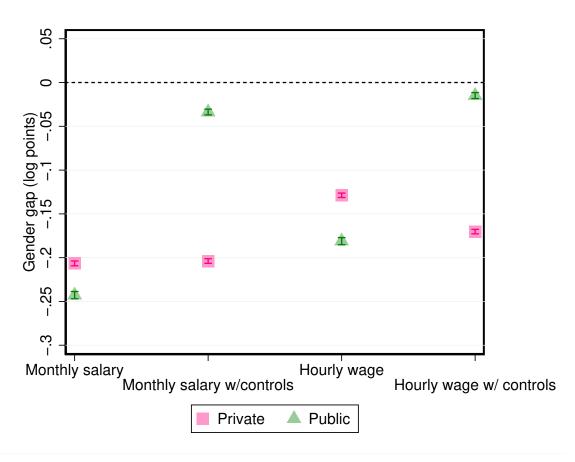
Figura 2: Rotation of bosses groups by firm and worker



- (a) Private firms' bosses with registered occupation
- (b) Public sector's bosses with political occupation

Note: We use the matched employer-employee social security administrative records from 1997-2013. In the left panel, we show the percentage of workers (pink) and private firms (green) who change at least one member of the group of bosses (directors, owners, and managers in companies and who work in the company) yearly. In the right panel, we show the percentage of workers (pink) and firms who change at least one member of the group of bosses (political position) yearly.

Figura 3: Raw salary gaps: private and public sector

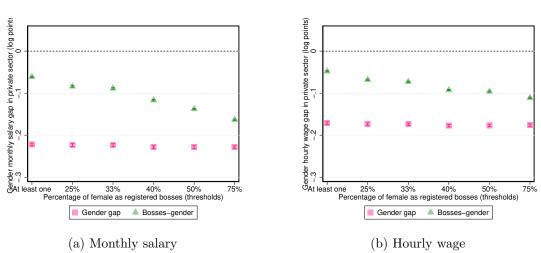


Note: We use the matched employer-employee social security administrative records from 1997-2013. We graph the coefficient of a linear regression of monthly salary and hourly wage in the private (pink) and public (green) sectors separately to worker gender, without and with controls. A confidence interval of 95 % is shown.

Cuadro 3: Contribution of Bosses-Specific pay premium to the gender wage gap

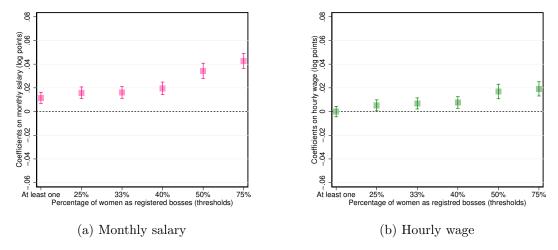
| | 1997-2001 | 2001-2005 | 2005-2009 | 2009-2013 |
|-----------------------------------|-----------|-----------|-----------|-----------|
| Gender log salary gap | 0.308 | 0.273 | 0.313 | 0.328 |
| Contribution of bosses components | 0.101 | 0.070 | 0.055 | 0.066 |
| | 0.33 | 0.23 | 0.18 | 0.22 |
| Decomposition | | | | |
| Sorting | | | | |
| Using male effects | 0.112 | 0.106 | 0.145 | 0.162 |
| | 1.12 | 1.52 | 2.62 | 2.44 |
| Using female effects | 0.080 | 0.140 | 0.116 | 0.132 |
| | 0.80 | 2.00 | 2.10 | 1.98 |
| Bargaining | | | | |
| Using male distribution | 0.020 | -0.070 | -0.061 | -0.065 |
| | 0.02 | -0.05 | -0.02 | -0.03 |
| Using female distribution | -0.012 | -0.036 | -0.090 | -0.096 |
| | -0.01 | -0.02 | -0.04 | -0.05 |
| N observations | 784,529 | 636,521 | 953,310 | 1,259,897 |

Figura 4: Gender gap and females bosses gap in private firms: Bosses defined by their registered position



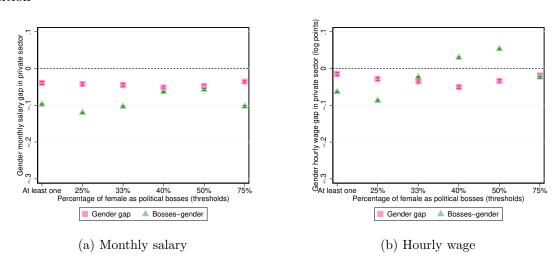
Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 2 for the private sector, we graph the coefficients δ_1 (pink) and δ_2 (green), taking monthly salary (left panel) and hourly wage (right panel) as Y_{itj} . In the horizontal axis, there are the different thresholds of female participation in bosses groups, defined by their registered position (directors, owners, and managers in companies and who work in the company). A confidence interval of 95 % is shown.

Figura 5: Interaction between female workers and female representation in bosses group in private firms: Bosses defined by their registered position.



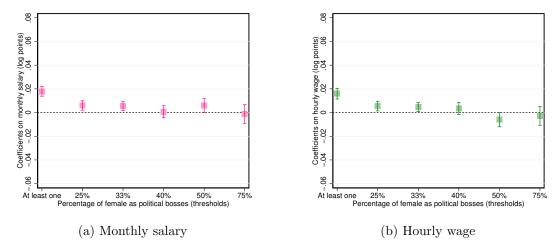
Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we graph the coefficient ω , taking monthly salary (left panel) and hourly wage (right panel) as Y_{itj} . Bosses are defined as those who declare in the social security being directors, owners, and managers in companies and who work in the company. In the horizontal axis, there are the different thresholds of female participation in bosses groups, defined by their registered position (directors, owners, and managers in companies and who work in the company). A confidence interval of 95 % is shown.

Figura 6: Gender gap and females bosses gap in public sector: Bosses defined by their political position



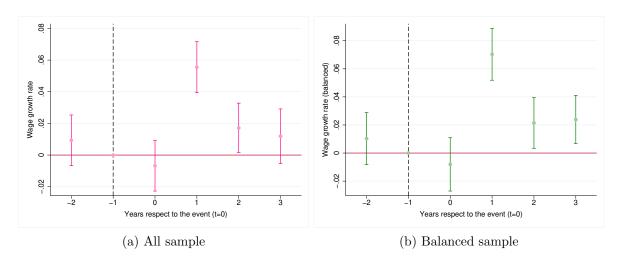
Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 2 for the public sector, we graph the coefficients δ_1 (pink) and δ_2 (green), taking monthly salary (left panel) and hourly wage (right panel) as Y_{itj} . In the horizontal axis, there are the different thresholds of female participation in bosses groups, defined by their registered position (political position). A confidence interval of 95% is shown.

Figura 7: Interaction between female workers and female representation in bosses group in public sector: Bosses defined with their political position



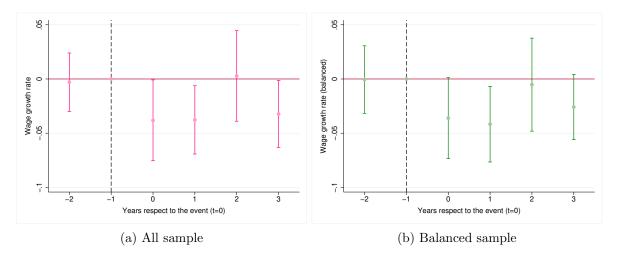
Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we graph the coefficient ω , taking monthly salary (left panel) and hourly wage (right panel) as γ_{tij} . Bosses are defined as those political positions. In the norizontal axis, there are the different thresholds of female participation in bosses groups, defined by their registered position (political position). A confidence interval of 95 % is shown.

