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THE GENDER GAP AMONG TOP BUSINESS EXECUTIVES

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ABSTRACT

This paper examines gender differences among top business executives using a large executive-employer matched data set spanning the last quarter century. Female executives make up 6.2% of the sample and we find they exhibit more labor market churning – both higher entry and higher exit rates. Unconditionally, women earn 26% less than men, which decreases to 7.9% once executive characteristics, firm characteristics, and in particular job title are accounted for. The paper explores the extent to which firm-level temporal flexibility and corporate culture can explain these gender differences. Although we find that women tend to select into firms with temporal flexibility and a female-friendly corporate culture, there is no evidence that this sorting drives the gender pay gap. However, we do find evidence that corporate culture affects pay gaps within firms: the within-firm gender pay gap disappears entirely at female-friendly firms. Overall, while both corporate culture and flexibility affect the female share of employment, only corporate culture influences the gender pay gap.

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1 Introduction

Convergence between men and women in terms of employment and compensation has been well documented, but this convergence is not complete and progress has not been uniform. For instance, women are underrepresented in the corporate business world and at the top of the income distribution more generally, where there are relatively large gender wage gaps (Goldin 2014; Guvenen, Kaplan and Song 2020). This paper examines how employment and compensation differ for female executives, and how these gender gaps vary across occupations, industries, and over time. We then explore two potential explanations for these gaps: (1) gender differences in preferences for temporal flexibility and (2) gender differences due to a male-dominated corporate culture.

Rising top incomes are the driving force behind growth in inequality, and business executives are the largest share of the top 1% (Piketty, Saez, and Zucman 2017, Bakija, Cole, and Heim 2012). For instance, CEO pay has increased more than eight times as fast as average worker pay over the last three and half decades (Edmans, Gabaix, and Jenter 2017). Not only is executive compensation important in understanding inequality, it also is a profession where women have traditionally made fewer inroads. Thus, this occupation offers unique insights and broader lessons into potential impediments to female employment and determinants of gender pay gaps.

We utilize a large executive-firm matched data set covering publicly traded U.S. firms over a quarter century (1992 to 2017). The data set combines executive-level information from *ExecuComp* and firm-level information from *Compustat,* which both come from company filings with the Securities and Exchange Commission (SEC). We complement this with the *KLD Research and Analytics*' corporate social responsibility index, which has firm-level information on temporal flexibility and corporate culture.

Our analysis begins by documenting the share of women in this labor market. We find that women represent 6.2% of top business executives. The share of female executives varies across job titles (i.e. 2.7% for CEOs versus 7.9% for CFOs) and across industries (i.e. 1.0% in agriculture versus 10.1% in education and health). Although the female share has increased over time, it still remains low at 10% in 2017.

To explore the determinants of the low share of female business executives, we examine whether there are gender differences in entry and exit rates. Although entry rates are significantly higher among women than men, female exit rates are also significantly higher. This indicates that there is more labor market churning for female executives and suggests that exit is important for understanding the low share of women in these top jobs.

We also estimate the gender pay gap among top business executives. Unconditionally, we find that

women earn 26% less than men. The pay gap falls to 15% after accounting for the characteristics of the executive (including experience, education, and age), and remains fairly constant after the addition of industry fixed effects, firm fixed effects, and time-varying firm controls. This pay gap falls by about half after controlling for the specific job title of the executive, which is consistent with promotion and exit rates differing by gender. Accounting for all of these individual, firm, and job characteristics, we still find a conditional gender pay gap of about 8%. Female executives with similar experience and education, working at similar firms, and doing similar jobs earn less than their male colleagues.

Having documented these facts in the data, we then turn to two explanations for the low female share and the gender compensation gap: temporal flexibility and a male-dominated corporate culture. To quantify temporal flexibility we utilize the *KLD* measure of whether the firm offers flextime benefits and to quantify corporate culture we use the *KLD* measure of firm diversity (i.e. the extent to which a firm has hired and promoted women and minorities in leadership positions) and whether the firm has had a female CEO.

Women may value temporal flexibility more than men do (Goldin and Katz, 2016; Mas and Pallais, 2017; Wiswall and Zafar, 2018) and may derive disutility from a male-dominated environment (Usui, 2008; Lordan and Pischke, 2016). To the extent that temporal flexibility and a female-friendly corporate culture are rare in this profession, this could explain the overall lack of female executives. We indeed find that female executives tend to sort into more flexible and female-friendly firms. In addition, we find that relative entry rates (of women compared to men) are higher in flexible firms, and that relative exit rates are lower in female-friendly firms. This latter finding suggests that the retention of female executives in this male dominated profession can be improved with a more female-friendly corporate culture.

In addition to explaining the low representation of women in this profession, temporal flexibility and corporate culture may also contribute to the gender pay gap. First, a compensating wage differential framework predicts that gender gaps arise from women selecting into firms with these amenities and these firms paying lower wages.[1] Second, flexibility and corporate culture could generate gender pay gaps within firms: if women choose shorter or flexible hours and get paid less as a result, or if insider relationships and personal connections favor men.

We find no evidence that differential sorting across firms based on these amenities is responsible for the gender pay gaps we document. Specifically, the estimated pay gap remains stable across specifications that control for our measures of firm flexibility, firm culture, and even firm fixed effects. Although the

[1] Goldin (2014), Goldin and Katz (2016), and Blau and Kahn (2017) make this argument with respect to temporal flexibility.

literature has found women sorting into lower-paying firms to be an important driver of gender pay gaps primarily for lower-skilled women (Casarico and Lattanzio 2019, Card et al. 2016), we focus on the other end of the skill distribution and find sorting matters less for executive pay gaps.

Even though sorting across flexible and female friendly firms fails to explain the gender pay gap, these two phenomena could still drive within-firm pay gaps. We investigate this hypothesis by testing whether the gender pay gap varies with firm flexibility and corporate culture. While temporal flexibility has been found to be important in the existing literature (Bertrand, Goldin, and Katz, 2010; Goldin and Katz, 2016; Cortes and Pan, 2019), we find little evidence that this explains within-firm gender pay gaps, perhaps because top business executives do not value temporal flexibility as much or they have the resources to hire help.

Unlike temporal flexibility, corporate culture plays a more important role in explaining the gender compensation gap. Within firms, men may benefit disproportionately from insider relationships and personal networks (Cullen and Perez-Truglia, 2019), and this could give rise to the the gender pay gap observed in the data. We find that at female-friendly firms, the gender pay gap is almost non-existent. Specifically, firms that have had a female CEO and firms that have promoted gender and racial diversity compensate male and female executives similarly. Conversely, at firms that lack these features, a corporate culture disproportionately favoring men prevails, and thus the gender pay gap is larger. These findings provide new insight into the mixed evidence on whether female leadership contributes to lower gender pay gaps (Bell, 2005; Tate and Yang, 2014, Bertrand et al., 2014; Flabbi et al., 2019).

Compared to fixed compensation schemes like salary, discretionary pay is often more susceptible to the influence of personal connections and insider relationships (Keller and Olney 2020) and these factors may be playing a role in the gender gap (Biasi and Sarsons 2020). Our results show that the gender gap is larger for more discretionary non-salary forms of compensation, which provides additional evidence that corporate culture is contributing to gender pay gaps.

We also document that the conditional pay gap has steadily declined over our sample period. A back of the envelope calculation shows that about a quarter of this decrease can be explained by a more female-friendly corporate culture, while temporal flexibility has had no significant impact.

Our paper contributes to the literature on the reasons for the low female representation in competitive and high-profile jobs, which includes gender differences in internal promotion rates (Bronson and Thoursie, 2020) and women's lower levels of competitiveness (Buser, Niederle, and Oosterbeek, 2014). Focusing on different explanations, we find that a lack of flexibility and a male-dominated corporate culture explains the low share of women in this profession. Moreover, our findings highlight the importance of higher female

exit rates in explaining this gender gap. Subsequent results show that women have lower exit rates at female-friendly firms, which complements Kunze and Miller's (2017) finding that female leadership reduces gender gaps in promotion.

We also add to the large literature examining the gender pay gap, which is nicely summarized in Goldin (2014) as well as Blau and Kahn (2017). As both of these surveys document, this gap has been closing, but progress has been slow among top earners (Blau and Kahn 2017) and among business occupations (Goldin 2014). This paper examines why, with a focus on the high-stress, time-intensive, and competitive work environment of top business executives. The results provide insight into the determinants of gender differences which are useful more broadly.

Our findings provide only limited evidence that preferences for temporal flexibility matter for gender pay gaps. This is consistent with Mas and Pallais (2017), who show that there are differences in preferences for flexibility across genders, but they are not large enough to be an important driver of gender pay gaps. Our results provide stronger support for the hypothesis that corporate culture favors male executive compensation. This is consistent with a broader literature showing that personal connections and insider relationships are important in determining executive pay (Keller and Olney 2020, Bertrand and Mullainathan 2001, and Bebchuk and Fried 2004). We contribute by documenting that these connections influence the gender pay gap by disproportionately increasing the discretionary pay of male executives.

Papers that study gender gaps among top business executives tend to focus on whether these gaps can be explained by differences in individual and firm characteristics (Bertrand and Hallock 2001), as well as firm performance (Albanesi, Olivetti, and Jose Prados 2015). In contrast, we find little evidence that gender pay gaps in our context are driven by these characteristics. Instead we focus on temporal flexibility and corporate culture, and find that the latter is particularly important for understanding gender differences in this profession. We also rely on a sample of top executives that spans many more years and is over five times than the sample used in these previous studies. This is especially appealing when studying the relatively small number of women in this profession.

