Career Concerns and the Efficacy of Female Executive Independent Directors

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Abstract

Independent directors (IDs), a growing presence on corporate boards, receive few benefits directly linked to appointing-firm performance. We investigate the motivating role of indirect incentives such as career advancement. In particular, we hypothesize that directors who are senior executives at other firms have strong incentives to contribute as directors. Rationale is that effective board service and good appointing-firm performance signals leadership skills, especially for female executives, enhancing their odds of being promoted to CEO. Evidence indicates that presence of executive-IDs, particularly female executive-IDs, is associated with stronger appointing-firm performance and a more favorable stock market response to their appointment announcements.

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Introduction

The composition of US corporate boards has undergone striking changes in recent years. Regulatory efforts to improve corporate governance (e.g., Sarbanes-Oxley Act, 2002) have emphasized the role of independent directors (IDs), leading to an unprecedented growth in their numbers on US boards. The greater demand for independent directors appears to have contributed to directors being drawn from a variety of non-traditional professional backgrounds.[1] Another development is the substantial increase in the number of female independent directors (FIDs) over this period. These trends in board composition are broadly consistent with the perceived benefits of selecting directors with different backgrounds and perspectives.

Our objective in the paper is to better understand the effect that professional background and motivation of independent directors has on their efficacy as directors. While incentives of senior executives have been extensively studied, relatively little is known about the role of incentives -- direct or indirect -- in enhancing the effort and effectiveness of independent directors (Masulis and Mobbs, 2014). The literature suggests that independent directors receive few benefits that are directly linked to appointing firm performance. Most independent directors receive fixed fees for attending meetings, though some firms offer modest equity awards. Yermack (2004) and Adams and Ferreira (2008) find that financial rewards of independent directors play an insignificant role in motivating their effectiveness. This raises the question of whether there are indirect benefits that could motivate director effort. To investigate the role of indirect benefits, we focus on the effect of appointing firm performance on the potential career and compensation of executive independent directors i.e., those that are currently senior-level corporate executives at other

[1] Linck et al. (2009) examines the impact of SOX related mandates on the hiring firms in terms of the cost of expanding board level functions and recruiting new directors. Our objective, on the other hand, is to examine whether directors from various backgrounds differ in their skill sets and incentives and whether these differences are reflected in their efficacy as board members.

firms. These directors are roughly 27% of our sample of non-employee directors and about 64% of firms in our sample have at least one such director.

In our empirical analysis, we examine the hypothesis that outside (or independent) directorships along with competence on boards and strong performance of the appointing firm boosts the likelihood of (non-CEO) executives being promoted to CEO (Fama and Jensen, 1983 and Boivie et al., 2016). While it may be difficult to discern the contribution of individual directors, serving on the board of a strongly performing firm provides a signal of director quality. We label these executive directors as *career-motivated directors* or *CMDs* henceforth. In our study, we expect the gender of CMDs to be relevant as well and label male and female *CMDs* as *Male CMDs* and *Female CMDs*, respectively. Specifically, we conjecture that female CMDs are likely to be more concerned than their male counterparts about acquiring a reputation for competence in the boardroom. The reason for greater concern might be the paucity of female CEOs and the possibility of implicit bias against promoting female executives to become CEOs. The existing literature suggests certain systematic differences in the performance of female and male directors (e.g., Adams and Ferreira, 2009). However, it is not known whether the effectiveness of these female independent directors (FIDs) is driven by fundamentally different opinions and attitudes relative to male independent directors (MIDs) and/or because they differ in their professional backgrounds and motivation. A strong performance as director could also enhance the compensation received by CMDs (from their primary firm), since success as an outside director and a stronger professional network could raise the value of their outside employment options. We expect such career concerns to be weaker or absent for non-CMD independent directors.

We note that with their corporate experience, executive independent directors are better equipped to be monitors and advisors than their non-executive counterparts (Fahlenbrach et al., 2010 and Stein and Zhao, 2019). Hence, CMDs with strong incentives for effort provision would be especially valuable to the appointing firm. A counter argument, however, is that because of their connections and executive backgrounds, these directors may be more sympathetic to managers of the appointing firm than non-CMDs,

rendering them more lax as monitors (Fredrickson et al., 1988; Walsh and Seward, 1990; Bruynseels and Cardinaels, 2003; Faleye et al., 2018 and Wang et al., 2015). Further, it has been suggested that non-executive directors coming from diverse backgrounds might exhibit more independent thinking than executive-directors and different skill sets that could be helpful in complex situations (Coles et al., 2008).[2]

A factor that can affect the performance of outside directors is the number of boards on which they choose to serve. While accumulation of board seats brings in more remuneration, it also places greater demands on the time of outside directors. Hence, for CMDs, accumulation of board seats could be contrary to their career objectives if it hurt their capacity to perform well in their roles as executives and as outside directors. While time constraints could similarly prompt non-CMDs to focus less on their directorial activities, boardroom performance might be relatively inconsequential in terms of their primary profession.[3] Therefore, we might expect non-CMDs, especially categories such as retired executives, to seek out more directorships. In addition, the accumulation of board positions could be affected by director attributes such as gender and age. For instance, female CMDs may be more willing to limit their board seats if it is critical for them to show their capability and perform well as board members. On the other hand, older executives might be more willing to accumulate board positions if their odds of promotion are low and their performance as director is less important.

For our empirical analysis, we obtain information on directors' primary profession from the Institutional Shareholder Services (ISS)/Boardex databases. With regard to CMD's promotion to CEO, our results indicate that serving as an independent director increases the probability of CEO promotion for both male and female executives. In particular, after controlling for year and firm characteristics as well as director characteristics (e.g., networks, qualifications, tenure and age), the average female CMD has a 7.1% probability

[2] On the other hand, professional diversity may not necessarily be a strength, since the presence of directors from a variety of specialized, professional backgrounds could hamper effective communication among board members due to "inadequate communication and insufficient translation" (Heath and Staudenmayer, 2000).

[3] For instance, professors serving as directors are not generally evaluated by universities for their performance on a specific board. However, instances of board malfeasance or unethical behavior could have negative reputational consequences, irrespective of the profession of the director.

of being promoted to CEO, not significantly different from a 8.8% probability for the average male CMD. We next analyze whether the likelihood of promotion to CEO is sensitive to the performance of the appointing firm. Such promotion sensitivity would support our hypothesis that CMDs have the incentive to provide effort and be effective as board members. It would also support the notion that the primary firm regarded appointing firm performance as informative about CMD ability. Our finding is that the promotion sensitivity to appointing firm performance (Tobin's Q and ROA) is significantly greater for female CMDs in comparison to male CMDs. In particular, the difference in the promotion likelihood is 3.5% to 5.5% lower for female CMDs if the firm in which they serve as independent director performs poorly as compared to peer firms. On the other hand, when appointing firm performance is relatively strong, the promotion likelihood of male and female CMDs is not significantly different. Hence, while the promotion likelihood of female CMDs is sensitive to the performance of the appointing firm, male CMDs promotion prospects are relatively insensitive. Consequently, relative to their male counterparts, we expect female CMDs to be more motivated and diligent on corporate boards.

We also analyze the incentive of directors to accumulate additional board seats. Our analysis on seat accumulation indicates that non-CEO female CMDs tend to serve on fewer external boards, relative to male CMDs and CEOs. This is consistent with the notion of female executives being concerned about performing well on external boards and preferring to focus their efforts on a smaller number of boards. Older executives accumulate more director seats, possibly because their odds of further promotion are lower. Non-CMDs are largely unaffected by career concerns and accumulate more seats.

We next examine whether there are differences in the performance impact of independent directors on their appointing firms corresponding to their gender and primary profession. Our results suggest that female CMDs are viewed by market participants as contributing the most to firms where they serve as directors. Specifically, the 3-day (-1, 1) average cumulative abnormal return around appointment

announcements is significantly positive (1.262%) for female CMDs, though not for female non-CMDs or for male CMDs.[4]

Overall, our results highlight the importance of incentives and professional background -- especially the distinction between executive and non-executive – when examining the impact of outside directors on corporate governance and board effectiveness. Our paper contributes to the literature in several ways. First, to the best of our knowledge ours is the first paper that systematically analyzes how the incentives and efficacy of directors varies by their primary professions, by their gender and by attributes such as age. There are only a handful papers that have examined directors' motivation and most of these focus on accumulation of board seats, rather than the effect of professional background on the incentives of directors. For example, Masulis and Mobbs (2011) examine inside directors that hold external board seats and find that firms with such inside directors perform better. However, the focus of their paper is on the information that inside directors bring through their external directorships. Masulis and Mobbs (2014) examine reputation incentives of independent directors and find that these directors strategically allocate their time and effort to firms that provide them better reputational incentives. Other researchers have focused on directors' compensation for board duties and show that larger compensation and option-based compensation motivate directors to perform better (Yermack, 2004 & Adams and Ferreira, 2008). Our paper extends this line of enquiry and presents evidence that the professional background of independent directors affects their incentives, with CMDs performing better than other directors even after controlling for director compensation.

Our paper is closely related to research that investigates the effect of gender diversity on board governance and oversight (Adams and Ferreira, 2009; Gul et al.,2008; Gul et al., 2011; Srinidhi et al., 2011;

[4] In additional analyses, we also find that female CMDs have a significant and positive association with firm performance measures such as Tobin's Q and ROA.

Cumming et al., 2015 and Lara et al., 2017).[5] These studies report a stronger monitoring role associated with the presence of female directors on the board. However, female directors differ in terms of their experience, capabilities, and incentives to perform board monitoring functions. Our finding indicates that *in general* female presence on corporate boards is not associated with better performance or more effective board monitoring. Rather, only the presence of female CMDs is positively associated with favorable outcomes.

Our finding of varying associations between executive female independent directors and firm performance due to differences in firms' other characteristics (such as director age and the presence of a CEO director) highlight the context-specific effect of management/board attributes. Recent research on corporate governance has increasingly emphasized that the 'one-size-fits-all' approach to board structures and composition is not appropriate and that board effectiveness depends critically on a firm's size, complexity, life cycle, and other factors (Coles et al., 2008; Linck et al., 2008; Field et al., 2013). Our findings could also help us understand better the literature on director attributes (e.g., busyness, older director or CEO directors). Mixed evidence presented by previous studies on these attributes might well be driven by director's incentives. For example, Fahlenbrach et al. (2010) find CEO directors to be ineffective, which might be explained by their weaker incentives to spend time and effort for directorial work. Similarly, Masulis et al. (2020) find that older directors are ineffective monitors. Our results indicating that accumulation of board seats is driven by older, or retiree directors complement Masulis et al (2020).

Our study also sheds some light on the supply and demand of female directors, an issue of interest to policy makers. Female executives, that tend to play a valuable role as independent directors, might not be readily available. Along with the relative scarcity of senior female executives, their availability as directors could be further constrained if they serve on fewer boards, consistent with an objective to enhance career prospects rather than accumulate seats. On the other hand, non-executive female directors appear willing

[5] We list only a few studies here. See Masulis (2020) for a more comprehensive discussion of the many studies that have examined board gender diversity.

to serve on multiple boards and may be readily available. However, as our results suggest, they may not contribute positively to the appointing firm's performance. Thus, there might be a mismatch in the background of the female directors for which there is demand and those that are more readily available.

2. Sample and Data

2.1. Sample

Our initial sample starts with all firm-year observations over the 1998-2018 period in the Institutional Shareholder Services (ISS, formerly RiskMetrics) and Boardex databases, that cover the S&P 1500 (S&P 500, S&P MidCaps, and S&P SmallCap) companies. We exclude firm-year observations in the utilities and financial industries (SIC codes 4900-4999 and 6000-6999, respectively) for regulatory and capital structure reasons. We eliminate observations with missing information on director professional background.[6] We obtain data on board and CEO characteristics from ISS, BoardEX and ExecuComp databases. ~~respectively~~. We further obtain data on institutional ownership from Thomson Reuters Institutional Holdings (13f) database, and data on firm-level financial characteristics from Compustat and CRSP. After accounting for data availability issues, we get a sample of over 167,000 director-year and about 15,000 firm-year observations with 1,792 unique firms.