Figura 8: Effect of the entrance of a female boss in a complete masculinized group of bosses. Private firms



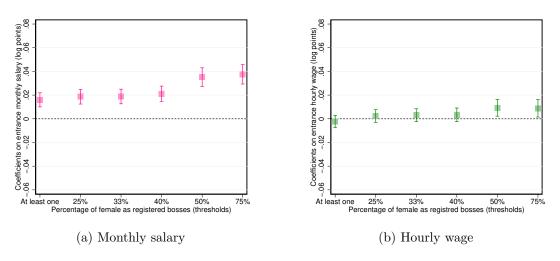
Note:We use the matched employer-employee social security administrative records from 1997-2013. We define the event $I_k(FemBoss=1)$, the entrance of a female boss (directors, owners, and managers in companies and who work in the company) in a completely masculinized group of bosses. Following the Equation 4 with worker and firm fixed effects for the private sector, we graph the coefficient ω_k , taking the hourly wage growth as Y_{itj} . The vertical axis is the wage growth rate effect respect to t=-1, and the horizontal axis are the years respect to the event. The dashed vertical line shows the year before the event. In the left panel, we consider all the workers in firms where the event occurs, and in the right panel are those workers in the same firm for the whole period (balanced panel). A confidence interval of 95 % is shown.

Figura 9: Effect of the entrance of a female boss in a complete masculinized group of bosses. Public sector



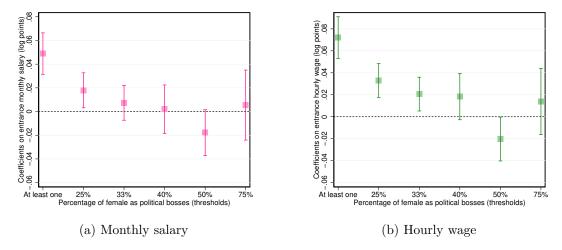
Note: We use the matched employer-employee social security administrative records from 1997-2013. We define the event $I_k(FemBoss=1)$, the entrance of a female boss (political position) in a completely masculinized group of bosses. Following the Equation 4 with worker and firm fixed effects for the public sector, we graph the coefficient ω_k , taking the hourly wage growth as Y_{itj} . The vertical axis is the wage growth rate effect respect to t=-1, and the horizontal axis are the years respect to the event. The dashed vertical line shows the year before the event. In the left panel, we consider all the workers in firms where the event occurs, and in the right panel are those workers in the same firm for the whole period (balanced panel). A confidence interval of 95 % is shown.

Figura 10: Gender gap in entrance pay: interaction of female worker and female representation in bosses group. Private firms



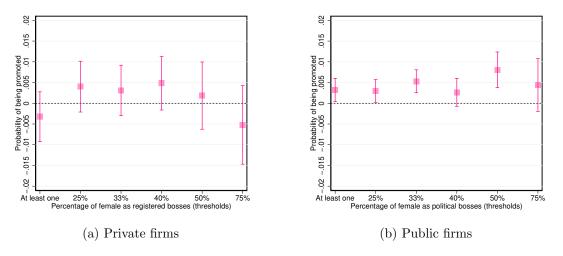
Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we graph the coefficient ω , taking the entrance monthly salary (left panel) and hourly wage (right panel) as Y_{itj} . Bosses are defined as those who declare in the social security being directors, owners, and managers in companies and who work in the company. In the horizontal axis, there are the different thresholds of female participation in bosses groups, defined by their registered position (directors, owners, and managers in companies and who work in the company). A confidence interval of 95 % is shown.

Figura 11: Gender gap in entrance pay: interaction of female worker and female representation in bosses group. Public sector



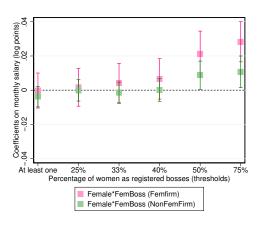
Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we graph the coefficient ω , taking the entrance monthly salary (left panel) and hourly wage (right panel) as Y_{itj} . Bosses are defined as those political positions. In the horizontal axis, there are the different thresholds of female participation in bosses groups, defined by their registered position (political position). A confidence interval of 95 % is shown.

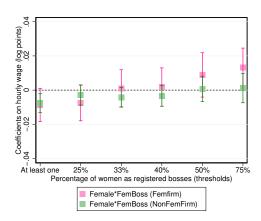
Figura 12: Gender and female bosses groups interaction on promotion probability



Note:We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we graph the coefficient ω , taking Y_{itj} as a variables who takes value 1 if the worker is promoted that year. Promotion is defined as the wage growth which is 30% higher that the firm's average. In the horizontal axis, there are the different thresholds of female participation in bosses groups, defined for private firms their registered position (directors, owners, and managers in companies and who work in the company); and in the public sector by their registered position (political position). A confidence interval of 95% is shown.

Figura 13: Effects of female bosses on gender gap: Feminized firms in the private sector



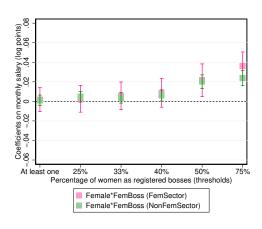


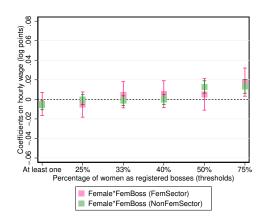
(a) Monthly salary private sector

(b) Hourly wage private sector

Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we graph the coefficient ω , taking monthly salary (left panel) and hourly wage (right panel) as Y_{itj} . A confidence interval of 95% is shown.

Figura 14: Effects of female bosses on gender gap: Feminized industries in the private sector



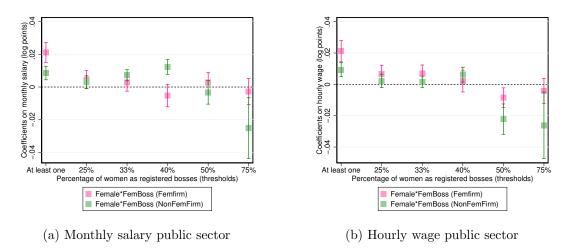


(a) Monthly salary private sector

(b) Hourly wage private sector

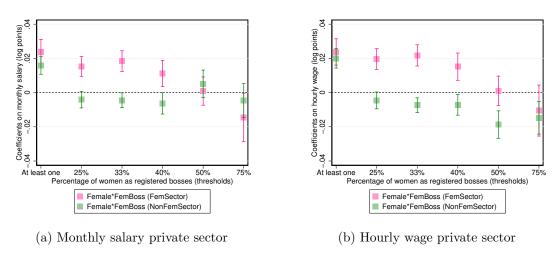
Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we graph the coefficient ω , taking monthly salary (left panel) and hourly wage (right panel) as Y_{itj} . A confidence interval of 95% is shown.

Figura 15: Effects of female bosses on gender gap: Feminized firms in the public sector



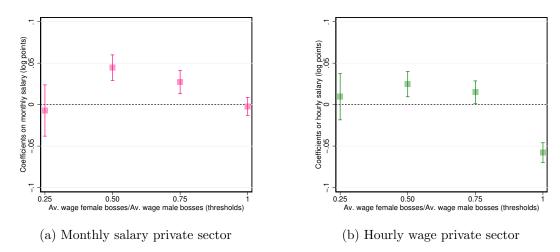
Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we graph the coefficient ω , taking monthly salary (left panel) and hourly wage (right panel) as Y_{itj} . A confidence interval of 95 % is shown.

Figura 16: Effects of female bosses on gender gap: Feminized industries in the public sector



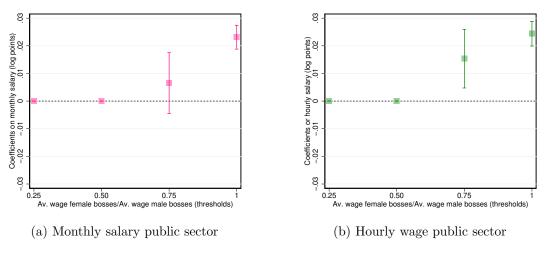
Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we graph the coefficient ω , taking monthly salary (left panel) and hourly wage (right panel) as Y_{itj} . A confidence interval of 95% is shown.

Figura 17: Effects of relative female power on gender gap: Private sector



Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we graph the coefficient ω , taking monthly salary (left panel) and hourly wage (right panel) as Y_{itj} . A confidence interval of 95 % is shown.

Figura 18: Effects of relative female power on gender gap: Public sector



Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we graph the coefficient ω , taking monthly salary (left panel) and hourly wage (right panel) as Y_{itj} . A confidence interval of 95 % is shown.

