Czech Female Managers and their Wages

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Abstract

This paper examines gender gaps in employment and wages among top- and lower-level managerial employees in the Czech Republic at the time of its accession to the EU. Using both least-squares and matching-based decomposition techniques, we find the wage gap among comparable men and women to be sizeable, but quite similar across firm hierarchy levels. The key reason why the average relative wage position of female top managers is worse compared to lower-ranking female employees is that women tend not to be at the helm of the highest-paying companies. Overall, the representation of women at the top of Czech firms as well as the structure of the gender wage gap there appear quite similar to those in the US. *JEL Classification*: J31, J71, P31

1 Introduction

There is some evidence that women face a 'glass ceiling' —a barrier to career prospects, which precludes them from achieving high-paying positions and having equal wages with men especially in the upper part of the wage distribution (e.g., Albrecht et al., 2003). A particularly visible and influential type of high-paying position is that of the manager. The representation of women among top-level managers and their relative wage position are therefore of high general public interest. The increasing share of female executives and the narrowing managerial gender pay gap in the US may represent a cracking of the discriminatory 'glass ceiling' (Bertrand and Hallock, 2001; Bell, 2005).

Unfortunately, less is known about the position of female managers in Europe, particularly in the post-communist countries of Central Europe where firm personnel strategies and corporate governance are converging towards Western standards (Denis and McConnel, 2003). Although there are now several studies of the gender pay gap in these economies (see Section 2), none focus on managers. In this paper we provide managerial gender wage gap decompositions for the Czech Republic at the time of its accession to the EU. Unlike most of the existing work on managers, our analysis covers not only top executives, but also mid-level managers and employees, thereby allowing us to link the relative position of women across firm hierarchy levels.

Working with a sample of 783 large Czech firms reporting wages of their 1,700 top-level managers, 36,000 lower-level managers and over 752,000 employees, we find Czech women to be well represented among low-level managers but severely under-represented at the top of firms' hierarchies, where the overall gender pay gap is also the largest. Even after we compare male and female managers with similar education and age and working in similar firms, female wages are about 20 percent lower. We also find a strong positive within-firm

association between the fraction of women at different hierarchy levels and some evidence of a negative within-firm link between the size of the conditional gender wage gap at a given level and the presence of women at other levels. Finally, the representation of women at the top of Czech firms as well as the structure of the gender wage gap there appears quite similar to those in the US.

In our wage-gap analysis we address a methodological issue that potentially affects the existing managerial gender wage gap studies, which all rely on parametric Oaxaca-Blinder decomposition techniques to understand the sources of the observed wage gap. The goal of any decomposition is to compare the wages of males and females with similar individual characteristics working in similar companies. However, whenever there is a significant share of men for whom no comparable women are observed, linear regression models used in the Oaxaca-Blinder techniques will misleadingly project the conditional wage distribution of women onto regions of the male wage distribution in which females are virtually nonexistent. The pitfalls of such lack of 'common support' have been carefully demonstrated by Barsky et al. (2002) in the context of the black-white wealth gap. More recently, Nopo (2008) and Black et al. (2004) suggests that such parametric assumptions lead to over-estimation of the 'unexplained' component of gender wage gaps, i.e., the part of the gap attributable to differences in rewards to individual characteristics and sometimes interpreted as an upper bound on the extent of gender discrimination.

Such over-estimation is likely to be particularly pronounced in our case given the low and uneven representation of women among top managers. Gender-related sorting into specific types of firms or managerial occupations is likely to result in a significant share of male managers for whom no comparable women will be observed. Following on this recent work, we therefore employ a nonparametric matching approach, which accounts for the gender differences in the 'support' of firm characteristics and does not impose a linear functional

form of conditional wage expectations. As expected, the nonparametric estimates indeed imply a smaller 'unexplained' part of the overall pay gap than regression-based techniques. Furthermore, matching helps us in the interpretation of the overall gender wage gaps; it shows that the major part of the gap for top-level managers occurs off the 'common support' and is driven by the absence of female top managers from the types of firms that pay their managers unusually well.

The remainder of this paper is organized as follows: Section 2 explores the related literature, Section 3 describes the data, and Section 4 presents basic gender-related statistics. Section 5 then covers the OLS- and matching-based decomposition techniques while Section 6 discusses the estimated wage-gap decompositions. We relate the relative position of women in a firm's management to that in the firm's employee workforce in Section 7 and contrast our findings with those from the US literature in Section 8. Concluding remarks are offered in Section 9.

2 Background

Our analysis builds on two strands of research. First, we extend the small literature on the gender wage gap among managers. Second, we complement the extensive set of gender wage gap analyses from post-communist economies. In this section, we briefly discuss these related areas of research.

2.1 Female Managers and their Wages

There are now two detailed studies of the gender gap in top corporate jobs in the US, both relying primarily on Standard and Poor's ExecuComp data, which contain information on the five highest-paid executives in large publicly traded US firms. Bertrand and Hallock (2001) study the data from 1992 to 1997 and find that women represent about 2.5% of the sample

and earn about 45% less than men. Bell (2005) covers the 1992-2003 period and reports a much smaller average gap in gross compensation of 25%, suggesting dramatic reductions in the gap after 1997. Both studies show that women gradually increase their participation in top executive ranks (to over 6% after 2001) as well as their relative compensation. They both also suggest that about 50 to 75% of the raw wage gap can be 'explained' by women being less likely to manage large companies and to be CEO, Chair or company President. The ExecuComp data used in the US research report information on different components of executive pay including salary, annual bonus, incentive bonus, and the value of stock options. Bell (2005) finds that the 'unexplained' gender wage gap is not sensitive to different types of compensation measures. She also reports a positive relationship between the presence of a female CEO and the representation and relative wages of other female top-paid managers.

Outside of the US, there is so far apparently only one study of the gender pay differences among executives. Gregg and Machin (1993) study British senior managers and find that women are less likely to be promoted and are paid 30% less; furthermore, two thirds of this raw pay gap is not explained by their observable characteristics. Little is therefore known about the relative position of female managers in most other countries. Standard international data provide no detailed information on the structure of the male-female pay gap among managers. The only widely available related statistic is the women's share as legislators, senior officials and managers, i.e., their share in the 1st major group of the ISCO-88 occupational classification. This statistic can be computed from household surveys, such as the widely available Labour Force Surveys, and is also featured in the International Labour Organization's Yearbooks (see, e.g., ILO, 2004). However, it is likely that this share is dominated by the fraction of women among the large group of senior officials and may therefore over-estimate female representation among top managers.[1]

[1]For example in the 2003 and 2004 Czech Labor Force Surveys, about 90% of the ISCO 1st major group

To provide an aggregate cross-country comparison of the relative gender employment among managers of large firms, we use the Luxembourg Income Study (LIS), which harmonizes labor-market micro data from several countries.[2] This data allows us to focus on managers of large firms (occupation group 12 of the ISCO-88 classification) and to measure both the fraction of women in this group and the corresponding gender wage gap. Table 1 shows that the share of females in this occupational group varies widely from 17% in Belgium to 43% in the USA. The hourly pay gap, defined as the ratio of female to male average wages minus one is high in Russia, Spain, and the US, and the smallest for Ireland and Slovenia. In the Czech Republic, females constitute only about 23% of the group of corporate managers. The corresponding gender pay gap, at 24%, is then close to the average gap taken across our small sample of countries. Based on this aggregate comparison, it therefore appears that the Czech Republic is a quite typical country in terms of the relative position of women in the group of corporate managers.