2.2. Primary Profession of Outside Directors

Our hypothesis is that the motivation and incentives of outside directors is likely to be affected by whether they are executives at other firms and by their gender and other director-specific attributes. In particular, we hypothesize that executive outside directors will have incentives that, while affected by gender, will be better aligned with the needs of the appointing firm relative to other independent directors. To

[6] When such information is missing, we collect background data from proxy reports or by referring to other sources such as Forbes or Bloomberg BusinessWeek. In doing so we also verify information provided by the ISS database. The data collection methods are very similar to those in Ahern and Dittmar (2012) and Wang, Xie and Zhu (2015) who examine the effect of director expertise on board monitoring.

capture these incentives, we create four category variables reflecting the background (executive/non-executive) and gender of outside directors: *Female CMD*, *Male CMD*, *Female non-CMD* and *Male non-CMD*. In some of our analyses, we also consider the role of moderating factors such as director age. In firm level analyses, we use continuous variables *Female CMD (Male CMD) Ratio* that are defined as the number of outside female (male) executive directors, divided by board size. *Female non-CMD (Male non-CMD) Ratio* is calculated as the number of outside female (male) directors from other professional backgrounds, divided by board size.

2.3. Descriptive statistics

Table 1 provides descriptive statistics for the sample firms. We begin by presenting some interesting statistics on ExecuComp firms -- among the largest and most visible public firms -- for the 1993-2018 sample period in Panel A.[7] As indicated, we find that among the top 5 executives about whom firms disclose compensation and other information, only 6.66% are females. Among all the male executives that are covered by ExecuComp during the 1993-2018 period, 21.66% are CEOs whereas the ratio of female CEOs among all the female executives is only 8.77%. When we examine, the ratio of female inside directors to female executives, it is 9.29% whereas this ratio for males is 13.58%. Since internal promotions to CEO are largely made from among a firm's inside directors, the pattern suggests that the likelihood of a female executive reaching the next level in the corporate hierarchy is increasingly smaller, relative to their male counterparts. We note that this is only a snapshot in time and might well represent a transition phase toward a more balanced gender distribution among corporate executives.

As Chart 1 shows, the presence of females in the corporate hierarchy appears to be changing gradually. When we look at the trend from 1993 to 2018, we see in Chart 1 that the representation of females at executive, inside director and CEO levels has been going up, albeit at a much slower rate at the inside

[7] Panel A of Table 1 and Chart 1 use data from 1993-2018 period to illustrate how female hiring has changed. All the other analyses use data for 1998-2018 due to the availability of director related variables from RiskMetrics/Boardex.

director and CEO levels. The increase at the executive level indicates that more females are crossing hurdles to reach these top positions. The slower growth in the hiring of female inside directors and CEOs as compared to senior executives might make it even more important for these executives to signal their abilities through strong performance on external boards.

Panel B presents the distribution of directors' affiliation and professional background as it varies by gender. Only about 6% of firms in our sample have at least one female inside director, with most of these firms having just one such director. On the other hand, almost every firm has at least one male inside director. This is consistent with female executives getting fewer opportunities to serve as inside directors. Panel B indicates that about 23% of firms have at least one female independent director who is a top executive of another firm (*CMD*), while almost 70% firms have at least one such male director (*CMD*).

Next, we tabulate the distribution of various categories of outside directors by their professional background in Panel C. Approximately 26% of all outside female directors are also top-level executives in other firms (*CMD*s), which is slightly lower than for male directors (27.92%). Within the executive category, we distinguish non-CEOs from CEOs, given their promotion incentives. While only 5.98% of all outside female directors are CEOs of other firms, the fraction is about 80% larger for males (10.76%). Panel C also reports various sub-categories of non-executive directors. As indicated, there is large variation in the professional backgrounds of these directors.

In Panel D, we compare the characteristics of female CMDs with those of male CMDs. We find that female CMDs are younger and have shorter tenure as directors. Female CMDs also tend to be on fewer boards, have fewer interlocks and attendance problems as compared with male CMDs. These differences are statistically significant. Panel E presents the distribution of board seats held by independent directors. These are board seats in addition to the one in the focal firm. Almost 53% of female CMDs hold no seat other than that in the focal firm. Compared with this, only about 38% of male CMDs do not hold other

seats. As we have argued, a reason for female CMDs to serve on fewer boards might be that it allows them to pay greater attention to their directorial responsibilities.[8]

Panel F of Table 1 presents executive, non-employee director and firm-level descriptive statistics for the sample. To mitigate the effect of outliers, all continuous variables are winsorized at the 1st and 99th percentile.

3. Empirical Results: Professional Background of Female Directors and Their Incentives

3.1 Females and Lack of Internal Board Service

We hypothesize that firms evaluating a candidate for a potential CEO position consider his/her directorial service positively (Bovie et al., 2016). Senior executives who aspire to become CEO, thus have the incentive to serve as directors, internally or externally to signal their leadership skills. However, if an executive is already an inside director, the need for an outside board seat or the incentive to perform better on the external board might be smaller. Panel A of Table 1 indicates that the ratio of executives and inside directors is highly skewed in favor of males, suggesting that female executives might have to explore external directorial opportunities to signal their suitability for the CEO promotion. In this section we first examine whether the likelihood of an executive serving as an inside director is affected by gender. We then examine whether female executives are more likely to hold external board appointments.

Using executive level data from ExecuComp, Table 2 presents results from a linear probability model (LPM) analysis. The benefit of using LPM is that it allows us to include firm fixed effects, which we consider important since the choice of hiring independent directors from a certain background could be affected by unobservable firm-specific factors.[9] The dependent variable in regression models is *Female* that takes a value of 1 if the executive is female and zero otherwise. First two columns use data for 1993-2018 period whereas

[8] In appendix tables 1 and 2, we show that service on external board is more important for female *executives* as compared with male executives. But once female executives have an external board seat (i.e., are identified as CMD in this analysis), their propensity to serve on other boards goes down.
[9] In untabulated analyses, we add industry fixed effects and find similar results.

the last two columns use data from a more recent period (2013-2018). In column 1, we include all executives, while CEOs are excluded in column 2. We use executive and firm level controls such as executive age, firm-size and firm performance. Results in column 1 indicate that among all the executives, inside directors are 2.0% less likely to be female. With about 214,000 executives covered by ExecuComp database, this probability translates into almost 4280 fewer female directors. Column 2 shows that the possibility that a female non-CEO executive is inside director is 2.2% lower as compared with males. Among executives, fewer females tend to be CEOs.

Columns 3 and 4 examine differences in characteristics of female and male executives using data for a recent sample period (2013-2018). Since there has been some push towards promoting gender diversity among top level executives, we might expect to see a greater representation of female CEOs and directors in recent periods. However, the analyses from recent years do not show any significant shift towards greater female representation. We continue to see a lower ratio of female CEOs and inside directors among the top executives of the largest US firms. We notice that female executives are also associated with lower compensation. Female executives tend to be younger and are more likely to serve in smaller firms. The coefficients on Tobin's Q and ROA are insignificant, suggesting that firm performance is unrelated to the executive's gender.

3.2 Females, Board Service and Promotion to CEO

Our hypothesis is that among the potential benefits to executive directors from building a reputation as an effective board member is a greater likelihood of being promoted to CEO and/or receiving more compensation from their primary employer. The gender of executive directors could affect their incentives and benefits if, for instance, due to a lack of internal opportunities senior female executives feel obliged to provide greater evidence of their ability to serve on a board, compared to male executives. These incentives are unlikely to affect non-executive independent directors as they are rarely promoted to CEO positions.

We test this career motive hypothesis by examining whether the likelihood of CEO promotion varies by gender and external board membership of a director. Using director level data, in Table 3 Panel A, we present results from LPM regressions that use CEO promotion dummy as dependent variable and control for year and firm fixed effects. Since Boardex/RiskMetric coverage of various director level characteristics began from 1998, we use the 1998-2018 sample period for these analyses.[10] We include *CMD* and *Inside Director* variables (excluding CEO directors) in these regressions. Note that *CMD*=1, indicates that the director an independent director in another firm, whereas *Inside Director*=1 if the director is an inside director at the focal firm. The CMD indicator variable thus captures an executive's incremental likelihood of promotion to CEO, after controlling for internal board service (i.e., inside directorship), when they serve as outside directors elsewhere. Additionally, to see if the likelihood of the promotion to CEO for executives who are outside directors varies by gender, we include the interaction term *CMD*Female*. We control for various director characteristics (e.g., age, tenure and other board seats) along with controls for various firm characteristics. We exclude observations after a director is identified as CEO, as well as current CEOs. Excluding these observations and current CEO directors from the analysis leads to a sample size of 127,380 director-year observations.

Column 1 presents results for all CEO promotions, internal as well as external. CEO promotions in column 2 are internal, while column 3 considers external promotions. Results in column (1) indicate that relative to the excluded group of other outside directors, with low likelihood of becoming a CEO, CMDs have 8.8% higher likelihood of CEO promotion. The difference in CEO promotion likelihood between male and female independent executive directors is insignificant, as indicated by the insignificant coefficient on the *CMD*Female*. Results in columns (2) and (3) indicate that executive experience combined with board experience is highly valuable in CEO promotions for both internal and external promotions. However, the

[10] To see if the differences in primary profession and gender have changed in recent years, we also examine our hypotheses separately using data from a more recent period (2013-2018) and find similar results as reported in this table.

magnitude of the coefficient on *CMD* differs significantly between internal and external promotions (0.092 vs 0.038) indicating the lower likelihood of hiring external CEOs. In our sample, only about 22% of CEOs are externally hired which is similar to the percentage (19%) reported by Huson, Malatesta and Parrino (2004). We note that likelihood of internal as well as external promotions is unaffected by the gender of executive directors as indicated by the insignificant coefficient on the *CMD*Female* in columns (2) and (3).

We also note that the coefficients on *Female* are negative and significant indicating lower likelihood of female appointments as CEO. However, *Inside Director* is positive and significant in all the three models, which highlights the importance of internal board service in CEO promotions. Estimates in column 2 indicate that while being an inside director raises the promotion likelihood of an executive by 35.9%, the coefficients in column 3 indicate that the incremental likelihood for these directors is only 6.9% in external CEO appointments. As indicated, the promotion likelihood also varies by director age and tenure. While older executives with board service appear to have a lower likelihood of CEO promotion, those with longer tenure have a higher likelihood of promotion, primarily in internal promotions. Those with longer tenures have a lower likelihood of external promotion. Overall, these results indicate that executives with external board service raise their odds of being promoted to CEO, both externally and internally and that this does not vary significantly by their gender.

3.2.1 Females, Board Service and CEO Promotion: Effect of Directorial Performance

We examine whether a director's performance (i.e., performance of the appointing firm in which the director serves) affects promotion opportunities. To capture performance, we create cumulative average performance measures based on the Tobin's Q and ROA of the appointing firm. We calculate mean Tobin's Q and ROA over the period that a director first appears as independent director and, if promoted, up to when that director first appears as CEO. We use appointing firm performance as an indicator of directors' performance and quality. The notion is that since it is difficult to discern the contribution of individual directors, appointing firm performance can provide an informative (if noisy) signal about the quality of

directors that serve on its board. We use the best performance if a director serves on multiple boards.[11] This approach allows us to capture the potential contributions of the executive director to the appointing company's performance up until promotion to CEO (if it occurs).

We use the same sample as in Panel A of Table 3. We present results from these analyses in columns 1 through 4 of Table 3, Panel B. We examine how the appointing-firm's performance impacts CEO promotion likelihood in columns 1 and 2, using Tobin's Q as the performance measure. Results in column 1 indicate that female and male executives that serve as independent directors have similar odds of CEO promotion if they serve on a firm that performs in the top two terciles of sample firms. On the other hand, results in column 2 indicate that if the appointing firm is in the bottom tercile in terms of its performance, the promotion likelihood of male executives is unaffected, while their female counterparts experience a significant decline in promotion likelihood. The coefficient on *CMD* is 0.087 (significant at 1%) while the coefficient on *CMD*Female* is -0.035 (significant at 5%) in column (2). Sum of these coefficients is 0.052 (significant at 1%) indicating that even when appointing firm performance is in the lowest tercile, both male and female executives with external board service are significantly more likely to be appointed as CEOs as compared with non-executives, though odds are 3.5% lower for female executives. Using ROA as an alternative performance measure, we find similar results in columns 3 (good performance) & 4 (poor performance). Hence, the sensitivity of promotion likelihood of *Female CMDs* to appointing firm performance is much greater than it is for *Male CMDs*.

3.2.2 Females, Board Service and Promotion to CEO: Alternative Analyses

While our results indicate that external board service helps executives in securing promotion, it is unclear whether the combination of internal and external board service has a stronger benefit and whether it is different for females. This question is important because while internal service is highly important for

[11] It is possible that the average performance of a director holding multiple seats affects her reputation more than the best performance. We analyze this question and find that average performance does not have a significantly greater explanatory power for promotion to CEO.