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APPENDIX

A Appendix A

Cuadro A.1: Descriptive Statistics for private firms (Bosses defined by relative position)

| | Wor | kers | Во | sses | Bosses groups | Firms |
|-------------------------------------|-------------------|-------------------|--------------------|------------------|------------------|------------------|
| | Men | Women | Men | Women | | |
| Age | 35.72 (12.40) | 35.87 (11.94) | 47.66 (10.81) | 45.05 (11.49) | | |
| Tenure | 4.574 (7.486) | 4.778 (7.178) | 12.33 (11.53) | 10.79 (11.08) | | |
| Hourly wage | 43.42 (129.1) | 37.86 (112.2) | 228.4 (547.4) | 149.0 (435.7) | | |
| Hours worked per month | 142.4 (65.85) | 139.9 (65.71) | 183.0 (48.01) | 175.2 (54.85) | | |
| Num. of years as Boss | | | 6.527 (5.039) | 5.084 (4.488) | | |
| Num. of years as Boss in firm | | | $6.090 \\ (4.678)$ | 4.833 (4.295) | | |
| Num. of firms as Boss in the period | | | 1.181 (0.477) | 1.115 (0.360) | | |
| Mean age by group | | | | | 46.17 (8.130) | |
| Mean tenure by group | | | | | 9.413 (8.647) | |
| Mean hourly wage by group | | | | | 170.2 (271.8) | |
| Total number of bosses by group | | | | | 5.960 (13.77) | |
| Prop. female boss by group | | | | | 0.221 (0.304) | |
| Prop. female boss in firm | | | | | | 0.221 (0.309) |
| At least one female boss | | | | | | 0.440 (0.496) |
| Mostly female bosses | | | | | | 0.115 (0.320) |
| Observations N of individuals | 3188564 467550 | 2480333 359389 | 43602 5488 | 14147 2254 | 9689 10066 | 14082 2283 |

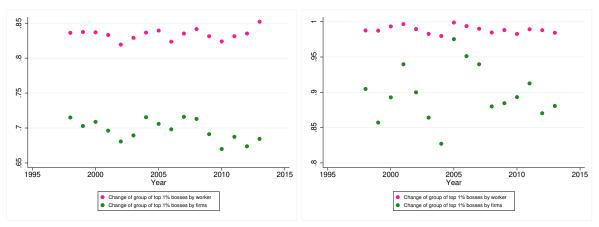
Note: We compute the descriptive statistic in public sector using matched employer-employee social security administrative records from 1997-2013. Using the social security information, we identify those who earn in the top 1% of wages in the firm (Columns 3 and 4); for those, we can show information about age, tenure, monthly working hours, wage, and their role as bosses in the same firm and the period. The first two columns show information about age, tenure, monthly working hours, and wages. The fifth column shows information about the bosses groups, and the sixth column shows female participation in bosses groups by different thresholds.

Cuadro A.2: Descriptive Statistics for Public firms (Bosses defined by relative position)

| | Workers | | Bosses | | Bosses groups | Firms |
|-------------------------------------|-------------------|-------------------|------------------|--------------------|------------------|-----------------|
| | Men | Women | Men | Women | | |
| Age | 42.46 (12.23) | 42.31 (11.28) | 49.94 (10.47) | 52.55 (7.598) | | |
| Tenure | 14.34 (11.65) | 10.53 (10.38) | 16.43 (13.55) | 18.64 (12.58) | | |
| Hourly wage | 39.24 (42.31) | 37.42 (35.44) | 153.5 (137.1) | 144.4 (2906.2) | | |
| Hours worked per month | 133.1 (66.76) | 159.9 (57.16) | 138.9 (50.22) | $163.0 \\ (53.77)$ | | |
| Num. of years as Boss | | | 6.436 (4.787) | 6.322 (4.048) | | |
| Num. of years as Boss in firm | | | 6.085 (4.554) | 6.028 (3.817) | | |
| Num. of firms as Boss in the period | | | 1.117 (0.355) | 1.109 (0.337) | | |
| Mean age by group | | | | | 52.93 (5.220) | |
| Mean tenure by group | | | | | 14.27 (9.735) | |
| Mean hourly wage by group | | | | | 155.7 (120.2) | |
| Total number of bosses by group | | | | | 34.70 (84.67) | |
| Prop. female boss by group | | | | | 0.299 (0.246) | |
| Prop. female boss in firm | | | | | | 0.298 (0.252) |
| At least one female boss | | | | | | 0.818 $(0.386$ |
| One quarter female bosses | | | | | | 0.489 (0.500 |
| One third female bosses | | | | | | 0.437 $(0.496$ |
| Fourty female bosses | | | | | | 0.298 (0.458 |
| Mostly female bosses | | | | | | 0.164 $(0.370$ |
| Three Quarters female bosses | | | | | | 0.0544 $(0.227$ |
| Observations N of individuals | 2238314 225182 | 1886309 165481 | 33969 3496 | 15023 1078 | 1412 1418 | 1580 123 |

Note: We compute the descriptive statistic in public sector using matched employer-employee social security administrative records from 1997-2013. Using the social security information, we identify those who earn in the top 1 % of wages (Columns 3 and 4); for those, we can show information about age, tenure, monthly working hours, wage, and their role as bosses in the same firm and the period. The first two columns show information about age, tenure, monthly working hours, and wages. The fifth column shows information about the bosses groups, and the sixth column shows female participation in bosses groups by different thresholds.

Figura A.1: Rotation of bosses groups by firm and worker



(a) Private firms' bosses with top 1% of wages

(b) Public sector's bosses with top 1% of wages

Note: We use the matched employer-employee social security administrative records from 1997-2013. In the left panel, we show the percentage of workers (pink) and private firms (green) who change at least one member of the group of bosses (top 1%) yearly. In the right panel, we show the percentage of workers (pink) and firms who change at least one member of the group of bosses (political position) yearly.

Cuadro A.3: Gender gap and female registered bosses groups effects on monthly salary. Private firms

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|----------------|----------------|----------------|----------------|----------------|----------------|
| | $\log(Salary)$ | $\log(Salary)$ | $\log(Salary)$ | $\log(Salary)$ | $\log(Salary)$ | $\log(Salary)$ |
| Female | -0.229*** | -0.228*** | -0.228*** | -0.224*** | -0.223*** | -0.222*** |
| | (-123.09) | (-122.50) | (-116.75) | (-112.74) | (-112.64) | (-111.37) |
| Three Quarters female bosses | -0.163*** | | | | | |
| V | (-66.79) | | | | | |
| Mostly female bosses | | -0.138*** | | | | |
| Jan | | (-59.35) | | | | |
| Fourty female bosses | | | -0.117*** | | | |
| Tourty Tourist Bosses | | | (-61.16) | | | |
| One third female bosses | | | | -0.0888*** | | |
| One third female bosses | | | | (-49.10) | | |
| | | | | (10.10) | | |
| One quarter female bosses | | | | | -0.0840*** | |
| | | | | | (-46.62) | |
| At least one female boss | | | | | | -0.0611*** |
| | | | | | | (-34.91) |
| Sector | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fe | Yes | Yes | Yes | Yes | Yes | Yes |
| | | | | | | |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 5413818 | 5413818 | 5413818 | 5413818 | 5413818 | 5413818 |
| Individuals | 1112390 | 1112390 | 1112390 | 1112390 | 1112390 | 1112390 |
| R2 | 0.386 | 0.386 | 0.386 | 0.386 | 0.386 | 0.385 |

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 2 for the private sector, we show the coefficients $\delta_1 \to \text{Female}$, and δ_2 who correspond to the six thresholds of female participation in the bosses groups defined for private firms their registered position (directors, owners, and managers in companies and who work in the company). We take the monthly salary as Y_{itj} , and regression also includes the interaction, but it is not displayed in the Table.

