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POLITICS AND GENDER IN THE EXECUTIVE SUITE

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Abstract

We investigate the relationship of CEOs' political preferences (as reflected in their political contributions) with the prevalence and compensation of women in leadership positions at U.S. public companies. We find that CEOs who favor the Democratic Party ("Democratic CEOs") are associated with the presence of more women in the team of non-CEO top executives ("the executive suite"). To explore causality, we use an event study approach and show that replacing a Republican CEO with a Democratic CEO is accompanied by an increased female representation in the executive suite. To further explore causality, we examine whether CEO political preferences are associated with gender diversity in the boardroom and find no such association. This lack of association is consistent with CEOs' preferences having less influence over gender diversity in the boardroom than the executive suite because CEOs have less power over the appointment of directors who supposed to supervise the CEO than over that of executives reporting to the CEO. Finally, examining the gender gaps in the level and performance-sensitivity of executive pay documented in the literature, we find that they are driven by companies headed by Republican CEOs and disappear or at least diminish under Democratic CEOs.

JEL: J16, J30, J33, J71, K00, M12, M14, M51, M52, G30

1 Introduction

This paper investigates the relationship between a CEO's political preferences and the representation of women on the CEO's executive team, as well as the level and structure of those executives' compensation. For U.S. companies ever listed in the S&P 1500 during the period 2000-2018, we combine information on CEOs' political preferences with data on non-CEO executives' gender and compensation.

We find that CEOs who favor the Democratic Party (Democratic CEOs), compared to those who favor the Republican Party (Republican CEOs), are associated with greater representation of women in the executive suite, and with a substantially lower, or nonexistent, gender wage gap among non-CEO top executives. To explore the direction of the correlation, we perform two exercises: (1) an event-study analysis of the effect of replacing a CEO with a successor whose political ideology differs on the representation of female executives, and (2) an analysis of the relationship between the CEO's political preferences and gender diversity on the corporate board of directors, to allay concerns that omitted-variable bias involving company-level attitudes toward women may be driving our results. The results of these exercises are consistent with CEOs' political preferences accounting for at least part of the patterns we see in the data. To the best of our knowledge, our study is the first empirical analysis of the interaction between CEOs' political preferences and the presence and compensation of women in the executive suite.

We hypothesize that, for a number of reasons, Democratic CEOs and Republican CEOs may have different attitudes toward female executives. First, Democratic CEOs may differ from Republican CEOs in their views regarding women's relative skill at business, which in turn may also affect the level and performance sensitivity of compensation packages they offer to women. Second, Democrats may tend more to support "affirmative action" for women in the workplace, in terms of both representation and pay. It is also plausible that a Republican CEO might tend to offer compensation keyed to outside job offers, which tend to be rarer and lower-paying for women, while Democratic CEOs might be more likely to offer equal pay for equal work. Third, Democratic CEOs might have had more exposure to career-focused women (e.g., in fundraising and other social activities), increasing both their comfort with such women and network-based hiring opportunities. Fourth, female executives are more likely than male executives to hold liberal political views (see Cohen et al., 2019). To the extent that CEOs may

feel more affinity towards executives with similar political views, Democratic CEOs may feel more affinity with female candidates for top executive positions than do Republican CEOs. That is, our results may be driven by CEOs preferring like-minded executives rather than by CEO gender preferences. Finally, introducing more women to the executive suite may well involve significant changes to the work environment and to corporate culture; if liberal (Democratic) CEOs are more open to change than conservative CEOs, they may be more willing to hire women. We do not take a stand as to which of these mechanisms may account for our results.

Alternatively, there may be omitted variable bias driving our results. For instance, a company may appoint a CEO of a certain political affiliation at the same time that it increases female representation in the executive suite; for example, companies whose strategies require interaction with or appeal to women might be more likely to hire both a Democratic CEO and more female top executives. Similarly, companies whose strategies require interaction with or appeal to Democratic audiences (e.g., increased commitment to the practice of corporate social responsibility (Di Giuli and Kostovetsky, 2014)) might be more likely to have both a Democratic CEO and more female top executives. We present evidence, discussed below, suggesting that CEO preferences are at least partly responsible for the association we document.

Our analyses draw on data about the personal political contributions of CEOs compiled for a companion paper (Cohen et al., 2019). Implicitly, we assume that contributing significantly more to one party than another signifies a strong personal preference for the former. This assumption is supported by the literature, as discussed in Section 2. We merge our data on CEOs' political preferences with several datasets (such as ExecuComp, Compustat, and Form 4 equity reports); the merged data allow us to measure the gender diversity of the executive suite and executive compensation. We discuss the construction of our data in Section 2.

Using an OLS analysis, we find that companies led by Democratic CEOs are associated with a significantly higher fraction of female executives than those run by Republican CEOs. Specifically, a Democratic CEO employs 13% more female executives than does a Republican CEO, after controlling for company characteristics and company fixed effects. To investigate whether it is the CEO's political preference that affects representation of female executives, we use an event-study approach, where the event is the replacement of a CEO. We show that replacing

an outgoing Republican CEO with an incoming Democratic CEO, as compared to an incoming Republican CEO, yields increased female representation among non-CEO executives by as much as 40% over three years, and this effect is statistically significant.[1]

Using ExecuComp data on executive compensation, we then show that female executives are paid about 7-10% less than their male counterparts, a gender pay gap that is comparable to what has been documented in the literature discussed below. This pay gap almost entirely disappears, however, under a Democratic CEO. Statistically, we cannot reject the hypothesis that there is no gender wage gap among executives under Democratic CEOs. Thus, our findings indicate that the gender pay gap documented in the literature can be accounted for by the political preferences of a company's CEO.

We also find that the performance sensitivity of compensation is lower for female executives than for their male counterparts. We use three standard measures for performance sensitivity of pay. First, women receive a higher "cash ratio," defined as the ratio of salary and bonus to total compensation; a higher cash ratio implies lower equity-based compensation. We show that differences in cash ratio between men and women are eliminated when a company is run by a Democratic CEO. Second, women receive lower incentives as measured by both the stock-price and the stock-volatility sensitivities of their stock-option packages (commonly termed "delta" and "vega" respectively). These gender gaps in pay structure largely disappear when a company has Democratic CEO.

To further explore whether our findings can be explained by CEO political preferences, at least in part, rather than fully by omitted variables characterizing companies as described above, we examine whether CEOs' political preferences are associated with the presence of more women on the corporate board. To the extent that the association between Democratic CEOs and a larger prevalence of women in the executive suite is driven by company characteristics or circumstances that benefit from including women in the company's leadership, Democratic CEOs could also be expected to be associated with more women on the board. By contrast, if the association between Democratic CEOs and more women in the executive suite is due to CEOs' political preferences, the association between Democratic CEOs and more women on the board should be weaker or even non-existent. This is as CEOs exercise more influence and discretion over

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[1]Replacing an outgoing Democratic CEO with an incoming Republican CEO, as compared to an incoming Democrat, yields a decline in female executive representation of about 13% over three years, but this finding is not statistically significant.

the gender composition of the executive team than over that of the boardroom for two reasons. First, CEOs have more power over appointments of the top executives who report to them than over the selection of directors; second, corporate decision-makers face discretion-reducing pressure from institutional investors to appoint women to the board of directors.

Using both OLS analysis and an event-study approach, we find no evidence that the political preferences of CEOs are associated with the gender composition of corporate boards. Though this evidence is merely suggestive, these findings are consistent with CEOs' political preferences being at least partly responsible for our findings.

To the best of our knowledge, this paper is the first to investigate the relationship between the incidence and compensation of females among companies' top executives and CEOs' political preferences. Significant literatures exist on both subjects, however, and our work seeks to contribute to each of them.

There is a large literature on gender and non-CEO executives in the US. Studies on the gender composition of the executive suite include Matsa and Miller (2011); Bell (2005) and studies on gender gaps in pay in the executives suite include Bertrand and Hallock (2001); Munoz-Bullon (2010); Gayle et al. (2012); Albanesi et al. (2015); Newton and Simutin (2015); Carter et al. (2017); Quintana-Garcia and Elvira (2017). To date, however, this significant body of work has not examined how the prevalence of female executives, and the level and structure of their pay, are associated with the political preferences of companies' CEOs.

In the literature on the political preferences of U.S. CEOs, studies that examine the distribution of CEO preferences for each of the major parties include Bonica (2016) and Cohen et al. (2019). Scholars have also documented associations between CEOs' political preferences and various choices made by their companies, including behavior in mergers and acquisitions (Elnahas and Kim, 2017), riskiness of investments and level of corporate debt (Hutton et al., 2014), tax sheltering (Francis et al., 2016), lobbying (Unsal et al., 2016), types of litigation (Hutton et al., 2015), corporate social responsibility (Di Giuli and Kostovetsky, 2014), transparency of political spending (Cohen et al., 2019), pay dispersion and diversity in the executive suite (Chin and Semadeni, 2017), and dividend policy (Bayat and Goergen, 2020). However, this body of work has not considered how CEOs' political preferences are associated with gender-related choices by their

companies.[2]

We proceed as follows. Section 2 describes our data sources and the calculation of our main variables of interest. Section 3 studies how the political preferences of a CEO influence the gender composition of the executive suite, and analyzes our event study. Section 4 examines differences in level and structure of compensation between men and women in light of the CEO's political preferences. Section 5 examines the association between CEO political preferences and gender composition on the the board of directors. Finally, section 6 concludes.

2 Data and Summary Statistics

This section describes how we build our data sets and construct our main variables of interest. Section 2.1 describes the companies that make up our data universe, and the financial information we collect on them. Section 2.2 describes the two samples of corporate executives that we employ for our analyses, drawn from ExecuComp and Form 4 data. Section 2.3 describes how we infer an executive's gender, if it is not explicitly given in any of our data sources, and how we calculate our stock-option-based measures of incentive pay (delta and vega). Section 2.4 describes the source of our data on the gender composition of the boards of directors of companies in our sample. Section 2.5 explains in detail how we determine the political preferences of the CEOs in our sample. Section 2.6 provides summary statistics of the main variables used in our analyses.