CEO appointments, female executives are less likely to serve as internal directors and are significantly more likely to serve on external boards. Table 3 panel C examines whether having internal as well as external board seats is associated with a higher promotion likelihood and whether external directorships mitigate the negative consequences of lacking an internal directorship for females. We limit this analysis to only those independent directors that are executives since they are the most likely candidates for CEO promotion,[12] taking account of the appointing firms' performance. To capture the effect of internal and external directorships, we create a variable *CMD_Demp*, which takes a value of 1 if a director is an independent director and as well as an inside director, zero otherwise. To differentiate between those executives who hold external and internal seats vs internal seats only, we also create another indicator variable *Emponly Director* that takes a value of 1, if a director holds an internal seat only, zero otherwise. To see if having internal and external board seats affects females differently in their promotion to CEO position, we also include the interaction *CMD_Demp*Female.*

Results in Panel C of Table 3 indicate that compared with having only an internal directorship, having both internal and external directorships raises promotion likelihood significantly. This combination helps males and females equally, but only if females are associated with better performing firms, in top two terciles of firm performance. If female executives are associated with the boards of poorly performing firms (i.e., in the bottom tercile), it hurts their promotion likelihood as compared with their male counterparts. This suggests that females seeking outside directorships might be especially concerned about the performance of firms on which they serve as outside directors, if they are to derive benefits in terms of promotion likelihood. It is worth noting that having an inside directorship always improves CEO promotion likelihood. Multiple board seats appear to help only when the appointing firm performance is strong.

3.2.3 Promotion to Inside Director

[12] We run this analysis on the full sample of all directors including non-executives (i.e., academics, lawyers, consultants etc.) and find similar results.

Another issue that arises in analyzing promotion incentives is whether external board service could help executives in securing internal board appointments. As noted, internal CEO promotion likelihood is strongly affected by whether the executive serves on her own company's board. Therefore, we also examine appointments of executives to the boards of their primary employer subsequent to their service on an external board. In Table 3, Panel D we use models from Panel B of Table 3 to examine such appointments. Column 1 of Panel D presents results for the full sample. Columns 2 through 4 examine how inside director appointment likelihood varies by appointing firm performance. We exclude inside directors (including CEOs) from these models. Thus, the key variable of interest in these analyses is *Female CMD*, that takes a value of 1 if an executive serving as independent director is female and zero if the executive is male. We use Tobin's Q in columns 2 and 3 to identify better performing firms (top two terciles) from those performing poorly and ROA in columns 3 and 4. In column1, we find that in general *Female CMDs* have similar chances of internal board appointments as their male counterparts. However, results in columns 2 and 4 indicate that *Female CMDs* have significantly higher likelihood of internal board appointments if they are associated with external directorships at appointing firms with better performance. There is no benefit if appointing firm performance is poor, as indicated in columns 3 and 5. Taken together, these results indicate that female executives have a greater incentive to serve as outside directors and perform well, thereby increasing their odds of becoming internal directors, typically the path to an internal CEO promotion.

3.3 Accumulation of Board Seats

A plausible advantage to building a reputation as an effective director is that it could raise the odds of additional board directorships. However, as noted above, executive directors might be focused more on promotion to CEO and less on accumulating board seats per se. On the other hand, directors that are non-executives or older executives might well focus on maximizing their board seats as the likelihood of being

promoted to CEO is low.[13] This is consistent with univariate results in Table 1 Panel E, which shows that the average age of a CEO in our sample is 55.70 years. We now test this conjecture in a multivariate setting in Table 4. We estimate regressions that use *Ln (Other Board Seats)* held by a director as dependent variable. We include year and firm fixed effects and control for director and firm characteristics. Our final sample is 167,396 director-year observations. We include *CMD* and *CMD*Female* as key variables of interest. Results in column 1 of Table 4 indicate that female CMDs tend to serve on fewer seats, as do inside directors. Male CMDs and CEOs tend to have a larger number of other board seats. In terms of the relative number of board seats, female CMDs hold 18.8% (sum of *CMD* and *CMD*Female* is -0.188, significant at 1% level*)*) fewer seats relative to non-CMDs, the control group, whereas male CMDs tend to have 2.5% more board seats.

Next, we examine whether the difference in accumulation of board seats is partly explained by the age of CMDs since female CMDs tend to be significantly younger than male CMDs. The notion is that as executive directors age, they are less likely to be promoted to CEO and might be more willing to accumulate board seats, rather than focus on the performance of their appointing firms. We find that older CMDs are more likely to accumulate seats as conjectured (column 2). The coefficients on *CMD*Female* are negative and of similar magnitude for older (-0.175) and younger (-0.185) CMDs, suggesting that the differential in seat accumulated between male and female CMDs is largely unaffected by age. We also note that the coefficients on *Female* are positive and significant at 1% level across all three models. This variable captures the accumulation of board seats by female non-CMDs, relative to the control group of male non-CMDs.

3.4 Female CMDs and Compensation as Employee from Primary Employer

[13] Non-CMDs could gain additional benefits (i.e., high compensation, perks etc.) from their primary profession when they build reputation as good directors. However, it is not obvious whether the marginal benefit from additional directorships is greater than spending more time on their primary job. For example, whether a lawyer gains more by accepting an additional board position or by spending more time and effort on her primary job is unclear.

As with promotion to CEO, we might expect executive outside directors to be valued and compensated more highly by their primary employer if good performance as outside directors is regarded as an indicator of their ability. To test this conjecture, we examine whether senior executives receive a larger total compensation from their primary employers when they serve as outside directors. Further, we test for whether such compensation benefits differ between males and females. Results from this analysis are presented in Table 5. We find that poor performance hurts female CMDs significantly but does not appear to hurt male CMDs. Overall, looking at the joint significance of *CMD* and *CMD*Female*, our findings suggest that female CMDs do not have a compensation motive to be effective as directors.

3.5 Female CMDs and Compensation as Director

We also examine directorial compensation of outside directors. If certain directors are valued by firms in general (e.g., female directors or lawyers), they may be willing to pay a larger compensation to directors. Also, some directors who are primarily motivated to generating board fees may not have large enough incentives to serve on those boards that pay a relatively smaller fee. We collect director compensation from Capital IQ and match that with other characteristics of individual directors and firms. We are able to collect a sample of about 42,000 directors for a period of 2006-2018. We present director compensation analysis in Table 6. Results in this table show that there is an insignificant difference in director compensation based on their gender or professional background. Thus, the analysis in Table 6 indicates that board meeting fees may not be the key differentiator in the motivation for directors from various backgrounds.

3.6 Female CMDs and Board Functions

In this section, we explore whether the appointment of independent directors to important monitoring committees (e.g., Audit/Compensation/Nominating Committees) varies by their professional background and whether this association is affected by director gender. Following Adams and Ferreira (2009), we also examine whether these directors are likely to miss meetings as they might be busy with their

primary role as executives. We exclude inside directors from our analysis since post-SOX, they are not allowed to serve on these committees on the boards of their primary employers.[14] We control for director and firm characteristics that could affect their performance as director. As in Table 2, we use LPM estimations and present results in Table 7. The first three columns present results on committee assignments and the 4th column presents results on the likelihood of directors missing meetings.

Results indicate that relative to non-CMDs, male CMDs are more likely to serve on compensation committees but less likely to serve on the nominating committee of the board. However, female CMDs are more likely to serve on the audit committee but are less likely to serve on nominating or compensation committees. The patterns suggest that when assigning directors to important committees, companies consider not only the gender of directors but also their professional background. When we examine the attendance behavior in column 4, we see that while male CMDs are more likely to miss meetings than non-CMDs, female CMDs are significantly less likely to miss meetings than their male counterparts.

3.7 Female CMDs and Audit Quality

Our results so far indicate that female CMDs have a strong incentive to perform well as outside directors. Since they are more likely to serve on the audit committee of a board than other committees, we might expect to see the impact of their directorial effort on outcomes related to audit functions. Prior literature indicates that gender diverse boards raise the reporting quality by instituting higher verification standards (Gul et al., 2011) and that these boards pay higher audit fees (Lai et al., 2017). Higher verification standards and commitment of larger resources to ensure better audit quality should also be reflected in a lower likelihood of financial restatements and in better reporting quality. In Table 8, we examine whether the presence of female CMDs leads to improvement in these audit quality measures. We use *Restatement, Accruals Quality* and *Discretionary Accruals* as measures of financial reporting quality. We define *Restatement* as an indicator variable that takes the value of one for the presence of accounting restatement(s)

[14] Inclusion of employee directors does not change our inference.

in a given year and zero otherwise.[15] We estimate accruals quality based on the Dechow and Dichev (2002) approach as modified by Francis et al. (2005), which maps current accruals into operating cash flows for the current, prior, and future periods. *Accruals Quality* is measured by the standard deviation of the residuals from total current accruals estimates calculated annually over years *t*-4 through *t*. Thus, a higher standard deviation indicates higher variability of residuals and poor accruals quality. Our second measure of financial reporting quality is the absolute value of performance-adjusted discretionary accruals (*Disc. Accruals*).[16] These signed discretionary accruals are defined by Kothari et al. (2005). Use of larger discretionary accruals indicates poor quality earnings figures.

We find that the presence of female CMDs on the audit committee (*Female CMD_Audit*) of a firm is negatively associated with restatements, indicating that these firms have better quality financial statements. Results in columns 2 and 3 support this notion as well. These columns use alternative measures of reporting quality and the negative coefficients on *Female CMD_Audit* indicate that the presence of Female CMD on the audit committee of a board is associated with better quality financial reporting quality. Overall, these results support the notion that female CMDs are likely to supply more directorial effort, resulting in better quality reporting and a better information environment.

3.8 Who Appoints Female CMDs?

In this section we explore the characteristics of firms that appoint female CMDs. For comparison, we also examine the appointment of female non-CMDs. We use multinomial logit regression for this analysis where the appointment of male director is the base case (male independent director=0), appointment of Female CMD=1 and appointment of female non-CMD=2. Thus, we use the appointment of male independent directors as the base group, and we compare their appointment with that of female CMDs and non-CMDs. Among the key determinants of female appointments is the absence of a female director in

[15] Restatement data is obtained from Audit Analytics and based on accounting restatement(s) with an adverse impact on a firm's financial statements.
[16] Accounting literature uses other variants of discretionary accruals measures and we find similar results using a variety of these measures, although some of these measures generate weaker results.

2009 when SEC mandated disclosure regarding board diversity (*No FID Firm in 2009*); Technology firm (*Tech Firm*); headquarters in California or New York (*CA-NY Firm*) and whether a firm has faced a reputational damage as captured by class action suit (*Legal Action*). Technology firms have been under pressure from popular press and politicians for the lack of gender diversity both among their employees as well as among their executives and board members.[17] Firms in California and New York states have been especially under pressure from policy makers and proponents of diversity to add more female directors to their boards. Thus, we expect to see the technology firms and firms headquartered in California and New York to add more female directors, possibly female CMDs. Another variable that captures the need for increasing board gender diversity is *Legal Action*. Hillman et al. (2007) argue that firms that need legitimacy, counsel and better communications with stakeholders are likely to hire female directors. We hypothesize that firms that have been in a legal trouble (e.g., class-action suite) are likely to hire female directors, especially female CMDs that might better understand the needs of these corporations. We also control for firm and board characteristics that capture the scale and scope of appointing company. Results from this analysis are presented in Table 9.

As indicated, firms appointing female CMDs have more board independence. These firms are more likely to be technology firms and are likely to have faced legal trouble in the past. On the other hand, firms that appoint female non-CMDs are older and did not have a female director in 2009 when SEC mandated board diversity related disclosures. Thus, it appears that firms that needed to show diversity on their boards after SEC's mandate tended to hire female directors with non-executive backgrounds. These results suggest that firms that hire female CMDs might have a greater need for the experience and expertise of such directors, whereas firms hiring female non-CMDs might have simply been under pressure to hire female directors.

3.9. Market Reaction to Appointments of Female CMDs and Non-CMDs

[17] See report at https://www.usatoday.com/story/tech/2017/08/25/women-missing-tech-boards/598706001/

Having documented variation in the incentives of directors along their primary profession and gender, we next examine whether their performance as director also varies by these attributes. A firm's choice of board structure and director types are endogenously determined, making it difficult to establish a causal relationship between firm performance and corporate governance. To the extent that a governance change is unanticipated by market participants, an event analysis can yield an unbiased estimate of investors' assessment of the valuation impact of such a change. Therefore, we compare the stock market reaction to announcement of appointments of female CMDs with those of female non CMDs and male CMDs.

We identify appointments of female and male CMDs and non-CMDs by searching for the announcement dates of these appointments on Lexis-Nexis and Mergent online.[18] We then exclude announcements accompanied by potentially confounding events such as mergers, dividend declaration, stock splits, tender offers, new product announcements, charter amendments, large order announcements, and/or substantial changes in capital structure. We also exclude announcements that contain concurrent appointments of male directors. The above filtering rules result in a final sample of 288 announcements of female CMDs and 411 announcements of female non-CMDs. A similar exercise leads to 1,524 appointment announcements related to male CMDs.