The paper proceeds as follows. In the next section we outline the data sources used in our analysis, including measures of compensation, executive characteristics, and firm characteristics (including temporal flexibility and corporate culture). Section 3 outlines our methods of exploring the role of flexibility and corporate culture in explaining the low female share and the gender pay gap. We explore various dimensions of the low female employment share in section 4: how it differs across occupations, industries and over time, along with the role of gender differences in entry and exit rates. Section 5 estimates the gender pay

gap and explores how it differs along similar dimensions. The role that temporal flexibility and corporate culture play in explaining these stylized facts is examined in section 6. Finally, section 7 provides some concluding thoughts.

2 Data

We construct an executive-firm matched data set that incorporates detailed data on executive compensation, executive characteristics, and firm characteristics. In this section, we first describe our various data sources and then report summary statistics on gender differences.

2.1 Executive Information

Information on executive compensation is obtained from the Compustat ExecuComp data set, which is based on filings with the U.S. Securities and Exchange Commission (SEC). This is the most comprehensive publicly available data set on executives and covers the top five executives within each Standard & Poor (S&P) firm. Our measure of executive compensation is *ExecuComp's* TDC1, which includes total compensation awarded to an executive in a given year. Results are similar using an alternative measure, TDC2, which captures compensation realized by an executive in a given year. All nominal compensation values are converted to constant 2017 U.S. dollars using the Consumer Price Index (CPI) provided by the Bureau of Labor Statistics.

Importantly, the *ExecuComp* data set identifies the gender of the executive, which allows us to measure the share of female executives as well as the gender pay gap. We include other executive characteristics in the analysis, including experience, education, and age. Experience is defined as the number of years the individual has been a top five executive at any firm in the *ExecuComp* data set. Education is defined as whether the executive has a doctorate degree. Binary variables indicating the age decade of the executive (i.e. thirties, forties, etc.) are created to maintain the sample size in light of missing age information for some executives.

While our analysis focuses on top business executives, individuals within this labor market are likely performing different types of tasks, which could influence compensation. The occupation of the executive is identified using the 'title' variable in the *ExecuComp* data set. We focus on the following five job titles: 'CEO and Chair', 'Vice-Chair', 'President', 'Chief Financial Officer (CFO)', and 'Chief Operating Officer (COO)' which we rank according the literature's assessment of their prestige (Bertrand and Hallock 2001,

Albanesi, Olivetti, and Jose Prados 2015).[2] This allows us to examine whether gender composition differs across these job titles, and it provides an opportunity to account for the tasks performed by the executive when measuring gender pay gaps.

Another appealing feature of the data is that we can follow executives over time, making it is possible to construct measures of executive entry and exit. Entry is a binary variable equal to one the first year an executive became a top 5 exec at that particular firm, and exit is a binary variable equal to one the last year an executive was a top 5 executive at the firm.[3]

2.2 Firm Information

Executive compensation information from the *ExecuComp* data set is linked to company-level measures in *Compustat* using a unique firm identifier, which allows us to construct an executive-firm matched data set. This enables us to examine whether firm characteristics influence the gender gap within the market for top business executives. Firm size, measured using sales, may influence executive composition and compensation. We also account for firm markups, which have been steadily increasing since 1980 (De Loecker and Eeckhout 2017).[4] We anticipate that firms with higher sales and higher markups will be more profitable and thus may be able to pay their executives more. A measure of insider board relationships is included, which is defined as a binary variable indicating whether three of more executives serve on the board of directors. We expect that executives will earn more at firms with this type of insider board structure. Finally, we identify the firm's main six-digit NAICS industry using the Compustat dataset.

Our firm-level measures of temporal flexibility and corporate culture come from *KLD Research and Analytics*, commonly used in economics and finance research (Cronqvist and Yu 2017). Ninety percent of the Compustat sample is matched to the KLD data using a unique firm ticker variable. We construct a measure indicating whether the firm offers temporal flexibility to its workers.[5] We also measure corporate culture by identifying whether the firm has hired and promoted women and minorities in leadership positions.[6]

[2]These job titles are mutually exclusive definitions which are constructed by searching for substrings within the title variable. For instance, the following non-case sensitive titles 'CEO', 'Chief Executive Officer', 'Chairman', 'Chmn.', and 'Chair' are included in our 'CEO and Chair' job title definition.

[3]Executives with gaps in their tenure at the firm are not classified as entering or exiting because the executive may simply have moved in or out of the top five at the firm.

[4]Using *Compustat* data, firm-specific markups are calculated as 0.85*(total sales / total costs of goods sold) following De Loecker and Eeckhout (2017) page 37.

[5]Specifically, we use a binary KLD variable on whether the firm has "outstanding employee benefits or other programs addressing work/life concerns, e.g., childcare, elder care, or flextime" (Div_str_d). In our main analysis, we take the firm-level average of this variable over the available years to maintain our sample size in light of *KLD* data constraints (i.e. missing values increase post-2009). Our results, however, are robust to the use of a time-varying measure of temporal flexibility, despite a much smaller sample size (See Appendix Table A3).

[6]We rely on binary KLD variables indicating whether the firm has a CEO who "is a woman or a member of a minority group" (Div_str_a), "has made notable progress in the promotion of women and minorities, particularly in line positions with

Finally, using the *ExecuComp* data we construct another measure of female-friendly corporate culture that identifies whether the firm has ever had a female CEO. Together these measures will provide insight into whether the gender pay gap is influenced by temporal flexibility or corporate culture within the firm.

2.3 Summary Statistics

This section documents gender differences in the market for top business executives. We include in our analysis the top five highest paid executives for each firm in each year.[7] Our sample consists of almost 240,000 observations and spans 26 years (1992-2017), around 4,000 firms and 45,000 executives. Our sample is over five times larger than existing studies of gender gaps among top business executives.[8] This larger sample is important when studying gender gaps within an occupation where there are relatively few women. Average total compensation in this sample (in real 2017 dollars) is $3.96 million, and median compensation is $1.97 million.

Table 1 reports summary statistics of our key variables for men and women separately, along with the differences between the two. A comparison of the number of male and female executives indicates that women comprise 6.2% of our sample. For male executives the mean natural log of total compensation is 7.43. In contrast, women earn 17 log points (approximately 16%) less than men, and this difference is statistically significant. In fact, there are statistically significant gender differences in almost all variables summarized in this table. Men have more experience (5.6 versus 5 years), are more likely to hold a doctorate (0.02 versus 0.01), and are on average older (52.5 versus 50 years old).[9]

There are also important differences in the titles that men and women hold. For instance, among male executives, 25% are CEOs or Chairs, while among female executives only 11% perform this job. Conversely, 19% of women are CFOs while only 14% of men are.

Male and female executives also sort into different types of firms. On average, firms which employ female executives tend to have similar sales but higher markups. Men also are more likely to be in firms with insider relationships, defined as when three or more executives sit on the board of directors in a given year.

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profit and loss responsibilities" (Div_str_b), and has "strong gender diversity on their board of directors" (Div_str_c). We calculate the average of these three measures and then take the firm-level average over the available years. Note that using a time-varying measure of diversity leads to similar results (Table A3), despite a much smaller sample.

[7] The SEC requires firms to report compensation information for their top five executives but some firms report more. The average number of executives reported changes over time which could influence the evolution of the female share and the gender pay gap. Thus, we drop non-top five executives from our sample.

[8] See for example Bertrand and Hallock (2001) and Albanesi, Olivetti, and Jose Prados (2015).

[9] Figure A1 in the online appendix shows that while the average age of both genders has increased over time the age gap between men and women is closing.

Table 1: Summary Statistics

	(1) Males	(2) Females	(3) Difference
Total Comp	7.43	7.26	-0.17***
	(1.06)	(0.99)	(0.0085)
Salary Comp	6.12	6.00	-0.13***
	(0.69)	(0.61)	(0.0053)
Non-Salary Comp	6.87	6.73	-0.14***
	(1.57)	(1.45)	(0.012)
Experience	5.64	4.97	-0.67***
	(4.30)	(3.76)	(0.033)
Dr.	0.020	0.011	-0.0094***
	(0.14)	(0.10)	(0.00091)
Age	52.5	50.0	-2.56***
	(7.90)	(6.71)	(0.062)
CEO/Chair	0.25	0.11	-0.14***
	(0.43)	(0.31)	(0.0027)
Vice Chair	0.018	0.012	-0.0061***
	(0.13)	(0.11)	(0.00094)
President	0.12	0.093	-0.027***
	(0.33)	(0.29)	(0.0025)
COO	0.033	0.027	-0.0060***
	(0.18)	(0.16)	(0.0014)
CFO	0.14	0.19	0.045***
	(0.35)	(0.39)	(0.0033)
Other Title	0.44	0.58	0.14***
	(0.50)	(0.49)	(0.0042)
Sales	21.1	21.1	-0.010
	(1.76)	(1.77)	(0.015)
Markups	0.96	0.99	0.024***
	(0.43)	(0.43)	(0.0037)
Insider	0.17	0.10	-0.065***
	(0.38)	(0.31)	(0.0027)
Observations	219948	14477	234425

Notes: Sample consists of the top five highest paid executives for each firm in the *ExecuComp* dataset from 1992-2017. Standard deviations (in columns 1 and 2) and standard errors (in column 3) reported in parentheses. * p< 0.1, ** p< 0.05, *** p< 0.01. Compensation and sales are reported in logs (of 2017 dollars). Markups are equal to ln(0.85(total sales/ total costs)).