2.1 Companies

Our sample consists of executives at companies included in the S&P 1500 at any point in the time period 2000-2018. The S&P 1500 is a composite index that combines three separate indices: the S&P 500, which consists of 500 companies with large market capitalization (currently, $6.1 billion or more); the S&P MidCap 400, consisting of 400 companies with medium capitalization (currently, between $1.6 and $2.8 billion); and the S&P SmallCap 600, consisting of 600 companies with small capitalization (currently, between $450 million and $2.1 billion) (S&P Dow Jones 2019, p. 6). In the aggregate, the S&P 1500 represents about 90% of total U.S.

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[2]Though we are unaware of other papers on how CEOs' political preferences influence gender issues in corporate America, Cohen and Yang (2019) examines how judges appointed by Republicans and by Democrats treat female defendants. The authors find that Republican-appointed judges give shorter sentences to female defendants. Similarly, Carnahan and Greenwood (2018) show that law firms with more politically liberal partners, as measured by their political contributions, are more likely to hire female associates.

market capitalization. Thus our sample encompasses the executives, including CEOs, of companies that represent the great majority of public-company assets.

In addition to data on executives at these companies, we collect corporate financial information from the Compustat database. Specifically, we obtain information on industry (SIC code), headquarters location, assets, return on assets, book-to-market ratio, cash, dividends, and total debt.

2.2 Executives

Our primary source of information on CEOs and top executives of public companies is Standard & Poor's ExecuComp database, which covers companies in the S&P 1500 index. For all of the highest-paid executives (including CEOs), Execu-Comp provides total compensation (TDC1), stock compensation, age, title, and gender.[3] From these data, we can also infer a CEO's tenure.

We complement the ExecuComp dataset with Form 4 filing data from the Securities and Exchange Commission (SEC), accessed via EDGAR. These are reports made in compliance with Section 12 of the Securities Exchange Act of 1934, which requires every director, officer, or owner of more than 10% of a company's equity to report to the SEC his or her relationship to the company and information on any acquisitions or dispositions of company securities.[4] Under the assumption that all officers transact in the company stock, these data should allow us to paint a complete picture of the officers in a firm.

To assess the reliability of Form 4 data, we first check whether the executives listed in ExecuComp, also appear in the Form 4 data. Very few executives who appear in ExecuComp are absent from our Form 4 data. We then check whether

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[3]TDC1 includes stock options granted, as valued by Black-Scholes, which is the appropriate measure for our purposes, widely used in the literature. TDC2 includes the value of options exercised. As a robustness exercise, we re-perform all of our exercises using TDC2. The results are largely unchanged, and are thus omitted from the paper.

[4]The definition of a corporate officer is less clear-cut than it seems. Though state statutes and corporate by-laws typically define the role clearly with regard to day-to-day operation of a firm, the term is not well defined in the Securities and Exchange Act of 1934 with reference to the responsibility to report transactions. It is not clear whether the failure to define the term was a legislative mistake or an assumption that the term would be defined in keeping with contemporaneous usage in the corporate world. Thus the term has been the subject of multiple SEC rules and court cases over the years. It is the general counsel's role to decide who does and does not meet the definition of an officer, in keeping with the general counsel's understanding of the law. Guidelines exist for designating the role of "officer" in a firm. For instance, Hurley (1975) discusses the history of the definition of an officer under the 1934 act and recommends three criteria: likelihood of obtaining confidential information, responsibility for corporate policy, and participation in the executive council.

executives employed at a given firm in our database are observed at a high frequency, such that we can accurately infer their continued employment. The vast majority of executives file reports annually, such that their presence in our data is continuous. For completeness, we assume that an executive who files a Form 4 report at least once every 4 years is continuously employed. Overall, less than 3% of our observations involve such imputations, and the vast majority of those are cases of an executive filing a Form 4 report for 1-2 years. Furthermore, we find no systematic differences in the frequency of imputations between male and female executives under CEOs of different political preferences.

We then merge the Form 4 data by company and year with our ExecuComp data to produce a more comprehensive list of executives by company-year.[5]

As noted, using Form 4 data allows us to identify a larger set of corporate executives than merely the most highly paid. This advantage is crucial for our ability to perform the event-studies described below in Section 3.2. A second advantage of using Form 4 data is that the size of the executive suite in these data is comparable to that of the corporate board. This similarity allows for a more direct comparison of the implications of a CEO's political preferences on the gender composition of the executive team with that of the corporate board, as we will discuss in Section 5.

The disadvantage is that we lack a full set of information about these observations, including compensation packages and gender, age, and other demographic characteristics.[6] All of our analyses of the representation of women in the executive suite use two samples: the sample of all executives appearing in ExecuComp (the "ExecuComp sample") and the union of executives appearing in the amalgamation of information on executives from ExecuComp and Form 4, described here (the "Form 4 sample").

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[5]We merge the two datasets in two phases. First, within each company we merge exact matches of last names with the same first and middle initial. Second, we match names using the Stata algorithm "matchit", which assigns a score to the relative similarity of the strings. Any match with a similarity score of less than 0.67 is manually checked; this cutoff was chosen after examining samples at various cutoffs and determining 0.67 to be an excellent measure of match quality. An example of a match performed in this way is Anthony Fadell of Apple Computers. In ExecuComp he is listed as Tony Fadell; in Form 4 he is listed as Anthony Fadell. The lack of matching first initials means that we only merge successfully in the second phase. Because the score of the match between the strings "Anthony Fadell" and "Tony Fadell" is only 0.59, we manually confirm that this is indeed the same person (in that Tony is a common nickname for Anthony).

[6]We discuss below how we infer an executive's gender from his or her name.

2.3 Gender and Compensation

Form 4 provides no data on gender; ExecuComp includes gender beginning in 2007. We thus determine gender by means of textual analysis of executives' first names, performed by gender-api.com. In cases for which we have data from both gender-api.com and ExecuComp, they agree about 90% of the time, increasing our confidence in this source of data. When they disagree, we defer to the gender listed in ExecuComp.

We only have compensation data for executives listed in ExecuComp. To supplement that data, which specifies total compensation, we also calculate each executive's delta and vega, or the price and volatility sensitivities, respectively, of their stock-option portfolios.[7]

2.4 Board of Directors

Using data on corporate boards from Form 4, we calculate for each year the fraction of each board that is female. Again, data on gender come from gender-api.com.

2.5 Political Preferences

We obtain information on CEOs' contributions to political parties from records made public by the Federal Election Commission (FEC). This is not a straightforward task; it involves linking the two datasets using names and companies, and inferring political preferences from contributions. We describe this process more fully in a related paper (Cohen et al., 2019); here we will merely point out some of the issues that we encounter.

The first issue is how to infer a political preference from data about CEOs' political contributions to Democrats or Republicans. For instance, consider a donation to a political action committee (PAC) that funds candidates. A PAC may be Democratic or Republican, in which case its political preference is obvious; alternatively, it may be associated with a company or a movement. In such cases, we infer the political preference of the PAC from its contributions. For further details, we refer readers to Cohen et al. (2019).

Because many CEOs make significant contributions in some years but not others, we define a CEO's political preference in a given year by examining his or her

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[7]We do so using the procedure outlined in Core and Guay (2002), and using code developed by Kai Chen and graciously made available on his website. His code is in turn based on that published on Lalitha Naveen's website, used for her paper (Coles et al., 2006).

contributions during the four preceding years and the three subsequent years. Thus, for each CEO, we calculate the fraction of contributions that flows to each of the two parties during these time periods. We have verified that using a somewhat shorter or longer time window would produce qualitatively similar results. If the fraction of a CEO's donations that flows to Republicans (Democrats) in a given year is at least 67%, we classify the CEO as a Republican (Democrat) that year. If neither party received at least 67% of donations, we classify the CEO as Neutral in that year.[8]

We do not allow for our CEOs' political preferences to change over time; instead, we use a CEO's mode political preference. For example, a CEO who was classified as a Democrat in 2000-2003 and as a Republican thereafter would be classified as Republican. Should there be no clear mode, we use the average fraction of donations to Republicans over the years. If this average is at least 0.67, we designate the CEO a Republican; if it is less than 0.33, we designate the CEO a Democrat. Others are designated Neutral.

One issue is that many CEOs cannot be matched with FEC contributions, either because they have made none or because their contributions cannot be matched with FEC records with sufficient confidence using our methodology. We assume these CEOs to be Neutral.[9]

Two questions arise from the approach described above. The first is whether CEO preferences are constant over time. The second is whether our measure captures CEOs' actual political preferences, as opposed to strategic considerations.

That CEOs' political preferences are constant over time is an assumption accepted by much of the literature (Hutton et al., 2014, 2015; Elnahas and Kim, 2017; Bayat and Goergen, 2020) and by this study. Both our data and that of the aforementioned papers show very little change over time in the pattern of donations by individual CEOs. Further, Bonica (2016) explicitly compares the consistency of the partisan leanings of individual Fortune 500 directors and CEOs across election cycles with those of other individual donors; he shows that both corporate elites and other individual donors are highly partisan in their contributions, giving mostly to a single party in a given election cycle, indicating a strong partisan preference. He then shows that this partisan preference of corporate elites in one

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[8]As a robustness check, we also perform all of our exercises using a cutoff of 75% of contributions to a given party as the threshold for being identified with that party. The results are largely unchanged and are thus omitted from the paper.