Table 10 reports the mean and median cumulative abnormal returns for the 3-day window [-1, 1] around the announcements. Abnormal return is computed by subtracting predicted return from realized stock return. Predicted returns are computed using a market model with the CRSP value-weighted market index, which is estimated using one year of daily trading data prior to the announcement. The cumulative abnormal return (CAR) is calculated as the daily abnormal returns cumulated from one day prior to the announcement to one day after. Panel A presents a comparison of CARs around the announcements of female CMDs and female non-CMDs. We present a comparison between female CMD and male CMDs announcement CARs in Panel B of Table 10.

[18] These databases include *Wall Street Journal*, *Financial Times* and *New York Times*, as well as other business news sources.

The results show that investors tend to react positively to appointments of female CMDs. The mean (median) 3-day CAR is 1.232 (1.232) percent, both significant at the 5 percent level. The mean (median) market reaction to appointment announcements for female non-CMDs, by contrast, is -0.671 (-0.702) percent and statistically insignificant. The difference between the mean (median) cumulative abnormal returns around these two events is statistically significant at the 1% (5%) level. Results in Panel B show that the CARs around male CMDs appointment announcement dates are insignificant. The mean (median) CAR for male CMDs is 0.518 (0.322) and is significantly lower than that for female CMDs appointments. These results suggest that shareholders view the appointments of female CMDs as having an overall beneficial value effect. The favorable market reaction occurs only for the appointment of female CMDs and not for female non-CMDs or male CMDs. This suggests that the positive benefit does not stem solely from an increase in board gender diversity or from outside directors who are current executives but from female directors that are current executives of other firms.

3.10 Arellano-Bond Estimation

To test the robustness of the positive association between the presence of CMDs and firm performance, we employ alternative measures of firm performance using dynamic panel estimator that allows for the potential dynamic nature of this relationship. Specifically, we use a dynamic panel generalized method of moments (GMM) estimator, developed by Holtz-Eakin et al. (1988) and Arellano and Bond (1991). Using *Female CMD Ratio* as our main variable of interest, we run an Arellano-Bond GMM dynamic panel data analysis and present results from this analysis in Table 11. Our results are robust to this estimation method, and we continue to find a positive association between *Female CMD Ratio* and firm performance measured by lead *Tobin's Q* as well as lead *ROA*.

3.11 Female CMDs and Firm Performance

To see if female CMDs' motivations to work hard and perform better is reflected in appointing firm's performance and that this relationship is not driven by endogenous matching, we use three additional approaches to analyze the association between female CMDs' presence and firm performance.

1. Exogenous Departure of Female CMDs and Change in Firm Performance

First, we address endogeneity concerns by examining the change in performance of a firm following an exogenous shock to the presence of female CMDs. Specifically, we identify a sample of 88 firm-year observations that experienced the departure of at least one female CMD in a given year due to death, serious illness, age limit or term limit.[19] We create an indicator variable *Female CMD Exogeneous Departure* that takes the value of one for these firms and zero otherwise. We regress the change in *Tobin's Q* from one year before the exogenous departure to one year after the departure on *Female CMD Exogeneous Departure* and the changes in other control variables measured over the same period. Table 12, Panel A reports the results. The first column presents results with no control variables, while the other models include changes in controls variables. The first two columns present results for *Female CMD Exogeneous Departure* for the full sample. In column (3), we use a propensity score matched sample using the Nearest-Neighbor method with 1-to-1 matching. We use all the variables in the model to identify the matched firms.[20] For the last two columns, we use a sub-sample of firms that saw the departure of at least one independent director. We find that the coefficients on *Female CMD Exogenous Departure* are negative and significant across all the three columns (significant at 5%) indicating that the exogeneous departure of female CMDs leads to a significant negative shock to investors. The exogenous departure of Male CMDs has no significant impact, however.

2 Female CMDs and Firm Performance: 2SLS(IV) Analysis

We further address endogeneity concerns by using a two-stage instrumental variable (IV) approach. We use two alternative variables as instruments: first the *County Ratio of Firms with Female IDs* and second the

[19] We also tried exogenous departures due to death or illness only and find similar results. However, this restriction substantially reduces the sample size of exogenous departures.
[20] We test for the difference in the characteristics of treated and control group of firms and find they are insignificant.

County # of Female Senior Executives. The first variable is defined as the proportion of firms with *FIDs*, excluding the focal firm, for all firms domiciled in the same county as the focal firm. Our second instrument is the log of the number of senior female executives (except those employed at the subject firm) reported by ExecuComp in the county of the subject firm's headquarters each year. Our choice of instruments is motivated by evidence that firms' corporate decisions tend to be correlated with those of their local peers. For instance, Knyazeva et al. (2013) examine local directorial labor pool and find that it directly impacts the supply of independent directors.[21]

Panel B of Table 12 reports the results of the 2SLS regression models. The first column shows that in counties with a larger presence of female directors or senior level female executives, firms are more likely to hire female CMDs. The F-statistic suggests that these are not weak instruments. The second and third columns present the second stage 2SLS regressions using Tobin's $Q_{t+1.}$ and ROA, respectively as dependent variable. As indicated, the coefficients on *Female CMD* are estimated to be positive and significant at the 5% level in both columns (2) and (3). Further, in both columns the null hypothesis of the Sargan's test of over-identifying conditions is not rejected. These results strengthen our conclusion that the positive association between female CMDs and firm performance is likely causal.

3. SEC Diversity Disclosure (2009), Hiring of Female non-CMDs and Performance Deterioration: Placebo Test

SEC passed a disclosure rule in December 2009 asking public firms to explain whether they considered diversity in making director hiring decisions. The rule became effective from Feb. 28, 2010**.** In Table 9, we find that companies that did not have a female director in 2010 were more likely to hire female non-CMDs. We use this disclosure mandate as an exogenous shock that led to the hiring of female non-CMDs. We create a variable *Treat* that takes a value of 1 if a firm had no female director in 2010, zero

[21] Matsa and Miller (2011) find that the increasing presence of women on corporate boards from 1997 to 2009 leads to a higher subsequent share of women in top management among the S&P firms. They suggest that there could a feedback cycle in which the latter further increases the qualified pool of female director candidates (in this case, candidates with top executive experience).

otherwise. To test the performance of treated firms after such hiring, we create another variable *Post*, which is 1 if year>2010, zero otherwise. First, we examine whether treated firms are more likely to hire female non-CMDs in the post-2010 period and then examine whether these appointments affect firm performance, relative to other firms. We estimate firm fixed effect regressions using data from 2006 through 2018 and present the results in Panel C of Table 12. For this analysis, we start our sample from 2006 because we do not want SOX (2002) effects (which allowed firms to meet director independence criteria by 2006) to affect the hiring of independent directors.

Results in Table 12, Panel C show that treated firms experienced a growth in female non-CMDs compared to other directors in the post-2010 period. The coefficient on *Treat*Post* is positive and significant at 1% level in column 1 that uses *Female non-CMD Ratio* as dependent variable. Next, we examine whether treated firms experience a performance shock in the post-2010 period with an increase in the female non-CMD ratio. As shown, the performance effects of the growth in female non-CMD ratio post-2010 is negative for the treated group of firms. The coefficient on *Post*Treat* Female non-CMD Ratio* is negative and significant at the 1% level in column 2, indicating that treatment firms suffered by the hiring of female non-CMDs post-2010. These results provide additional evidence that not all female directors are likely better directors, possibly due to their mis-aligned incentives with the appointing firm.

4. Other Robustness Checks and Extensions

1. *External board service: Using Executive Level Analysis*

To examine whether external board service varies by the gender of executives and whether that helps female executives more, we merge board level data from RiskMetrics/Boardex with Execucomp. Riskmetrics/Boardex provide coverage on board service of various types of directors along with their gender beginning 1998. Appendix Table 1 suggests that outside board seats could help females to advance their careers. These analyses are performed on those executives whose external board membership on a S&P

index firm can be established. Panels A and B indicate that the path to a CEO position almost always goes through inside or/and outside directorships. Panel B suggests that external board service may be more important for potential female CEO candidates as they are more likely to have had external board seats in addition to inside directorship prior to promotion, relative to male CEO candidates. Panel B also indicates that an external board service might be helpful for female executives in securing a board seat internally.

2. Appointment of Female Executives as Outside Directors

Appendix Table 2 examines the likelihood of a female executive having an outside board seat relative to a male executive. We merge Boardex/RiskMetric data with ExecuComp database to create this sample for the 2000-2018 period. First 2 columns of Appendix Table 2 use data for the 2000-2018 period whereas the last two columns use data from the 2013-2018 period. We use *Outside Board Seat* as dependent variable in these columns that takes a value of 1 if an executive serves as a director on an external board, zero otherwise. In Column 1, we find that among all executives a female executive is 2.2% more likely to hold an outside board seat, which is similar to the likelihood for non-CEO executives in column 2. We find that compared with other executives, inside directors and CEOs are significantly more likely to serve on outside boards. Also noticeable is the positive coefficient on firm size which indicates that executives of larger firms are more likely to serve on outside boards.

5. Conclusion

Despite the proliferation of research on corporate boards, our knowledge of their professional backgrounds and its influence on their incentives to perform is limited. Nor is much known about the effect of gender on director incentives and effectiveness. Most empirical research on board gender diversity, for instance, treats female directors as a homogenous group and is silent on the heterogeneity in female directors' professional experiences, which may affect their capability and incentives to perform board duties effectively.

Our paper attempts to fill these gaps. In particular, we categorize outside directors along two dimensions: by whether they are current executives in other firms or have a different professional background and by whether they are male or female. Our hypothesis is that non-CEO executive directors could have a strong incentive to be effective directors if this bolsters their reputation and enhances their odds of promotion to CEO or higher compensation at their primary firms. The incentive effects for female executives could be stronger if the greater skepticism they face about their leadership skills can be mitigated by being effective on the boards of other companies.

Our empirical findings are strongly supportive of our hypotheses. We show that executive female independent directors (senior executives in other firms) may have especially strong incentives to be effective directors. Their likelihood of promotion to CEO (and to some extent compensation) is strongly affected by serving as an external director on a firm that performs well during their service. The strong incentives of their female executives (female CMDs) are evident in that their presence boosts firm performance and enhances the effectiveness of board monitoring. The stock market reacts favorably to the announcement of appointments of such directors to the board, indicating that investors view the addition of these board members as a value-enhancing practice. Using IV analysis, our results are shown to be plausibly exogenous. The results are robust to variety of robustness tests.

Our analysis on the moderating factors that affect the monitoring effectiveness of female CMDs also provides some practical guidelines for the on-going board gender diversity reforms around the world. Any mandatory quota on board gender diversity should not focus on female presence *per se*. Instead, emphasis should be placed on attracting/installing senior female executives as directors.