Cuadro A.4: Gender gap and female registered bosses groups effects on hourly wage. Private firms

| | (1) | (2) | (3) | (4) | (5) | (6) |
|------------------------------|----------------------|----------------------|------------|----------------------|------------------------|----------------------|
| | $\log(\text{Hwage})$ | $\log(\text{Hwage})$ | log(Hwage) | $\log(\text{Hwage})$ | $\log(\text{Hwage})$ | $\log(\text{Hwage})$ |
| Female | -0.176*** | -0.176*** | -0.177*** | -0.174*** | -0.174*** | -0.171*** |
| | (-101.77) | (-102.14) | (-98.31) | (-95.09) | (-94.95) | (-93.65) |
| Three Quarters female bosses | -0.111*** | | | | | |
| • | (-49.03) | | | | | |
| Mostly female bosses | | -0.0962*** | | | | |
| y | | (-44.68) | | | | |
| Fourty female bosses | | | -0.0926*** | | | |
| Tourty Tourist Dosson | | | (-51.57) | | | |
| One third female bosses | | | | -0.0728*** | | |
| One third female bosses | | | | (-43.24) | | |
| | | | | , , | 0.0000*** | |
| One quarter female bosses | | | | | -0.0680*** (-40.68) | |
| | | | | | (10.00) | |
| At least one female boss | | | | | | -0.0478*** |
| | | | | | | (-29.54) |
| Sector | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| Section S. Tooghine | 100 | 100 | 100 | 100 | 100 | 100 |
| Contract type | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 5413776 | 5413776 | 5413776 | 5413776 | 5413776 | 5413776 |
| Individuals | 1112388 | 1112388 | 1112388 | 1112388 | 1112388 | 1112388 |
| R2 | 0.339 | 0.339 | 0.339 | 0.339 | 0.339 | 0.338 |

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 2 for the private sector, we show the coefficients $\delta_1 \to \text{Female}$, and δ_2 who correspond to the six thresholds of female participation in the bosses groups defined for private firms their registered position (directors, owners, and managers in companies and who work in the company). We take the hourly wage as Y_{itj} , and regression also includes the interaction, but it is not displayed in the Table.

Cuadro A.5: Effects of having female registered bosses on monthly salary gender gap. Private firms

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------------------------|----------------------|---------------------|---------------------|---------------------|---------------------|-----------------------|
| | log(Salary) | log(Salary) | log(Salary) | log(Salary) | log(Salary) | log(Salary) |
| Female x Three Quarters female bosses | 0.0427*** (10.96) | | | | | |
| Female x Mostly female bosses | | 0.0343*** (8.73) | | | | |
| Female x Fourty female bosses | | | 0.0197*** (6.16) | | | |
| Female x One third female bosses | | | | 0.0161*** (5.33) | | |
| Female x One quarter female bosses | | | | | 0.0158*** (5.29) | |
| Female x Female boss | | | | | | $0.0115^{***} (4.05)$ |
| Sector | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes | Yes |
| Bosses fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Workers fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 5154519 | 5154519 | 5154519 | 5154519 | 5154519 | 5154519 |
| Individuals | 854687 | 854687 | 854687 | 854687 | 854687 | 854687 |
| R2 | 0.826 | 0.826 | 0.826 | 0.826 | 0.826 | 0.826 |

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001Note:We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we show the coefficient ω s, taking the monthly salary as Y_{itj} . Bosses are defined by their registered position (directors, owners, and managers in companies and who work in the company). The coefficients ω s are the different thresholds of female participation in bosses groups.

Cuadro A.6: Effects of having female registered bosses on hourly wage gender gap. Private firms

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------------------------|----------------------|----------------------|----------------------|--------------------|----------------------|-----------------------|
| | $\log(\text{Hwage})$ | $\log(\text{Hwage})$ | $\log(\text{Hwage})$ | log(Hwage) | $\log(\text{Hwage})$ | log(Hwage) |
| Female x Three Quarters female bosses | 0.0192*** (5.25) | 108(11##85) | 108(11##\$c) | 108(11##\$c) | log(IIwage) | iog(iiwage) |
| Female x Mostly female bosses | | 0.0169*** (4.53) | | | | |
| Female x Fourty female bosses | | | 0.00763^* (2.57) | | | |
| Female x One third female bosses | | | | 0.00686* (2.42) | | |
| Female x One quarter female bosses | | | | | 0.00524 (1.86) | |
| Female x Female boss | | | | | | -0.0000615 (-0.02) |
| Sector | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes | Yes |
| Bosses fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Workers fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 5158434 | 5158434 | 5158434 | 5158434 | 5158434 | 5158434 |
| Individuals | 854783 | 854783 | 854783 | 854783 | 854783 | 854783 |
| R2 | 0.801 | 0.801 | 0.801 | 0.801 | 0.801 | 0.801 |

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001Note:We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we show the coefficient ω s, taking the hourly wage as Y_{itj} . Bosses are defined by their registered position (directors, owners, and managers in companies and who work in the company). The coefficients ω s are the different thresholds of female participation in bosses groups.

Cuadro A.7: Gender gap and female political bosses groups effects on monthly salary. Public $_{
m firms}$

| | (1) | (2) | (3) | (4) | (5) | (6) |
|------------------------------|----------------|----------------|----------------|----------------|-------------------------|------------|
| | $\log(Salary)$ | $\log(Salary)$ | $\log(Salary)$ | $\log(Salary)$ | $\log(\mathrm{Salary})$ | log(Salary |
| Female | -0.0358*** | -0.0476*** | -0.0512*** | -0.0444*** | -0.0428*** | -0.0395*** |
| | (-17.19) | (-22.78) | (-23.87) | (-19.86) | (-18.22) | (-14.15) |
| Three Quarters female bosses | -0.0978*** | | | | | |
| · | (-18.88) | | | | | |
| Mostly female bosses | | -0.120*** | | | | |
| | | (-33.55) | | | | |
| Fourty female bosses | | | -0.103*** | | | |
| Tourty Temate Bosses | | | (-38.44) | | | |
| 0 (1:16 1:1 | | | , | 0.0027*** | | |
| One third female bosses | | | | -0.0637*** | | |
| | | | | (-28.49) | | |
| One quarter female bosses | | | | | -0.0573*** | |
| • | | | | | (-24.11) | |
| At least one female boss | | | | | | -0.103*** |
| At least one lemate boss | | | | | | (-47.18) |
| | | | | | | (11.10) |
| Sector | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 2789557 | 2789557 | 2789557 | 2789557 | 2789557 | 2789557 |
| Individuals | 299729 | 299729 | 299729 | 299729 | 299729 | 299729 |
| R2 | 0.431 | 0.431 | 0.431 | 0.431 | 0.431 | 0.432 |

 $[\]boldsymbol{t}$ statistics in parentheses

* p < 0.05, *** p < 0.01, *** p < 0.001Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 2 for the public sector, we show the coefficients $\delta_1 \rightarrow$ Female, and δ_2 who correspond to the six thresholds of female participation in the bosses groups defined for public sector by their registered position (political position). We take the monthly salary as Y_{itj} , and regression also includes the interaction, but it is not displayed in the Table.

Cuadro A.8: Gender gap and female political bosses groups effects on hourly wage. Public firms

| | (1) | (2) | (3) | (4) | (5) | (6) |
|------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | $\log(\text{Hwage})$ | $\log(\text{Hwage})$ | $\log(\text{Hwage})$ | $\log(\text{Hwage})$ | $\log(\text{Hwage})$ | $\log(\text{Hwage})$ |
| Female | -0.0186*** | -0.0333*** | -0.0508*** | -0.0349*** | -0.0281*** | -0.0153*** |
| | (-8.40) | (-14.91) | (-22.02) | (-14.73) | (-11.30) | (-5.28) |
| Three Quarters female bosses | -0.0635*** | | | | | |
| | (-11.84) | | | | | |
| Mostly female bosses | | -0.0873*** | | | | |
| v | | (-23.15) | | | | |
| Fourty female bosses | | | -0.0235*** | | | |
| | | | (-8.22) | | | |
| One third female bosses | | | | 0.0297*** | | |
| | | | | (12.52) | | |
| One quarter female bosses | | | | | 0.0530*** | |
| 1 | | | | | (20.87) | |
| At least one female boss | | | | | | -0.0239*** |
| | | | | | | (-10.05) |
| Sector | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 2789534 | 2789534 | 2789534 | 2789534 | 2789534 | 2789534 |
| Individuals | 299729 | 299729 | 299729 | 299729 | 299729 | 299729 |
| R2 | 0.377 | 0.377 | 0.379 | 0.377 | 0.377 | 0.376 |

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 2 for the public sector, we show the coefficients $\delta_1 \to \text{Female}$, and δ_2 who correspond to the six thresholds of female participation in the bosses groups defined for public sector by their registered position (political position). We take the hourly wage as Y_{itj} , and regression also includes the interaction, but it is not displayed in the Table.