[9]As a robustness test, we reperform all of our exercises without these missing CEOs. The results are largely unchanged and are thus omitted from the paper.

election cycle are very strongly associated with the partisan lean of donations in the next election cycle, a pattern that is strikingly similar to that of other individual political contributors. Overall, the empirical evidence suggests that CEOs' personal political preferences of CEOs are indeed constant, like those of the public at large, a finding that is consistent with the notion that party identification forms during adolescence and remains constant thereafter (Green et al., 2002).[10]

We next examine whether political contributions reflect personal beliefs. Bonica (2016) performs a number of analyses to determine whether corporate elites make political donations to advance their personal preferences or their business interests. His first argument is that, if a political contribution is a strategic investment to gain access or influence over politicians, such money should be much more likely to flow to the candidate likely to win. Corporate elites gave only 46% (38%) of their donations to winners in 2008 (2012), when Democrat Barack Obama won the presidency, a pattern consistent with corporate elites' overall Republican leanings and inconsistent with "picking winners" for purposes of influence.[11] Bonica (2016) also shows that corporate elites donate substantially to presidential candidates, while corporate PACs are more focused on congressional races, which he designates as more likely avenue for political access than presidential contributions.[12] Furthermore, as noted earlier, corporate elites typically donate largely to a single political party, as do other individual donors; more strategic corporate PACs distribute donations much more evenly between the two major parties.[13] Interestingly, Bonica shows that corporate PACs shift their contributions toward the political party currently in power, a pattern that suggests they may indeed be trying to buy influence. By contrast, corporate elites donate more (in total

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[10]Relatedly, Fremeth et al. (2013) track contributions by individual CEOs before, during, and after their tenure at the helm of S&P 500 firms, between 1991 and 2008, and find that such contributions increase dramatically during their service as CEOs. Their online appendix presents some evidence that, while serving as CEOs, executives contribute slightly more to the Democratic Party (but not to Democratic candidates). These results are not robust, however, due to data issues and to the small sample of CEOs observed to have donated before their tenure. The authors conclude that individual CEOs' partisan leanings are not strongly affected by employment as a CEO.

[11]Relatedly, Bonica (2016) documents little "hedging" behavior among corporate elites who contribute to presidential nominees. The vast majority donate to only one party.

[12]Bonica, looking only at contributions to congressional elections, finds that corporate elites are much less likely to pick winners than are corporate PACs, and only slightly more likely to pick winners than itemized individual donors (members of the general public who contribute more than $200), who in turn are somewhat better at picking winners than smaller donors. This pattern further supports the idea that corporate elites are not trying to buy access, even with congressional contributions.

[13]Cooper et al. (2010) show that the number of candidates a corporate PAC supports is correlated with subsequent abnormal stock-market returns, suggesting that these PACs are indeed focused on firm profits.

contributions) to their preferred party when it is out of power. This pattern may suggest some strategizing about the *timing* of political contributions, but it supports the assertion that these contributions reflect personal ideology rather than a strategic choice of which party to support.

Hutton et al. (2014) similarly make four arguments that CEOs' political contributions accurately reflect their personal beliefs. First, for a subset of CEOs who self-report their political ideology, the partisan leanings of their contributions strongly correlate with reported ideology. Second, demographic characteristics associated with Republicans in the general population–namely, being older, male, and not a member of a minority–are also strongly correlated with a consistent Republican tilt in CEO contributions. Third, CEOs who donate more to Republicans are more financially conservative in their personal lives than those who donate more to Democrats, as measured by incurring less debt when purchasing their primary residences. Finally, and consistent with Bonica (2016), the authors argue that, if contributions were strategic rather than reflective of personal beliefs, we would see more change in the partisan orientation of donations over time as power changes hands. As noted above, this is decidedly not the case.

Figure 1 shows CEOs' political preferences over time. Around 40% are designated as Republican and another 40% are designated as Neutral, with the remaining 20% designated as Democrats.

2.6 Summary Statistics

Tables 1 and 2 report summary statistics for our analysis. We report the mean and standard deviation (in parentheses) for our variables of interest for all observations, as well as conditional on the political preferences of the CEO. We also report the number of observations of each variable, both overall and by the CEO's political preference.

Table 1, Panel A, reports summary statistics on CEOs, including gender, age, tenure as CEO, and whether they also chair the board of directors. 6% of Democratic CEOs are female, as are 4% of Neutral CEOs and 2% of Republican CEOs. The average age of the CEOs in our sample is 56; there is no major age difference among the various political preferences. Democrats have the longest tenure at 8.5 years; Neutral CEOs have the shortest tenure at 6 years, with Republicans in between at 7.5 years of tenure. 59% of Republicans chair their boards of directors; only 52% of Democrats and 45% of Neutral CEOs do so.

Table 1, Panel B, reports summary statistics on the non-CEO executives in our

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samples: their age, total compensation, ratio of salary and bonus to total compensation ("cash ratio"), delta, and vega. All of this data comes from ExecuComp, and is thus reported only for the ExecuComp sample. Total compensation, delta, and vega are reported in thousands of dollars. Finally, Panel B also reports whether an executive is an insider (as defined above). Insider status is calculated using Form 4 data, because that wider sample of data is more likely to capture an executive having been employed at the firm in a previous time period.

Table 1, Panel C, reports summary statistics on firm characteristics: number of female executives, total number of executives, and the fraction of non-CEO executives who are female in both the ExecuComp and Form 4 samples. There are approximately 9.4 and 5.6 executives in the Form 4 and ExecuComp samples respectively, numbers that do not vary much by the politics of the CEO. 9% of ExecuComp non-CEO executives and 12% of their Form 4 counterparts are female. Democratic CEOs employ a higher fraction of female executives than Neutral CEOs, who in turn employ more female executives than Republicans do. This is true for both samples. Relatedly, Figure 2 shows the fractions of executives who are female, in both samples, by the political preferences of the CEO over time. The figure shows that the fraction of non-CEO executives who are female increases over time; however, the difference in that fraction between corporations run by Democrats and Republicans is large and relatively stable over time. The log of assets is also roughly uniform among the three political groups. Republican-run companies have the highest return on assets (ROA), followed by Democrats; with Neutral CEOs have the lowest ROA. Cash, dividends, and debt all vary somewhat from group to group, but their variance can be attributed to differences in other variables, such as industry and company size.[14]

Table 2 duplicates Table 1, Panel A, for a subset of CEOs who are new to the position, and who thus constitute the sample used in our event-study analysis, reported in Section 3.2. We report statistics by the type of leadership change observed in the data. The first letter denotes the political preference of the outgoing CEO; the second letter denotes that of the incoming CEO: RR specifies a Republican CEO replacing a Republican, RD a Democratic CEO replacing a Republican, DD a Democratic CEO replacing a Democrat, and DR a Republican CEO replacing a Democrat. Patterns in CEO gender are very similar to Panel A. Democrats are much more likely to be female. The four groups of CEOs are relatively similar to one another, and about 3 years younger than the overall pool of CEOs in Panel

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[14]In untabulated regressions, we confirm that this is the case.

A. Those in this sample are much less likely to chair the board of directors, which is unsurprising in that they are new to the job. Again, Republicans are more likely to chair the board than are Democrats. 86% of new CEOs are insiders; that is, they worked at the company during the year before they became CEOs.

3 The Gender Composition of the Executive Suite

This section documents differences among Republican, Democratic, and Neutral CEOs in the gender composition of their top-executive teams. Section 3.1 looks at differences across the entire sample of companies. Section 3.2 then uses an event-study approach to examine the dynamics of the executive suite's gender composition around the time of a change in CEO.

3.1 All Companies

Our first exercise studies the relationship between the political preference of a company's CEO and the gender composition of its executives. To do so, we estimate regressions of the following structure:

$$(1) \quad Y_{ct} = \alpha \cdot Neutral_{ct} + \beta \cdot Democrat_{ct} + \gamma \cdot Female_{ct} + \lambda_s + d_t + I_{i,c} + X'_{ct}\xi + \epsilon_{ct},$$

where Y_{ct} is the fraction of company c's non-CEO executives in year t who are women (using either the Form 4 or the ExecuComp sample). $Neutral_{ct}$ is a dummy variable equal to 1 if the CEO of company c in year t is identified as Neutral; $Democrat_{ct}$ is a dummy variable equal to 1 if the CEO is identified as a Democrat. These two variables thus give a comparison to the omitted case of a CEO identified as a Republican. $Female_{ct}$ is a dummy variable equal to 1 if the CEO is female. λ_s is a set of state fixed effects; d_t is a set of year fixed effects; $I_{i,c}$ represents either industry fixed effects (for industry i in which company c operates, as defined by its SIC code), or firm fixed effects, depending on the specification.[15] X'_{ct} is a vector of company controls, including (a) a quadratic in CEO age; (b) the log of the CEO's tenure; (c) whether the CEO also chairs the board of directors; (d) whether the CEO is an "insider", (defined as whether (s)he worked for the company in year $t - 1$; (e) the interaction of insider status and being female, and (f) the log of the firm's total assets.[16] Standard errors are clustered at

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[15] Note that state fixed effects are absorbed by company fixed effects unless a company reincorporates in a different state. We thus drop state fixed effects whenever we use company fixed effects.

[16] The insider variable interacted with the CEO being female controls for a mechanical issue: that promotion of a female executive to CEO status is likely to change the gender composition

the industry level when I_{ic} represents industry fixed effects, and at the firm level otherwise.

Table 3 shows the results of these regressions. Column 1 uses the sample of executives from Form 4 and includes industry fixed effects; column 2 duplicates column 1 using the sample of executives from ExecuComp; and columns 3 and 4 replace industry fixed effects with firm fixed effects.[17] All specifications find that Democratic CEOs employ a larger fraction of women on their executive teams than do Republican CEOs, with estimates ranging from 1.7 to 2.2 percentage points. These results are all significant at the 1% level. Neutral CEOs also employ a larger fraction of women than Republicans, with estimates ranging from 0.5 to 0.9 percentage points, which is statistically significant at the 5% level when using the Form 4 sample and company fixed effects but not otherwise. The effects documented are large, given that the average fraction of women on executive teams is 9% in the ExecuComp sample and 13% in the Form 4 sample. Thus a Democratic CEO employs 13-24% more female executives than a Republican CEO.[18]

We conclude that companies run by CEOs who are Democrats employ significantly more female executives than Republican-run companies. Companies run by Neutral CEOs also employ more female executives, but by a smaller margin. These findings hold both for the broad sample of executives in the Form 4 sample, and for the more restricted sample of highly paid executives in the ExecuComp sample.

3.2 Event-Study Design

The previous analysis established an association between the political preference of a CEO and the gender composition of the executive suite; it did not assert causation. One approach to identifying the direction of the association is to use an event-study design, where the event is a change in a company's CEO. Our event-study analysis compares the gender composition of the executive suite at companies whose outgoing CEO is replaced by a successor of the opposite po-

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of the remaining non-CEO executive suite because a promoted female executive is likely to be replaced by a man, given that the vast majority of executives are male. Thus such an internal promotion will create a negative relationship between a female CEO and the fraction of non-CEO executives who are female. Controlling for the CEO's insider status, interacted with being female, solves this issue.