2.2 Wages in Post-Communist Countries

Much research now studies the size and structure of the gender wage gap in post-communist economies. A typical finding in this literature is that only a small part of the pay gap can be attributed to gender differences in productive characteristics. Several studies also point out the adverse effect of increasing wage inequality for the relative wage position of women and the important role of decreasing low-wage female labor force participation for explaining the observed reductions in the overall gap.[3] On the other hand, there is relatively little research on gender segregation (and the changes thereof) across occupations in these

was composed of senior officials, which includes municipality and public-administration officials.

[2]The LIS collects information at the individual and household level from labor force surveys. The data is available at `www.lisproject.org` .

[3]For recent gender wage gap decompositions from Central Europe see Jolliffe and Campos (2005) or Jurajda (2005).

countries. Ogloblin's (1999) analysis implies a major role for occupational segregation in accounting for the observed gender wage gap in Russia in the early 1990s. Similarly, Jurajda (2005), who examines Czech data from 1998 and 2002, suggests that a large part of the stable gender wage gap is due to segregation of women into low-paying occupations and firms. Still, he finds the 'unexplained' component of the gap in the Czech Republic to be much larger, suggesting an extensive potential role for within-job wage discrimination.

The history of occupational gender segregation (Ogloblin, 1999) as well as the recent evidence on the presence of important segregation effects and on potential within-job wage discrimination all motivate the study of gender gaps in the highly visible role-model managerial occupation group. Yet, the literature on managerial pay in post-communist economies is miniscule as it apparently consists of two papers, both focusing on the relationship between managerial compensation and firm performance. While Jones and Kato (1998) examine the pay of Bulgarian managers immediately after the collapse of communism, Eriksson (2005) studies a recent sample of Czech and Slovak managers. He finds that private firms offer higher pay than state-owned companies and confirms a positive link between managerial compensation and company performance. There are 7% of females in his 2000 sample of 600 Czech CEOs responding to an earnings survey; he offers no further detail as to the gender structure of managerial employment.

3 Data

We use data from a national employer survey, the Information System on Average Earnings (ISAE), from the first quarters of 2000 to 2004. The enterprise survey is conducted on behalf of the Czech Ministry of Labor and Social Affairs and firm response is mandatory. It contains hourly wages, gender, education, age, and a detailed occupational classification for each worker employed in the sampled firms, which also report their total employment, ownership

and industry (using the NACE classification).[4] The wage records are drawn directly from firms' personnel databases and the definition of hourly wage is detailed and fully consistent across firms; it includes total quarterly cash compensation and bonuses divided by total hours worked for that quarter.[5] Having available a measure of hourly wage rates is ideal for the purpose of estimating differences in the pay of men and women because of the potential gender differences in hours worked. On the other hand, it is possible that Czech executive pay packages also contain other forms of compensation such as stock options, which are therefore ignored in our analysis. There is no systematic evidence on the extent of the use of stock options in post-communist countries.

A detailed occupational classification (ISCO-88) is used to identify managerial employees at three levels: (i) chief executives and directors (ISCO code 121), (ii) production managers and supervisors (ISCO 122), and (iii) specialist managers and supervisors in finance, administration, personnel, sales and marketing, distribution, or computing (ISCO 123). In this study, the first group is referred to as top-level managers. Many firms report more than one top manager. Next, we combine production and specialist managers under the heading of lower-level managers. In some cases, we will bring into the analysis a third, benchmark group of all regular employees.[6]

The original stratified random sample drawn from the country for-profit firm register consists of 2000 firms on average per year over the 2000-2004 period, and covers all industries, ownership groups and firm sizes (above 10 employees) with a natural over-representation

[4] We cannot construct an individual panel due to lack of personal identifiers.

[5] Annual bonuses are applied proportionately to each quarter in calculating the quarterly average wage rate.

[6] In a subset of our analysis in Section 8, we also use another alternative classification of managers, which distinguishes three managerial levels: (i) chief executives and directors (ii) directors in finance, administration, personnel, sales and marketing, distribution or computing, and (iii) all other managers and supervisors. This alternative classification employs the fact that the Czech version of ISCO-88 introduces specific 5th digit codes, which allow us to identify group (ii).

of large firms.[7] In our analysis we focus only on large firms—those with more than 250 workers—as the position and role of managers are defined more precisely in large organizational structures. The ownership grouping available in the data distinguishes foreign-majority, domestic-private-majority, state-majority, and no-majority (mixed) firms. We also omit large cooperatives (about 200 firms on average per year), because of their different legal and corporate governance framework (Bonin et al., 1993). The number of sampled large firms is evenly distributed across years, with the maximum of 733 in 2001.

As a result, we start with a sample of 3,297 firm-year observations. Unfortunately, wage records for top-level managerial employees are missing in almost a third of this pool of observations. Fortunately, many of the firms that do not report managerial wages in one year do so in another. In the whole five-year period, a total of 1,011 different firms are covered, out of which 218 do not report top-level managerial wage records in at least one year. The incidence of not reporting managerial wages is unrelated to observed firm characteristics.[8] Still, a potentially non-random response rate with respect to the relative position of female managers is a potential weakness of our analysis.[9]

Given the stable wage structure in the Czech Republic during our study period (Jurajda, 2005) and the goal of focusing on the small group of female top-level managers, our strategy is to combine the firm-year observations with available managerial wage records to maximize the size of a cross-section of firms, at the cost of combining data from different years. We select one firm-year observation from the five-year sample period based on several criteria.[10]

[7] The 2001 ISAE sample covers 38 (58) [64] percent of firms employing 250-500 (500-1000) [over 1000] employees.

[8] We estimated a logit model for the incidence of missing top-manager wages controlling for firm ownership type, industry and the number of employees. None of the estimated set of parameters was statistically significant. These results are available upon request.

[9] We evaluate this potential problem indirectly in Section 7.

[10] We look for the year with the maximum number of reported top- and lower-level managers, which, however, does not vary much within firms, conditional on reporting. In case a given firm reports a similar number of managers in more than one year, the year closer to 2002 or 2003 is preferred. In all estimated

The resulting sample consists of 783 firms reporting wages of all of their employees.