Cuadro A.9: Effects of having female political bosses on monthly salary gender gap. Public firms

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------------------------|---------------------|------------------|-------------------|--------------------|--------------------|---------------------|
| | log(Salary) | log(Salary) | log(Salary) | log(Salary) | log(Salary) | log(Salary) |
| Female x Three Quarters female bosses | -0.00121 (-0.25) | | | | | |
| Female x Mostly female bosses | | 0.00584 (1.64) | | | | |
| Female x Fourty female bosses | | | 0.000656 (0.21) | | | |
| Female x One third female bosses | | | | 0.00543^* (2.38) | | |
| Female x One quarter female bosses | | | | | 0.00596* (2.46) | |
| Female x Female boss | | | | | | 0.0180*** (7.15) |
| Sector | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes | Yes |
| Bosses fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Workers fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 2752202 | 2752202 | 2752202 | 2752202 | 2752202 | 2752202 |
| Individuals | 262374 | 262374 | 262374 | 262374 | 262374 | 262374 |
| R2 | 0.788 | 0.788 | 0.788 | 0.788 | 0.788 | 0.788 |

t statistics in parentheses

p < 0.00, p < 0.01, p < 0.001Note:We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the public sector, we show the coefficient ω s, taking the monthly salary as Y_{itj} . Bosses are defined for public sector by their registered position (political position). The coefficients ω s are the different thresholds of female participation in bosses groups.

^{*} p < 0.05, ** p < 0.01, *** p < 0.001

Cuadro A.10: Effects of having female political bosses on hourly wage gender gap. Public firms

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------------------------|---------------------|---------------------|------------------|--------------------|----------------------|---------------------|
| | log(Hwage) | log(Hwage) | log(Hwage) | log(Hwage) | log(Hwage) | log(Hwage) |
| Female x Three Quarters female bosses | -0.00285 (-0.59) | | | | | |
| Female x Mostly female bosses | | -0.00604 (-1.66) | | | | |
| Female x Fourty female bosses | | | 0.00355 (1.14) | | | |
| Female x One third female bosses | | | | 0.00456* (1.97) | | |
| Female x One quarter female bosses | | | | | 0.00545^* (2.20) | |
| Female x Female boss | | | | | | 0.0159*** (5.88) |
| Sector | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes | Yes |
| Bosses fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Workers fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 2752178 | 2752178 | 2752178 | 2752178 | 2752178 | 2752178 |
| Individuals | 262373 | 262373 | 262373 | 262373 | 262373 | 262373 |
| R2 | 0.774 | 0.774 | 0.774 | 0.774 | 0.774 | 0.774 |

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001Note:We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the public sector, we show the coefficient ω s, taking the hourly wage as Y_{itj} . Bosses are defined for public sector by their registered position (political position). The coefficients ω s are the different thresholds of female participation in bosses groups.

Cuadro A.11: Effect of the entrance of a female boss in an entire masculinized group of bosses. Private firms

| | (1) | (2) | (3) | (4) | (5) | (6) |
|------------------|----------------|----------------|----------------|----------------|----------------|-----------------|
| | $\Delta Hwage$ | $\Delta Hwage$ | $\Delta Hwage$ | $\Delta Hwage$ | Δ Hwage | ΔH wage |
| Female | -0.0115*** | -0.0113*** | 0 | -0.0110* | -0.0140** | 0 |
| | (-17.77) | (-17.78) | (.) | (-2.16) | (-2.74) | (.) |
| D | 0.00160 | 0.0107*** | 0.0105*** | 0.00400 | 0.0000*** | 0.0000*** |
| Event | -0.00168 | 0.0127*** | 0.0185*** | -0.00433 | 0.0362*** | 0.0320*** |
| | (-1.38) | (7.08) | (7.87) | (-1.01) | (5.58) | (5.01) |
| Female*Event | -0.00249 | -0.000896 | -0.00135 | 0.0190** | 0.0188** | 0.0224*** |
| | (-1.19) | (-0.40) | (-0.34) | (2.98) | (2.93) | (3.46) |
| Year fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes | Yes |
| Fem+Femboss | -0.016*** | 0.001 | 0.017*** | 0.004 | 0.041*** | 0.054*** |
| SD Fem+Femboss | (0.002) | (0.002) | (0.003) | (0.005) | (0.007) | (0.007) |
| Firms fe | No | Yes | Yes | No | Yes | Yes |
| Workers fe | No | No | Yes | No | No | Yes |
| Balanced | No | No | No | Yes | Yes | Yes |
| Observations | 2173771 | 2173771 | 2173771 | 45885 | 45885 | 45885 |
| Individuals | 382615 | 382615 | 382615 | 7814 | 7814 | 7814 |
| Adjusted R2 | 0.0289 | 0.0456 | 0.212 | 0.0583 | 0.0786 | 0.194 |

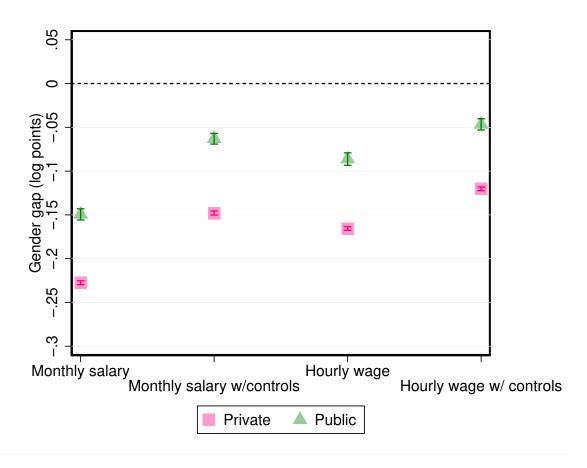
t statistics in parentheses

Cuadro A.12: Effect of the entrance of a female boss in an entire masculinized group of bosses. Public firms

| | (1) | (2) | (3) | (4) | (5) | (6) |
|------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | $\Delta Hwage$ | Δ Hwage | $\Delta Hwage$ | $\Delta Hwage$ | $\Delta Hwage$ | $\Delta Hwage$ |
| Female | 0.00339*** | 0.00353*** | 0 | 0.00521** | 0.0105*** | 0 |
| | (7.42) | (8.23) | (.) | (2.92) | (5.13) | (.) |
| Event | 0.0149*** | 0.0191*** | 0.0188 | 0.0557*** | 0.207*** | 0.213* |
| | (17.89) | (19.25) | (0.96) | (23.52) | (44.22) | (2.33) |
| Female*Event | -0.00902*** | -0.00335** | -0.00149 | -0.0130*** | -0.0204*** | -0.0190 |
| | (-7.50) | (-2.77) | (-0.18) | (-4.89) | (-7.31) | (-1.46) |
| Year fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes | Yes |
| Fem+Femboss | 0.009*** | 0.019*** | 0.017 | 0.048*** | 0.197*** | 0.194** |
| SD Fem+Femboss | (0.001) | (0.001) | (0.016) | (0.003) | (0.005) | (0.089) |
| Firms fe | No | Yes | Yes | No | Yes | Yes |
| Workers fe | No | No | Yes | No | No | Yes |
| Balanced | No | No | No | Yes | Yes | Yes |
| Observations | 2413313 | 2413313 | 2413313 | 156448 | 156448 | 156448 |
| Individuals | 233794 | 233794 | 233794 | 26299 | 26299 | 26299 |
| Adjusted R2 | 0.0494 | 0.0624 | 0.154 | 0.383 | 0.449 | 0.497 |

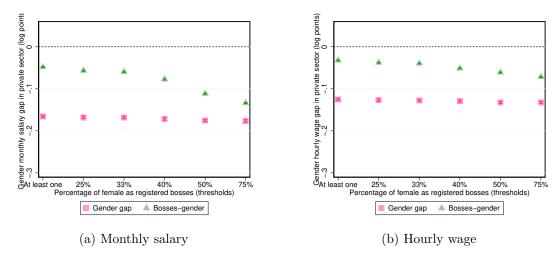
t statistics in parentheses

Figura A.2: Raw entrance gaps: private and public sector



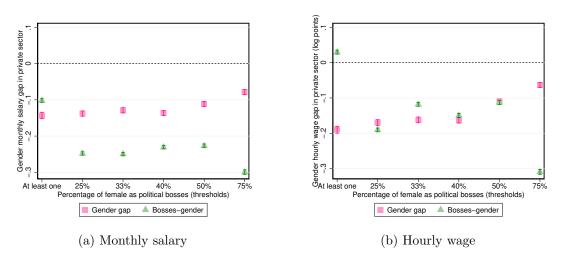
Note: We use the matched employer-employee social security administrative records from 1997-2013. We graph the coefficient of a linear regression of monthly salary and hourly wage in the private (pink) and public (green) sectors separately to worker gender, without and with controls. A confidence interval of 95 % is shown.