3 Empirical Strategy

3.1 Gender Gaps in Entry, Exit, and Compensation

Our empirical analysis will examine the causes of gender gaps in employment and compensation identified in the previous section. We begin by investigating whether the low female share is explained by low entry rates or high exit rates. We then estimate the gender pay gap among top business executives. For both sets of analyses, we use the following estimating equation:

$$Y_{ijfnt} = \beta_1 Female_i + \beta_2 X_{1it} + \beta_3 X_{2fnt} + \gamma_t + \delta_j + \nu_n + \alpha_f + \epsilon_{ijfnt}, \quad (1)$$

where Y_{ijfnt} either represents entry, exit, or compensation for executive *i,* with job title *j,* at firm *f,* in industry *n,* and in year *t*. As described above, we generate entry and exit variables to indicate when an executive enters or leaves a particular firm. In these regressions, β_1 represents the difference in the share of entrants, which we refer to as the entry rate, or the share of leavers, which we refer to as the exit rate, between men and women.

The analysis then uses log compensation as our dependent variable in equation 1 to estimate the gender compensation gap. We begin with a basic specification that only includes the female indicator ($Female_i$) and year fixed effects (γ_t). The following controls are then sequentially added: individual controls for age, education, and experience (X_{1it}), industry fixed effects (ν_n), firm fixed effects (α_f), time-varying firm controls (X_{2fnt}), and finally job title fixed effects (δ_j). Documenting how our estimates of β_1 change with the inclusion of these controls will shed light on how much of the raw pay gap can be explained by these factors.

3.2 Temporal Flexibility and Corporate Culture

We explore the extent to which temporal flexibility and corporate culture explain the gender gaps in executive employment and compensation. Our analysis is careful to distinguish between how these explanations may lead to gender differences in sorting across firms and how these explanations can also have within firm effects.

First, suppose women disproportionately value temporal flexibility and a female-friendly corporate culture (Mas and Pallais, 2017; Wiswall and Zafar, 2018; Usui 2008; Lordan and Pischke 2016). If so, female executives may gravitate towards firms with flexibility and a female-friendly culture, either through

higher entry rates or lower exit rates at firms with these amenities. This type of sorting can influence not only female shares but also the gender pay gap. A compensating wage differential framework predicts that firms that offer these amenities may pay less on average. Thus, if women tend to select into firms with flexibility and female-friendly corporate culture, they will earn less, which would therefore generate a gender pay gap. To summarize, this sorting across firms leads to the following testable predictions:

1. The female share of executives is larger at flexible and female-friendly firms.

2. Female entry is higher and/or female exit is lower at firms with these amenities.

3. If compensating wage differentials are important, then controlling for firm differences should reduce the estimated gender pay gap.

Second, flexibility and corporate culture can lead to gender pay gaps within the firm. For example, at firms where temporal flexibility is offered, it may be that women are more likely to choose shorter or flexible hours which are accompanied by less generous compensation. This would lead to a larger gender pay gap within flexible firms. Corporate culture may also have a differential effect on male and female executives, but not via a selection effect. Instead, informal networks may disproportionately disadvantage female executives (Cullen and Perez-Truglia 2019), especially in firms with a more male-dominated corporate culture. Put another way, female-friendly firms should have a lower gender pay gap. These within firm effects lead to the following prediction, which we test using equation (2) below:

4. The gender pay gap should be larger at flexible firms but lower at female-friendly firms.

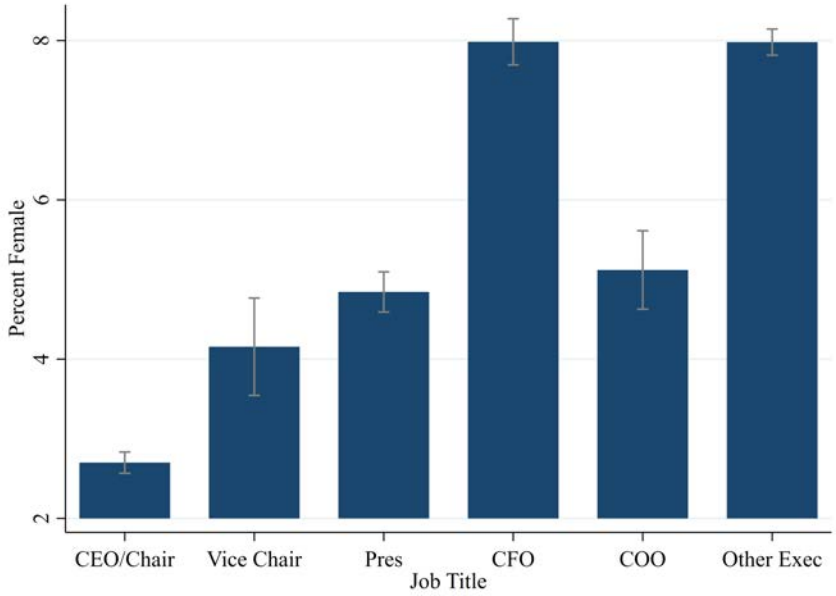
$$\begin{aligned} Y_{ijfnt} = {} & \beta_1 Female_i + \beta_{flex} Female_i Flex_f + \beta_{div} Female_i Div_f + \beta_{ceo} Female_i FCEO_f \\ & + \beta_2 X_{1it} + \beta_3 X_{2fnt} + \gamma_t + \delta_j + \nu_n + \alpha_f + \epsilon_{ijfnt}. \end{aligned} \tag{2}$$

Here, $Flex_f$ is the firm-level flexibility variable from the KLD dataset, Div_f is the firm diversity index from the KLD dataset, and $FCEO_f$ indicates whether the firm has ever had a female CEO. Using entry and exit rates as the dependent variable in equation (2) will provide insight into prediction 2, while using compensation as the dependent variable will test prediction 4. If women are being paid less for taking more flexible hours, then there should be a larger gender gap at firms that offer this flexibility (i.e. a negative β_{flex} coefficient). With respect to corporate culture, there should be smaller gender gaps at firms with a more female-friendly culture (i.e. positive β_{div} and β_{ceo} coefficients).

4 Female Share

Before proceeding to our estimation results, we first document the female share of top business executives across job titles, industries, age, and over time. The overall share of female executives is 6.2%. Figure 1 shows substantial variation in this female share across different job titles. For instance, only 2.7% of CEOs in our sample are women.[10] However, 4.8% of Presidents are women and 7.9% of CFOs are women. Overall, we see that the share of women typically falls as the job becomes more prestigious. This indicates that not only are women underrepresented overall in this profession, but that an even smaller share rise to the top leadership positions. It is also interesting that the share of women is relatively high (8%) in "other" executive positions, with less prestige and potentially more temporal flexibility.

Figure 1: Female Shares of Top Executives by Job Title



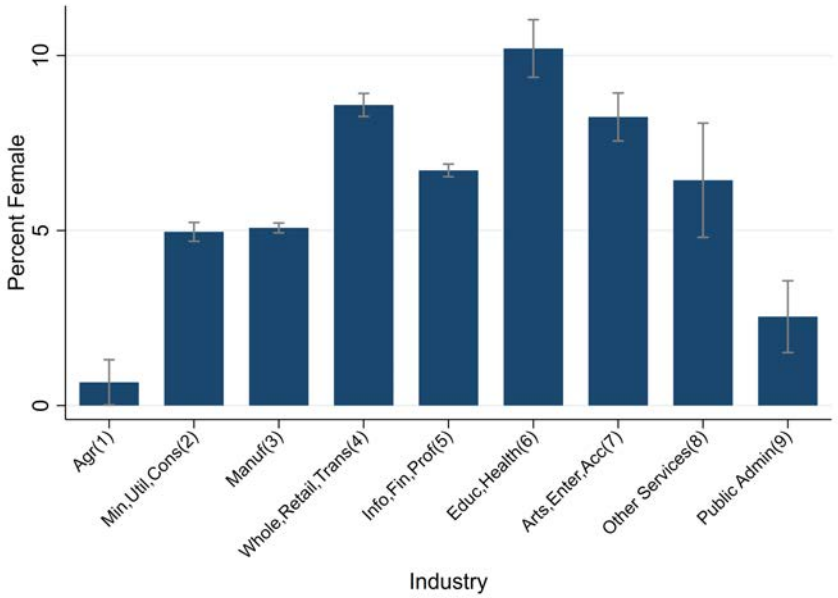
Notes: Percent of executives who are female in each job title category.