Overall, the data we use have several unique strengths as well as weaknesses. Among the strengths, it is a large data source covering wage records of 1,692 top-level managers, over 36,000 lower-level managers and over 752,000 non-managerial employees. The data therefore allow us to study and relate within-firm gender gaps at three hierarchy levels. The wage measure is free of reporting bias possibly present in survey data on managerial pay in less developed economies such as those used by Eriksson (2005). For the weaknesses, the data do not identify CEOs,[11] there is a substantial fraction of firms not reporting managerial wages, and only wage data (including bonuses) but no other forms of compensation are reported. The last weakness may be of relatively small concern. First, salaries will likely constitute the bulk of compensation for lower-level managers. Second, Bell (2005) finds that the 'unexplained' portion of the gender pay gaps among top-level US executives are similar when estimated off all-compensation or salary-only data.

4 Gender Gaps in Wages and Employment

A unique feature of our managerial wage data is that they allow us to compare the wage and employment patterns among two layers of managers as well as those prevailing among basic employees. Such comparisons are natural to the extent that lower-level managers are recruited from employees within industries or demographic groups and to the extent that top managers are promoted from lower-level ranks within firms. From an alternative perspective, these comparisons are interesting if the presence of a female top-level manager has a positive

regressions presented below, we include a set of year dummies. In a previous version of this paper, we compare results based on alternative sample-inclusion criteria, which make relatively little difference. These results are available upon request.

[11] We note, however, that the fraction of women among all top-level managers in our data (7%) is identical to the fraction of Czech female CEOs reported by Eriksson (2005).

influence on the relative standing of lower-level female employees.[12] While we are not able to distinguish between these two perspectives, we believe that the benchmark all-employee-based comparisons offered below aid in the interpretation of the descriptive statistics for managers.[13]

Top-level managers in our data make on average 2.69 times more per hour than lower-level managers who, in turn, enjoy wage rates 2.46 times higher compared to those of basic employees. How well are women represented among these high-paid groups of workers? If the gender of managers were assigned randomly in a fashion reflecting the overall employment patterns, the share of female managers would be around 46%, which is the fraction of females in the whole sample before dropping the non-response firms and the small firms. In contrast, our data show that only 7% of top managers are females, while women constitute 32% of all lower-level managers.[14] Female top-level (lower-level) managers make on average 41% (38%) less per hour than their male colleagues, while the employee-based gender wage gap is 22%.[15]

Demographic patterns of gender-specific employment and wages are presented in Table 2 separately for the three hierarchy levels of top managers, lower-level managers and all remaining employees. Specifically, the table shows the fraction of females and the gender wage gap in each group (i.e., one minus the ratio of female to male average wages) as well as the relative pay position of a given group within a hierarchy level.[16] Women are relatively

[12] See Bell (2005) for several hypotheses on why this might be the case and an extensive list of related references.

[13] We return to the relationship between relative female positions across hierarchy levels in Section 7.

[14] Our Czech data have a sister data set in Slovakia (collected by the same agency). However, the Slovak data are much smaller compared to the Czech sample as they cover only 227 non-cooperative firms employing over 250 workers as of 2002. Of these firms, all report lower-level managers, but only 54% report top managerial wages. We therefore hesitate to use this data for detailed analysis. Nevertheless, the representation of women is similar to that found in the larger Czech sample as 7% of reported Slovak top managers are female, while 40% of lower managers are women.

[15] The median gender wage differential for top-level and lower-level managers is 41% and 37%, respectively.

[16] In the Table, we report the statistical significance for tests asking whether the within-hierarchy group-specific statistic is significantly different from that calculated using all data in a given hierarchy level. This should help signal the amount of information available within each detailed data cell.

highly represented among younger and especially among less educated top managers—and these groups of managers are also the least highly paid. Among lower-level managers, the wage gap is small in the group of highly educated, where there are also relatively little women. The representation of women and the gender wage gap are more equalized across major demographic groups in the large sample of basic employees.

Firm-level patterns of employment and wages are presented in Table 3, which focuses on firms' ownership type, size, and industrial sector. The results for top managers suggest that state-owned firms have the lowest gender pay gap and also feature more women at the top of the firm hierarchy compared to other ownership categories. Dividing firms into four quartiles by size (total employment) implies that females are more likely to be at the top of the few very large firms. Finally, the 'femaleness' of the top brass is highest in the relatively low-paying retail and transport/communication industries, where 38% of all female top managers work.[17] The gender wage gap for top managers fluctuates across all industry branches, but is particularly high in the retail industry.[18]

Shifting attention to lower-level managers, Table 3 suggests that female representation in the managerial workforce is highest in state-owned and very large firms, similar to the case with top-level managers. The gender wage gap is now somewhat more equalized across firm types in comparison to the relevant top-level-managerial statistic. Looking at industry patterns of lower management's 'femaleness' we again find the retail and transport industries having high shares of women. More than half of all female lower managers are concentrated in transport/communication and manufacturing. However, the sector with the highest number of females—transport—pays some of the lowest wages and exhibits the second highest wage

[17] We also note that banking and insurance feature a high share of female employees and lower-level managers, but a low share of female top managers.

[18] The construction and service industries are notable in that they exhibit very high shares of women among basic employees, but very low shares of female top-level managers and high gender wage gaps.

gap after banking and insurance.

Of course, these simple descriptive findings are hard to interpret as the cross-industry differences could be driven by a different demographic or firm-size composition of the sampled firms. Nevertheless, the evidence does suggest that female managers tend to be under-represented in the highest paid jobs and there appears to be a clear divide in the share of women between top- and lower-level managerial positions. The rest of this study asks to what extent the observed gender wage gaps among managers can be explained by the gender employment patterns and differences in demographic characteristics highlighted above.

5 Decomposition Techniques

5.1 Regression-Based Decompositions

The traditional Oaxaca-Blinder mean wage gap decomposition technique, which isolates the part of the overall gap related to observable differences between men and women, is based on estimating gender-specific linear log-wage regressions controlling for observed characteristics. We approximate the counterfactual non-discriminatory wage structure (Oaxaca and Ransom, 1994) with the 'male' regression coefficients based on running a regression on the sample of male managers. This choice makes our parametric decompositions comparable to the matching decompositions presented below. The approach we choose is to isolate the effect of belonging to the female demographic group by asking how much women would be paid if they were treated like men; this corresponds to estimating the effect of 'treatment on treated' in the terminology of the program evaluation literature.

We therefore decompose the gap between the male and female mean of the natural logarithm of hourly wages as follows:

$$Gap = \overline{\ln w_1} - \overline{\ln w_0} = (\overline{X_1} - \overline{X_0})' \beta_0 + Unexplained\ Gap, \tag{1}$$

where $\overline{X_1}$ and $\overline{X_0}$ denote the respective vectors of female and male mean values of explanatory variables and β_0 stands for the estimated set of male slope coefficients. In order to reflect the likely presence of inter-dependence of unobservables within firms, we cluster residuals at the firm level in all reported specifications.