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Appendix: Variable Definitions

Active CEO=1 If a director is currently serving as CEO, zero otherwise. Source ISS/Boardex

Board Independence: Ratio of # of independent directors (excluding employee or grey) to board size. *Source ISS/Boardex*

CEO-Chair: Indicator variable: equals 1 if firm's CEO is also board chair, 0 otherwise. *Source ISS/Boardex*

CEO Gender: Indicator variable that takes a value of 1 if firm's CEO is woman in a given year, zero otherwise. *Source: ExecuComp*

CEO Performance Based Compensation: One minus the ratio of CEO salary to total compensation. *Source: ExecuComp*

CEO Total Compensation: Natural Log of Total Compensation (TDC1). *Source: ExecuComp*

CEO Turnover: 1 if a firm reports a new CEO from the prior year, zero otherwise. *Source: ExecuComp*

CEO Tenure: Natural Log of # of years served by a CEO in current position. *Source: ExecuComp*

Career Motivated Director (CMD): 1 if a non-employee director is a senior executive of another firm, zero otherwise. *Source ISS/Boardex*

County Ratio of Firms with Female Directors: The proportion of number of firms with female directors to the number of all firms except the sample firm in the county of the sample firms, computed yearly. *Source: ExecuComp, Compustat, Proxy statements*

Diversification: Number of operating segments. *Source: COMPUSTAT*

Dir Age/Tenure: Age/Tenure of a director in years. *Source: ISS/Boardex*

Inside Director: =1 if a director is an employee of the appointing firm, zero otherwise. *Source ISS/Boardex*

Equity Return: 1-Year holding period return. *Source: CRSP*

Female (Male) CMD: 1 if a firm has at least one female (male) director who is a senior executive of another firm, zero otherwise. *Source ISS/Boardex*

Female (Male) CMD Ratio: Ratio of number of female (male) CMDs to board size. *Source ISS/Boardex*

Female Ratio: Ratio of number of female directors to board size. *Source: ISS/Boardex*

FID Ratio: Ratio of number of independent female directors to board size. *Source: ISS/Boardex*

Firm Age: Natural log of number of years that a firm has been in CRSP. *Source: CRSP*

Firm size: Natural log of sales. *Source: COMPUSTAT*

Insider Ownership: Percentage of outstanding shares held by the directors and officers, excluding the CEO. *Source: ISS/Boardex*

Institutional Ownership: Percentage of outstanding shares held by institutional investors. *Source: Thomson Financial*

Intangible Assets: 1-(Net Property Plant and Equipment/Assets). *Source: COMPUSTAT*

Leverage: Long term debt divided by total assets. *Source: COMPUSTAT*

Ln(Board Size): Natural log of Board Size which is # of directors on board. *Source: ISS/Boardex*

Ln(# of Female Executives in a County): Natural log of # of senior female executives (except executives of the sample firm) in the county of the sample firms, computed yearly. *Source: ExecuComp, Compustat, Proxy statements*

Non-CMD=1 if a director's primary profession is not executive of another firm but it is either consultant, academician, finance/accounting, directorial, retired, or miscellaneous profession (charity/artist/retired military etc.), zero otherwise. *Source: ISS/Boardex*

Female (Male) Non-CMD: 1 if a firm has at least one female (male) non-CMD, zero otherwise. *Source ISS/Boardex*

Female (Male) Non-CMD Ratio: Ratio of number of female (male) non-CMD directors to board size. *Source: ISS/Boardex*

Other Board Seats= # of board seats held by a director in public firms other than the focal firm. *Source: ISS/Boardex*

Promotion as CEO=1 if a non-CEO director appears as CEO in future, zero otherwise. *Source: ISS/Boardex*

R&D Intensity: R&D expense divided by total assets. *Source: COMPUSTAT*

ROA: Operating income divided by total assets. *Source: COMPUSTAT*

Total compensation from primary employer as executive: Total compensation received by a director from her/his primary employer as the employee of that firm. *Source: ExecuComp/ISS/Boardex*

Tobin's Q: Ratio of (market value of equity + book value of debt) to book value of assets. *Source: COMPUSTAT*

Truant Director: =1 if a director attends less than 75% meetings, zero otherwise. *Source ISS/Boardex*

Volatility: Standard deviation of daily stock return for the year t. *Source: CRSP*

Table 1: Descriptive Statistics

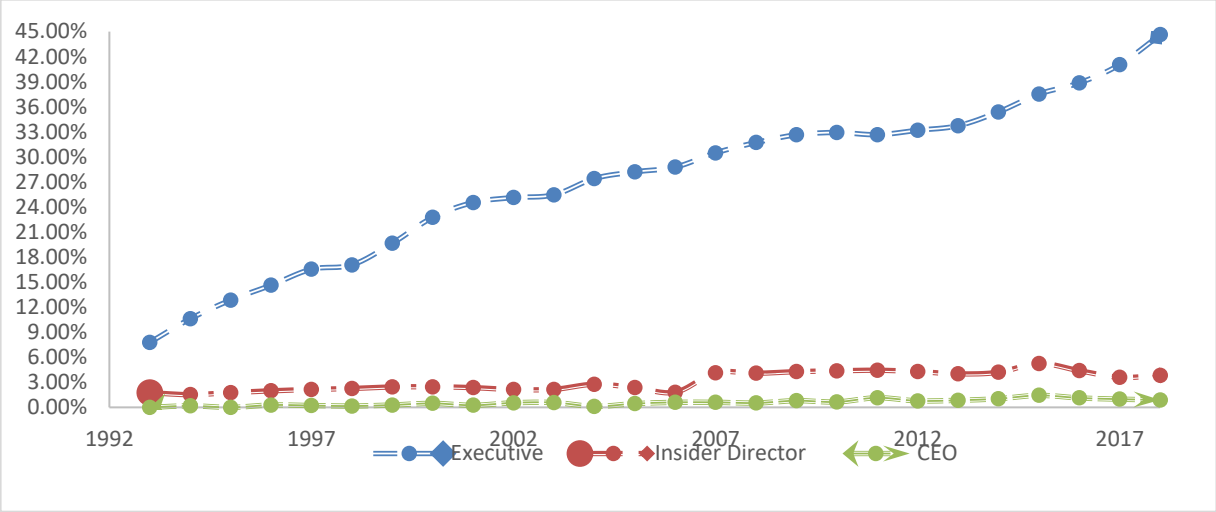
Panel A: Presence of Female Executives, Inside Directors and CEOs

This table shows the presence of females among the top 5 executives, CEOs and inside directors that are covered by ExecuComp from 1993-2018 period.

	# Executives	% Executives	# CEO	% CEO	% CEO from executives of that gender	# Non-CEO inside directors	% Non-CEO inside directors from that gender
Female	14241	6.66%	1249	2.81%	8.77%	1323	9.29%
Male	199728	93.34%	43256	97.19%	21.66%	30809	13.58%
Total Executives	213969	100.00%	44505	100.00%	20.80%	32132	13.22%

Chart 1: **Distribution of Firms with Female Executives, Inside Directors and CEOs**

This chart shows the trend of female representation among the top 5 executives, CEOs and inside directors in firms that are covered by ExecuComp for 1993-2018 period.



Panel B: Affiliation of Directors: Variation between Females and Males

This table presents the number of female and male directors per firm according to their affiliation and professional background for a sample period of 1998-2018. Column 1 presents # of director in each category that a firm has. Column 2 (3) presents the number (%) of firm-year observations in our sample with the respective count of female directors from Column 1. Column 4 (5) presents the number (%) of firm-year observations in our sample with the respective count of female directors from Column 1.

	Directors in a firm	Female Directors		Male Directors	
		of Obs.	% Obs.	# of Obs.	% Obs.
	(1)	(2)	(3)	(4)	(5)
Inside Directors	1	1049	5.75%	11096	60.83%
	2	62	0.34%	4553	24.96%
	3	0	0.00%	1541	8.45%
	4 or more	0	0.00%	549	3.01%
Outside Directors	1	6903	37.84%	9	0.05%
	2	3875	21.24%	117	0.64%
	3	1021	5.60%	638	3.50%
	4 or more	362	1.98%	17477	95.81%
Outside Directors: Executive	1	3447	18.90%	4869	26.69%
	2	576	3.16%	3373	18.49%
	3	37	0.20%	2127	11.66%
	4 or more	7	0.04%	2461	13.49%
Outside Directors: Non-Executive	1	6393	35.05%	768	4.21%
	2	2821	15.46%	1388	7.61%
	3	580	3.18%	2346	12.86%
	4 or more	176	0.96%	13545	74.25%

Panel C: Primary Profession of Outside Directors: Variation between Females and Males

This table presents distribution of independent directors based on their primary profession for 1998-2018. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	# Female Directors	% Female Directors	# Male	% Male Directors	Difference
	(A)	(B)	(C)	(D)	(D-B)
CMDs	**5435**	**25.76%**	**33396**	**27.92%**	**2.16%*** **
Active CEOs	1262	5.98%	12867	10.76%	4.98%***
Non-CEO Executives	4173	19.78%	20529	17.16%	-2.62%***
Non-CMDs	**15667**	**74.24%**	**86205**	**72.08%**	**-2.19%*** **
Consultant	3042	14.42%	12391	10.36%	-4.06%***
Academic	1840	8.72%	6233	5.21%	-3.51%***
Investments	1857	8.80%	18956	15.85%	7.05%***
Legal	444	2.10%	3431	2.87%	0.77%***
Retired	4118	19.51%	29115	24.34%	4.83%***
Others	4366	20.69%	16079	13.44%	-7.25%***
Total	21102	100%	119601	100%	

Panel D: Characteristics of Female and Male CMDs

This table compares the following characteristics of female and male CMDs for 1998-2018. *P*-values are reported for *t*-tests comparing differences in means and Wilcoxon signed-rank tests comparing differences in medians.

	Female CMD		Male CMD		*p*-Value for Diff.	
Characteristics	Mean	Median	Mean	Median	Mean	Median
Age (years)	53.373	53.000	57.988	58.000	0.000	0.000
Tenure (years)	5.361	4.000	7.141	6.000	0.000	0.000
No. of Other Board Seats	0.798	0.000	1.085	1.000	0.000	0.000
Interlock	0.004	0.000	0.002	0.000	0.000	N/A
Truant Director	0.014	0.000	0.025	0.000	0.000	N/A

Panel E: Distribution of Other Boards Seats Held

This table presents other board seats (other than the focal board) held by each category of independent directors for the sample period 1998-2018.

	Female CMD		Male CMD	
# of Other Seats	N	(%)	N	(%)
0	2855	52.53%	12707	38.05%
1	1460	26.86%	10799	32.34%
2	706	12.99%	6299	18.86%
3	262	4.82%	2149	6.43%
4 or more	152	2.80%	1442	4.32%
Total	5435	100.00%	35553	100.00%

Panel F: Descriptive Statistics

This table presents our sample firm characteristics. The data is on S&P 1500 firms covered by ExecuComp/ISS/Boardex for a period of 1998-2018. All continuous variables are winsorized at the 1% and 99% percentile values. Variable definitions are in Appendix.

	Mean	Median	Max.	Min.	Std. Dev.	N
Director Level Variables						
Active_CEO Director	0.193	0.000	1.000	0.000	0.395	167779
# of Other Board Seats	0.881	1.000	10.000	0.000	1.132	167722
Truant Director	0.011	0.000	1.000	0.000	0.106	167779
Audit Committee Member	0.406	0.000	1.000	0.000	0.491	167779
Compensation Committee Member	0.393	0.000	1.000	0.000	0.489	167779
Nominating Committee Member	0.380	0.000	1.000	0.000	0.485	167779
Ln(Director Age)	4.115	4.127	4.419	3.689	0.143	167674
Ln(Director Tenure)	2.041	2.079	3.664	0.000	0.798	167674
Firm Level Variables						
FID Ratio	0.115	0.111	0.667	0.000	0.100	19090
CEO Gender	0.031	0.000	1.000	0.000	0.174	19126
Tobin's Q	2.072	1.662	19.549	0.460	1.315	19125
Ln(Board Size)	2.175	2.197	3.466	1.099	0.247	19126
Board Independence	0.740	0.778	1.000	0.000	0.152	19126
Employee Ratio	0.176	0.143	0.750	0.000	0.098	19090
CEO Age	4.020	4.025	4.344	3.689	0.126	18728
CEO Tenure	1.638	1.792	3.584	0.000	0.971	19126
CEO-Chair	0.558	1.000	1.000	0.000	0.497	18990
EBIT/Assets	0.099	0.096	0.379	-1.809	0.098	19125
Firm Size	7.592	7.480	11.380	1.965	1.510	19124
Firm Age	2.974	3.045	4.466	0.000	0.823	19102
Leverage	0.197	0.183	1.429	0.000	0.171	19052
Diversification	3.537	3.000	31.000	0.000	3.311	19060
Volatility	11.011	9.885	35.800	0.746	6.061	19007
R&D Intensity	0.030	0.004	0.576	0.000	0.050	19126
Intangible Assets	0.737	0.807	0.999	0.114	0.219	19107
Inside Ownership	0.073	0.025	0.999	0.000	0.127	19026
Ln(CEO Compensation)	8.242	8.316	10.403	5.113	1.002	19126
CEO Equity Based Compensation	0.668	0.758	0.993	0.000	0.260	19126
CEO Turnover	0.033	0.000	1.000	0.000	0.178	19126
Institutional Ownership	0.774	0.804	1.149	0.010	0.201	18730
Ln (# of Senior Female Executives in a County)	2.112	2.197	4.357	0.000	1.133	18873
County Ratio of Firms with Female Directors	0.579	0.588	1.000	0.000	0.265	17149