The share of female executives also varies across industries, as we show in Figure 2. For instance, the following three NAICS 1-digit industries have a relatively high share of female top executives (i.e. above 8%): 'Wholesale, Retail, and Transportation (NAICS 4)', 'Education and Health Services (NAICS 6)', and 'Arts, Entertainment, and Accommodations (NAICS 7)'. In contrast, 'Agriculture (NAICS 1)' and 'Public Administration (NAICS 9)' have female shares that are much lower (less than 3%). These differences suggest that female executives seem to cluster in specific industries, which is consistent with evidence that

[10]Note that Table 1 reports the share of women who are CEOs, while Figure 1 reports the share of CEOs who are women.

women-led firms are more likely to hire other female executives (Bell 2005). Note that some industries, such as mining and manufacturing, that have less temporal flexibility (both anecdotally and based on our KLD flexibility measure) also have lower shares of women, though there are also examples of industries with high flexibility yet low shares of women (like agriculture and public administration).[11]

Figure 2: Female Shares of Top Executives by Industry



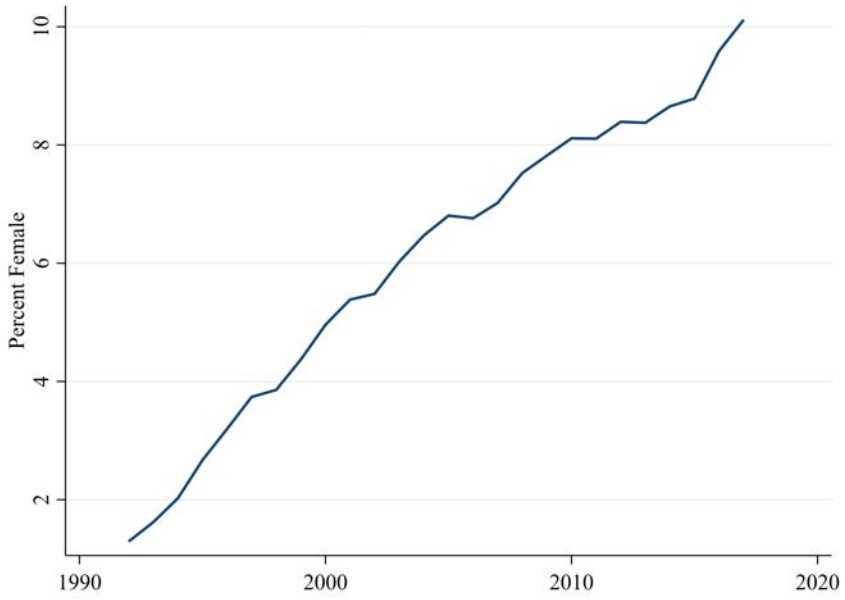
Notes: Share of executives who are female by industry. Industries defined using the main NAICS 1-digit industry of the firm.

In Appendix Figure A2, we explore how the share of women varies across age cohorts and show that female shares are much larger among younger cohorts. This pattern could reflect that women are less likely to become CEOs (see Figure 1) and thus they exit this labor market. Alternately, perhaps fewer women historically were able to join the track towards top leadership positions and thus there are now fewer women among this older cohort.

The average female share in our sample (6.2%) masks interesting dynamic variation over time. As we see in Figure 3, the female share of executives has risen from 1.5% in 1992 to 10.1% in 2017. While the share of women still remains low in an absolute sense, these increases are substantial in relative terms. We show in Appendix Figure A4, however, that the increase documented here has been much slower in CEO or Chair positions relative to all other job titles.

[11] We later discuss the relationship between firm-level flexibility and female representation, which is stronger than the industry-level relationships described here.

Figure 3: Female Share of Top Executives over Time



4.1 Entry and Exit

We investigate whether entry and exit rates can shed light on the low female share of executives documented in Figure 3. An appealing feature of our data is that we can track executives over time and identify when they enter or exit a firm as a top five executive. We test whether these rates differ by gender, by estimating equation (1) using entry and exit as dependent variables.

The results in column 1 of Table 2 show that the share of newcomers is significantly higher among women. This is consistent with the female share of top business executives increasing over time. However, in column 2 we find that the share of executives leaving the firm is also higher among women than men. This indicates that there is more labor market churning for top female business executives than for their male colleagues. In columns 3 and 4, we show the significant positive coefficients are robust to the inclusion of executive controls, firm characteristics and fixed effects, and job title fixed effects, although the magnitude of the effects are smaller. Once all controls are accounted for, the gap between female and males is larger for exit rates than entry rates. In Appendix Table A1, we show that the large reduction in the female coefficient in the entry regression results primarily from the inclusion of age and experience controls (older and more experienced people are less likely to enter, and women tend to be younger and less experienced).

Overall these findings provide new insight into the low female share among top business executives documented in the previous section. While women have higher entry rates, they also have higher exit

rates, which highlights the need to understand why women are more likely to leave this profession. In section 6 we explore the extent to which this labor market churning can be explained by preferences for temporal flexibility or by corporate culture.

Table 2: Entry and Exit

	(1) Entry	(2) Exit	(3) Entry	(4) Exit
Female	0.085***	0.036***	0.019***	0.024***
	(0.0037)	(0.0036)	(0.0031)	(0.0033)
Age 40s			-0.073***	0.018***
			(0.0047)	(0.0049)
Age 50s			-0.092***	0.043***
			(0.0054)	(0.0054)
Age 60+			-0.061***	0.14***
			(0.0067)	(0.0058)
Experience			-0.039***	0.0015***
			(0.00064)	(0.00031)
Dr.			-0.0066	-0.041***
			(0.0054)	(0.0060)
Sales			-0.0089***	0.014***
			(0.0026)	(0.0027)
Markups			-0.015*	-0.0075
			(0.0081)	(0.0063)
Insider			0.00033	0.051***
			(0.0037)	(0.0045)
CEO/Chair			-0.065***	-0.066***
			(0.0023)	(0.0025)
Vice Chair			-0.099***	0.039***
			(0.0074)	(0.012)
President			-0.082***	-0.0055*
			(0.0030)	(0.0030)
CFO			-0.062***	-0.047***
			(0.0023)	(0.0021)
COO			-0.095***	-0.030***
			(0.0043)	(0.0043)
Observations	234425	234425	234425	234425
Year FE	Yes	Yes	Yes	Yes
Firm FE	No	No	Yes	Yes

Notes: Standard errors (clustered at the industry level) in parentheses. * p< 0.1, ** p< 0.05, *** p< 0.01. All regressions control for a dummy for missing age.

5 Compensation

In this section, we explore the gender pay gap and how it varies across occupations, industries, compensation type, and over time.

5.1 Gender Pay Gap

To test for the gender pay gap, we estimate equation (1) using log total compensation as our outcome variable. Our analysis begins by regressing total executive compensation on our female binary variable, controlling only for year fixed effects. The results show that the "unconditional" gender pay gap is -0.26 (in column 1 of Table 3), which is larger than the raw difference in male and female compensation reported in Table 1 because both executive compensation and the share of female executives has been increasing over time. This coefficient implies that women earn approximately 26% less than men when not accounting for any individual or firm characteristics.

Table 3: Gender Compensation Gap

	(1) Total Comp	(2) Total Comp	(3) Total Comp	(4) Total Comp	(5) Total Comp	(6) Total Comp
Female	-0.26***	-0.15***	-0.16***	-0.17***	-0.16***	-0.079***
	(0.026)	(0.024)	(0.020)	(0.012)	(0.012)	(0.0089)
Age 40s		0.31***	0.28***	0.16***	0.13***	0.069***
		(0.024)	(0.021)	(0.015)	(0.014)	(0.015)
Age 50s		0.46***	0.43***	0.26***	0.23***	0.097***
		(0.033)	(0.026)	(0.019)	(0.018)	(0.017)
Age 60+		0.41***	0.39***	0.31***	0.28***	0.045**
		(0.040)	(0.030)	(0.022)	(0.021)	(0.020)
Experience		0.057***	0.057***	0.050***	0.047***	0.022***
		(0.0029)	(0.0027)	(0.0011)	(0.0011)	(0.0010)
Dr.		0.010	0.016	0.023	0.024	-0.013
		(0.069)	(0.040)	(0.028)	(0.028)	(0.024)
Sales					0.18***	0.17***
					(0.015)	(0.015)
Markups					0.050*	0.057**
					(0.027)	(0.027)
Insider					0.064***	0.046***
					(0.014)	(0.014)
CEO/Chair						0.81***
						(0.012)
Vice Chair						0.30***
						(0.024)
President						0.30***
						(0.0095)
CFO						0.10***
						(0.0077)
COO						0.31***
						(0.014)
Observations	234425	234425	234425	234425	234425	234425
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	No	Yes	Absorbed	Absorbed	Absorbed
Firm FE	No	No	No	Yes	Yes	Yes

Notes: Standard errors (clustered at the industry level) in parentheses. * p< 0.1, ** p< 0.05, *** p< 0.01. Columns 2 through 8 also control for a dummy for missing age.

However, female and male executives differ along a number of dimensions including experience, education, age, and job titles (see Table 1). Does the observed gender pay gap simply reflect these observable differences between men and women or is there a gap conditional on these characteristics?

In the remaining columns of Table 3, we sequentially control for a variety of executive and firm characteristics that may influence compensation. For instance, controlling for age, experience, and education

decreases the gender pay gap to 15% (column 2). Table 1 showed that female executives tend to be young, and these results show that executives in their forties, fifties, and sixties are paid increasingly more than those younger than 40 (the omitted category). These results also show that more experienced executives earn more while more educated executives (i.e. those with doctoral degree) do not earn significantly more. In sum, while there exists a substantial unconditional gender pay gap among top executives, 40% of this gap can be explained by individual characteristics like age and experience.

In addition to individual-level characteristics, we also explore the role of industries, firms, and job titles in driving this gender pay gap. If men and women select into different types of industries, firms, and job titles where compensation differs, this could influence the gender pay gap.