[17]When using firm fixed effects, identification of the effects of a CEO's political preference comes a change in CEO within a company.

[18]Another interesting result reported in Table 3 is the lack of a relationship between company size, as measured by the log of total assets, and gender composition. Larger companies do not seem to have more gender diversity in their executive suites.

litical affiliation with companies whose outgoing and incoming CEOs are of the same political affiliation.

We estimate regressions of the following structure:

$$Y_{ctk} = \sum_{k=-3}^{3} \alpha_k \cdot S^k + OI_{p,-p} + \sum_{k=-3}^{3} \gamma_{p,-p,k} \cdot OI_{p,-p} \cdot S^k$$
$$+ \lambda_s + I_i + X'_{ct}\xi + \epsilon_{ctk},$$

where Y_{ctk} is the female fraction of non-CEO executives at company c between the year of a change in CEO, t, and $t + k$, where the lag k ranges from -3 to 3 (from 3 years before to 3 years after the change in CEO). The fraction of executives who are female is measured using the Form 4 sample.[19] S^k is a set of fixed effects for the lags before and after a switch in CEO, which allows us to measure any potential trends around the time of a CEO's replacement. As noted above, we perform these exercises separately on the sample of companies replacing a Republican with either a Democratic or a Republican (that is, not Neutral) CEO, and on the sample replacing a Democrat with either a Democrat or a Republican.

We denote the political preference of the outgoing CEO as $p \in$ {Democrat, Republican}. $OI_{p,-p}$ is a dummy variable indicating that an outgoing CEO of political preference p is replaced by an incoming CEO of the opposite political preference $-p$.[20] We also include the interactions of $OI_{p,-p}$ with S^k, with coefficients $\gamma_{p,-p,k}$; these interactions capture differences between (a) the fraction of non-CEO executives who are female in the years before and after a CEO of party p is replaced with a CEO of party $-p$, and (b) the same changes at companies whose outgoing and incoming CEOs share a political preference.[21] Thus, $\gamma_{p,-p,k}$ are our parameters of interest. d_t is a set of year fixed effects; λ_s is a set of state fixed effects; I_i are industry fixed effects, for the industry i in which company c operates, as defined by the two-digit SIC code (SIC2). X'_{ct} is a vector of company controls, including (a) a quadratic in the new CEO's age, (b) whether the new CEO also chairs

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[19]This event-study approach naturally results in a greatly restricted sample size, because we are limited to observations where a Democrat or Republican is replaced by another Democrat or Republican.

[20] For example, consider the event study of the sample of outgoing Republicans who are replaced by either Democrats or Republicans. $OI_{p,-p}$ takes a value of 1 if a company replaces a Republican with a Democrat. It thus measures difference in the gender composition of the executive suite between companies that replace a Republican with a Democrat and companies that replace a Republican with another Republican.

[21]Continuing the example from Footnote 20, $\gamma_{R,D,2}$ compares change in the fraction of non-CEO executives who are female two years after a Democratic CEO replaces a Republican and two years after a Republican replaces another Republican.

the board of directors, (c) whether the new CEO is female, (d) whether the new CEO is an insider, (e) the interaction of insider status and being female, and (f) the log of the firm's total assets. Standard errors are clustered by firm-switching observation.[22]

Performing these exercises separately for companies whose outgoing CEOs are Republicans and Democrats, and restricting our attention to the case that the incoming CEO is not Neutral is advantageous for two reasons. First, restricting the sample by the political preferences of the outgoing CEOs enables us to better measure trends in female executive employment at companies run by Republicans or Democrats before a change in their leaders' political preference. That is, we are able to show that trends in executive gender composition do not differ, prior to a change in CEO, between companies that replace a Republican with a Democrat and those that select another Republican.[23] Doing so increases confidence that the event-study design captures the effect of a change in the CEO's political preference on the gender composition of the executive suite, rather than differing trends at companies that replace a Republican with a Democrat or with another Republican. Second, by excluding cases in which the incoming CEO is politically Neutral, we are by design highlighting the most dramatic such changes that companies make. Doing so helps identify the effects of the CEO's political preference, given the event study's relatively small sample size.

Table 4 reports the results of our event studies. Columns 1 and 2 use the sample of firms that replaced a Republican CEO with either a Democrat or a Republican. We include the indicator variable OI_{RD}, which indicates replacement of a Republican with a Democrat, and this variable's interactions with S^k. We omit the interaction between OI_{RD} and S^{-1}. As such, the interpretation of the coefficients on these interactions is a comparison to the year before a company changed CEOs. Column 1 does not include the controls in X; column 2 does include these controls. In both specifications, the coefficients on S^k are economically and statistically insignificant, indicating no trends in female executive employment around the time of a change in CEO, for this sample of companies.

Both specifications also find a small, and statistically insignificant, estimate on OI_{RD}, indicating that companies that replaced a Republican with a Democrat did

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[22]That is, all observations from 3 years before to 3 years after a change in CEO at company c in year t form a cluster.

[23]Relatedly, we do not find that the executive suite's gender composition prior to a change in CEO predicts the political preference of the new CEO, alleviating concerns about possible reverse causality.

not have meaningfully larger fractions of female executives than companies that maintained Republican leadership on average through the sample period. The estimates on the interaction between OI_{RD} and S^k prior to the change in CEO indicate no difference in trend in the fraction of the executive suite that is female between companies whose Republican CEOs are replaced with Democrats and with Republicans.[24] Both specifications also show a small (but not statistically significant) increase in female representation in the executive suite at the time a Republican CEO is replaced by a Democrat, followed by a large increase of more than 4 percentage points in female representation in the executive suite one to three years after the change. This increase in female executive representation is statistically significant at the 1% level both one and two years after the change in CEO, and at the 5% level three years afterward. Considering that the average fraction of the executive suite that is female at companies in this sample is 11.7%, our results suggest that replacing a Republican CEO with a Democrat yields nearly 40% increase in female representation in the executive suite within a few years.

Columns 3 and 4 of Table 4 duplicate columns 1 and 2, but employ the sample of firms that replace a Democratic CEO with either a Democrat or a Republican. We switch the indicator variable to OI_{DR}, indicating that a Republican is replaced by a Democrat, and this variable's interactions with S^k. The coefficients on these variables thus compare the replacement of a Democrat with a Republican to the replacement of a Democrat with another Democrat. The estimates on S^k in both specifications again show no difference in trend in the gender composition of the executive suite for this sample of companies.

The estimates on the interaction between OI_{DR} and S^k prior to the change in CEO indicate no difference in trend in the fraction of the executive suite that is female, prior to the switch in the CEO, between companies that replace Democrats with Republicans and those that install another Democrat. Both specifications also show a small (but not statistically significant) decrease in female executive representation in the years after a Democratic CEO is replaced by a Republican; the point estimate is as much as 1.9 percentage points three years after the switch in

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[24]To be clear, in both specifications the estimate on the interaction between OI_{RD} and S^{-3} is positive and statistically significant at the 10% level. If anything, this indicates a *decreasing* trend in the years before a company replaces a Republican with a Democrat. Interpreting this positive coefficient as a negative trend would yield an interpretation of a larger impact of replacing a Republican with a Democrat. However, given that the estimate on 2 years before the change in CEO is economically and statistically no different than that of 1 year before the change, it seems that there is no immediate difference in pre-trends between these groups of companies. Thus we interpret these results conservatively as indicating no pre-trend difference between the companies.

CEO. Considering that the average fraction of the executive suite that is female for companies in this sample is 14.7%, the point estimates suggest that replacing a Democrat with a Republican yields a nearly 13% decrease in female representation in the executive suite, though the estimate is not statistically significant. The lack of statistical significance may be due to the relatively small sample of companies in this event study, due to underrepresentation of Democrats among CEOs.

Figure 3 illustrates the results reported in Table 4. The left-hand panel shows the effects on the gender composition of the executive suite of replacing a Republican CEO with a Democrat, rather than another Republican, using the estimates on $\gamma_{R,D,k}$ from Table 4, column 2. As noted, no notable trend in female executive employment is discernible prior to replacing a Republican with a Democrat, but female representation in the executive suite increases after the transition, in a manner that is both economically and statistically significant. The right-hand panel shows the effects on the gender composition of the executive suite of replacing a Democratic CEO with a Republican, as compared to another Democrat, using the estimates on $\gamma_{D,R,k}$ from Table 4, column 4. Again, there is no notable trend in female executive employment prior to replacing a Democrat with a Republican, but female representation in the executive suite drops after the change in CEO (though the drop is not statistically significant).

We cannot completely rule out the possibility that confounding factors cause companies to simultaneously replace a Republican CEO with a Democrat and increase female representation in the executive suite. However, it is highly suggestive that replacing a Republican CEO with a Democrat yields an increase in female representation among executives. Replacing a Democrat with a Republican may yield the opposite result, though our estimates are not statistically significant.

4 Gender Differences in Executive Pay

This section documents how gender differences in total compensation (Section 4.1) and performance-sensitive pay (Section 4.2) vary based with the political preferences of a company's CEO.

4.1 Total Compensation

To analyze gender differences in non-CEO executive total compensation between companies run by CEOs of different political preferences, we estimate regressions of the following structure:

$$Y_{pct} = \alpha \cdot Neutral_{ct} + \beta \cdot Democrat_{ct} + \gamma \cdot Female_{ct} + \psi \cdot ExecFemale_{pct}$$

$$(2) \qquad + \gamma_N \cdot ExecFemale_{pct} \cdot Neutral_{ct} + \gamma_D \cdot ExecFemale_{pct} \cdot Democrat_{ct}$$

$$+ \omega \cdot ExecFemale_{pct} \cdot Female_{ct} + \lambda_s + d_t + I_{i,c} + X'_{ct}\xi + Z'_{pct}\chi + \epsilon_{pct},$$

where Y_{pct} is the log of total compensation of non-CEO executive p at company c in year t. $Neutral_{ct}$ is a dummy variable equal to 1 if the CEO of company c is labeled Neutral in year t. $Democrat_{ct}$ is a dummy variable equal to 1 if the CEO of company c is labeled a Democrat in year t. These two variables thus present a comparison to the omitted case of a CEO labeled a Republican. $Female_{ct}$ is a dummy variable equal to 1 if the CEO is female. $ExecFemale_{pct}$ is a dummy variable equal to 1 if executive p is female. We interact $ExecFemale_{pct}$ with $Neutral_{ct}$ and $Democrat_{ct}$ (listed above with coefficients γ_N and γ_D respectively). Our coefficients of interest are γ_N and γ_D; they compare gender differences in compensation, under Neutral and Democratic CEOs respectively, to gender differences in compensation under Republican CEOs. Some specifications also add an interaction between $ExecFemale_{pct}$ and $Female_{ct}$ (listed above with coefficient ω). λ_s is a set of state fixed effects. d_t is a set of year fixed effects. $I_{i,c}$ represent either industry fixed effects, as defined by SIC, or firm fixed effects, depending on the specification.[25] X'_{ct} is a vector of company controls.