The estimated wage equations condition on individual characteristics (age groups and education degrees) and also control for firm characteristics (type of ownership, firm size and two-digit industry category).[19] In regressions based on managers, we also control for firm average wages of non-managerial employees to capture firm-specific wage-level differences within industry and size groups.[20] Introducing firm controls affects the interpretation of the 'unexplained' gap because they absorb the potential barriers to the entry of women into managerial positions in certain firm types.[21] Controlling for firm characteristics, however, helps us compare the wages of comparable female and male managers and therefore approximate more closely potential violations of the equal pay for equal work principle. This is also the goal of the matching approach presented below, which allows us to decompose the overall gap into the part due to wage differences among comparable managers (explained and unexplained) and the part related to a lack of presence of female managers in certain firm types.

5.2 Matching-Based Decompositions

Non-parametric matching, which contrasts wages of 'matched' male and female workers with similar observable characteristics, is an intuitive alternative to regression-based methods.

[19] Wage-age dependence is specified using a flexible step function with five-year intervals; education controls consist of four dummies for primary, apprenticeship, secondary and university degrees; ownership dummies correspond to majority foreign, private, state and mixed ownership; firm size is controlled for using a step function corresponding to quintiles of the size distribution; finally, twelve industry dummies are also included.

[20] We measure the employee average wage using males. The decompositions are based on male-wage regressions; further, controlling for the overall average wage would also implicitly measure the effect of the share of women—the subject of analysis in Section 7.

[21] See Blau and Ferber (1987) for a similar discussion related to the inclusion of occupational controls.

We again start with the total wage gap, defined as the difference between female and male conditional expected wages: $Gap = E(\ln w_1|D = 1) - E(\ln w_0|D = 0)$. We consider the 'treatment' effect of being a female ($D = 1$) as opposed to belonging to the 'control' demographic group of men ($D = 0$). The matching approach aims to estimate the missing counterfactual of what a woman's wage would be if she were a man. The answer is given by the wage of men with the same set of observable characteristics. The approach then remains silent about the extent of wage differences between men and women in those types of firms or occupations from which women are generally absent.

First, we sort both males and females into data cells, indexed by k, based on their age, education, industry, firm size and ownership. This allows us to write the overall average wage of females as $E(\ln w_1|D = 1) = \sum_{k=1}^{n} p_k E(\ln w_1|D = 1, k)$, where $E(\ln w|D = 1, k)$ is the expected wage for females in the k^{th} cell and p_k is the proportion of females in that data cell. Similarly, for men, we use q_k to denote the proportion of males in the k^{th} cell. Thus the gap can be expressed as

$$Gap = \sum_{k=1}^{n} p_k E(\ln w_1|D = 1, k) - \sum_{k=1}^{n} q_k E(\ln w_0|D = 0, k)$$

and by adding and subtracting $\sum_{k=1}^{n} p_k E(\ln w_0|D = 0, k)$ we obtain

$$Gap = \sum_{k=1}^{n} p_k [E(\ln w_1|D = 1, k) - E(\ln w_0|D = 0, k)] + \sum_{k=1}^{n} (p_k - q_k) E(\ln w_0|D = 0, k). \quad (2)$$

This is of course reminiscent of the Oaxaca-Blinder decomposition. The first term in the equation describes how much less women would earn if they shared equal observable characteristics with men. The group-specific gender wage gap is averaged across groups with respect to the distribution of the "treated" (p_k), resulting in an estimate of the 'average treatment on the treated' (ATT) in the terminology of the program evaluation literature or the 'unexplained' gap in the jargon of the regression-based decompositions.

Equation 2 makes clear that a basic requirement for the implementation of the matching approach is a sufficiently large overlap between the distribution of the observable characteristics of the "treated" and "untreated" individuals. This is known as the *common support* condition. In our case, it asks that we only use 'similar' males for comparison with every female manager in our data and drop from the calculation of the ATT those males who work in firm types where no women are employed.

There are available several algorithms for matching 'comparable' workers. We apply 'exact', kernel and Mahalanobis-metric matching with replacement.[22] Exact matching, or cell matching, compares individuals with exactly the same set of values of the observed variables. Kernel matching is based on the estimated propensity scores and takes local averages of the untreated observations near each treated observation.[23] Finally, Mahalanobis matching consists of matching on specific variables (a subset of X that is assumed to be particularly important) in addition to the propensity score; it may decrease selection bias and may also serve as an additional protection against any impact due to inconsistent estimation of the propensity score.[24]

[22] Matching is implemented in Stata 8 using the latest version of the psmatch2 software suggested by Leuven and Sianesi (2003). 'Replacement' refers to the repeated use of the "untreated" (male) individuals in forming the matched comparison groups. Given that in our application the size of the treatment group is typically smaller than the control group size, matching with replacement is the only reasonable option.

[23] For exact matching, we use so-called 'pair' matching (one woman to all matched men); for propensity score matching, we use trimming to determine the common support, see Smith and Todd (2005).

[24] See Rubin (1980) and Rosenbaum and Rubin (1983) for further details. An assessment of the matching quality consists of checking whether the matching procedure is able to balance the distribution of the relevant variables across the control and treatment group. To this effect we perform two-sample t-tests as suggested by Rosenbaum and Rubin (1985).

6 Decomposition Results

6.1 Regression-Based Decompositions

In this section we present the estimated conditional ('pure', 'unexplained') wage gaps based on the Oaxaca-Blinder procedure outlined in Section 5.1. Table 4 first lists the 'raw' average gender log-wage differentials and then the corresponding conditional gaps based on different regression specifications. The results are presented separately for top managers, lower managers and employees. The unconditional log-wage gender gap is -0.55 for top managers, -0.43 for lower managers and -0.22 for employees. Approximately a third of the raw gender wage gap for both top- and lower-level managers can be explained by the gender differences in age and education. This is in contrast to the situation with regular employees, where the demographic composition of the workforce is actually more favorable for women. Next, controlling only for firm characteristics but not for employee demographics suggests that the type of firm that is more likely to have female managers pays significantly lower wages. Firm ownership, size and industry explain up to eight percentage points of the managerial gender wage gaps, but little of the regular-employee gap. The average employee (non-managerial) wage level in the firm is particularly helpful in explaining the size of the wage gap between male and female lower-level managers.

The overall conclusion of the presence of a sizeable 'unexplained' component of the managerial gender wage gap is confirmed in the bottom part of Table 4, where we first present gaps controlling for both individual and firm characteristics. The top-managerial conditional log-wage gap is close to 30% even in such rich specification. The 'unexplained' gaps are smaller and similar for lower-level managers and employees. However, they remain close to 20% even there.

The coefficient estimates from the male log–wage regressions for managerial employees

underlying these decompositions are presented in Table 5. The Table also shows the difference between female and male mean values of explanatory variables and the (absolute) contribution of each characteristic to the overall managerial gender wage gap. Clearly, the relative lack of older female top-level managers helps to explain much of the gap as does the relative scarcity of university-educated female managers. Of particular interest is the contribution of the employee pay level. Lower-level managers are paid better in firms that offer higher wages to their employees and this explains about 4 percentage points of the overall pay gap. While there are more women in the group of lower-level managers, they are sorted into firms that pay lower wages to basic employees and much of this sorting occurs within industry and size groups. The finding of female managerial segregation into lower-paying firms is consistent with the presence of links between the gender wage gaps and the representation of women at different hierarchy levels, an issue which we explore in more detail in Section 7.