Figura A.3: Gender gap and females bosses entrance gap in private firms: Bosses defined by their registered position



Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 2 for the private sector, we graph the coefficients δ_1 (pink) and δ_2 (green), taking monthly salary (left panel) and hourly wage (right panel) as Y_{itj} . In the horizontal axis, there are the different thresholds of female participation in bosses groups, defined by their registered position (directors, owners, and managers in companies and who work in the company). A confidence interval of 95% is shown.

Figura A.4: Gender gap and females bosses entrance gap in public sector: Bosses defined by their political position



Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 2 for the public sector, we graph the coefficients δ_1 (pink) and δ_2 (green), taking monthly salary (left panel) and hourly wage (right panel) as Y_{itj} . In the horizontal axis, there are the different thresholds of female participation in bosses groups, defined by their registered position (political position). A confidence interval of 95% is shown.

Cuadro A.13: Effects of having female registered bosses on monthly entrance salary gender gap. Private firms

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | log(Salary) | log(Salary) | log(Salary) | log(Salary) | log(Salary) | log(Salary) |
| Female x Three Quarters female bosses | 0.0376*** (7.55) | | | | | |
| Female x Mostly female bosses | | 0.0352*** (7.38) | | | | |
| Female x Fourty female bosses | | | 0.0211*** (5.39) | | | |
| Female x One third female bosses | | | | 0.0188*** (5.02) | | |
| Female x One quarter female bosses | | | | | 0.0186*** (4.98) | |
| Female x Female boss | | | | | | 0.0160*** (4.43) |
| Sector | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes | Yes |
| Bosses fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Workers fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 1729137 | 1729137 | 1729137 | 1729137 | 1729137 | 1729137 |
| Individuals | 529519 | 529519 | 529519 | 529519 | 529519 | 529519 |
| R2 | 0.787 | 0.787 | 0.787 | 0.787 | 0.787 | 0.787 |

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we show the coefficient ω s, taking the entrance monthly salary as Y_{itj} . Bosses are defined by their registered position (directors, owners, and managers in companies and who work in the company). The coefficients ω s are the different thresholds of female participation in bosses groups.

Cuadro A.14: Effects of having female registered bosses on hourly entrance wage gender gap. Private firms

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------------------------|--------------------|--------------------|------------------|--------------------|------------------|---------------------|
| | log(Hwage) | log(Hwage) | log(Hwage) | log(Hwage) | log(Hwage) | log(Hwage) |
| Female x Three Quarters female bosses | 0.00886* (1.97) | | | | | |
| Female x Mostly female bosses | | 0.00928^* (2.16) | | | | |
| Female x Fourty female bosses | | | 0.00343 (0.99) | | | |
| Female x One third female bosses | | | | $0.00305 \ (0.93)$ | | |
| Female x One quarter female bosses | | | | | 0.00235 (0.72) | |
| Female x Female boss | | | | | | -0.00231 (-0.73) |
| Sector | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes | Yes |
| Bosses fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Workers fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 1729132 | 1729132 | 1729132 | 1729132 | 1729132 | 1729132 |
| Individuals | 529518 | 529518 | 529518 | 529518 | 529518 | 529518 |
| R2 | 0.784 | 0.784 | 0.784 | 0.784 | 0.784 | 0.784 |

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001Note:We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we show the coefficient ω s, taking the entrance hourly wage as Y_{itj} . Bosses are defined by their registered position (directors, owners, and managers in companies and who work in the company). The coefficients ω s are the different thresholds of female participation in bosses groups.

Cuadro A.15: Effects of having female political bosses on monthly entrance salary gender gap. Public firms

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------------------------|-------------------|--------------------|-------------------|------------------|-------------------|---------------------|
| | log(Salary) | log(Salary) | log(Salary) | log(Salary) | $\log(Salary)$ | log(Salary) |
| Female x Three Quarters female bosses | 0.00546 (0.30) | | | | | |
| Female x Mostly female bosses | | -0.0178 (-1.51) | | | | |
| Female x Fourty female bosses | | | 0.00198 (0.16) | | | |
| Female x One third female bosses | | | | 0.00740 (0.83) | | |
| Female x One quarter female bosses | | | | | 0.0179* (1.99) | |
| Female x Female boss | | | | | | 0.0489*** (4.61) |
| Sector | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes | Yes |
| Fem+Femboss | | | | | | |
| SD Fem+Femboss | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 |
| Bosses fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Workers fe Observations | Yes 315958 | Yes | Yes | Yes 315958 | Yes | Yes |
| Observations Individuals | 315958 89256 | $315958 \\ 89256$ | $315958 \\ 89256$ | 315958 89256 | $315958 \\ 89256$ | $315958 \\ 89256$ |
| R2 | 0.693 | 0.693 | 0.693 | 0.693 | 0.693 | 0.693 |

t statistics in parentheses

Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the public sector, we show the coefficient ω_s , taking the entrance monthly salary as Y_{itj} . Bosses are defined for public sector by their registered position (political position). The coefficients ω_s are the different thresholds of female participation in bosses groups.

^{*} p < 0.05, ** p < 0.01, *** p < 0.001

Cuadro A.16: Effects of having female political bosses on hourly entrance wage gender gap. Public firms

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------------------------|------------------|--------------------|-----------------|-------------------|---------------------|---------------------|
| | log(Hwage) | log(Hwage) | log(Hwage) | log(Hwage) | log(Hwage) | log(Hwage) |
| Female x Three Quarters female bosses | 0.0138 (0.75) | | | | | |
| Female x Mostly female bosses | | -0.0203 (-1.67) | | | | |
| Female x Fourty female bosses | | | 0.0184 (1.43) | | | |
| Female x One third female bosses | | | | 0.0206* (2.20) | | |
| Female x One quarter female bosses | | | | | 0.0330*** (3.54) | |
| Female x Female boss | | | | | | 0.0721*** (6.25) |
| Sector | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes | Yes |
| Bosses fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Workers fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 315949 | 315949 | 315949 | 315949 | 315949 | 315949 |
| Individuals | 89255 | 89255 | 89255 | 89255 | 89255 | 89255 |
| R2 | 0.727 | 0.727 | 0.727 | 0.727 | 0.727 | 0.727 |

t statistics in parentheses

Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the public sector, we show the coefficients ω s, taking the hourly wage as Y_{itj} . Bosses are defined for public sector by their registered position (political position). The coefficients ω s are the different thresholds of female participation in bosses groups.

^{*} p < 0.05, ** p < 0.01, *** p < 0.001

Cuadro A.17: Effects of having female registered bosses on promotion probability gender gap. Private firms

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | $Y_{ijt} = 1$ |
| Female x Three Quarters female bosses | -0.00522 | | | | | |
| | (-0.91) | | | | | |
| | | 0.00104 | | | | |
| Female x Mostly female bosses | | 0.00184 | | | | |
| | | (0.37) | | | | |
| Female x Fourty female bosses | | | 0.00483 | | | |
| Tomate it Tourty Tomate Sossos | | | (1.23) | | | |
| | | | (1.23) | | | |
| Female x One third female bosses | | | | 0.00309 | | |
| | | | | (0.84) | | |
| | | | | | | |
| Female x One quarter female bosses | | | | | 0.00402 | |
| | | | | | (1.08) | |
| Female x Female boss | | | | | | -0.00324 |
| remaie x remaie boss | | | | | | (-0.89) |
| | | | | | | (-0.03) |
| Sector | Yes | Yes | Yes | Yes | Yes | Yes |
| | | | | | | |
| Year fe | Yes | Yes | Yes | Yes | Yes | Yes |
| a .1a b . | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes | Yes |
| Bosses fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Workers fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 1736195 | 1736195 | 1736195 | 1736195 | 1736195 | 1736195 |
| Individuals | 320400 | 320400 | 320400 | 320400 | 320400 | 320400 |
| R2 | 0.233 | 0.233 | 0.233 | 0.233 | 0.233 | 0.233 |
| | | | | | | |

t statistics in parentheses

Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector. We define Y_{itj} as a variables who takes value 1 if the worker is promoted that year. Promotion is defined as the wage growth which is 30% higher that the firm's average. We show the coefficients ω s which represent the different thresholds of female participation in bosses groups, defined for private firms their registered position (directors, owners, and managers in companies and who work in the company).