Table 2: Representation of Females among Top Executives-Executive Level Analysis

Using executive level data (Sample Period:1993-2018), this table presents results from firm fixed-effects regressions using Linear Probability Model. The dependent variable is an indicator for whether the executive is female. Inside Director=1 if an executive is inside director, zero otherwise. Definitions of explanatory variables are provided in the Appendix. t-statistics in parentheses are reported below each coefficient estimate. t-statistics are computed using Huber-White-Sandwich estimator of variance with clustering at firm level. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	Female			
	(1)	(2)	(3)	(4)
	All Executives	Non-CEO Executives	All Executives	Non-CEO Executives
	1993-2018		2013-2018	
Inside Director	-0.020***	-0.022***	-0.018**	-0.024**
	(-4.298)	(-4.334)	(-1.994)	(-2.332)
CEO	-0.014***		-0.015*	
	(-3.515)		(-1.655)	
Ln(Total compensation)	-0.015***	-0.019***	-0.026***	-0.035***
	(-7.602)	(-8.313)	(-6.042)	(-7.371)
Ln(Age)	-0.168***	-0.167***	-0.152***	-0.146***
	(-9.994)	(-8.635)	(-5.686)	(-4.649)
Firm Size	-0.002	0.001	0.004	0.008
	(-0.547)	(0.348)	(0.699)	(1.035)
Tobin's Q	0.000	0.000	0.003	0.004
	(0.049)	(0.207)	(1.375)	(1.447)
Volatility	-0.000	-0.000	0.000	0.000
	(-1.431)	(-1.424)	(0.864)	(0.455)
ROA	0.011	0.012	0.002	0.006
	(0.954)	(0.920)	(0.198)	(0.417)
Institutional Ownership	0.015*	0.019*	0.008	0.007
	(1.684)	(1.809)	(0.696)	(0.470)
Intercept and Year Dummies	Yes	Yes	Yes	Yes
Fixed Effects	Firm	Firm	Firm	Firm
Observations	120,572	95,009	36,475	29,543
R-squared	0.154	0.168	0.174	0.193

Table 3

Panel A: Promotion as CEO

Using director level data (excluding CEO directors), this table presents results from firm fixed effects regressions using Linear Probability Model. Promotion as CEO =1 if a director holds CEO position in a 1500 S&P indexes firm anytime during sample period but before becoming the CEO, zero otherwise. Definitions of explanatory variables are provided in the Appendix. t-statistics in parentheses are reported below each coefficient estimate. t-statistics are computed using Huber-White-Sandwich estimator of variance by clustering on firm level indicators. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	Promotion as CEO		
	CEO Promotion	Internal CEO Promotion	External CEO Promotion
	(1)	(2)	(3)
CMD (β1)	0.088***	0.092***	0.038***
	(14.770)	(15.415)	(9.421)
CMD *Female (β2)	-0.017	-0.002	-0.006
	(-1.508)	(-0.145)	(-0.864)
Female	-0.107***	-0.060***	-0.024***
	(-20.103)	(-12.044)	(-9.118)
Inside Director	0.212***	0.359***	0.069***
	(19.706)	(29.142)	(9.567)
Other Board Seats	0.043***	0.014**	0.001
	(6.544)	(2.194)	(0.435)
Ln(Dir Tenure)	0.012***	0.016***	0.000
	(4.553)	(6.002)	(0.133)
Ln(Dir Age)	-0.018	-0.065***	-0.016*
	(-1.032)	(-3.788)	(-1.689)
Truant Director	-0.002	-0.011	-0.003
	(-0.217)	(-1.399)	(-0.531)
Firm Size	0.011***	0.011***	0.001
	(2.672)	(2.760)	(0.457)
Tobin's Q	-0.002	0.001	-0.001
	(-1.232)	(0.933)	(-1.216)
Volatility	-0.000	0.000	-0.000
	(-0.349)	(1.640)	(-1.602)
ROA	-0.001	0.002	0.005
	(-0.093)	(0.149)	(0.579)
Institutional Ownership	-0.003	-0.000	0.003
	(-0.407)	(-0.045)	(0.622)
Intercept, Time & Firm Fixed Effects	Yes	Yes	Yes
Female CMD Coefficient (β1+β2)	0.071***	0.090***	0.032***
(p-value)	(0.000)	(0.000)	(0.002)
Observations	127,380	127,380	127,380
R-squared	0.162	0.203	0.105

Table 3

Panel B: Promotion as CEO: Effects of Performance

Using director level data (excluding CEO directors), this table presents results from firm fixed effects regressions using Linear Probability Model. Promotion as CEO=1 if a director holds CEO position in a 1500 S&P indexes firm anytime during sample period but before becoming the CEO, zero otherwise. High (Low) Tobin's Q(ROA) sub-samples are in top two (bottom) tercile of performance. Definitions of explanatory variables are provided in the Appendix. t-statistics in parentheses are reported below each coefficient estimate. t-statistics are computed using Huber-White-Sandwich estimator of variance by clustering on firm level indicators. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	Promotion as CEO			
	High Tobin's Q	Low Tobin's Q	High ROA	Low ROA
	(1)	(2)	(3)	(4)
CMD (β1)	0.086***	0.087***	0.086***	0.089***
	(11.347)	(9.329)	(11.812)	(8.977)
CMD *Female (β2)	-0.004	-0.035**	0.002	-0.055***
	(-0.276)	(-2.060)	(0.113)	(-3.432)
Female	-0.129***	-0.060***	-0.132***	-0.050***
	(-17.599)	(-9.914)	(-18.803)	(-7.989)
Inside Director	0.227***	0.195***	0.224***	0.188***
	(15.898)	(12.773)	(16.423)	(12.324)
Other Board Seats	0.041***	0.011	0.040***	0.007
	(4.860)	(1.161)	(4.947)	(0.694)
Ln(Dir Tenure)	0.008**	0.007*	0.009**	0.003
	(2.090)	(1.899)	(2.340)	(0.925)
Ln(Dir Age)	-0.010	-0.041*	-0.013	-0.047**
	(-0.423)	(-1.752)	(-0.535)	(-2.196)
Truant Director	0.004	-0.012	-0.004	0.010
	(0.384)	(-0.867)	(-0.391)	(0.628)
Firm Size	0.015***	0.007	0.010*	0.005
	(2.890)	(1.051)	(1.716)	(0.832)
Tobin's Q	-0.002	-0.002	-0.002	-0.002
	(-1.318)	(-0.201)	(-1.235)	(-0.714)
Volatility	-0.000	0.000	0.000	0.000
	(-0.824)	(0.930)	(0.044)	(0.474)
ROA	-0.020	-0.012	-0.036*	-0.008
	(-1.100)	(-0.580)	(-1.866)	(-0.480)
Institutional Ownership	-0.004	-0.005	-0.006	0.005
	(-0.331)	(-0.435)	(-0.491)	(0.462)
Intercept, Time and Firm Fixed Effects	Yes	Yes	Yes	Yes
Female CMD Coefficient (β1+β2)	0.083***	0.052***	0.088***	0.034***
(p-value)	(0.000)	(0.003)	(0.000)	(0.009)
Observations	85,737	41,446	90,394	36,812
R-squared	0.203	0.189	0.195	0.203

Table 3

Panel C: Promotion as CEO: Effects of Performance Using Sub-Sample of Directors who Are Executives

Using director level data (excluding CEO directors and those directors who have non-executive backgrounds), this table presents results from firm fixed effects regressions using Linear Probability Model. Promotion as CEO=1 if a director holds CEO position in a 1500 S&P indexes firm anytime during sample period but before becoming the CEO, zero otherwise. *CMD_Demp* =1 if a director is an CMD who is also inside director with her primary employer, zero otherwise. *Emponly Director*=1 if a director is inside director but has no outside board seat, zero otherwise. High (Low) Tobin's Q(ROA) sub-samples are in top two (bottom) tercile of performance. Definitions of explanatory variables are provided in the Appendix. t-statistics in parentheses are reported below each coefficient estimate. t-statistics are computed using Huber-White-Sandwich estimator of variance by clustering on firm level indicators. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	Promotion as CEO				
	Full Sample	High Tobin's Q	Low Tobin's Q	High ROA	Low ROA
	(1)	(2)	(3)	(4)	(5)
CMD_Demp (β1)	0.245***	0.224***	0.270***	0.239***	0.208***
	(8.826)	(7.269)	(4.798)	(7.705)	(3.895)
CMD_Demp*Female (β2)	-0.049	-0.032	-0.167***	-0.059	-0.171*
	(-0.741)	(-0.438)	(-2.586)	(-0.765)	(-1.777)
Female	-0.131***	-0.140***	-0.109***	-0.139***	-0.127***
	(-11.452)	(-9.587)	(-5.811)	(-9.515)	(-6.615)
Emponly Director (β3)	0.136***	0.152***	0.128***	0.152***	0.124***
	(10.507)	(8.669)	(6.597)	(9.271)	(6.288)
Other Board Seats	0.077***	0.090***	0.007	0.090***	-0.015
	(5.169)	(5.058)	(0.238)	(5.242)	(-0.386)
Ln(Dir Tenure)	0.004	0.001	-0.005	0.000	-0.012
	(0.703)	(0.130)	(-0.602)	(0.029)	(-1.334)
Ln(Dir Age)	-0.089***	-0.111**	-0.043	-0.108**	-0.061
	(-2.595)	(-2.365)	(-0.804)	(-2.389)	(-1.029)
Truant Director	-0.002	0.001	-0.011	-0.005	0.008
	(-0.154)	(0.041)	(-0.454)	(-0.294)	(0.324)
Firm Size	0.008	0.007	0.027*	0.013	0.017
	(0.719)	(0.542)	(1.704)	(0.980)	(1.009)
Tobin's Q	-0.005	-0.006	0.018	-0.005	0.002
	(-1.266)	(-1.397)	(0.992)	(-1.155)	(0.292)
Volatility	0.001	0.001	0.001	0.000	0.001
	(0.590)	(0.692)	(0.512)	(0.341)	(0.921)
ROA	0.010	-0.016	-0.050	-0.077	-0.017
	(0.256)	(-0.350)	(-0.843)	(-1.430)	(-0.439)
Institutional Ownership	0.005	-0.011	0.005	0.007	-0.001
	(0.241)	(-0.382)	(0.208)	(0.250)	(-0.041)
Intercept, Time and Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes
Female CMD Coefficient (β1+β2)	0.196***	0.192***	0.103**	0.180**	0.037
(p-value)	(0.001)	(0.005)	(0.013)	(0.012)	(0.645)
CMD_Demp=Emponly (β1=β3)	0.109***	0.072**	0.142***	0.087**	0.084**
(p-value)	(0.005)	(0.043)	(0.000)	(0.032)	(0.048)
Observations	34,035	22,615	11,130	24,537	9,218
R-squared	0.286	0.333	0.376	0.321	0.397

Table 3

Panel D: Appointment as Inside Director

Using director level data, this table presents results from firm fixed effects regressions using Linear Probability Model. Appointment as Inside Director=1 if a director is appointed as inside director after having an outside directorship, zero otherwise. We limit this analysis to non-CEO directors who are executives of other firms. High (Low) Tobin's Q(ROA) sub-samples are in top two (bottom) tercile of performance. Definitions of explanatory variables are provided in the Appendix. t-statistics in parentheses are reported below each coefficient estimate. t-statistics are computed using Huber-White-Sandwich estimator of variance by clustering on firm level indicators. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	Appointment as Non-CEO Inside Director				
	Full Sample	High Tobin's Q	Low Tobin's Q	High ROA	Low ROA
	(1)	(2)	(3)	(4)	(5)
Female CMD	0.022	0.055**	0.001	0.055**	0.015
	(1.611)	(2.059)	(0.144)	(2.039)	(1.604)
Other Board Seats	0.030**	-0.003	0.040**	0.013	0.043**
	(2.118)	(-0.178)	(2.003)	(0.687)	(2.159)
Ln(Dir Tenure)	0.010*	0.018*	0.016*	0.008	0.023**
	(1.793)	(1.947)	(1.923)	(0.889)	(2.397)
Ln(Dir Age)	-0.033	-0.073	-0.158**	-0.012	-0.052
	(-0.654)	(-1.045)	(-2.511)	(-0.140)	(-0.627)
Truant Director	-0.020**	-0.014	0.000	-0.023	-0.009
	(-2.400)	(-1.381)	(0.006)	(-1.616)	(-0.813)
Firm Size	0.004	0.024**	0.013	-0.006	0.013
	(0.417)	(2.032)	(0.947)	(-0.294)	(1.016)
Tobin's Q	-0.005	0.002	-0.010	-0.002	-0.009
	(-1.170)	(0.548)	(-1.078)	(-0.297)	(-1.269)
Volatility	-0.002*	-0.001	-0.001	-0.001	-0.002
	(-1.743)	(-0.737)	(-0.765)	(-0.857)	(-1.284)
ROA	-0.040	-0.101	-0.032	-0.122	-0.030
	(-1.040)	(-1.479)	(-0.607)	(-1.219)	(-0.610)
Institutional Ownership	-0.023	-0.038	-0.026	-0.025	-0.038
	(-0.643)	(-1.060)	(-0.428)	(-0.593)	(-0.628)
Intercept, Time & Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	3,104	1,517	1,587	1,539	1,565
R-squared	0.352	0.331	0.479	0.318	0.430