As before, X includes a quadratic in the CEO's age; the log of the CEO's tenure; an indicator of whether the CEO also chairs the board of directors; an indicator of whether the CEO is an insider, interacted with whether the CEO is female; and the log of total assets. We now add the return on assets, book-to-market value, cash, dividends, and total debt. Z'_{pct} is a set of individual controls for executive p, including a quadratic in his/her age, an indicator of whether the executive is an insider, and a set of dummy variables for the executive position's title.[26] When the dependent variable is either log of delta or log of vega, we include as a control the sum of the executive's salary and bonus; higher levels of non-stock-option compensation are presumably correlated with higher levels of stock-option compensation. Standard errors are clustered at the industry level when I_{ic} represents industry fixed effects and at the firm level otherwise.

Table 5 reports the results when the dependent variable is the log of total compensation. Column 1 regresses log total compensation on *ExecFemale* and *Female*,

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[25]As noted in footnote 15, we drop state fixed effects when using company fixed effects.

[26]Title groups include chief officers, an executive who is also a chairman, general counsel, human resources, vice president, other titles that include the word *senior*, and other.

and includes our firm controls *X*, individual controls *Z*, year fixed effects, state fixed effects, and industry fixed effects. Column 2 adds CEOs' political preferences, *Neutral* and *Democrat*, interacted with *ExecFemale*. The estimates on *ExecFemale* suggest that women are paid about 7-10% less than men, and are statistically significant at the 1% level. However, the interaction between *Democrat* and *ExecFemale* suggests that female executives are paid 7.3% more under a Democratic CEO than under a Republican; it is significant at the 10% level. We cannot reject the hypothesis that female executives are paid the same as male executives under a Democratic CEO. The *p* value for this test is reported in the row "*p*-value." There is no meaningful difference in female executive pay between Neutral and Republican CEOs. One potential concern is that female CEOs may pay female executives more equitably.

As noted above, female CEOs are more likely to be Democrats than Republicans. Our estimates in column 2 could be biased, in that they do not control for how female CEOs pay female executives. To address this issue, column 3 repeats column 2, but adds the interaction between *ExecFemale* and *Female*. Indeed, the coefficient in this specification suggests that female executives are paid about 11.3% more under a female CEO than under a male CEO; the estimate is significant at the 5% level. The point estimate on the interaction between *ExecFemale* and *Democrat* is slightly smaller at 6.8%, and again significant at the 10% level. We cannot reject the hypothesis that male and female executives are paid identically under a Democratic CEO.

Table 5, columns 4-6, repeat columns 1-3 but replace industry fixed effects with company fixed effects. Quantitatively, the results are quite similar: the gender wage gap ranges from 6.8% to 9.2%, and 7.3-7.7 percentage points of the pay gap disappear under a Democratic CEO. However, in contrast to columns 2 and 3, the estimates of the interaction between *ExecFemale* and *Democrat* here are significant at the 1% level. As before, we cannot reject the hypothesis than men and women are paid equally under a Democratic CEO. And as before, we reject the hypothesis that an omitted variable–female CEOs paying female executives more–drives our results.[27]

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[27]We also note that the specifications in columns 2 and 3 suggest that total pay is somewhat lower under Neutral CEOs than under Republican CEOs; this difference disappears, however, once company fixed effects are included. There is no statistically significant difference between total pay under Democratic and Republican CEOs. Below, in footnotes 30 and 31, we discuss other apparent differences in overall compensation between these groups of CEOs, but we do not offer a robust takeaway message.

4.2 Performance-Sensitivity Compensation

To analyze gender differences in performance-sensitive non-CEO executive compensation between companies run by CEOs of different political preferences, we estimate regressions as in (2), but with different dependent variables. We use three measures for Y_{pct}: (1) the ratio of salary and bonus to total compensation, which we call "the cash ratio," (2), the log of delta, and (3) the log of vega.[28]

Table 6, columns 1 and 2, repeat Table 5, columns 1 and 3 respectively, with the difference that the dependent variable becomes the cash ratio. A higher value for this ratio indicates a higher share of total compensation that is paid in cash rather than equity compensation. Both specifications show that female executives receive a cash ratio that is 1.3-2.0 percentage points higher than that of their male counterparts; the estimates are significant at the 1% level. Though the interaction between *ExecFemale* and *Democrat*, reported in column 2, is not statistically significant, it is negative and of the same order of magnitude as the positive estimate on *ExecFemale*.[29] Thus it is no surprise that we cannot reject the null hypothesis that the cash ratio in compensation is identical for male and female executives under a Democratic CEO; the p-value of this test is reported in the row "p-value." There is no economically or statistically significant difference in the cash ratio between male and female executives under Neutral CEOs, as compared to Republican CEOs.

Table 6, columns 3 and 4, repeat the pattern of columns 1 and 2, with the difference that the dependent variable is the log of delta. The literature interprets higher levels of delta as a way to align executives' incentives with shareholders' by linking executive compensation to outcomes, as measured by stock prices. Both specifications indicate that female executives receive about 30-40 percent lower delta than their male colleagues; the estimate is statistically significant at the 1% level. However, the interaction between a female executive and a Democratic CEO, reported in column 4, suggests that women receive about 37 percent more delta under a Democratic CEO than under a Republican CEO. This estimate is significant at the 1% level. We cannot reject the null hypothesis that delta is identical for male and female executives under a Democratic CEO; the p-value of this test is reported in the row "p-value." The gender pay gap in delta is not significantly different under a Neutral CEO than under a Republican CEO.

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[28]Technically, we take the log of delta + \$1 or the log of vega + \$1 in order not to take the log of 0 in cases of no stock-option compensation.

[29]As discussed below, the estimate on this interaction term is statistically significant at the 5% level when using company fixed effects.

Table 6, columns 5 and 6, again repeat the same pattern, but substitute the log of vega as the dependent variable. Higher levels of vega incentivize risk-taking behavior by the executive. Both specifications suggest that female executives receive about 20-36% lower vega than their male counterparts; the estimates are significant at the 1% level. The interaction between female executive and Democratic CEO, reported in column 5, suggests that women are paid about 42% more vega under a Democratic CEO than under a Republican CEO; the estimate is significant at the 10% level. We cannot reject the null hypothesis that male and female vega is identical under Democratic CEOs; the *p*-value of this test is reported in the row "*p*-value." The gender pay gap in vega is not significantly different under a Neutral CEO than under a Republican CEO.[30]

Table 7 repeats Table 6 but replaces industry fixed effects with company fixed effects. Some of the magnitudes of estimates and levels of statistical significance change, but the overall message is the same.

Table 7, columns 1 and 2, show that the cash ratio is 0.9-1.3 percentage points higher for female executives than for male executives; the difference is statistically significant at the 1% level. Column 2 shows that women receive a lower cash ratio under a Democratic CEO than under a Republican CEO; the difference is significant at the 5% level. We cannot reject the null hypothesis that there is no gender gap in this measure of executive compensation under Democratic CEOs. Again, we find no economically or statistically significant difference between Neutral and Republican CEOs in the cash-ratio gender gap.

Table 7, columns 3 and 4, show that delta is about 28-38% lower for female executives than for male executives; the difference is statistically significant at the 1% level. The results in column 4 show that delta for female executives is about 30% higher under a Democratic CEO than under a Republican CEO; the estimate is significant at the 5% level. Once again, we cannot reject the null hypothesis that delta is identical for male and female executives under Democratic CEOs. Also

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[30] Finally, though not the main purpose of this paper, Table 6 reports interesting differences in executive pay between Republican CEOs, on the one hand, and Neutral and Democratic CEOs on the other. The estimates in column 2 show that the cash ratio is 1.2 (1.5) percentage points higher under a Neutral (Democratic) CEO than under a Republican CEO; the estimates are statistically significant at the 5% level. The estimates in column 4 show that delta is 10.5 (15.2) percent lower under a Neutral (Democratic) CEO than under a Republican CEO; the estimate on Neutral CEOs is significant at the 10% level, and that on Democratic CEOs is significant at the 5% level. The estimates in column 6 show that vega is 3.0 (13.8) percent lower under a Neutral (Democratic) CEO than under a Republican CEO; however, the estimates are not statistically significant. Jointly, these estimates suggest that Republican CEOs use more stock-related pay in the compensation packages they grant to executives. However, as footnote 31 points out, these findings are not very robust to replacing industry fixed effects with company fixed effects.

as before, we do not find strong evidence of a difference in the gender pay gap in delta between Neutral CEOs and Republican CEOs.

Table 7, columns 5 and 6, show that vega is about 28-35% lower for female than for male executives. The estimates in column 6 suggest, however, that vega for female executives is about 27% higher under Democratic CEOs than under Republican CEOs, statistically significant at the 10% level. We cannot reject the null hypothesis that vega is identical for male and female executives under Democratic CEOs.[31]

We conclude that companies run by Democratic CEOs have much smaller and statistically nonexistent gender pay gaps among top executives; other companies, by contrast, have significant pay gaps. Interestingly, this pattern characterizes not only total compensation but also the makeup of the compensation package: significant gender gaps are apparent in the cash ratio, delta, and vega of compensation under Republican CEOs. Thus, not only do female executives under Republican CEOs receive lower total compensation than their male counterparts; their compensation also has a much smaller equity component. These gaps all but disappear under Democratic CEOs. The previous literature has argued that lower delta and vega for female executives indicate higher female risk aversion (Carter et al., 2017); it is hard to reconcile this explanation with the fact that these differences are greatly mitigated when the CEO of a company is a Democrat.