Finally, in the last row of Table 4, we control for firm identity fully using a set of firm fixed effects.[25] This results in a minor reduction of the 'unexplained' wage gap among lower-level managers, suggesting that the observed firm characteristics are quite rich for this groups, but a large drop in the conditional gap for top-level managers. Clearly, the types of firms that hire female top-level managers offer different level of pay and this is not fully captured by controlling for industry and firm size independently. The 'unexplained' gap is now fairly similar across the three hierarchy levels.

6.2 Matching-Based Decompositions

In this section, we use matching methods to ask to what extent the regression-based 'unexplained' wage gaps presented in Table 4 can be thought of as capturing the wage gap between truly comparable male and female managers. We estimate the average treatment on

[25] See Meng (2004) for a gender wage gap analysis controlling for firm wage policies.

the treated (ATT) using the kernel, Mahalanobis-metric, and exact matching procedures.[26] But first, we estimate the propensity score—the probability that an individual with certain characteristics is female. Specifically, we run logit models controlling for the same set of observables used in the OLS wage regressions.[27]

Table 6 shows the 'unexplained' wage gap from the regression-based decompositions together with the estimated ATT parameter from all three types of matching. Bootstrapped standard errors are reported below the average treatment effects, which are rather similar across the three types of matching, suggesting little sensitivity to the details of the matching technique. The ATT estimates for top managers are smaller than the OLS-based conditional gaps, but remain large and are above zero with high levels of statistical significance. The Oaxaca-Blinder decomposition suggests that for top managers, out of the raw log-wage gender gap of -0.55, about -0.29 remain unexplained, while the ATT estimate ranges from -0.19 to -0.22 depending on the procedure.[28]

In contrast, the ATT for lower-level managers, close to 20%, is highly similar to the OLS-based conditional gap. This is perhaps not surprising, given that the common support condition is less of a problem in the group of lower-level managers where women are more highly represented. The number of 'comparable' male and female wage records used in each decomposition is presented in the Table and shows that matching typically excludes from comparison only a small share of lower-level managers. In stark contrast, the share of non-

[26] We experimented with different kernel functions and bandwidth parameters and found that these choices affected the ATT little. The reported results are based on the Epanechnikov kernel using an optimal bandwidth of 0.06. The sub-set of X used for matching on top of the propensity score in the Mahalanobis exercise consists of ownership, firm size, and industry indicators.

[27] Age enters as a step function with five-year intervals, education in four attainment-level dummies, and firm size as a step function in quintiles of firms size distribution. We also control for a set of year, industry and ownership dummies, and interact the firm size and industry terms. Finally, we also control for the employee wage average. In the exact-matching exercise, we categorize the average wage level into decile groups.

[28] We also estimated specifications conditioning only on pre-market characteristics (age and education). For the top (lower-level) managers the exact-matching ATT estimate is -0.34 (-0.26).

comparable top managers is high. Exact matching is the most strict procedure as it drops all observations that do not find a gender counterpart with the same set of all covariates; as a result only 71 females are matched with 234 males out of the original sample of 118 females and 1,572 males. Accounting for common support in terms of the unidimensional propensity score is less restrictive, especially for men, but results in similar ATT estimates.

We note that both the kernel and the Mahalanobis matching procedures succeed in reducing the variability of observable characteristics across the two genders, which suggests good matching quality.[29] We conclude that in the presence of low female representation among top managers, matching leads to lower 'unexplained' gaps compared to OLS decompositions, while there is less difference in the estimated conditional gaps across our diverse decomposition methods for the group of lower-level managers, where women are better represented.

Furthermore, matching highlights the support problem in a way that regression does not. Let us consider for example the exact matching procedure. Starting with the raw wage gap for all top managers of -0.55, we analyze only the small sub-sample of matched managers, where the raw gap happens to be -0.10. This shows that a major part of the gap comes from the existence of non-comparable top male and female managers. Using matching averaging on the matched sub-sample (i.e., weighting the group-specific gender wage gaps with the distribution of the 'treated') then results in an 'unexplained' gap of -0.19.

An important question thus raised by the matching exercise is what types of firms have solely male managers. Comparing the industry and size structure of firms with 'unmatched' lower-level male managers to the overall male sample, we find that firms in manufacturing and utilities have most of their male lower-level managers off the 'common support'; for example,

[29] Diagnostic results are available upon request. We have evaluated pseudo-R^2 statistics before and after matching separately for each procedure and each hierarchy level. In all cases there are no systematic differences in the distribution of covariates after matching and the pseudo-R^2 is close to zero (0.02, down from 0.2 before matching). Similar conclusions come from F-tests on the joint significance of all regressors.

83% of the almost 3 thousand lower-level male managers in the largest manufacturing firms (those with over 3,500 workers) have no comparable women in the sample. On the other hand, only 5% of the 4 thousand male lower-level managers in the similarly large transportation and communication companies fail to find a 'matched' female manager. The situation is similar for top-level managers. The only two types of firms where women are well 'matched' with male top-level managers are the largest companies in transportation and communication and, somewhat surprisingly, in construction.

7 Relationships Across Hierarchy Levels

The previous analysis suggests the presence of within-firm links between the gender-gaps in employment and wages across the three firm hierarchy levels. Here, we explore these correlations in more detail. There are two potential interpretations of a positive relationship between the 'femaleness' of lower and upper employment hierarchy: Women in upper firm hierarchy levels could 'help' women enter lower-level positions and/or a high fraction of women among employees could lead to more females reaching the higher hierarchy levels. The first mechanism is featured in the economic theory of discrimination (Becker, 1985), where female managers are inclined to hire women into their firms because they may prefer to work with similar individuals. The alternative mechanism is natural to the extent that lower-level managers are recruited from employees and top-level managers were once lower-level managers. In the absence of information about the timing of the entry of female top managers, however, it is difficult to disentangle the likely two-way causality. In a similar spirit, one can also ask whether the gender wage gaps of employees and lower-level managers are correlated with the fraction of females among top-level managers. Such analysis has been recently performed by Bell (2005), who explores the correlation of the presence of a female CEO with the relative standing of female employees in US companies. She concludes that

women are relatively better off in women-led firms in terms of pay and that having more women in a firm is positively associated with the chances of a woman reaching the top of the firm.

We perform a similar firm-level analysis. To measure the firm-specific gender wage gaps, we estimate separate regressions for each firm at each hierarchy level based on both men and women. Other than controlling for individual characteristics, these regressions also include the female dummy. We thus capture the 'unexplained' gap (of Equation 1) by the female dummy coefficient.[30] Given the distribution of male and female top-level managers across firms, we are able to estimate the conditional gender wage gap for top-managers for only a highly limited set of 64 firms, which are mostly in manufacturing and almost all relatively small. All of the estimated regressions based on these 64 within-firm wage gaps were highly imprecise and we do not report them here.