In column 3, we add industry fixed effects in order to estimate the gender pay gap based on within-industry comparisons. Interestingly, the estimated gender pay gap barely changes, which suggests that differential sorting at the industry level is not an important explanation for the pay gap we document. Similarly, the next two columns show that firm characteristics do not appear to be driving the gender pay gap either. Controlling for firm fixed effects (in column 4), which absorbs the industry fixed effects, and also time-varying firm characteristics (in column 5) has a negligible effect on the gender pay gap. The female point estimate varies between 15-17% in columns 2-5.

In contrast, specific occupations, measured using job titles, have an important impact on the gender pay gap. In column 6, we add indicators for each of the five top leadership positions: CEO/Chair, Vice Chair, President, CFO, and COO (which leaves all other executives as the omitted category). All five positions earn more than other types of executives, and not surprisingly it is CEOs that earn the most. Controlling for job title also reveals that the monotonically increasing relationship between age and compensation documented in previous columns was driven in part by older executives being more likely to be in a top leadership position. In fact, controlling for title, we see that compensation peaks around age fifty and then tails off for older executives. Furthermore, we find that accounting for job title explains about half of the remaining gender pay gap, perhaps because promotion rates differ by gender. Importantly, the results in column 6 of Table 3 show that women still earn 7.9% less than men, after accounting for executive, firm, and job characteristics. In other words, female executives with similar experience and education, working at similar firms, and doing similar jobs earn less than their male colleagues.

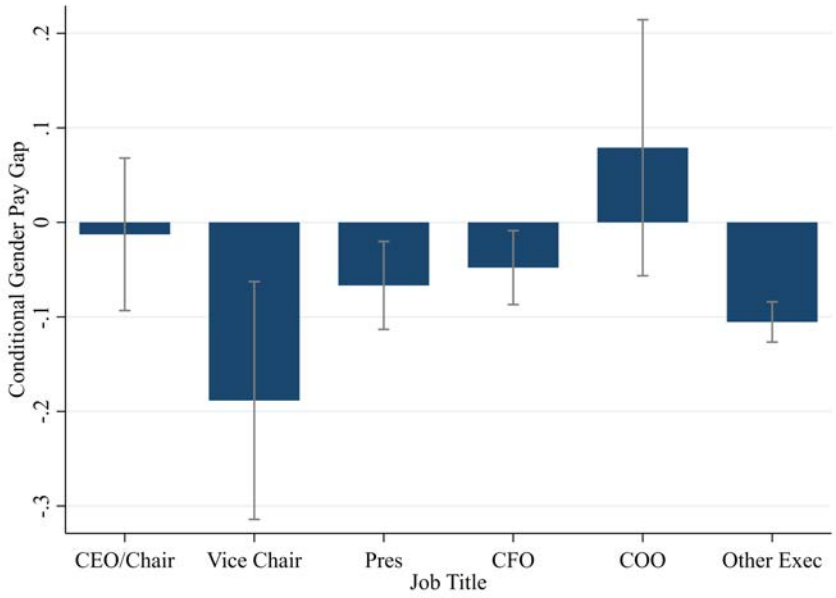
In Appendix Table A2, we show that our estimate of the conditional gender pay gap is robust to the inclusion of industry-by-year fixed effects, industry-by-title fixed effects, firm-by-year fixed effects, and firm-by-title fixed effects. The estimated gender gap across all these specifications ranges from 7.5% to

8.7%.

5.2 Industry and Occupation

Here we examine how the gender pay gap varies across job titles and industries. Figure 4 shows the gender pay gap within each job title (rather than looking at the overall gender pay gap conditional on job title as in column 6 of Table 3). Interestingly we find that compensation paid to female CEOs is not statistically different from their male counterparts. However, we find that female Vice-Chairs, Presidents, CFOs, and other executives all earn significantly less than men in similar positions. Female COOs actually earn more than their male counterparts, although this difference is not statistically significant.

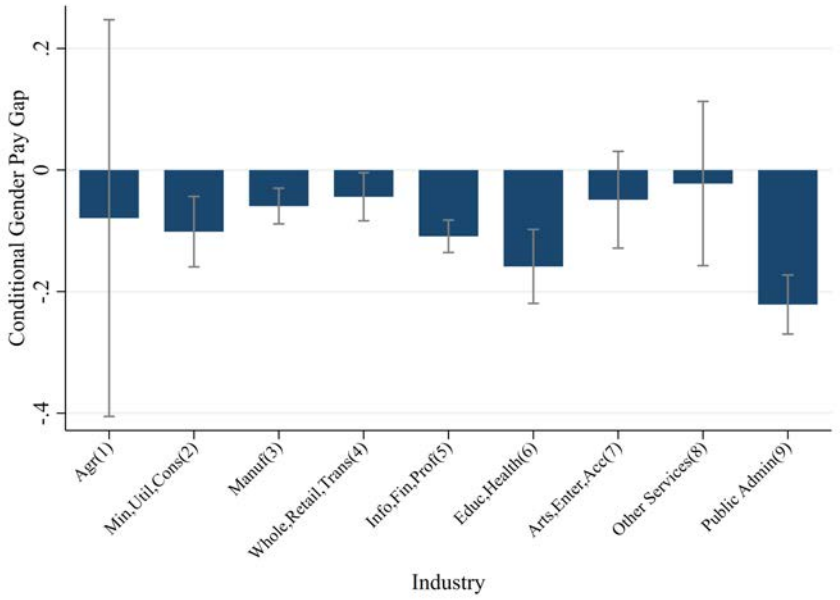
Figure 4: Conditional Gender Pay Gap by Job Title



Notes: Gender gap in total compensation (TDC1) conditional on experience, education, age, sales, markups, insider relationships, year fixed effects, and firm fixed effects.

Figure 5 explores how the gender pay gap differs across industries. We find a conditional gender pay gap of 10% or more in 'Mining, Utilities, and Construction (NAICS 2)', 'Information, Finance, and Professional Services (NAICS 5)', 'Education and Health (NACIS 6)', and 'Public Administration (NAICS 9)'. However, there are smaller conditional gender pay gaps (i.e. less than 5%) in 'Wholesale, Retail, and Transportation (NAICS 4)', 'Arts, Entertainment, and Accommodations (NAICS 7)', and in 'Other Services (NAICS 8)'.

Figure 5: Conditional Gender Pay Gap by Industry



Notes: Gender gap in total compensation (TDC1) conditional on experience, education, age, sales, markups, insider relationships, title fixed effects, year fixed effects, and firm fixed effects. Industry defined using the main NAICS 1-digit industry of the firm.

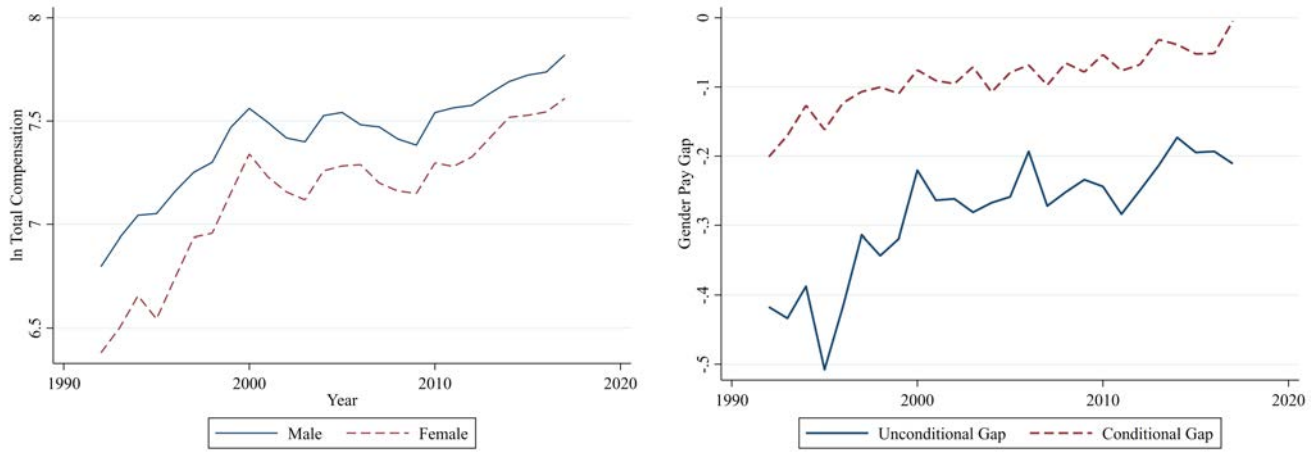
Finally, in Appendix Figure A3, we examine the difference in male and female earnings across different age cohorts. The conditional gender pay gap is much larger for executives in their thirties than it is for other age brackets. One potential explanation is that women in their thirties may be disproportionately affected by the time constraints associated with young children. Indeed, several papers show evidence of a "child penalty" in compensation for women but not for men (Cortes and Pan, 2020; Kleven et al., 2019).

5.3 Trends Over Time

Like the female share of executives, the gender gap has also changed substantially over our sample period. The left side of Figure 6 shows that compensation has increased (in real terms) over time for both men and women. While compensation declined during the recessions of 2001 and 2008, there were steady increases in executive pay during the dotcom bubble of the 1990s and more recently. Furthermore, it appears that the gap between male and female earnings has decreased. This can be seen more clearly on the right side of Figure 6, where the blue solid line plots the difference between male and female earnings. In 1992 the unconditional pay gap of about -0.4 log points implies that women earned about 33% less than men. However, this gap has closed by half over the subsequent quarter century. Unconditionally, women earned

21% less than men in 2017.