^{*} p < 0.05, ** p < 0.01, *** p < 0.001

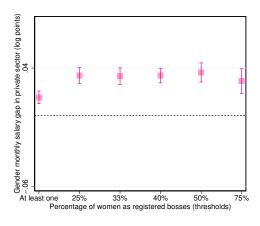
Cuadro A.18: Effects of having female political bosses on promotion probability gender gap. Public firms

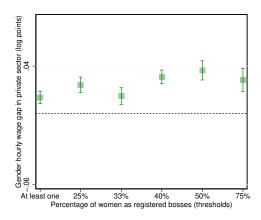
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | | | | | | | |
|---|---------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Female x Three Quarters female bosses 0.00441 (1.14) Female x Mostly female bosses 0.00807** (3.09) Female x Fourty female bosses 0.00262 (1.28) Female x One third female bosses 0.00531** (3.16) Female x One quarter female bosses 0.00296 (1.77) Female x Female bosses 2.00296 (1.77) Sector Yes | | (1) | () | () | () | () | () |
| Contract type Yes Yes | | $Y_{ijt} = 1$ |
| Female x Mostly female bosses 0.00807** (3.09) 0.00262 (1.28) Female x Fourty female bosses 0.00262 (1.28) 0.00531** (3.16) Female x One third female bosses 0.00531** (3.16) 0.00296 (1.77) Female x One quarter female bosses 2.00296 (1.77) 0.00320 (1.89) Female x Female boss 2.00320 (1.89) 0.00320 (1.89) Sector Yes | Female x Three Quarters female bosses | | | | | | |
| Female x Fourty female bosses | | (1.14) | | | | | |
| Female x Fourty female bosses | Female v Mostly female hosses | | 0.00807** | | | | |
| Female x Fourty female bosses 0.00262 (1.28) Female x One third female bosses 0.00531** (3.16) Female x One quarter female bosses 0.00296 (1.77) Female x Female boss 0.00320 (1.89) Sector Yes | Temate X Wostry Temate Bosses | | | | | | |
| Female x One third female bosses (1.28) Female x One quarter female bosses (1.28) Female x One quarter female bosses (1.28) Female x Female boss (1.28) Female x Female boss (1.28) Sector Yes Yes <td></td> <td></td> <td>(0.00)</td> <td></td> <td></td> <td></td> <td></td> | | | (0.00) | | | | |
| Female x One third female bosses 0.00531** (3.16) 0.00296 (1.77) Female x One quarter female bosses 0.00296 (1.77) 0.00320 (1.89) Female x Female boss Yes | Female x Fourty female bosses | | | | | | |
| Female x One quarter female bosses Yes < | | | | (1.28) | | | |
| Female x One quarter female bosses (3.16) Female x Female boss 10.00296 (1.77) Female x Female boss 10.00320 (1.89) Sector Yes Ye | Female v One third female hosses | | | | 0.00531** | | |
| Female x One quarter female bosses Vesual President of the properties of the pro | Temate x one unit lemate posses | | | | | | |
| Female x Female boss Yes | | | | | (0.10) | | |
| Female x Female boss Yes | Female x One quarter female bosses | | | | | | |
| Sector Yes Yes< | | | | | | (1.77) | |
| Sector Yes Yes< | Famala y Famala hoss | | | | | | 0.00320 |
| Sector Yes Yes< | remaie x remaie boss | | | | | | |
| Year fe Yes | | | | | | | (2.00) |
| Social S. Regime Yes | Sector | Yes | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime Yes | V f- | V | V | V | V | V | V |
| Contract type Yes < | rear ie | res | res | res | res | res | res |
| Contract type Yes < | Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| Bosses fe Yes Y | _ | | | | | | |
| Workers fe Yes | | | | | | | |
| Observations 1867071 1867071 1867071 1867071 1867071 1867071 | | | | | | Yes | Yes |
| | Workers fe | Yes | Yes | Yes | Yes | Yes | Yes |
| T 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | 1867071 | 1867071 | 1867071 | 1867071 | 1867071 | 1867071 |
| Individuals 215762 215762 215762 215762 215762 215762 | Individuals | 215762 | 215762 | 215762 | 215762 | 215762 | 215762 |
| R2 0.161 0.161 0.161 0.161 0.161 0.161 | R2 | 0.161 | 0.161 | 0.161 | 0.161 | 0.161 | 0.161 |

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector. We define Y_{itj} as a variables who takes value 1 if the worker is promoted that year. Promotion is defined as the wage growth which is 30 % higher that the firm's average. We show the coefficients ω s which represent the different thresholds of female participation in bosses groups, defined for the public sector by their registered position (political position).

Figura A.5: Effects of having female top 1% bosses on gender gap: Private sector

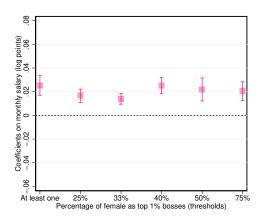


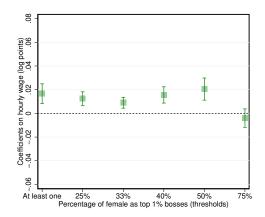


- (a) Monthly salary private sector: Top 1%
- (b) Hourly wage private sector: Top 1%

Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we graph the coefficient ω , taking monthly salary (left panel) and hourly wage (right panel) as Y_{itj} . Bosses are defined as those with the top 1% of wages in the same organization. In the horizontal axis, there are the different thresholds of female participation in bosses groups, defined by their relative wage. We only consider firms with more than 100 employees. A confidence interval of 95% is shown.

Figura A.6: Effects of having female top 1% bosses on gender gap: Public sector

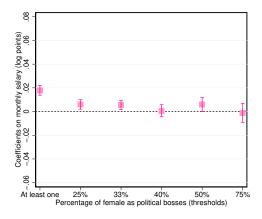


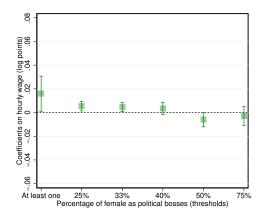


- (a) Monthly salary public sector: Top 1%
- (b) Hourly wage public sector: Top 1%

Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we graph the coefficient ω , taking monthly salary (left panel) and hourly wage (right panel) as Y_{itj} . Bosses are defined as those with the top 1% of wages in the same organization. In the horizontal axis, there are the different thresholds of female participation in bosses groups, defined by their relative wage. A confidence interval of 95% is shown.

Figura A.7: Effects of having female registered bosses on hourly wage gender gap with three fixed effects. Public sector





(a) Monthly salary public sector

(b) Hourly wage public sector

Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker, firms and bosses groups fixed effects for the private sector, we graph the coefficient ω , taking monthly salary (left panel) and hourly wage (right panel) as Y_{itj} . Bosses are defined as those political positions. In the horizontal axis, there are the different thresholds of female participation in bosses groups, defined by their registered position (political position). A confidence interval of 95 % is shown.

Supplemental material (not for publication)

B Appendix B: Additional tables

Cuadro B.1: Effects of having female top 1% bosses on monthly salary in the private firms

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | log(Salary) | log(Salary) | log(Salary) | log(Salary) | log(Salary) | log(Salary) |
| Female x Three Quarters female bosses | 0.0290*** (4.57) | | | | | |
| Female x Mostly female bosses | | 0.0363*** (7.41) | | | | |
| Female x Fourty female bosses | | | 0.0337*** (8.99) | | | |
| Female x One third female bosses | | | | 0.0332*** (7.81) | | |
| Female x One quarter female bosses | | | | | 0.0337*** (8.32) | |
| Female x Female boss | | | | | | 0.0153*** (4.69) |
| Sector | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes | Yes |
| Bosses fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Workers fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 4219042 | 4219042 | 4219042 | 4219042 | 4219042 | 4219042 |
| Individuals | 657615 | 657615 | 657615 | 657615 | 657615 | 657615 |
| R2 | 0.760 | 0.760 | 0.760 | 0.760 | 0.760 | 0.760 |

t statistics in parentheses

Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we show the coefficient ω s, taking the monthly salary as Y_{itj} . Bosses are defined by being in the top 1% of the firm's wages. The coefficients ω s are the different thresholds of female participation in bosses groups.