Our initial analysis based on this firm-level data links the share of women across adjacent hierarchy levels within firms. Specifically, in column (1) of Table 7, we regress the firm-specific share of women among employees on the firm's share of women among low-level managers, controlling for a full set of firm-type observables used in the gender gap decompositions presented above. In columns (5) and (9), we then repeat this analysis for the other possible combinations of adjacent hierarchy levels. In all specifications we find statistically significant positive coefficients. For example, the coefficient in column (5) suggests that even within detailed firm type, increasing the share of women among employees by 10 percentage points is associated with a 3.5 percentage point higher share of women among lower-level employees. The relationship is quantitatively less strong when going from lower-level to top-level managers in column (9).

[30] When we use the estimated female dummy coefficient on the left-hand side of firm-level regressions, we weight these regressions with the inverse of the variance of the female-dummy coefficients. See Wooldridge (2003) for an efficiency-based motivation for this approach.

Next, we ask similar descriptive questions for the firm- and hierarchy-specific gender wage gap. For instance, in column (2) we regress the gender wage gap among employees on the share of women among lower-level managers and then explore the other possible relationship in column (6). We find a statistically as well as economically significant negative link at the firm level between the conditional 'unexplained' gender wage gap among lower-level managers and the fraction of women among employees. These results are in accord with those Bell (2005) reports for the US; they are consistent with Czech firms differing in a systematic way (within industry and size categories) in how friendly they are to women.[31]

The remaining columns of Table 7 then present specifications where we simultaneously condition on the fraction of women in the other two firm hierarchy levels. Particularly interesting is column (7), where we ask whether there are more female lower-level managers in firms that have, ceteris paribus, a higher share of female employees or a higher fraction of female top-level managers. We find that a high fraction of women at the employee level is a quantitatively more important predictor of the representation of women among lower-level managers compared to the effect of share of women among top-level managers. The regression estimates thus support the notion that lower-level managers are promoted from among the employees, but they are also consistent with some independent positive effect of female top-level managers on the representation of women in lower management. Unfortunately, the data do not allow us to distinguish between the effects of female representation at two hierarchy levels on the size of the conditional within-firm gender wage gaps at the third level.

[31] These results also suggest that the firm-specific gender wage gap among top managers, which we cannot effectively measure, is likely to be related to that among lower-level managers. Using this premise, we can ask whether firms in our data not reporting the wages of top managers (see Section 3) have unusual gender wage gaps for lower level managers. We did not find any connection between these two firm-level variables; these results are available upon request.

8 Comparison to US Findings

Although we have estimated the gender wage gap among Czech managers using several techniques, it is not clear how large the Czech gap is in an international perspective. Bertrand and Hallock (2001) study the gender pay differential of the five highest-paid executives in a sample of large publicly traded firms in the US. In order to compare the Czech managerial gender gap to the US one, we therefore select and separately study the five highest-paid managerial employees from each firm in our ISAE sample and compare them to their American colleagues for the same period (2000 to 2004). The US and Czech firm samples are, however, not comparable in terms of average firm size as the ExecuComp data covers much larger firms from the S&P 1500.

The share of females among the five highest-paid managers in each of the Czech firms in our sample is 9%, which compares favorably to the 6.6% in the ExecuComp US data for the period 2000-2004. The ratio of female to male pay among the five highest-paid Czech managers is 74%, which is highly comparable to the 73% ratio for executive salary measured in the ExecuComp data for the same period.[32] Given that aggregate gender statistics are similar in the two economies, we next ask whether the structure of the Czech wage gap for the highest-paid managers compares to that estimated in the US. To answer this question, we estimate a series of pooled regressions of salary and bonus on a female dummy using the sub-sample of the five highest-paid Czech and US managers.[33] The results are presented in

[32] Bertrand and Hallock (2001) also report the US managerial wage gap from the Current Population Survey (CPS), which includes not only top-level managers but all managerial occupations (category 3 to 22 in the 1980 Census of Population Occupational Classification); the managerial coverage of the CPS and ISAE data is thus more comparable. Comparing the combined group of top- and lower-level Czech managers to the CPS managerial occupations covered by Bertrand and Hallock (2001), the Czech raw wage gap appears about a third smaller in comparison to the US gap.

[33] The strategy of focusing on female dummy estimates from pooled regressions corresponds to the Oaxaca-Blinder decomposition we used in the main body of this paper (Equation 1) to the extent that the pooled regression coefficients are close to the male parameters and to the extent that the introduction of the female dummy to the pooled regression does not affect its slope parameters.

Table 8.[34] The mean Czech gender log-wage differential is 35%. About a fifth of it, or 8 percentage points, can be accounted for by the lower participation of women in large (higher paying) firms. Indeed, 74% of the five highest-paid female managers appear in the smallest firms. In the US, however, the effect of gender sorting into large firms is much weaker as only a small fraction of the whole gap is explained by the lack of women in the large firms. Bertrand and Hallock (2001), analyzing earlier period, find that a third of the gap is due to the lack of women in large better paying firms, which suggests that American female top-five managers have improved their relative position by being appointed at very top positions.

The different representation of women across industries does not affect the Czech gap in column (5), similarly to the US case in column (6). Finally, in columns (7) and (8) we additionally control for occupational structure among the highest paid executives. Specifically, for the Czech sample we introduce a dummy variable differentiating between directors and chief executive officers on the one hand and financial, sales, personnel and R&D managers on the other hand.[35] The scarcity of female directors and chief executive officers explains a substantial part of the gender compensation differential. The combined effects of occupational, industrial and firm-size segregation reduced the Czech 'unexplained' gap measured by the female dummy estimate to -0.20. This is a larger conditional gap compared to the US one, analyzed in column (8). It appears that the lack of women at the very top of US corporations (CEOs) explains around 50% of the pay differential.

Overall, we find the representation of women at the top of US and Czech firms to be quite comparable. While the Czech and US managerial gender raw-wage gaps are also similar, the power of our Czech data to explain these gaps is lower compared to the US case; however, there are some similarities in the structure of wage gap across the two countries.

[34] For the sake of comparability, the firm-level controls used in Table 8 exclude the average employee pay level used in, e.g., Table 4.

[35] See Section 3, note 6, for details on the data.

9 Conclusion

This paper presents the first available evidence on the gender structure of managerial employment and wages outside of the most developed economies—in a post-communist country at the time of its accession to the EU. We study managerial wage gaps using an intuitively appealing matching approach, which recognizes the lack of comparable female managers for many male managers, particularly those of the largest companies. Unlike most of the existing work on managers, our analysis covers not only top executives, but also mid-level managers and employees, thereby allowing us to link the relative position of women across firm hierarchy levels.