5 Gender Composition of the Board of Directors

Finally, we explore whether the association we find between CEOs' political preferences and the prevalence of female executives extends to the board of directors.

If the association we find between Democratic CEOs and more females in the executive suite is fully driven by company characteristics or by circumstances that promote including women in a company's leadership positions, Democratic CEOs should also be associated with more women on the board. Conversely, if the association between Republican CEOs and fewer women in the executive

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[31] By contrast to the results discussed in footnote 30, here we find fewer differences in executive pay between Republican CEOs, on the one hand, and Neutral and Democratic CEOs on the other. The cash ratio for executives under a Neutral CEO is 1.3 percentage points higher than under a Republican CEO; the estimate is statistically significant at the 5% level. There is no difference, economically or statistically, between the cash ratio of executive pay under Democratic and Republican CEOs. Delta is about 12% lower under a Neutral CEO than a Republican CEO; the estimate is significant at the 10% level. There is no meaningful difference in delta between a Democratic and a Republican CEO. Vega is a bit higher (lower) under Neutral (Democratic) CEOs than under Republican CEOs, but the estimates are not statistically significant.

suite is attributable to CEOs' political preferences, the association between Democratic CEOs and more women on the board should be expected to be lower or even nonexistent. This is the case because CEOs are likely to exercise less discretion over the gender composition of the board than over that of the executive suite. Such restricted discretion is due both to pressure from institutional investors for diversity on the board and to constraints on corporate decision makers' ability to avoid appointing women to the board. Furthermore, the important role typically played by the board's nominating committee is likely to allow CEOs less influence over the selection of directors than of the executives who report to them.

To measure the relationship between CEOs' political preferences and the gender composition of the board, we repeat the analysis reported in Section 3.1 but substitute as the dependent variable the fraction of a company's directors who are female.

Table 8 reports the results. Column 1 uses industry fixed effects; column 2 replaces industry fixed effects with company fixed effects. The estimates suggest no economically or statistically meaningful relationship between the CEO's political preference and the gender composition of the board.[32]

We also perform an event study of the dynamics of the board's gender composition around the time a CEO is replaced; its design resembles that described in Section 3.2. We find no evidence that replacing a Republican CEO with a Democratic CEO (or vice-versa) influences the gender composition of the board. For brevity, these results are untabulated.

Because the size of a corporate board is roughly the same as that of an executive team, when using the Form 4 sample, the results in this section are, in principle, directly comparable to those in Section 3 that pertain to the Form 4 sample. Considering that CEOs may have limited power to influence the gender composition of the board of directors due to pressure from shareholders such as institutional investors, it is possible that CEOs' political preferences account for our findings on the gender composition of the executive suite. However, the lack of association between the CEO's political preferences and the gender diversity of the board of directors suggests that forces for gender equality at the company level

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[32]Though the impact on the board of a female CEO is not statistically significant, it is negative and large. This estimate is almost entirely undone by the interaction between a CEO being female and being an insider. The inclusion of the insider variable was important in Section 1, for reasons described in footnote 16, and is included here to facilitate comparison of the two sections.

are not responsible for both the choice of a Democratic CEO and gender diversity in the executive suite.

6   Conclusion

This paper provides the first empirical evidence about how CEOs' political preferences interact with gender-related choices regarding the prevalence of female executives and the level and structure of their compensation. The evidence is consistent with our hypothesis that Democratic CEOs are associated with the presence of more women in the executive suite and with a reduced gender gap in compensation of non-CEO executives. To better understand the direction of the association, we use an event-study analysis; the event is a change in a company's CEO. We show that when a Republican CEO is replaced with a Democrat rather than another Republican, the fraction of women in the executive suite increases; conversely, when a Republican is succeeded by another Republican, the fraction of executives who are women decreases. Our analysis suggests that, to some extent, CEOs' political preferences drive such gender choices.

In particular, we find that earlier findings of lower and less performance-sensitive compensation for female executives are driven by companies with Republican CEOs, and do not accurately describe companies with Democratic CEOs.

Finally we show that, although Republican CEOs are associated with fewer women in the executive suite, they are not associated with fewer women on the board, a pattern that might be due to CEOs' greater discretion over hiring executives than over the choice of board directors.

Our study has significant implications for future work. Subsequent explorations of gender-related choices should take CEOs' political preferences into account. Future work may seek to specify the relative roles of the various stories we have discussed in producing the association we have identified.

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Figure 1: CEOs' political preferences, 2000-2018.
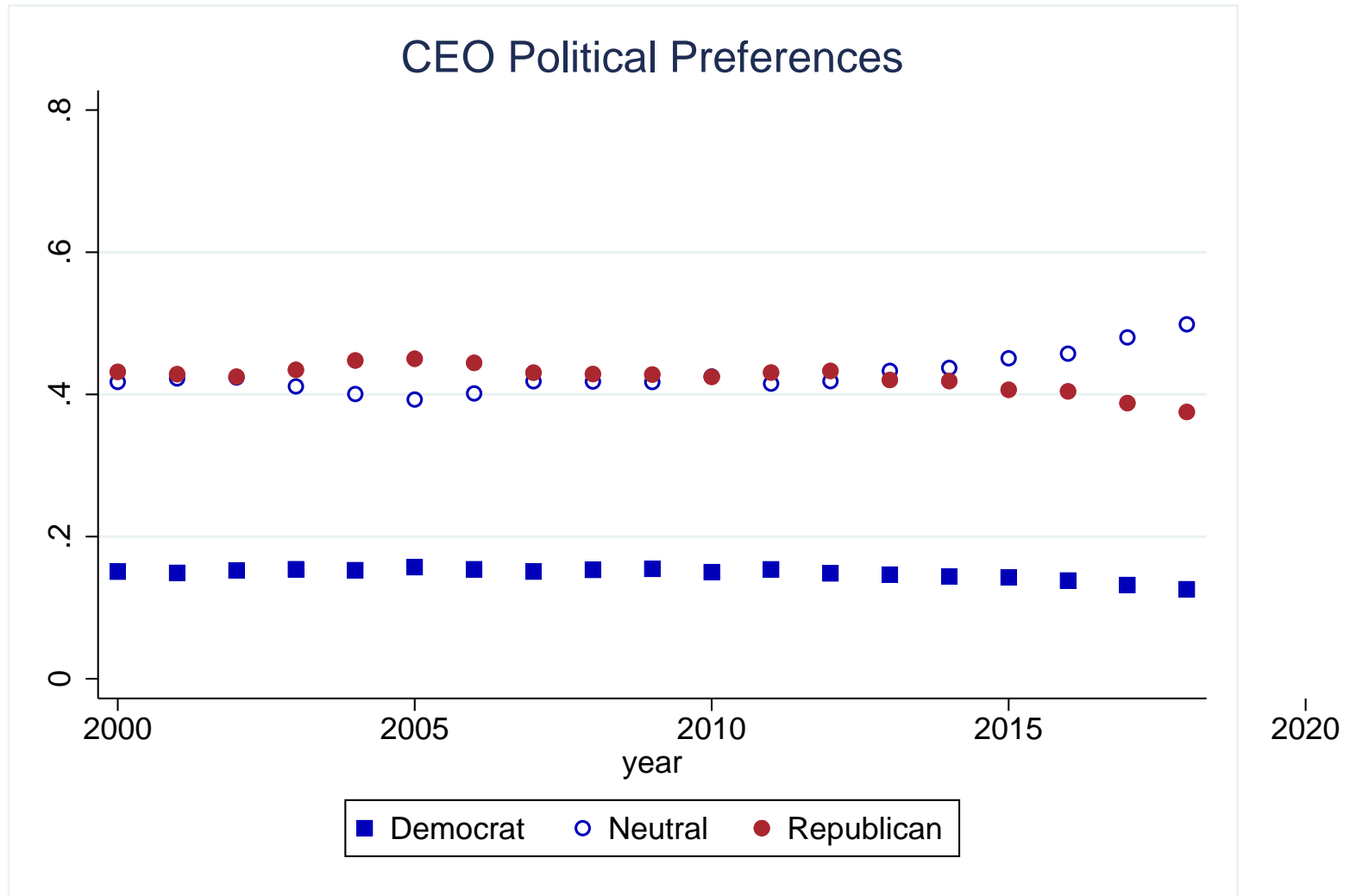
Figure 2: Fraction of Executives who are Female, 2000-2018.
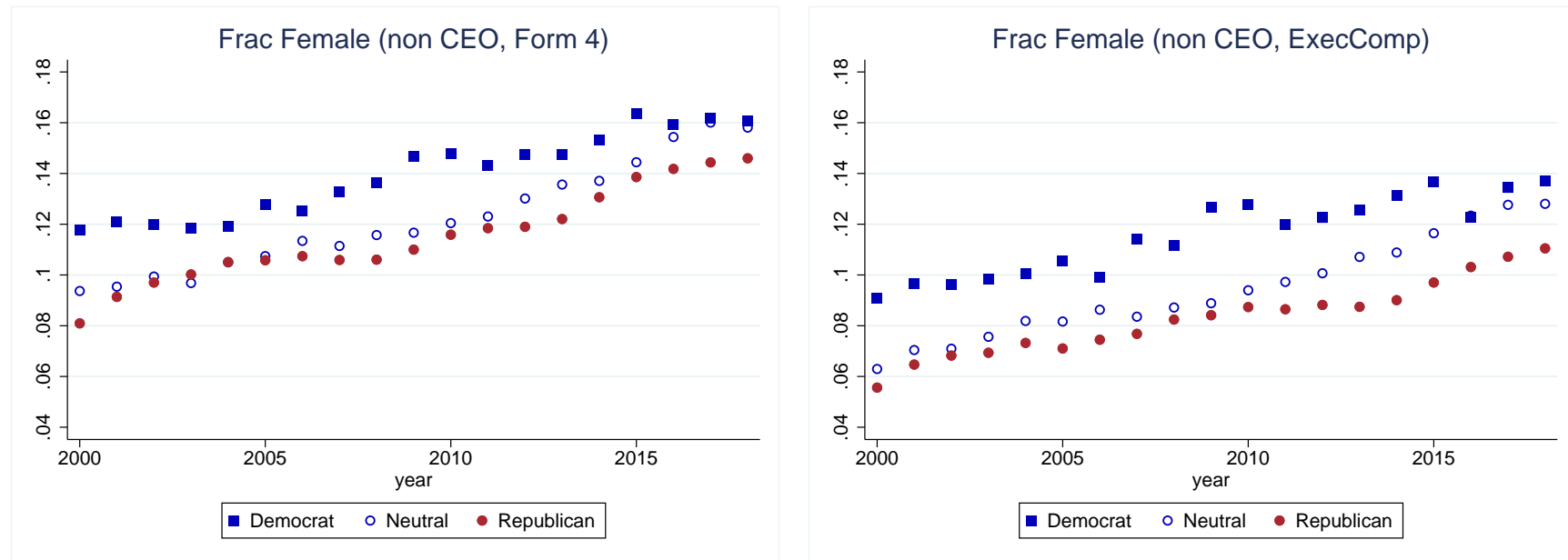
The left-hand panel represents the Form 4 sample; the right-hand panel represents the ExecuComp sample.