Table 4: Professional Background of Independent Directors and Accumulation of Board Seats

Using director level data, this table presents results from firm fixed effects regressions. Older (Younger) directors are those who older (younger) than the average director in our sample. t-statistics in parentheses are reported below each coefficient estimate. t-statistics is computed using Huber-White-Sandwich estimator of variance by clustering on firm level indicators. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	Ln(Other Board Seats)		
	Full Sample	Older Directors	Younger Directors
	(1)	(2)	(3)
CMD (β1)	0.025***	0.081***	-0.005
	(3.398)	(6.977)	(-0.586)
CMD *Female (β2)	-0.213***	-0.179***	-0.189***
	(-13.606)	(-4.550)	(-10.941)
Female	0.083***	0.047***	0.103***
	(7.838)	(3.055)	(8.242)
Inside Director	-0.246***	-0.181***	-0.279***
	(-27.992)	(-12.787)	(-28.468)
Ln(Dir Tenure)	-0.015***	-0.048***	0.031***
	(-3.966)	(-8.280)	(6.801)
Ln(Dir Age)	0.424***	-0.401***	0.603***
	(16.981)	(-6.709)	(18.041)
Truant Director	0.040***	0.028	0.034*
	(2.643)	(1.319)	(1.689)
Firm Size	0.019**	0.005	0.043***
	(2.444)	(0.509)	(4.695)
Tobin's Q	-0.001	-0.000	-0.004
	(-0.605)	(-0.084)	(-1.222)
Volatility	-0.001	-0.000	-0.001*
	(-1.407)	(-0.214)	(-1.960)
ROA	-0.060**	-0.086**	-0.037
	(-2.483)	(-2.571)	(-1.185)
Institutional Ownership	0.021*	0.028	0.024
	(1.652)	(1.561)	(1.443)
Active CEO	0.160***	0.102***	0.186***
	(23.654)	(8.999)	(24.532)
Intercept, Time and Firm Fixed Effects	Yes	Yes	Yes
Female CMD Coefficient (β1+β2)	-0.188***	-0.098**	-0.194***
(p-value)	(0.000)	(0.021)	(0.000)
Observations	167,396	88,700	78,696
R-squared	0.224	0.259	0.263

Table 5: Female CMDs and Compensation as Employee from Primary Employers

This table presents results from director level analysis. Dependent variable is Total Compensation of independent directors who are executives of other firms, from their primary employer. Definitions of explanatory variables are provided in the Appendix. t-statistics (below coefficients) are computed using Huber-White-Sandwich estimator of variance by clustering on firm level indicators. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	Ln (Total compensation from primary employer as executive)				
	Full Sample	High Tobin's Q	Low Tobin's Q	High ROA	Low ROA
	(1)	(2)	(3)	(4)	(5)
CMD (β1)	0.153***	0.097**	0.172***	0.120***	0.185***
	(5.733)	(2.306)	(5.048)	(3.236)	(4.845)
CMD*Female (β2)	-0.145*	-0.070	-0.194*	0.001	-0.280**
	(-1.717)	(-0.538)	(-1.666)	(0.010)	(-2.271)
Female	-0.212***	-0.143	-0.265***	-0.220***	-0.187**
	(-3.822)	(-1.611)	(-3.756)	(-2.657)	(-2.536)
Ln(Other Board Seats)	0.139***	0.154***	0.133***	0.184***	0.105***
	(6.572)	(4.203)	(5.020)	(5.787)	(3.623)
Ln(Dir Tenure)	-0.036**	-0.092***	-0.002	-0.061***	-0.011
	(-2.498)	(-3.745)	(-0.092)	(-2.654)	(-0.583)
Ln(Dir Age)	-0.522***	-0.634***	-0.448***	-0.532***	-0.487***
	(-5.065)	(-3.898)	(-3.335)	(-3.569)	(-3.482)
Truant Director	0.191*	0.144	0.217**	0.101	0.258**
	(1.824)	(0.793)	(2.042)	(0.543)	(2.379)
Firm Size	0.255***	0.265***	0.241***	0.245***	0.249***
	(13.055)	(8.514)	(8.478)	(8.267)	(8.825)
Tobin's Q	-0.024*	-0.001	-0.011	-0.003	-0.010
	(-1.794)	(-0.078)	(-0.216)	(-0.147)	(-0.411)
Volatility	0.005***	0.002	0.006**	0.006	0.005**
	(2.737)	(0.616)	(2.281)	(1.623)	(2.164)
ROA	0.832***	0.098	1.597***	0.549*	1.035***
	(4.682)	(0.391)	(6.328)	(1.841)	(3.644)
Institutional Ownership	0.023	0.141*	-0.053	0.140*	-0.032
	(0.459)	(1.770)	(-0.862)	(1.942)	(-0.490)
Active CEO	0.484***	0.486***	0.466***	0.514***	0.453***
	(27.221)	(16.553)	(21.523)	(18.951)	(19.974)
Intercept, Time and Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes
Female CMD Coefficient (β1+β2)	0.008	0.027	-0.022	0.121	-0.095
(p-value)	(0.698)	(0.142)	(0.240)	(0.292)	(0.244)
Observations	34,035	22,615	11,130	24,537	9,218
R-squared	0.592	0.597	0.632	0.626	0.613

Table 6: Female CMDs and Compensation as Directors

This table presents results from director level analysis for a period of 2006-2018. Dependent variable is Total Compensation of independent directors from the appointing firm. Definitions of explanatory variables are provided in the Appendix. t-statistics (below coefficients) are computed using Huber-White-Sandwich estimator of variance by clustering on firm level indicators. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	Ln (Total compensation as director)				
	Full Sample	High Tobin's Q	Low Tobin's Q	High ROA	Low ROA
	(1)	(2)	(3)	(4)	(5)
CMD (β1)	-0.015	-0.006	-0.025	-0.009	-0.025
	(-1.166)	(-0.492)	(-0.819)	(-0.729)	(-0.720)
CMD*Female (β2)	-0.032	-0.012	-0.070	-0.016	-0.050
	(-1.020)	(-0.520)	(-0.810)	(-0.730)	(-0.579)
Female	0.006	-0.010	0.035*	-0.002	0.017
	(0.638)	(-1.054)	(1.767)	(-0.193)	(0.964)
Ln(Other Board Seats)	0.027***	0.032***	0.000	0.034***	0.003
	(4.201)	(4.198)	(0.026)	(4.439)	(0.222)
Ln(Dir Tenure)	0.070***	0.063***	0.079***	0.064***	0.077***
	(11.490)	(8.682)	(6.460)	(8.791)	(5.642)
Ln(Dir Age)	0.147***	0.106**	0.249**	0.109**	0.220**
	(3.105)	(2.370)	(2.088)	(2.373)	(2.120)
Truant Director	-0.371***	-0.271**	-0.585**	-0.309**	-0.424*
	(-3.114)	(-2.058)	(-2.451)	(-2.326)	(-1.870)
Firm Size	0.133***	0.137***	0.150***	0.144***	0.078**
	(3.922)	(3.272)	(2.840)	(3.345)	(2.449)
Tobin's Q	0.024*	0.021*	0.100	0.019	0.058***
	(1.701)	(1.662)	(1.638)	(1.317)	(2.913)
Volatility	0.003**	0.003**	0.003	0.003**	0.002
	(2.202)	(2.324)	(1.267)	(2.108)	(0.954)
ROA	0.123*	0.165*	0.011	0.167*	0.019
	(1.729)	(1.661)	(0.153)	(1.690)	(0.309)
Institutional Ownership	0.110**	0.091	0.144*	0.120*	0.055
	(1.980)	(1.576)	(1.692)	(1.910)	(0.864)
Active CEO	-0.006	-0.029	0.050	-0.024	0.025
	(-0.326)	(-1.304)	(1.572)	(-1.095)	(0.755)
Intercept, Time and Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes
Female CMD Coefficient (β1+β2)	-0.047	-0.018	-0.095	-0.025	-0.075
(p-value)	(0.308)	(0.604)	(0.419)	(0.465)	(0.563)
Observations	42,480	29,280	13,200	29,846	12,634
R-squared	0.605	0.627	0.591	0.621	0.636

Table 7: CMD Gender and Board Functions

Using director level data, this table presents results from firm fixed effects regressions. t-statistics in parentheses are reported below each coefficient estimate. t-statistics is computed using Huber-White-Sandwich estimator of variance by clustering on firm level indicators. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	Audit Committee	Compensation Committee	Nominating Committee	Truant Director
	(1)	(2)	(3)	(4)
CMD (β1)	0.010	0.023**	-0.012*	0.011***
	(1.158)	(2.415)	(-1.707)	(7.762)
CMD *Female (β2)	0.037**	-0.036**	-0.017	-0.008***
	(2.151)	(-2.111)	(-1.053)	(-3.623)
Female	-0.016	0.010	0.070***	0.000
	(-1.461)	(0.944)	(6.834)	(0.243)
Ln(Other Board Seats)	0.030***	0.048***	0.032***	0.003***
	(4.691)	(7.865)	(5.362)	(2.880)
Ln(Dir Tenure)	0.002	0.072***	0.084***	-0.001
	(0.435)	(16.315)	(19.978)	(-1.202)
Ln(Dir Age)	-0.031	0.095***	0.198***	0.000
	(-1.024)	(3.226)	(7.384)	(0.060)
Truant Director	-0.112***	-0.050***	-0.023	
	(-7.684)	(-3.434)	(-1.587)	
Firm Size	-0.013***	-0.019***	-0.008	-0.001
	(-2.820)	(-4.031)	(-1.208)	(-0.396)
Tobin's Q	0.002	0.007**	0.003	0.000
	(0.689)	(2.239)	(0.981)	(0.458)
Volatility	0.000	0.000	-0.001**	0.000
	(1.057)	(0.098)	(-2.358)	(0.836)
ROA	-0.006	0.019	0.001	-0.011
	(-0.158)	(0.521)	(0.015)	(-1.347)
Institutional Ownership	0.012	0.008	0.052***	-0.001
	(1.334)	(0.812)	(4.107)	(-0.252)
Active CEO	-0.072***	0.087***	0.035***	-0.002
	(-6.161)	(7.706)	(3.385)	(-0.845)
Intercept, Time and Firm Fixed Effects	Yes	Yes	Yes	Yes
Female CMD Coefficient (β1+β2)	0.047***	-0.013	0.-029*	0.003
(p-value)	(0.000)	(0.344)	(0.058)	(0.329)
Observations	127,402	127,402	127,402	127,402
R-squared	0.058	0.079	0.136	0.048

Table 8: Female CMD on Audit Committees and Audit Quality

This table presents results from regressions in which the dependent variable is Audit Quality variables. All the variables are defined in the Appendix. t-statistics in parentheses is computed using Huber-White-Sandwich estimator of variance by clustering on firm level indicators. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	Restatements	Accruals Quality	Disc. Accruals
	(1)	(2)	(3)
Female CMD_Audit	-0.024**	-0.205***	-0.386**
	(-2.024)	(-2.698)	(-2.160)
Female ID	0.020	-0.183	-0.339
	(1.430)	(-1.283)	(-1.277)
Ln(Board Size)	-0.030	-0.557*	-0.708
	(-1.026)	(-1.824)	(-1.308)
Board Independence	-0.008	-0.322	-0.320
	(-0.174)	(-0.717)	(-0.517)
Ln (CEO Tenure)	-0.001	-0.109**	-0.126
	(-0.111)	(-2.392)	(-1.439)
CEO-Chair	-0.010	0.139	0.209*
	(-1.104)	(1.470)	(1.886)
Firm Size	0.032***	-0.043	0.187
	(3.194)	(-0.301)	(0.745)
Firm Age	0.003	-1.016***	0.039
	(0.162)	(-4.205)	(0.101)
Leverage	0.005	0.555	1.726**
	(0.151)	(1.241)	(2.388)
Diversification	0.003	0.007	0.022
	(1.480)	(0.437)	(0.885)
Volatility	0.002**	0.104***	0.050*
	(2.273)	(7.236)	(1.867)
Intangible Assets	0.136**	1.963***	1.633
	(2.473)	(3.283)	(1.269)
Inside Ownership	0.002	-0.458	-0.328
	(0.056)	(-1.221)	(-0.541)
CEO Performance Based Compensation	0.016	0.014	0.019
	(0.905)	(0.086)	(0.065)
CEO Gender	0.027	0.340	-0.148
	(1.103)	(1.484)	(-0.294)
Institutional Ownership	0.002	-0.319	-0.919**
	(0.075)	(-1.394)	(-2.292)
(ROA)	-0.063	0.075	4.431***
	(-1.382)	(0.129)	(4.447)
Intercept, Time and Firm Fixed Effects	Yes	Yes	Yes
Observations	15,039	15,039	15,039
R-squared	0.270	0.703	0.396

Table 9: Who Appoints Female Directors?