Figure 6: Gender Pay Gap over Time



Notes: Gender gap in total compensation (TDC1). Left Side reports the log of total compensation (in 2017 USD) for men and women separately, while the right side reports the unconditional and conditional difference (conditional on experience, age, education, sales, markups, insider relationships, title fixed effects, and firm fixed effects).

Also in the right panel of Figure 6, we report the evolution of the conditional gender pay gap, which accounts for executive characteristics, job title differences, firm characteristics, and firm fixed effects. We find that in 1992 women earned about 20% less than similar male colleagues performing the same job. However, by 2017 female executives earned only 0.5% less than similar male colleagues. These results indicate that the conditional gender pay gap for top business executives has decreased substantially over the last quarter century. In section 6.2 we calculate that about a quarter of this observed decline in the conditional gender pay gap can be explained by a more female-friendly corporate culture.

6 Temporal Flexibility and Corporate Culture

Having documented gender gaps in employment and executive compensation, we now examine possible explanations, including temporal flexibility and corporate culture. As described in section 3, if women derive a stronger disutility from a male-dominated corporate culture, they might sort into firms with more female-friendly cultures. Similarly, if women value temporal flexibility more than men do, they might sort into flexible firms.

Table 4: Corporate Culture and Firm Flexibility Measures

	(1) Males	(2) Females	(3) Difference
Female CEO Firm	0.11	0.31	0.20***
	(0.31)	(0.46)	(0.0043)
Firm Diversity	0.11	0.22	0.11***
	(0.15)	(0.21)	(0.0019)
Firm Flexibility	0.075	0.089	0.014***
	(0.22)	(0.25)	(0.0023)
Observations	185319	12227	197546

Notes: Sample consists of the top five highest paid executives for each firm in the *ExecuComp* dataset from 1992-2017, restricting to firms with non-missing corporate culture and flexibility measures.

We test these hypotheses (i.e. empirical test #1 in section 3.2) in Table 4, where we report average firm-level flexibility and culture measures for men and women separately. This table provides evidence for differential sorting across genders. Women are indeed more likely (in fact, three times more likely) to be at firms that have had a female CEO at least once in the study period. In addition, firms with female executives have higher diversity scores, which capture a greater tendency to promote gender and racial diversity. Finally, Table 4 shows firms with female executives are more likely to offer childcare, elder care, and flextime. These findings provide evidence that women do select into firms that offer temporal flexibility and have a more female-friendly corporate culture.

6.1 Entry and Exit by Firm Characteristics

Having established that women are more likely to sort into flexible and female-friendly firms than their male counterparts, we now examine whether this is driven primarily by exit or entry. Specifically, equation (2) is estimated using entry and exit rates as the dependent variable. We interact the female binary variable with our measures of temporal flexibility and female-friendly corporate culture.

In Table 5, the coefficient on the interaction with our first corporate culture variable (female CEO firm) is insignificant in the entry regression (column 1), but negative and significant in the exit regression (column 2). In the exit regression, the negative interaction coefficient is similar in magnitude to the female coefficient itself, which means that although exit rates are higher among women than men overall, in firms that have had a female CEO, this gap is almost non-existent.

Examining our next corporate culture variable (firm diversity), somewhat puzzlingly, we find lower relative entry rates for women at diverse firms. Consistent with our earlier results, however, the negative

interaction in column 2 indicates that the gender gap in exit rates is smaller in firms that prioritize diversity. Firms with female-friendly corporate cultures are relatively better at retaining female executives. This indicates that the higher share of women at female-friendly firms (Table 4) is primarily due to lower relative exit rates of women in these firms.

With respect to temporal flexibility, column 1 shows that female executives not only have higher entry rates but they are even more likely to join firms that provide temporal flexibility. On the other hand, in column 2 there is no evidence that women differentially exit firms that provide flexibility. In other words, the fact that women are more heavily represented at flexible firms (Table 4) is due to higher female entry rates at these firms, rather than lower relative exit rates.

Table 5: Entry and Exit By Firm Characteristics

	(1) Entry	(2) Exit
Female	0.030***	0.056***
	(0.0049)	(0.0054)
Female x Female CEO Firm	0.0046	-0.040***
	(0.0071)	(0.0085)
Female x Firm Diversity	-0.069***	-0.11***
	(0.015)	(0.018)
Female x Firm Flexibility	0.024*	0.016
	(0.013)	(0.017)
Observations	197546	197546
Indiv. Controls	Yes	Yes
Firm Controls	Yes	Yes
Year FE	Yes	Yes
Job Title FE	Yes	Yes
Firm FE	Yes	Yes

Notes: Standard errors (clustered at the industry level) in parentheses. * p< 0.1, ** p< 0.05, *** p< 0.01. Indiv. Controls are age (including a dummy for missing age), gender, and experience. Firm controls are sales, markups, and insider relationships. Regressions restrict to firms with non-missing flexibility and corporate culture variables.

6.2 Gender Pay Gap by Firm Characteristics

Having established that women do select into more flexible and female-friendly firms (empirical test #1 in section 3.2), with lower exit at female-friendly firms and higher entry at flexible firms (empirical test #2), we now test whether this sorting contributes to the gender pay gap (empirical test #3). In column 1, we report estimates of the gender gay gap after controlling for executive characteristics, industry fixed effects, time-varying firm controls, and job title fixed effects. In column 2, we add our measures of female-friendly

corporate culture and temporal flexibility. If the tendency of women to sort into these firms is contributing to the gender gap documented in column 1, then the estimated gender gap in column 2 should be smaller. However, the estimated gap grows from 7% in column 1 to 8.8% in column 2. The coefficients on firm diversity and firm flexibility are positive and statistically significant, which means that diverse and flexible firms tend to pay *more*, not less.

In fact, when we control for firm fixed effects (in column 3), which account for all time-invariant firm-specific unobservables, we estimate a gender gap of 8%. Note that this specification is identical to that of column 6 in Table 3, but we drop firms with missing culture and flexibility data. In short, although women do appear to be sorting into more flexible and female-friendly firms, this sorting is not responsible for the gender pay gap that we document.

Even though sorting across firms based on flexibility and corporate culture does not appear to explain much of the gender pay gap, these phenomena could still be playing a role in driving within-firm pay gaps. For example, corporate culture may favor men over women within a firm. Personal relationships may be key for promotion and compensation decisions, and these networks may disproportionately benefit men, who make up the majority of the top positions. In terms of flexibility, if women choose tasks that allow for greater flexibility but pay less, then gender pay gaps will be larger at flexible firms.

To test these hypotheses (empirical test #4), we explore whether the conditional gender pay gap differs based on the firm's corporate culture or temporal flexibility. In column 4 of Table 6, we add interactions terms between the female indicator and our three firm characteristics (as outlined in specification (2)). The large and significant positive coefficient on the interaction term illustrates that the gender gap is cut in half at firms that have had a female CEO. The next interaction term reveals a similar story – the gender pay gap is significantly smaller among firms that promote diversity. The fact that the gender pay gap is significantly smaller at these firms supports the idea that a male-dominated corporate culture is contributing to the pay gaps that we document. On the other hand, there is no evidence that the gender pay gap is larger at firms that offer temporal flexibility. The coefficient on the flexibility interaction term in column 6 is positive and statistically insignificant.

In Appendix Table A3 we utilize time-varying measures of flexibility and corporate culture, restricting to years prior to 2010 (with more complete KLD data coverage). Despite the loss of more than half the sample, the results are similar. The gender pay gap is significantly smaller at firms with a female-friendly corporate culture but not different at firms that offer temporal flexibility. We use these estimates to calculate how much of the observed decline in the conditional gender pay gap (Figure 6) can be explained

by corporate culture. Specifically, a back of the envelope calculation multiplies the change in the Female CEO and Firm Diversity variables by their respective coefficients in columns 1 and 2 of Table A3. We find that these two factors together explain 28% of the observed decline in the conditional gender pay gap.[12]

Table 6: Gender Compensation Gap By Firm Characteristics

	(1)	(2)	(3)	(4)
Female	-0.070***	-0.088***	-0.080***	-0.13***
	(0.014)	(0.015)	(0.0093)	(0.014)
Female CEO Firm		0.038		
		(0.033)		
Firm Diversity		0.19***		
		(0.071)		
Firm Flexibility		0.18**		
		(0.075)		
Female x Female CEO Firm				0.054**
				(0.021)
Female x Firm Diversity				0.17***
				(0.060)
Female x Firm Flexibility				-0.0018
				(0.039)
Observations	197546	197546	197546	197546
Indiv. Controls	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Job Title FE	Yes	Yes	Yes	Yes
Firm FE	No	No	Yes	Yes

Notes: Standard errors (clustered at the industry level) in parentheses. * p< 0.1, ** p< 0.05, *** p< 0.01. Indiv. Controls are age (including a dummy for missing age), gender, and experience. Firm controls are sales, markups, and insider relationships. Regressions restrict to firms with non-missing flexibility and corporate culture variables.