Figure 3: Event-Study: Change in the Fraction of Executives who are Female following a replacement of the CEO.
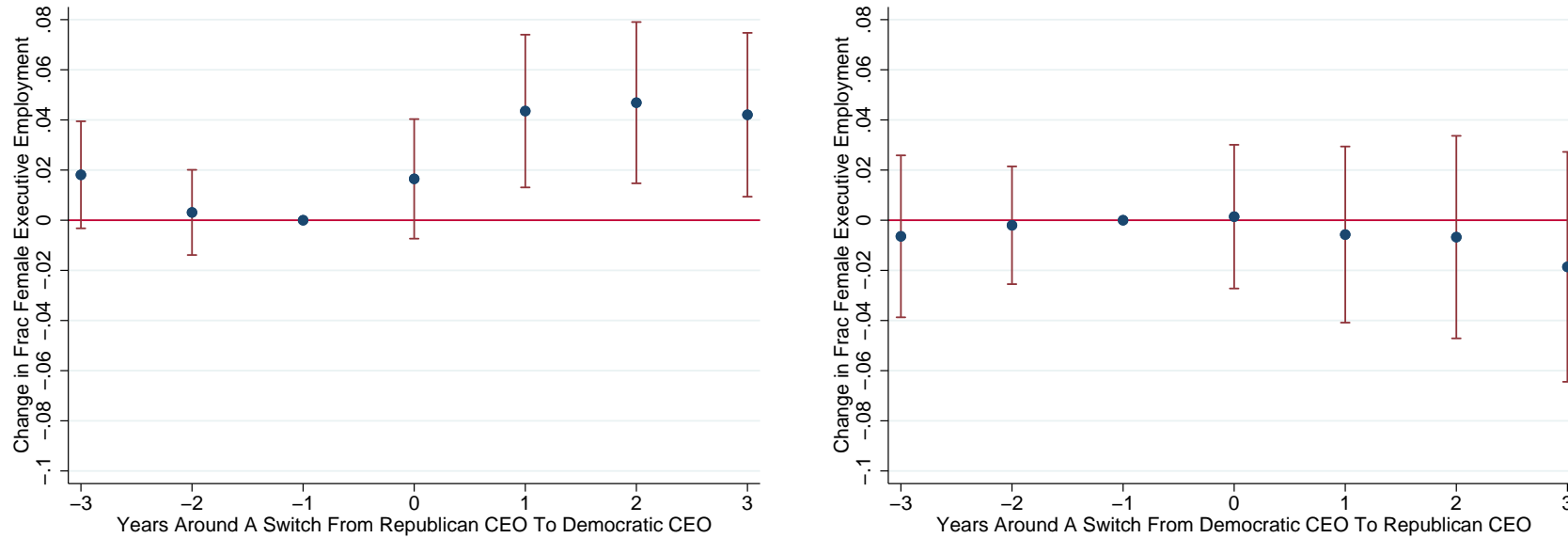
 The left-hand panel shows the change in the fraction of non-CEO executives who are female before and after a Republican CEO is replaced with a Democrat, as compared to replacement with a Republican. The right-hand panel shows the change in the same fraction before and after a Democratic CEO is replaced with a Republican, as compared to replacement with a Democrat.

Table 1: CEOs, non-CEO Executives, and Firms: Summary Statistics. Means (Standard Deviations)

Variable	Republican	Neutral	Democrat	All
	Panel A: CEO Characteristics			
CEO Female	0.02	0.04	0.06	0.03
	(0.14)	(0.19)	(0.23)	(0.18)
CEO Age	56.64	55.15	55.66	55.86
	(7.06)	(7.16)	(8.18)	(7.31)
CEO Tenure	7.54	6.01	8.46	7.02
	(7.51)	(6.38)	(8.50)	(7.27)
CEO Chairman	0.59	0.45	0.52	0.52
	(0.49)	(0.50)	(0.50)	(0.50)
N	14,402	14,516	5,032	33,946
	Panel B: Executive (non-CEO) Characteristics			
Age	52.14	51.76	51.62	51.90
	(7.03)	(7.25)	(7.38)	(7.18)
Compensation	2,117.34	2,069.09	2,232.85	2,114.11
	(2,961.36)	(3,695.17)	(4,602.93)	(3,563.11)
Salary & Bonus	544.86	542.46	582.55	549.46
	(554.14)	(969.98)	(744.08)	782.90
Cash Ratio	0.40	0.41	0.43	0.41
	(0.24)	(0.24)	(0.26)	(0.25)
Delta	158.68	154.63	166.31	158.10
	(4,095.80)	(4,262.50)	(2,037.54)	(3,935.39)
Vega	35.43	30.88	34.11	33.30
	(122.97)	(99.55)	(94.86)	(109.56)
Insider	0.91	0.88	0.89	0.89
	(0.29)	(0.32)	(0.32)	(0.31)
N	50,528	50,247	17,631	118,403

Continued on next page

Table 1 – *Continued from previous page*

	Republican	Neutral	Democrat	All
	Panel C: Firm Characteristics			
# Female Executives (ExC)	0.406	0.478	0.599	0.466
	(0.665)	(0.717)	(0.822)	0.715
# Executives (ExC)	5.642	5.660	5.604	5.644
	(1.189)	(1.287)	(1.220)	(1.236)
Frac Female (ExC)	0.083	0.095	0.116	0.093
	(0.138)	(0.147)	(0.165)	(0.147)
# Female Executives (F4)	1.063	1.124	1.218	1.112
	(1.221)	(1.364)	(1.342)	(1.303)
# Executives (F4)	9.617	9.320	9.072	9.410
	(4.467)	(6.701)	(4.061)	(5.491)
Frac Female (F4)	0.114	0.123	0.139	0.122
	(0.125)	(0.135)	(0.148)	(0.133)
Log Assets	8.003	7.666	7.618	7.802
	(1.706)	(1.845)	(1.815)	(1.791)
Return on Assets	0.039	0.026	0.027	0.031
	(0.196)	(0.422)	(0.151)	(0.310)
Book-to-Market	0.513	0.520	0.480	0.511
	0.434	0.460	0.435	0.446
Cash	875.567	958.982	967.569	924.928
	(2,824.648)	(3,322.198)	(3,354.873)	(3,126.161)
Dividends	183.906	148.668	124.489	160.062
	(584.486)	(521.262)	(520.100)	(549.293)
Debt	3,347.381	3,086.578	3,057.145	3,193.414
	(9,757.917)	(10,389.331)	(11,271.648)	(10,265.540)
N	14,402	14,516	5,032	33,946

Notes: All variables are defined in the text. The variables Salary & Bonus, delta, and vega are in thousands of U.S. dollars. "Cash Ratio" is the ratio of salary and bonus to total compensation. The rows denoted N report numbers of observations. ExC denotes the ExecuComp sample; F4 denotes the Form 4 sample. All age and compensation variables are from the ExecuComp sample.

Table 2: Event-Study CEO Characteristics: Summary Statistics
Means (Standard Deviations)

	RR	RD	DD	DR	All
CEO Female	0.02	0.09	0.11	0.06	0.04
	(0.15)	(0.28)	(0.31)	(0.24)	(0.20)
CEO Age	53.52	52.78	52.11	53.90	53.33
	(6.79)	(7.15)	(6.66)	(7.06)	(6.85)
CEO Chairman	0.29	0.27	0.24	0.33	0.29
	(0.46)	(0.45)	(0.43)	(0.47)	(0.45)
Insider	0.87	0.78	0.82	0.87	0.86
	(0.33)	(0.42)	(0.38)	(0.34)	(0.35)
N	702	114	114	113	1,043

 Notes: All variables are defined in the text. Column RR reports statistics on a Republican replacement for an outgoing Republican CEO; column RD reports statistics on a Democratic replacement for a Republican CEO; column DD reports statistics on a Democratic replacement for a Republican CEO; column DR reports statistics on a Republican replacement for a Democratic CEO. The row denoted N reports numbers of observations.

Table 3: Fraction of Women Executives

Sample/FE	(1) F4/Industry	(2) ExC/Industry	(3) F4/Firm	(4) ExC/Firm
CEO Neutral	0.005	0.006	0.009**	0.007
	(0.003)	(0.004)	(0.004)	(0.005)
CEO Dem	0.017***	0.022***	0.020***	0.019***
	(0.006)	(0.007)	(0.006)	(0.007)
CEO Female	-0.001	0.014	-0.018	-0.019
	(0.025)	(0.025)	(0.026)	(0.028)
CEO Age	0.004**	0.002	0.002	-0.001
	(0.002)	(0.002)	(0.002)	(0.002)
CEO Age Squared	-0.000**	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
log(CEO tenure)	-0.006***	-0.005**	-0.000	-0.003
	(0.002)	(0.002)	(0.002)	(0.002)
CEO Is Chairman	0.010***	0.002	0.005*	0.001
	(0.003)	(0.004)	(0.003)	(0.003)
CEO Insider	0.016***	0.010*	0.012***	0.017***
	(0.006)	(0.006)	(0.004)	(0.005)
CEO Insider×CEO Female	0.019	0.008	-0.020	-0.050*
	(0.026)	(0.028)	(0.026)	(0.028)
log(Assets)	0.005***	-0.001	-0.003	-0.004
	(0.001)	(0.002)	(0.003)	(0.003)
Industry FE	Yes	Yes	No	No
Firm FE	No	No	Yes	Yes
State FE	Yes	Yes	No	No
Year FE	Yes	Yes	Yes	Yes
N	31,335	31,331	32,116	32,103
Adj. R^2	0.1777	0.1487	0.5887	0.5454
Mean Dependent Variable	0.1267	0.0931	0.1267	0.0931

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (in parentheses) are clustered at the industry level in columns (1)-(2) and at the firm level in columns (3)-(4).