We find that at 7% women are severely under-represented in top managerial positions, and that there is a clear gender divide between lower- and top-level managerial ranks. Given that the raw average pay gap between men and women increases with firm hierarchy level, as the fraction of women dwindles, descriptive statistics suggest an increasingly female-unfriendly environment as workers progress towards higher hierarchy levels. However, our wage-gap decomposition analysis suggests that the size of the wage gap that cannot be linked to observable differences between men and women is quite similar across hierarchies. To the extent that this conditional wage gap can be interpreted as an upper bound on potential on-the-job discriminatory wage setting, this suggests that women are treated similarly at the top and bottom of firms, once they are there. A large part of the average wage difference across genders among top managers is then related to the different types of firms that women and men typically head. This conclusion is reached based on the matching analysis, while the traditional Oaxaca-Blinder decomposition technique would maintain the existence of larger 'unexplained' gender wage gaps among top managers—a group of workers for which the differences in 'common support' of men and women are the strongest.

Our main finding is therefore twofold: After comparing the wage rates of women and men who are comparable in terms of basic demographic characteristics, employer type and within-firm hierarchical position, there remains a gender wage gap of about 20 percent. The key reason why the relative wage position of Czech female top managers is worse compared to lower-ranking female employees is that they tend not to be present at the top of the highest-paying companies. The policy implication of these findings is that equality-enhancing policies aimed at the highly visible group of executives are more likely to be effective in equalizing wages of male and female top managers if they focus on promotion policies in the most prestigious companies.

We also find a strong positive within-firm association between the fraction of women at different hierarchy levels and a negative within-firm link between the size of the conditional gender wage gap at the lower managerial level and the presence of women at both employee and top-managerial levels. Finally, the representation of women at the top of Czech firms as well as the structure of the gender wage gap there appears quite similar to those in the US. Our study thus finds intriguing similarities between a post-communist country and a developed market economy when focusing on the small group of managers. Similarly, Jurajda and Harmgart (2007) find the gender composition of 274 detailed occupations to be highly comparable between East and West Germany in 1995 despite the different history of labor market practices. Such similarities are consistent with gender-specific preferences for occupational characteristics explaining the bulk of gender employment patterns and/or with a similar extent of barriers preventing women from entering high-wage occupations in very different labor markets.

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Table 1: Managers

	Female %	Hourly Pay Gap
Austria	0.19	-0.29
Belgium	0.17	-0.34
Canada	0.36	-0.21
Czech Republic	0.23	-0.24
Germany	0.30	-0.24
Ireland	0.27	-0.07
Russia	0.36	-0.44
Slovenia	0.36	-0.11
Spain	0.18	-0.55
UK	0.35	-0.29
USA	0.43	-0.38

Source: Workers in the group 12 of the ISCO occupational classification from the Luxembourg Income Study for 2000, except for Czech Republic (1996) and Slovenia (1999). The hourly wage gap is defined as the ratio of female to male average gross hourly wages minus one, except in Slovenia where only net wages are availble.

Table 2: Demographic Gender Employment and Wage Patterns

	Managers						Employees		
	Top-Level			Lower-Level					
	Fem. %	Rel. Pay[a]	Pay Gap[b]	Fem. %	Rel. Pay	Pay Gap	Fem. %	Rel. Pay	Pay Gap
Overall	7	1	-0.41	32	1	-0.38	40	1	-0.22
Age									
≤39	8.7	0.93	-0.51	34.8*	0.98	-0.44	38.8*	0.99	-0.19
40-49	8.1	1.01	-0.33	34.1*	1.02	-0.36	45.4*	1.01	-0.21
≥50	5.2	1.02	-0.43	26.6*	0.99	-0.33	36.9*	1.01	-0.20
Education									
Lower	12.6*	0.63*	-0.43	45.8*	0.70	-0.32*	0.4	0.93*	-0.20
University	5.6	1.08	-0.33	17.5*	1.33	-0.18*	0.3*	1.71*	-0.15

Notes: [a]Ratio of the average pay by age/education category to average pay in each hierarchy level. [b]Ratio of average pay of women to average pay of men within age/education category minus one. * denotes groups where the fraction of women is different from the overall fraction in the hierarchy level with a p value below 0.01, similarly for the gender pay gap and the relative pay.

Table 3: Firm-Type Gender Employment and Wage Patterns

	Managers						Employees		
	Top-Level			Lower-Level					
	Fem. %	Rel. Pay[a]	Pay Gap[b]	Fem. %	Rel. Pay	Pay Gap	Fem. %	Rel. Pay	Pay Gap
Overall	7	1	-0.41	32	1	-0.38	40	1	-0.22
Ownership									
Foreign	8.9	1.25	-0.60*	31.1	1.10	-0.44	46.5	1.02	-0.29*
Private	5*	0.99	-0.33	19.9*	1.03	-0.61*	36.4	0.93*	-0.21
State Owned	11.8*	0.68*	-0.09*	51.9*	0.72*	-0.38*	41.2	1.02	-0.21
Mixed	7.3	1.10	-0.58	24.3*	1.24	-0.28*	41.4	1.13*	-0.10*
Firm size									
250-625	6.6	0.89*	-0.24	22.3*	1.01	-0.20*	37	0.91*	-0.17*
626-1310	4*	1.23*	-0.35	18.3*	1.18*	-0.25*	37.8	1.04	-0.15
1311-3500	6.9	1.22	-0.57	23.3*	1.08*	-0.34	39.1	0.98	-0.22
over 3500	11.1*	0.76	-0.51	42.8*	0.92	-0.44	41.7	1.06	-0.21
Industry									
Agriculture	2	0.52*	-0.22*	11.2*	0.66*	-0.20*	20.8*	0.99	-0.22
Manufacturing[c]	5.9	1	-0.47	17*	1.05	-0.24*	35.8*	0.97	-0.23*
Utilities	6.7	0.99	-0.25	14.9*	1.07	-0.26*	14.9*	1.01	-0.05*
Construction	0.0	1.27	-	14.5*	1.17	-0.29	59.3*	0.74*	-0.3
Retail	12.7*	0.85	-0.60*	49.4*	0.65*	-0.40	42.8	1.04	-0.19
Transport	12.5*	0.90	-0.24	50.8*	0.80	-0.43	40	0.82*	-0.18
Banking & Insurance	12	1.90*	-0.43	42.7*	1.73*	-0.47	55.7*	0.91	-0.27
Services	4.5	0.95	-0.46	32	1.01	-0.27	74.6*	1.4	-0.32*

Notes: [a]Ratio of the average pay by firm-type category to average pay in each hierarchy level. [b]Ratio of average pay of women to average pay of men by firm type minus one. [c]Manufacturing includes mining and metallurgy. * denotes groups where the fraction of women is different from the overall fraction in the hierarchy level with a p value below 0.01, similarly for the gender pay gap and the relative pay.