6.3 Compensation Type

To delve deeper into the sources of the gender pay gap, this section explores whether the gender pay gap varies with the type of compensation. Discretionary pay structures that allow for negotiation can disproportionately benefit men (Biasi and Sarsons, 2020). In our context, discretionary forms of compensation may be more affected by temporal flexibility and/or corporate culture. For instance, executives that request

[12]While the point estimate on the Female CEO interaction term is larger, relatively few women become CEOs in our sample and thus the Firm Diversity variable plays a larger role in the decline in the conditional gender pay gap. Due to Firm Diversity data constraints, this calculation is based on changes from 1992 to 2009. To calculate the change in Firm Diversity over time, we focus on firms that span this entire period.

temporal flexibility or that have fewer personal connections may receive smaller bonuses.

In columns 1 and 2 of Table 7, we report the conditional gender pay gap using salary and non-salary compensation as our dependent variables. The findings show that relative to their male colleagues, women earn 4.4% less in salary (column 1) and 8.5% less in non-salary compensation (column 2). In the remaining columns, we report results for each component of non-salary compensation: bonuses, stocks, options, and other compensation. Across all components of non-salary compensation (except compensation from stocks, which is the smallest component), the gender gap is larger than the gender gap in salary compensation.

The fact that the gender pay gap is larger for more discretionary forms of compensation is consistent with corporate culture and temporal flexibility being important. Specifically, corporate culture that favors men may be more likely to manifest itself in the form of discretionary compensation. Similarly, women that choose positions with more temporal flexibility may be less likely to receive discretionary pay.

Table 7: Gender Gap in Different Types of Compensation

	(1) Salary Comp	(2) Non-Salary Comp	(3) Bonus	(4) Stocks	(5) Options	(6) Other Comp
Female	-0.044***	-0.085***	-0.056***	0.0052	-0.080***	-0.081***
	(0.0067)	(0.013)	(0.019)	(0.025)	(0.026)	(0.019)
Observations	234425	234425	234425	234425	234425	234425
Indiv. Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Job Title FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors (clustered at the industry level) in parentheses. * p< 0.1, ** p< 0.05, *** p< 0.01. Indiv. Controls are age (including a dummy for missing age), gender, and experience. Firm controls are sales, markups, and insider relationships.

We explore these possibilities more carefully in Table 8 which replicates the specification in column 7 of Table 6 using different types of compensation as the dependent variables. Comparing the coefficient on *Female* in columns 1 and 2, it is clear that the gender pay gap (for firms that are not female-friendly or flexible) is larger for non-salary compensation. We also see in both specifications that firms with a female friendly corporate culture have significantly smaller gender pay gaps.

We then disaggregate non-salary compensation into bonuses, stocks, stock options, and other compensation. The negative coefficient on the female indicator is largest for bonuses, but also sizable and statistically significant for stocks and other compensation. The interaction coefficients show that there are

significantly smaller gender gaps in bonuses and stocks at female-friendly firms. For instance, the gender bonus gap disappears entirely at firms that promote diversity, which is what we would expect to see if corporate culture is important. Conversely, the gender gaps in bonuses and stock options are larger at firms that offer temporal flexibility. This provides some evidence that women may take advantage of temporal flexibility in flexible firms and receive smaller bonuses and stock options in return.

Table 8: Heterogeneity in Gender Gap in Different Types of Compensation Across Firm Characteristics

	(1) Salary Comp	(2) Non-Salary Comp	(3) Bonus	(4) Stocks	(5) Options	(6) Other Comp
Female	-0.068***	-0.15***	-0.15***	-0.14***	0.013	-0.10***
	(0.0088)	(0.020)	(0.030)	(0.038)	(0.045)	(0.029)
Female x Female CEO Firm	0.026	0.033	0.052	0.075	-0.088	-0.018
	(0.017)	(0.031)	(0.060)	(0.086)	(0.092)	(0.053)
Female x Firm Diversity	0.11***	0.33***	0.43***	0.52***	-0.21	0.11
	(0.038)	(0.087)	(0.14)	(0.18)	(0.20)	(0.14)
Female x Firm Flexibility	-0.042	-0.052	-0.17*	0.099	-0.25**	-0.075
	(0.043)	(0.049)	(0.10)	(0.12)	(0.12)	(0.097)
Observations	197546	197546	197546	197546	197546	197546
Indiv. Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Job Title FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors (clustered at the industry level) in parentheses. * p< 0.1, ** p< 0.05, *** p< 0.01. Indiv. Controls are age (including a dummy for missing age), gender, and experience. Firm controls are sales, markups, and insider relationships. Regressions restrict to firms with non-missing flexibility and corporate culture variables.

7 Conclusion

This paper examines gender differences among top business executives. The results provide unique insight into one of the most high-stress, time-intensive, and competitive work environments. Furthermore, the findings highlight impediments to female labor participation and identify determinants of gender pay gaps, which may be of interest more broadly.

The descriptive component of our paper provides a number of interesting findings. Over the last quarter century the female share of top business executives averaged 6%, and it varies in sensible and

interesting ways across occupations and industries, as well as over time. We also explore differences in the compensation paid to male and female executives. The unconditional gender pay gap shows that women earn 26% less than men, but after accounting for job title, firm, and executive characteristics this gap falls to 8%.

We then examine whether corporate culture or temporal flexibility can explain these stylized facts. Our results provide a variety of new insights into gender differences among top business executives. First, firms with a female-friendly corporate culture have more female executives because they are relatively better at retaining women. Second, firms that offer temporal flexibility have more female executives because they are relatively better at attracting women. Third, this selection of female executives into different types of firms does not explain the gender wage gap (via a compensating wage differential story). Fourth, we look at compensation differences *within* firms and find that the gender pay gap is similar at flexible firms. Fifth, *within* female-friendly firms, the gender pay gap disappears entirely, which indicates that corporate culture is important. Sixth, we show that the gender pay gap is larger for discretionary pay. In sum, these findings indicate that both corporate culture and temporal flexibility influence the female share of employment but only corporate culture influences the gender pay gap.

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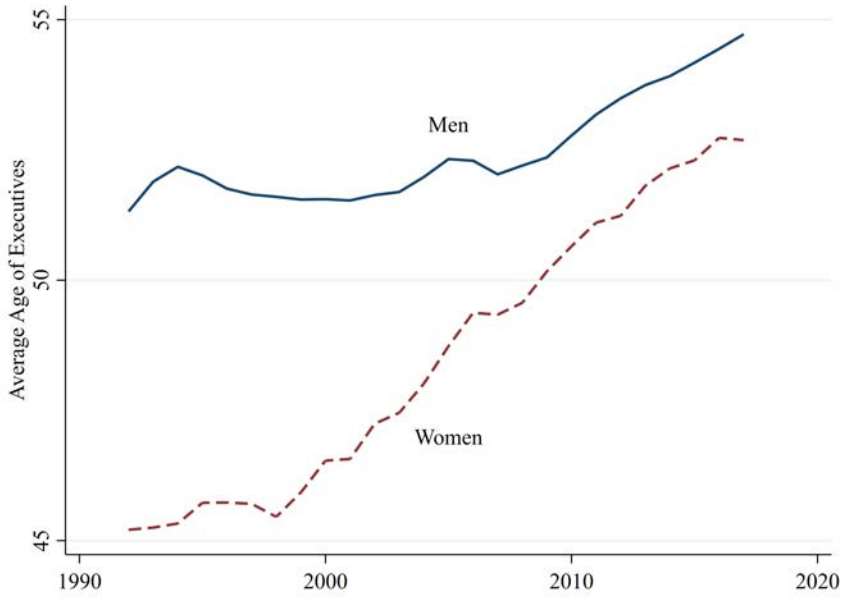
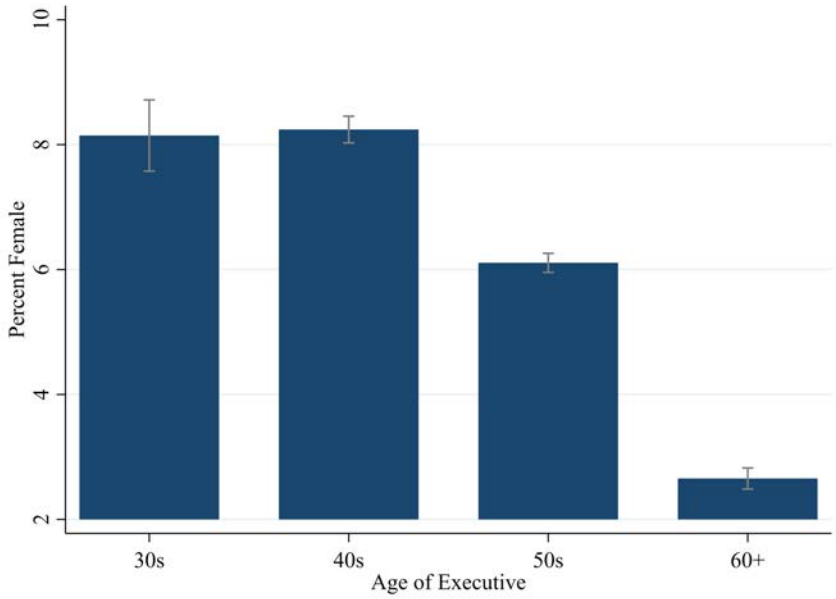
A ONLINE APPENDIX