Table 4: Event Study – Fraction of Women Executives

	(1)	(2)	(3)	(4)
	Republican CEO Switched to Democrat		Democrat CEO Switched to Republican	
3 yrs before	-0.001	-0.001	0.010	0.008
	(0.004)	(0.004)	(0.010)	(0.010)
2 yrs before	0.003	0.003	0.013	0.012
	(0.003)	(0.003)	(0.008)	(0.008)
year OI occurred	0.004	0.004	-0.006	-0.005
	(0.003)	(0.003)	(0.011)	(0.011)
1 yr after	0.000	0.001	-0.001	-0.001
	(0.005)	(0.004)	(0.014)	(0.014)
2 yrs after	0.005	0.006	0.002	0.003
	(0.006)	(0.005)	(0.016)	(0.016)
3 yrs after	0.005	0.006	0.008	0.007
	(0.006)	(0.006)	(0.020)	(0.020)
OI	0.012	0.009	-0.018	-0.024
	(0.012)	(0.012)	(0.019)	(0.020)
OI×3 yrs before	0.019*	0.018*	-0.009	-0.006
	(0.011)	(0.011)	(0.017)	(0.016)
OI×2 yrs before	0.004	0.003	-0.004	-0.002
	(0.009)	(0.009)	(0.012)	(0.012)
OI×1 yr before OI occurred	0	0	0	0
OI×year OI occurred	0.016	0.016	0.001	0.001
	(0.012)	(0.012)	(0.014)	(0.015)
OI×1 yr after	0.044***	0.044***	-0.006	-0.006
	(0.016)	(0.016)	(0.018)	(0.018)
OI×2 yrs after	0.046***	0.047***	-0.005	-0.007
	(0.017)	(0.016)	(0.021)	(0.020)
OI×3 yrs after	0.042**	0.042**	-0.018	-0.019
	(0.017)	(0.017)	(0.023)	(0.023)
Firm Controls	No	Yes	No	Yes
N	4,595	4,586	1,283	1,274
Adj. R^2	0.2024	0.2156	0.3127	0.3627
Mean Dependent Variable	0.117	0.117	0.147	0.147

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (in parentheses) are clustered by firm-switching observation. $OI_{p,-p}$ is a dummy variable indicating that an outgoing CEO of political preference p is replaced by an incoming CEO of the opposite political preference $-p$. yrs before and yrs after refer to years before and after the switch of a CEO. Firm controls include log(Assets), Female CEO, CEO Is Chairman, CEO Age, and CEO Age Squared. All specifications include state, year, and industry fixed effects.

Table 5: Non-CEO Executive Log Compensation, Industry FE (columns 1-3) and Firm FE (columns 4-6)

	(1)	(2)	(3)	(4)	(5)	(6)
	Industry Fixed Effects			Firm Fixed Effects		
Exec Female	-0.072***	-0.097***	-0.101***	-0.068***	-0.090***	-0.092***
	(0.016)	(0.019)	(0.019)	(0.009)	(0.014)	(0.014)
CEO Neutral		-0.045***	-0.045***		-0.021	-0.021
		(0.014)	(0.014)		(0.014)	(0.014)
CEO Dem		-0.035	-0.035		-0.011	-0.010
		(0.023)	(0.023)		(0.023)	(0.023)
Exec Female×CEO Neutral		0.029	0.027		0.019	0.017
		(0.024)	(0.023)		(0.019)	(0.019)
Exec Female×CEO Dem		0.073*	0.068*		0.077***	0.073***
		(0.038)	(0.038)		(0.026)	(0.026)
CEO Female	-0.152	-0.142	-0.158	-0.120	-0.118	-0.129
	(0.116)	(0.117)	(0.117)	(0.096)	(0.096)	(0.096)
Exec Female×CEO Female			0.113**			0.073*
			(0.052)			(0.041)
Industry FE	Yes	Yes	Yes	No	No	No
Firm FE	No	No	No	Yes	Yes	Yes
State FE	Yes	Yes	Yes	No	No	No
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	110,785	110,785	110,785	113,453	113,453	113,453
Adj. R^2	0.5098	0.5102	0.5102	0.5993	0.5993	0.5994
p-value		0.4883	0.8021		0.5811	0.6390

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (in parentheses) are clustered at the industry level in columns (1)-(3) and at the firm level in columns (4)-(6). All specifications include a quadratic in the CEO's age, a dummy variable indicating whether the CEO also chairs the board of directors, a dummy variable indicating whether the CEO is an insider (interacted with the CEO being female), the log of total assets, return on assets, book-to-market value, cash, dividends, and total debt. All specifications also include individual controls for each executive, including a quadratic in age, whether the executive is an insider, and controls for the executive's title.

Table 6: Pay Composition, Industry Fixed Effects

Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)
	Cash Ratio		Log Delta		Log Vega	
Exec Female	0.013***	0.020***	-0.297***	-0.429***	-0.202***	-0.359***
	(0.004)	(0.007)	(0.053)	(0.082)	(0.065)	(0.112)
CEO Neutral		0.012**		-0.105*		0.030
		(0.005)		(0.054)		(0.097)
CEO Dem		0.015**		-0.152**		-0.138
		(0.007)		(0.074)		(0.138)
Exec Female×CEO Neutral		-0.007		0.100		0.130
		(0.007)		(0.116)		(0.141)
Exec Female×CEO Dem		-0.016		0.376***		0.416*
		(0.013)		(0.130)		(0.218)
CEO Female	-0.007	-0.007	0.084	0.047	0.455	0.380
	(0.039)	(0.039)	(0.412)	(0.408)	(0.679)	(0.681)
Exec Female×CEO Female		-0.021		0.455**		0.541**
		(0.014)		(0.202)		(0.269)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	110,789	110,789	118,403	118,403	118,403	118,403
Adj. R^2	0.3231	0.3235	0.1585	0.1587	0.2003	0.2005
p value		0.7587		0.6219		0.7453

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (in parentheses) are clustered at the industry level. All specifications include a quadratic in the CEO's age, a dummy variable indicating whether the CEO also chairs the board of directors, a dummy variable indicating whether the CEO is an insider (interacted with the CEO being female), the log of total assets, return on assets, book-to-market value, cash, dividends, and total debt. All specifications also include individual controls for each executive, including a quadratic in age, whether the executive is an insider, and controls for the executive's title. When the dependent variable is either log of delta or log of vega, we also control for the sum of the executive's salary and bonus.

Table 7: Pay Composition, Firm Fixed Effects

Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)
	Cash Ratio		Log Delta		Log Vega	
Exec Female	0.009***	0.013***	-0.281***	-0.380***	-0.279***	-0.347***
	(0.002)	(0.004)	(0.049)	(0.078)	(0.056)	(0.087)
CEO Neutral		0.013**		-0.120*		0.168
		(0.005)		(0.065)		(0.114)
CEO Dem		0.008		-0.044		-0.060
		(0.008)		(0.097)		(0.159)
Exec Female×CEO Neutral		-0.002		0.064		0.009
		(0.005)		(0.106)		(0.117)
Exec Female×CEO Dem		-0.015**		0.306**		0.267*
		(0.007)		(0.131)		(0.157)
CEO Female	0.003	0.002	-0.101	-0.144	-0.319	-0.376
	(0.037)	(0.037)	(0.334)	(0.338)	(0.502)	(0.498)
Exec Female×CEO Female		-0.003		0.331*		0.303
		(0.010)		(0.185)		(0.225)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	110,789	110,789	118,403	118,403	118,403	118,403
Adj. R^2	0.4580	0.4582	0.2173	0.2174	0.3599	0.3601
p value		0.7056		0.4992		0.5540

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (in parentheses) are clustered at the firm level. All specifications include a quadratic in the CEO's age, a dummy variable indicating whether the CEO also chairs the board of directors, a dummy variable indicating whether the CEO is an insider (interacted with the CEO being female), the log of total assets, return on assets, book-to-market value, cash, dividends, and total debt. All specifications also include individual controls for each executive, including a quadratic in age, whether the executive is an insider, and controls for the executive's title. When the dependent variable is either log of delta or log of vega, we also control for the sum of the executive's salary and bonus.

Table 8: Fraction of Female Directors

Dependent Variable	(1)	(2)
	Fraction of Female Directors	
CEO Neutral	-0.001	-0.001
	(0.003)	(0.004)
CEO Dem	0.005	0.002
	(0.006)	(0.005)
CEO Female	0.046	0.042
	(0.036)	(0.042)
CEO Age	0.007***	0.001
	(0.002)	(0.002)
CEO Age Squared	-0.000***	-0.000
	(0.000)	(0.000)
log(CEO tenure)	-0.007***	-0.000
	(0.002)	(0.001)
CEO Is Chairman	0.013***	0.001
	(0.003)	(0.003)
CEO Insider	0.002	0.001
	(0.005)	(0.004)
CEO Insider$\times$CEO Female	-0.045	-0.072*
	(0.037)	(0.043)
log(Assets)	0.016***	0.003
	(0.001)	(0.002)
Industry FE	Yes	No
Firm FE	No	Yes
State FE	Yes	No
Year FE	Yes	Yes
N	29,712	29,749
Adj. R^2	0.2696	0.6139
Mean Dependent Variable	0.1325	0.1324

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (in parentheses) are clustered at the industry level in columns (1)-(2) and at the firm level in columns (3)-(4).