Table 4: OLS Conditional ('Unexplained') Log-Wage Gender Gaps

	Managers		Employees
	Top-Level	Lower-Level	
Raw Gaps	-0.55	-0.43	-0.22
Gaps Conditional on			
Individual Characteristics			
Age and Education	-0.37	-0.27	-0.24
Firm Characteristics			
Ownership, Size, Industry	-0.47	-0.37	-0.20
Ownership, Size, Ind. and Avg. Employee Wage	-0.44	-0.29	-0.19
Firm and Individual Characteristics			
All Firm and Individual Characteristics	-0.29	-0.20	-0.20
Firm Fixed Effect and Individual Characteristics	-0.17	-0.18	-0.15

Notes: The table presents 'unexplained' gender wage gaps from a series of Oaxaca-Blinder decompositions conditioning on different sets of observables and based on the male slope parameters. The complete specification corresponding to row 'All Firm and Individual Characteristics' can be found in Table 5.

Table 5: Wage Gap Decomposition (Equation (1)) for Top- and Lower-Level Managers

	Top-Level Managers			Lower-Level Managers		
	β_{Male}	$\overline{X}_F - \overline{X}_M$	Contribution	β_{Male}	$\overline{X}_F - \overline{X}_M$	Contribution
	(1)	(2)	(1)x(2)	(3)	(4)	(3)x(4)
Avg. Employee Wage	0.85***	-0.01	-0.01	0.73***	-0.06	-0.041
Age						
26-30	1.64***	0.00	0.003	0.26***	0.03	0.007
31-35	1.85***	-0.01	-0.015	0.39***	-0.01	-0.003
36-40	1.89***	0.01	0.017	0.41***	0.01	0.002
41-45	2.02***	0.07	0.131	0.44***	0.03	0.014
46-50	2.05***	0.03	0.051	0.43***	0.01	0.006
51-55	1.99***	-0.10	-0.190	0.42***	-0.06	-0.027
56-60	2.04***	-0.05	-0.100	0.47***	-0.03	-0.015
Education						
Apprenticeship	-0.01	0.04	-0.001	-0.05	0.09	-0.005
Secondary	-0.07	0.16	-0.011	0.15***	0.21	0.031
University	0.3**	-0.20	-0.059	0.45***	-0.32	-0.146
Firm Size (Employment)						
below 625	0.07	0.02	0.001	0.04	-0.05	-0.002
626-1310	0.22***	-0.09	-0.021	0.08**	-0.09	-0.008
1311-3500	0.23**	0.01	0.003	0.04	-0.07	-0.003
3501-9291	0.39***	-0.02	-0.016	-0.01	-0.02	0.000
over 9292	-0.33**	0.13	-0.042	-0.08	0.26	-0.022
Ownership						
Private	-0.20***	-0.16	0.031	-0.12***	-0.19	0.023
State Owned	-0.61	0.11	-0.065	-0.22***	0.26	-0.058
Mixed	-0.15	0.01	-0.002	-0.04	-0.08	0.003
Industry						
Retail	0.38***	0.05	0.019	0.07	0.08	0.006
Transport	0.46***	0.13	0.061	0.13**	0.26	0.033
Construction	0.35***	-0.08	-0.027	0.15**	-0.05	-0.007

Notes: The table presents coefficient estimates from male log-wage regressions including year dummies together with the difference between the female and the male average of the corresponding explanatory variable. These two values are used to calculate the absolute (Oaxaca-Blinder) contribution of each explanatory variable towards explaining the observed gender wage gap. We show only industries with contributions larger than 1%. * (**) [***] denotes statistical significance at the 10% (5%) [1%] level.

Table 6: Matching Results: Top and Lower-Level Managers

	Unexpl.	Exact	Propensity Score	
	Gap[a]	Matching	Kernel	Mahalanobis
		Top-Level Managers		
ATT[b]	-0.29*	-0.19*	-0.22*	-0.19*
	(0.08)	(0.08)	(0.10)	(0.09)
N treated	118	71	106	79
N control	1,572	234	1,105	1,105
		Lower-Level Managers		
ATT	-0.20*	-0.17*	-0.18*	-0.19*
	(0.01)	(0.02)	(0.05)	(0.04)
N treated	11,388	10,840	10,285	10,182
N control	24,666	18,735	23,874	23,874

Notes: Bootstrapped standard errors in parenthesis. * Statistically significant at the 0.01 level. [a]Oaxaca-Blinder decomposition from Table 4. [b]Average Treatment on the Treated over the common support.

Table 7: Gender Relationships Across Firm Hierarchy Levels

	Employees				Lower-Level Managers				Top-Level Man.	
Explanatory variables	% Fem.	Wage Gap	% Fem.	Wage Gap	% Fem.	Wage Gap	%Fem.	Wage Gap	% Fem.	% Fem.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
% Female Employees					0.350***	-0.109*	0.332***	-0.086		0.099**
					(0.048)	(0.064)	(0.045)	(0.094)		(0.039)
%Fem. Lower-Level Managers	0.334***	-0.001	0.318***	-0.019					0.153**	0.121*
	(0.041)	(0.025)	(0.043)	(0.020)					(0.065)	(0.063)
%Fem. Top-Level Managers			0.105**	0.024			0.132*	-0.021		
			(0.042)	(0.018)			(0.07)	(0.059)		
N Firms	772	766	772	766	772	766	772	766	772	772

Notes: Each column represents a separate firm-level regression controlling for year, industry, average male employee wage as well as firm-size and ownership indicators. Either the fraction of women or the conditional gender wage gap are on the left-hand side. Wage-gap regressions are weighted with the inverse of the variance of the estimated firm-specific gaps. Robust standard errors in parentheses. * (**) [***] denotes statistical significance at the 10% (5%) [1%] level.

Table 8: Gender Wage Gap Among the Five Highest-Paid Managers

Country	CZ	US	CZ	US	CZ	US	CZ	US
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female	-0.35*	-0.21*	-0.27*	-0.22*	-0.26*	-0.21*	-0.20*	-0.10*
	(0.05)	0.03	(0.04)	(0.02)	(0.04)	(0.02)	(0.04)	(0.02)
Firm size	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Industry	No	No	No	No	Yes	Yes	Yes	Yes
Occupation	No	No	No	No	No	No	Yes	Yes
N	3,853	43,428	3,853	43,428	3,846	42,621	3,726	42,621

Notes: Estimates are from pooled regressions separately for the US and Czech samples. Female is an indicator variable and takes on the vlaue one for female executives and zero otherwise. In the Czech ISAE sample, the dependent variable is quartely salary and bonus of the five highest-paid executives; industry follows NACE classification; occupation stands for directors and CEOs, financial, sales, personnel and R&D managers as defined in the ISCO classification. In the US ExecuComp sample, the dependent variable is annual salary and bonus of the five highest-paid executives from the ExecuComp database for 2000-2004; industry is based on SIC; occupation defines chief executie officers and chief financial officers from the field TITLEANN in the ExecuCopm data. All residuals are clustered at firm level and control for year dummies. * Statistically significant at the 0.01 level.