Using independent director appointments, this table presents results from multinomial logit regressions. The dependent variable is equal to zero if a male independent director is appointed, one if a Female CMD is appointed, and two for Female non-CMD appointments. t-statistics in parentheses are reported below each coefficient estimate. t-statistics is computed using Huber-White-Sandwich estimator of variance by clustering on firm level indicators. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	Director Appointments	
VARIABLES	Female CMD vs Male IDs	Female non-CMD vs Male IDs
	(1)	(2)
No FID Firm in 2009	-0.072	0.294***
	(-0.656)	(3.830)
CA-NY Firm	-0.006	0.060
	(-0.052)	(0.651)
Tech Firm	1.405***	0.551
	(2.644)	(1.076)
Legal Action	0.309*	0.112
	(1.795)	(0.733)
Ln(Board Size)	1.586***	0.507***
	(5.951)	(2.749)
Board Independence	1.076**	0.212
	(2.542)	(0.643)
CEO Gender	0.117	0.036
	(0.564)	(0.199)
CEO-Chair	0.091	0.092
	(0.944)	(1.193)
Firm Size	-0.065	-0.042
	(-1.567)	(-1.327)
Firm Age	0.040	0.133**
	(0.562)	(2.376)
Leverage	-0.381	-0.167
	(-1.256)	(-0.662)
Diversification	-0.012	-0.014
	(-0.686)	(-0.911)
Volatility	-0.003	-0.004
	(-1.069)	(-1.476)
R&D Intensity	-0.760	0.471
	(-0.525)	(0.441)
Institutional Ownership	0.184	-0.012
	(0.722)	(-0.058)
(ROA)t-1	0.320	-0.269
	(0.508)	(-0.550)
(Tobin's Q)t-1	0.085	0.049
	(1.580)	(1.076)
Intercept, Year and Industry Fixed Effects	Yes	Yes
Observations	5,858	5,858

Table 10: Event Study of Appointment of Female CMDs, Female non-CMDs and Male CMDs

This table presents results from an event study of appointment of Female CMDs, Female non-CMDs and Male CMDs. Table presents the average 3-day cumulative abnormal return around the announcements of directors' appointments. Abnormal return is computed after subtracting predicted returns from realized returns. Predicted returns are computed using the market model and the value-weighted market index. Cumulative returns are computed from 1 day before the announcement to 1 day after the announcement. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

Panel A: Comparing CARs around Female CMDs and Female non-CMDs Appointments

		Event- Study Returns			
		3-Day Cumulative Abnormal Return		p-value	
Director Appointment	Sample Size	Mean	Median	Mean	Median
(a) Female CMDs	288	1.232**	1.293**	0.037	0.046
Female non-CMDs	411	-0.671	-0.702	0.156	0.13
(a) − (b)		1.903***	1.995**	0.000	0.033

Panel B: Comparing CARs around Female CMDs and Male CMDs Appointments

		Event- Study Returns			
		3-Day Cumulative Abnormal Return		p-value	
Director Appointment	Sample Size	Mean	Median	Mean	Median
(a) Female CMDs	288	1.232**	1.293**	0.037	0.046
(b) Male CMDs	1524	0.518	0.322	0.152	0.297
(a) − (b)		0.714*	0.971**	0.088	0.048

Table 11: Female CMDs and Firm Performance: Arellano-Bond Dynamic Panel Data Analysis
This table presents results from Dynamic Panel Data analysis in which the dependent variables are 1-year Lead Tobin's Q and Lead ROA. All the variables are defined in the Appendix. t-statistics in parentheses are reported below each coefficient estimate. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	(Tobin's Q)t+1	(ROA)t+1
Female CMD Ratio	0.643**	0.052*
	(2.040)	(1.753)
Female non-CMD Ratio	0.304	-0.038*
	(1.064)	(-1.692)
Male CMD Ratio	-0.223	-0.014
	(-1.608)	(-1.233)
$(Tobin's\ Q)_t$	0.444***	
	(34.029)	
$(Tobin's\ Q)_{t-1}$	-0.013	
	(-1.548)	
$(ROA)_t$		0.561***
		(42.000)
$(ROA)_{t-1}$		-0.080***
		(-8.939)
Ln(Board Size)	0.011	-0.000
	(0.181)	(-0.083)
Board Independence	-0.034	0.006
	(-0.344)	(0.738)
Female Ratio	0.004	-0.001
	(0.428)	(-0.990)
ExecID Ratio	-0.011	0.000
	(-0.529)	(0.177)
Ln(CEO Tenure)	-0.284***	-0.108***
	(-8.158)	(-36.005)
CEO-Chair	-0.093	0.011**
	(-1.382)	(2.094)
Firm Size	0.317***	0.003
	(3.400)	(0.343)
Firm Age	-0.010**	-0.001***
	(-2.178)	(-2.605)
Leverage	0.001	-0.000*
	(0.340)	(-1.816)
Diversification	-0.198	0.452***
	(-0.381)	(11.182)
Volatility	0.223	-0.062***
	(1.185)	(-4.135)
R&D Intensity	-0.016	0.012
	(-0.163)	(1.460)
Intangible Assets	-0.022	-0.001
	(-0.608)	(-0.307)
Insider Ownership	-0.097	-0.007
	(-1.342)	(-1.211)
CEO Performance based compensation	-0.066	0.002
	(-1.073)	(0.368)
CEO Gender	0.011	-0.000
	(0.181)	(-0.083)
Institutional ownership	-0.034	0.006
	(-0.344)	(0.738)
Intercept, Year FE & Instruments	Yes	Yes
Observations	12,190	12,190
Wald Chi-Sqd.	3012.87	2264.26

Table 12: Female CMDs and Firm Performance: Alternative Analyses

This table presents results from alternative analyses. All the variables are defined in the Appendix. t-statistics in parentheses are reported below each coefficient estimate. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

Panel A: Exogenous Departure of Female CMDs and Change in Firm Performance

The dependent variable is change in Tobin's Q. *Female (Male) CMD Exogeneous Departure* takes a value of one if a female director leaves the board due to death or term limits, zero otherwise. Columns 1 & 2 use full sample; 3 uses PSM sample (based on all the firm characteristics used in the model). Columns 2 & 3 also include change in control variables that are used Table 10.

	[(Tobin's Q)$_{t+1}$-(Tobin's Q)$_{t-1}$]		
	(1)	(2)	(3)
	Full Sample		Matched Sample
Female CMD Exogenous Departure	-0.176**	-0.183**	-0.161**
	(-1.987)	(-1.990)	(-2.094)
Male CMD Exogenous Departure	0.006	0.021	0.018
	(0.151)	(0.443)	(0.431)
⊿ *Control Variables*	*No*	*Yes*	*Yes*
Intercept, Year and Industry Fixed Effects	Yes	Yes	No
Observations	14,648	14,260	176
R-squared	0.070	0.073	0.087

Panel B: Female CMDs and Firm Performance: 2SLS (IV) Models

	Female CMD	(Tobin's Q)$_{t+1}$	(ROA)$_{t+1}$
	(1)	(2)	(3)
Female CMD		0.417**	0.045**
		(2.485)	(2.225)
Ln(#Female Executives County)	0.011***		
	(3.711)		
County Ratio of Female CMD Firms	0.095***		
	(4.797)		
Control Variables	Yes	Yes	Yes
Intercept, Year & Firm Fixed Effects	Yes	Yes	Yes
Observations	16,122	16,122	16,122
Sargan Test		1.106	1.049
		(p=0.293)	(p=0.306)
R-squared	0.105	0.106	0.126

Panel C: SEC Diversity Disclosure Rule (2009), Hiring of Female non-CMDs and Performance Deterioration: Placebo Test

This table presents results from Diff-in-Diff approach for sample period of 2006-2018. Treat=1 if a firm had no female director in 2010, zero otherwise. Post=1 if year>2010, zero otherwise.

	Female non-CMD Ratio	(Tobin's Q)t+1
	(1)	(2)
Treat*Post	0.014***	0.080
	(3.063)	(0.997)
Female non-CMD Ratio		0.437
		(1.012)
Treat*Post*Female non-CMD Ratio		-1.198**
		(-1.994)
Post*Female non-CMD Ratio		0.668
		(1.151)
Control Variables	Yes	Yes
Intercept, Year and Firm Fixed Effects Included	Yes	Yes
Observations	6,871	6,724
R-squared	0.261	0.728

Appendix Table 1

Panel A: Directorships of CEOs

This table compares directorships of female and male CEOs from 1998-2018 period. We limit this analysis to those candidates for whom we have outside directorship information. Inside Director only group includes those candidates who serve as inside directors but have no outside directorship. Inside & Outside Director group includes those candidates who serve as inside as well as outside director. No Directorship group includes those candidates who do not have director experience before becoming CEO. Outside Directorship only group includes those candidates who serve as outside director but not as inside director. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	Female CEO	% Female	Male CEO	% Male	Diff.
Total CEOs	677	100.00%	22782	100.00%	--
Inside Directorship only	218	32.20%	11030	48.42%	-16.21%***
Inside & Outside Directorship	458	67.65%	11647	51.12%	16.53%***
No Directorship	1	0.15%	67	0.29%	-0.15%
Outside Directorship only	0	0.00%	38	0.17%	-0.17%

Panel B: Directorships of Internal Vs External CEOs

This table compares directorships of female and male CEO candidates along their status as internal (*Int.*) vs external (*Ext.*) candidates from 1998-2018 period. We limit this analysis to those candidates for whom we have outside directorship information. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	Female				Male					
	Int.	% Int.	Ext.	% Ext.	Int.	% Int.	Ext.	% Ext.	Diff. (Int.)	Diff. (Ext.)
Total	533	78.73%	144	21.27%	17136	75.22%	5646	24.78%	3.51%*	-3.51%*
Inside Directorship only	175	25.85%	43	6.35%	8835	38.78%	2195	9.63%	-12.93%***	-3.28%*
Inside & Outside Directorship	357	52.73%	101	14.92%	8218	36.07%	3429	15.05%	16.66%***	-0.13%
No Directorship	1	0.15%	0	0.00%	56	0.25%	11	0.05%	-0.10%	-0.05%
Outside Directorship only	0	0.00%	0	0.00%	27	0.12%	11	0.05%	-0.12%	-0.05%

Appendix Table 2: Appointment of Female Executives as Outside Directors

Using executive level data, this table presents results from firm fixed-effects regressions using Linear Probability Model. The dependent variable is an indicator for whether the executive has an outside board seat. Inside Director=1 if an executive is inside director, zero otherwise. Definitions of explanatory variables are provided in the Appendix. t-statistics in parentheses are reported below each coefficient estimate. t-statistics are computed using Huber-White-Sandwich estimator of variance with clustering at firm level. *, **, and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	Outside Board Seat			
	(1)	(2)	(3)	(4)
	All Executives	Non-CEO Executives	All Executives	Non-CEO Executives
	1998-2018		2013-2018	
Female	0.022***	0.020***	0.022***	0.022***
	(4.109)	(4.147)	(3.698)	(3.990)
Inside Director	0.071***	0.080***	0.050***	0.055***
	(14.948)	(16.163)	(8.058)	(8.544)
CEO	0.063***		0.033***	
	(10.662)		(4.379)	
Ln(Total compensation)	0.020***	0.012***	0.017***	0.012***
	(9.052)	(6.131)	(6.113)	(4.402)
Ln(Age)	0.171***	0.155***	0.064***	0.073***
	(12.862)	(13.694)	(4.732)	(6.193)
Firm Size	0.015***	0.011***	0.012**	0.008*
	(4.047)	(3.569)	(1.966)	(1.665)
Tobin's Q	-0.002	0.000	0.001	0.001
	(-1.054)	(0.010)	(0.719)	(0.622)
Volatility	-0.000*	-0.000	0.000	0.000
	(-1.799)	(-0.015)	(0.886)	(0.768)
ROA	-0.025**	-0.027***	-0.010	-0.006
	(-2.145)	(-2.645)	(-0.831)	(-0.554)
Institutional Ownership	0.010	0.006	-0.005	0.002
	(1.056)	(0.669)	(-0.465)	(0.184)
Intercept and Year Dummies	Yes	Yes	Yes	Yes
Fixed Effects	Firm	Firm	Firm	Firm
Observations	114,430	90,633	36,475	29,543
R-squared	0.209	0.155	0.180	0.152