^{*} p < 0.05, ** p < 0.01, *** p < 0.001

Cuadro B.2: Effects of having female top 1% bosses on hourly wage in the private firms

| [wage] log(Hwage) |
|-------------------|
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| 40*** |
| 42*** |
| 09) |
| 0.0136*** |
| (4.28) |
| (1.20) |
| es Yes |
| |
| Yes Yes |
| es Yes |
| es res |
| Yes Yes |
| es Yes |
| es Yes |
| 8982 4218982 |
| 7608 657608 |
| 752 	 0.752 |
| |

t statistics in parentheses

Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the private sector, we show the coefficient ω s, taking the hourly wage as Y_{itj} . Bosses are defined by being in the top 1% of the firm's wages. The coefficients ω s are the different thresholds of female participation in bosses groups.

^{*} p < 0.05, ** p < 0.01, *** p < 0.001

Cuadro B.3: Effects of having female top 1% bosses on monthly salary in the public sector

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | log(Salary) | log(Salary) | log(Salary) | log(Salary) | log(Salary) | log(Salary) |
| Female x Three Quarters female bosses | 0.0204*** (4.23) | | | | | |
| Female x Mostly female bosses | | 0.0219*** (3.70) | | | | |
| Female x Fourty female bosses | | | 0.0251*** (5.95) | | | |
| Female x One third female bosses | | | | 0.0140*** (5.04) | | |
| Female x One quarter female bosses | | | | | 0.0166*** (4.88) | |
| Female x Female boss | | | | | | 0.0253*** (5.03) |
| Sector | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes | Yes |
| Bosses fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Workers fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 3250722 | 3250722 | 3250722 | 3250722 | 3250722 | 3250722 |
| Individuals | 294457 | 294457 | 294457 | 294457 | 294457 | 294457 |
| R2 | 0.758 | 0.758 | 0.758 | 0.758 | 0.758 | 0.758 |

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the public sector, we show the coefficient ω s, taking the hourly wage as Y_{itj} . Bosses are defined by being in the top 1% of the organization's wages. The coefficients ω s are the different thresholds of female participation in bosses groups.

Cuadro B.4: Effects of having female top 1% bosses on hourly wages in the public sector

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------------------------|------------|------------|------------|------------|------------|----------------------|
| | log(Hwage) | log(Hwage) | log(Hwage) | log(Hwage) | log(Hwage) | $\log(\text{Hwage})$ |
| Female x Three Quarters female bosses | -0.00401 | | | | | |
| | (-0.85) | | | | | |
| Female x Mostly female bosses | | 0.0205*** | | | | |
| remate x wostry temate bosses | | (3.61) | | | | |
| | | (3.31) | | | | |
| Female x Fourty female bosses | | | 0.0156*** | | | |
| | | | (3.73) | | | |
| Female x One third female bosses | | | | 0.00898** | | |
| remate x One third female bosses | | | | (3.22) | | |
| | | | | (3:22) | | |
| Female x One quarter female bosses | | | | | 0.0125*** | |
| | | | | | (3.59) | |
| Female x Female boss | | | | | | 0.0166*** |
| Temate & Temate 5055 | | | | | | (3.30) |
| | | | | | | (3133) |
| Sector | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fe | Yes | Yes | Yes | Yes | Yes | Yes |
| rear re | res | res | res | res | res | res |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes | Yes |
| | | | | | | |
| Contract type | Yes | Yes | Yes | Yes | Yes | Yes |
| Bosses fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Workers fe | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 3250652 | 3250652 | 3250652 | 3250652 | 3250652 | 3250652 |
| Individuals | 294454 | 294454 | 294454 | 294454 | 294454 | 294454 |
| R2 | 0.744 | 0.744 | 0.744 | 0.744 | 0.744 | 0.744 |

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001Note: We use the matched employer-employee social security administrative records from 1997-2013. Following the Equation 3 with worker and bosses groups fixed effects for the public sector, we show the coefficient ω s, taking the hourly wage as Y_{itj} . Bosses are defined by being in the top 1% of the organization's wages. The coefficients ω s are the different thresholds of female participation in bosses groups.

Cuadro B.5:

| | (1) | (2) | (3) | (4) | (5) |
|------------------|-----------------------|-----------------|--------------------|---------------------|--------------------|
| | log(Hwage) | log(Hwage) | log(Hwage) | log(Hwage) | $\log(Hwage)$ |
| fem_power100 | -0.0579*** (-8.01) | | | | |
| $fem_power75$ | | 0.0150 (1.82) | | | |
| $fem_power 50$ | | | 0.0247** (2.67) | | |
| $fem_power25$ | | | | $0.00950 \\ (0.56)$ | |
| fem_power0 | | | | | -0.0195 (-0.39) |
| Sector | Yes | Yes | Yes | Yes | Yes |
| Year fe | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes |
| Bosses fe | Yes | Yes | Yes | Yes | Yes |
| Workers fe | Yes | Yes | Yes | Yes | Yes |
| Observations | 900872 | 900872 | 900872 | 900872 | 900872 |
| Individuals | 195145 | 195145 | 195145 | 195145 | 195145 |
| R2 | 0.839 | 0.839 | 0.839 | 0.839 | 0.839 |

 $[\]boldsymbol{t}$ statistics in parentheses

Cuadro B.6:

| | (1) | (2) | (3) | (4) | (5) |
|------------------|-----------------------|-----------------|--------------------|---------------------|--------------------|
| | log(Hwage) | log(Hwage) | log(Hwage) | log(Hwage) | $\log(Hwage)$ |
| fem_power100 | -0.0579*** (-8.01) | | | | |
| $fem_power75$ | | 0.0150 (1.82) | | | |
| $fem_power 50$ | | | 0.0247** (2.67) | | |
| $fem_power25$ | | | | $0.00950 \\ (0.56)$ | |
| fem_power0 | | | | | -0.0195 (-0.39) |
| Sector | Yes | Yes | Yes | Yes | Yes |
| Year fe | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes |
| Bosses fe | Yes | Yes | Yes | Yes | Yes |
| Workers fe | Yes | Yes | Yes | Yes | Yes |
| Observations | 900872 | 900872 | 900872 | 900872 | 900872 |
| Individuals | 195145 | 195145 | 195145 | 195145 | 195145 |
| R2 | 0.839 | 0.839 | 0.839 | 0.839 | 0.839 |

 $[\]boldsymbol{t}$ statistics in parentheses

Cuadro B.7:

| | (1) | (2) | (3) | (4) | (5) |
|------------------|-----------------------|-----------------|--------------------|---------------------|--------------------|
| | log(Hwage) | log(Hwage) | log(Hwage) | log(Hwage) | $\log(Hwage)$ |
| fem_power100 | -0.0579*** (-8.01) | | | | |
| $fem_power75$ | | 0.0150 (1.82) | | | |
| $fem_power 50$ | | | 0.0247** (2.67) | | |
| $fem_power25$ | | | | $0.00950 \\ (0.56)$ | |
| fem_power0 | | | | | -0.0195 (-0.39) |
| Sector | Yes | Yes | Yes | Yes | Yes |
| Year fe | Yes | Yes | Yes | Yes | Yes |
| Social S. Regime | Yes | Yes | Yes | Yes | Yes |
| Contract type | Yes | Yes | Yes | Yes | Yes |
| Bosses fe | Yes | Yes | Yes | Yes | Yes |
| Workers fe | Yes | Yes | Yes | Yes | Yes |
| Observations | 900872 | 900872 | 900872 | 900872 | 900872 |
| Individuals | 195145 | 195145 | 195145 | 195145 | 195145 |
| R2 | 0.839 | 0.839 | 0.839 | 0.839 | 0.839 |

 $[\]boldsymbol{t}$ statistics in parentheses