Figure A1: Average Age of Top Executives by Gender over Time



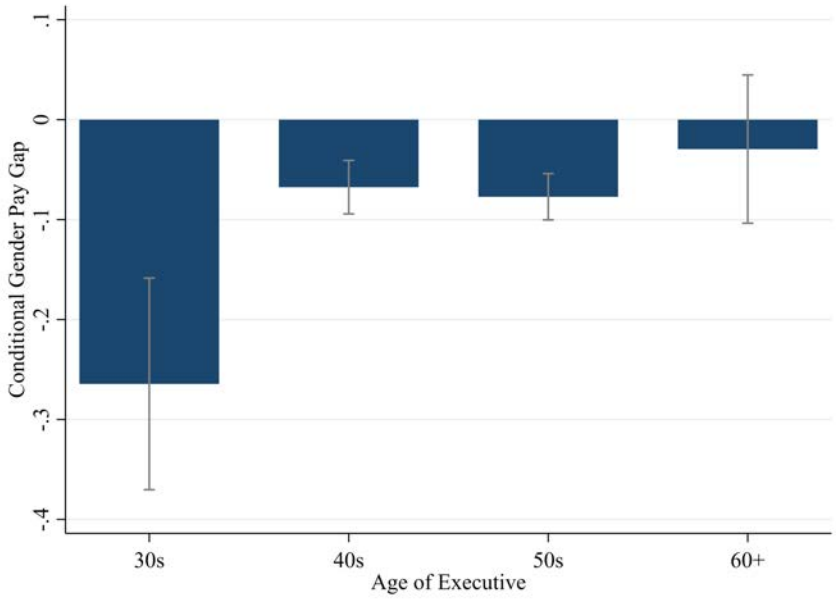
Notes: Average age of female and male executives over time. ExecuComp does not report age of all executives.

Figure A2: Female Shares of Top Executives by Age



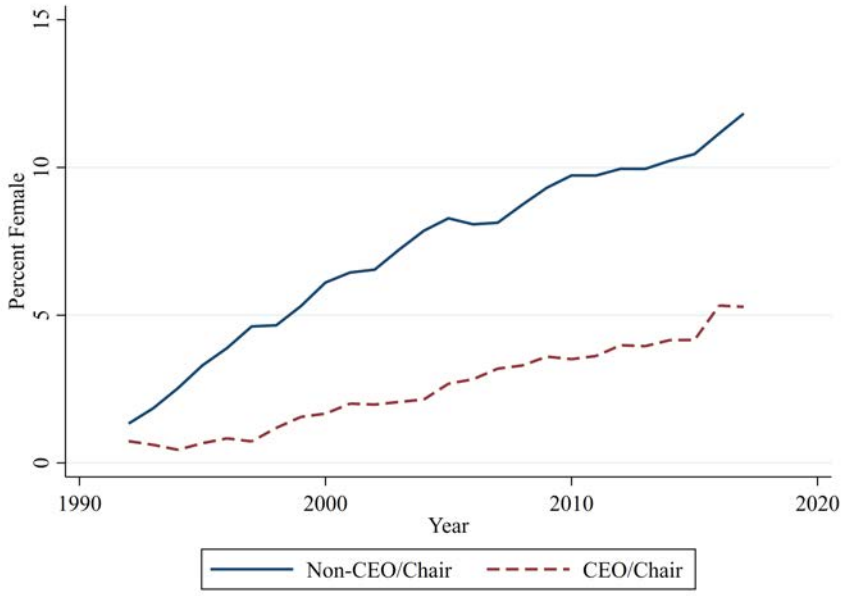
Notes: Share of female executives within each age bin. ExecuComp does not report the age of all executives.

Figure A3: Conditional Gender Pay Gap by Age



Notes: Gender gap in total compensation (TDC1) conditional on experience, education, sales, markups, insider relationships, title fixed effects, year fixed effects, and firm fixed effects. ExecuComp does not report age of all executives.

Figure A4: Female Share of Top Executives by Job Title over Time



Notes: Share of executives who are female over time by job title.

Table A1: Entry and Exit with All Controls

	(1) Entry	(2) Entry	(3) Entry	(4) Entry	(5) Entry	(6) Entry	(7) Exit	(8) Exit	(9) Exit	(10) Exit	(11) Exit	(12) Exit
Female	0.085***	0.029***	0.028***	0.028***	0.028***	0.019***	0.036***	0.035***	0.031***	0.030***	0.030***	0.024***
	(0.0037)	(0.0028)	(0.0030)	(0.0031)	(0.0031)	(0.0031)	(0.0036)	(0.0035)	(0.0034)	(0.0033)	(0.0033)	(0.0033)
Age 40s		-0.070***	-0.071***	-0.081***	-0.079***	-0.073***		0.0091**	0.014***	0.017***	0.014***	0.018***
		(0.0043)	(0.0045)	(0.0045)	(0.0046)	(0.0047)		(0.0041)	(0.0040)	(0.0047)	(0.0046)	(0.0049)
Age 50s		-0.091***	-0.091***	-0.10***	-0.099***	-0.092***		0.024***	0.034***	0.039***	0.036***	0.043***
		(0.0045)	(0.0047)	(0.0050)	(0.0051)	(0.0054)		(0.0044)	(0.0045)	(0.0051)	(0.0049)	(0.0054)
Age 60+		-0.069***	-0.068***	-0.071***	-0.069***	-0.061***		0.100***	0.12***	0.13***	0.13***	0.14***
		(0.0055)	(0.0058)	(0.0062)	(0.0063)	(0.0067)		(0.0049)	(0.0052)	(0.0057)	(0.0055)	(0.0058)
Experience		-0.039***	-0.039***	-0.041***	-0.041***	-0.039***		-0.0022***	-0.0015***	-0.00029	-0.00059*	0.0015***
		(0.00061)	(0.00062)	(0.00066)	(0.00066)	(0.00064)		(0.00031)	(0.00030)	(0.00030)	(0.00031)	(0.00031)
Dr.		-0.0023	-0.0041	0.00081	0.00075	-0.0070		-0.033***	-0.051***	-0.037***	-0.037***	-0.041***
		(0.0049)	(0.0054)	(0.0052)	(0.0052)	(0.0054)		(0.0068)	(0.0058)	(0.0071)	(0.0071)	(0.0060)
Sales					-0.012***	-0.0088***					0.013***	0.014***
					(0.0029)	(0.0026)					(0.0026)	(0.0027)
Markups					-0.014*	-0.015*					-0.0068	-0.0075
					(0.0080)	(0.0081)					(0.0061)	(0.0063)
Insider					-0.0041	0.00028					0.051***	0.051***
					(0.0038)	(0.0037)					(0.0045)	(0.0045)
CEO/Chair						-0.065***						-0.066***
						(0.0023)						(0.0026)
Vice Chair						-0.099***						0.039***
						(0.0074)						(0.012)
President						-0.082***						-0.0055*
						(0.0030)						(0.0029)
CFO						-0.062***						-0.047***
						(0.0023)						(0.0021)
COO						-0.096***						-0.030***
						(0.0042)						(0.0043)
Observations	234425	234425	234425	234425	234425	234425	234425	234425	234425	234425	234425	234425
Mean	0.176	0.176	0.176	0.176	0.176	0.176	0.176	0.176	0.176	0.176	0.176	0.176
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	No	Yes	Absorbed	Absorbed	Absorbed	No	No	Yes	Absorbed	Absorbed	Absorbed
Firm FE	No	No	No	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes

Notes: Standard errors (clustered at the industry level) in parentheses. * p< 0.1, ** p< 0.05, *** p< 0.01. All regressions control for a dummy for missing age.

Table A2: Gender Compensation Gap with Additional Fixed Effects

	(1) Total Comp	(2) Total Comp	(3) Total Comp	(4) Total Comp	(5) Total Comp	(6) Total Comp
Female	-0.079***	-0.079***	-0.080***	-0.087***	-0.075***	-0.082***
	(0.0089)	(0.0086)	(0.0089)	(0.0093)	(0.0087)	(0.0083)
Observations	234425	234286	234415	233371	234329	233270
Indiv. Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Job Title FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-by-Title FE	No	Yes	No	Absorbed	No	Absorbed
Industry-by-Year FE	No	No	Yes	No	Absorbed	Absorbed
Firm-by-Title FE	No	No	No	Yes	No	Yes
Firm-by-Year FE	No	No	No	No	Yes	Yes

Notes: Standard errors (clustered at the industry level) in parentheses. * p< 0.1, ** p< 0.05, *** p< 0.01. Indiv. Controls are age (including a dummy for missing age), gender, and experience. Firm controls are sales, markups, and insider relationships.

Table A3: Gender Compensation Gap By Time-Varying Firm Characteristics

	(1)	(2)	(3)
Female	-0.10***	-0.14***	-0.086***
	(0.011)	(0.016)	(0.013)
Female CEO Firm	-0.030		
	(0.031)		
Firm Diversity		-0.026	
		(0.038)	
Firm Flexibility			0.030
			(0.028)
Female x Female CEO Firm	0.078**		
	(0.037)		
Female x Firm Diversity		0.19***	
		(0.049)	
Female x Firm Flexibility			-0.019
			(0.034)
Observations	161691	84850	84850
Indiv. Controls	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Job Title FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes

Notes: Standard errors (clustered at the industry level) in parentheses. * p< 0.1, ** p< 0.05, *** p< 0.01. Indiv. Controls are age (including a dummy for missing age), gender, and experience. Firm controls are sales, markups, and insider relationships. Regressions restrict to years before 2010.