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GENDER DIVERSITY GOALS, SUPPLY CONSTRAINTS, AND THE MARKET FOR SEASONED FEMALE DIRECTORS: THE U.S. EVIDENCE

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JEL Classification: G34, J16, G38, J31

Keywords: Board Gender Diversity, Gender quota, supply constraints, Labor Market for Directors

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Gender Diversity Goals, Supply Constraints, and the Market for Seasoned Female Directors: The U.S. Evidence*

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This version: August, 2020

Abstract

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1. Introduction

While women remain significantly underrepresented in corporate boards worldwide, several countries have followed Norway's lead and passed laws aimed at more gender balance in the boardroom.[1] Until recently, the United States was among the few Western developed economies with neither voluntary nor mandatory gender diversity targets for publicly traded companies. Female board representation in the U.S. remains well below that of most European countries. However, in recent years, U.S. boards have been under increasing scrutiny and pressure to improve gender diversity. The number of shareholder proposals targeting gender diversity has steadily increased, and institutional investors (with Blackrock and Vanguard leading the way) and proxy advisory firms have directly addressed the issue. On September 30, 2018, California passed Senate Bill 826, which requires all publicly traded companies headquartered in the state to have at least one female board member by the end of 2019 and meet additional quota requirements (depending on board size) by 2021. Subsequently, New Jersey, Michigan and Pennsylvania have proposed similar legislation, while Illinois, Maryland and New York all passed laws requiring reports or studies on board and/or management diversity. Perhaps the most significant development is that there are no longer any S&P 500 boards without a female director in 2019.

Figure 1 shows (a) the fraction of women among all individuals who hold board seats and (b) the fraction of female board members, in (i) all quoted (publicly traded) firms in the U.S. and (ii) S&P 500 firms, from the year 2000 to 2019. From 2000 to 2009—the first-half of our sample period—the fraction of females, both for all quoted firms as well as for S&P 500 firms, grew at less than 0.5 percent per year. From 2010 onwards, the growth rate accelerated to about 1 percent per year. The percentage of females on the boards of quoted firms (S&P 500 firms) increased from 6.9 percent (11.1 percent) in 2000 to 8.1 percent (14.6 percent) in 2009, and then to 14.5 percent (24.05 percent) in 2019. The acceleration in the post-2009 period likely reflects greater sensitivity towards gender diversity (Giannetti and Wang, 2020) and public pressure.[2]

One interpretation of these developments is that public pressure is succeeding in removing prejudices against women and providing opportunities to qualified women who would otherwise be overlooked by nomination committees. However, questions remain regarding how sustainable the recent

[1] In recent years the parliaments of Spain (2007), Iceland (2010), France (2011), the Netherlands (2011), Belgium (2011), Italy (2011), Malaysia (2011), India (2013) and Germany (2014) have adopted gender quota laws regulating the gender composition of corporate boards. In 2013, the European parliament voted in favor of a proposed draft law that would require 40% of board members to be female in about 5,000 listed companies in the European Union by 2020. Several other countries are considering similar legislation, sometimes limited to state-owned or mixed ownership companies, while others have set voluntary goals.

[2] Giannetti and Wang (2020) find that the Google Search Volume Index for terms associated with gender equality increases sharply around 2012, suggesting a gradual increase in gender awareness that accelerated around this time.

developments are, or indeed whether California-style quota policies are needed to advance the cause of diversity further and ensure that qualified women are not overlooked. The case for quotas is strongest when "demand-side" biases (such as taste-based or statistical discrimination) against women cause nomination committees to overlook qualified women; it is less clear-cut when there are constraints on the "supply-side" that limit the pool of women in the radar of nomination committees. In the presence of supply constraints, boards have to engage in costly search and screening to identify women who can serve on the board. These costs could be large, especially for smaller firms. In fact, Greene et al. (2020) and Hwang et al. (2019) document that the market reaction to the passage of California's Senate Bill 826 for firms headquartered in California was negative on average, and conclude that market reactions were more negative for smaller firms and for those facing larger shortfalls in the number of women members required to meet the quota.

In this paper, we provide several pieces of evidence that suggest that supply constraints—i.e., a limited pool of female candidates in the radar of nomination committees—have affected how firms are responding to the pressure for board gender diversity. The search and screening costs of identifying first-time female directors are high enough that the larger firms are responding to the pressure for diversity by mostly avoiding these costs, while smaller firms are constrained and are responding much less. These findings thus raise questions about the sustainability of the current drive towards board gender diversity, absent policies that directly address expanding the thin pool of women in the upper echelons of the corporate hierarchy, from which new directors are mostly recruited by nomination committees. They also raise concerns about widespread adoption of California-style quota policies, and especially in the ability of smaller firms to conform. However, somewhat paradoxically, if the forces of gender awareness and public pressure continue, our findings suggest that in the short-term, a different type of mandate might actually be called for—namely, one that requires the larger firms to prioritize appointing first-time female directors, as opposed to seasoned ones.

Our evidence mostly relates to the market for seasoned directors, which reflect the presence of search frictions in the market for first-time directors. Figure 2 highlights one indication for such frictions that begins to emerge as the pressure for gender diversity intensifies. The percentage of directors classified as "busy" directors (holding 3 or more board seats at a given point of time), after staying relatively flat during most of our sample period, starts to decline after 2015 as campaigns against "overboarding" gathered momentum (Chen and Guay, 2019)[3]. However, the percentage of women in the pool of busy directors starts to increase sharply around 2010, i.e. the start of the second half of our sample period. The effect is present

[3] Concerns about busy directors have prompted a recent lowering of the limit of concurrent directorships in the Institutional Shareholder Services' (ISS) Proxy Voting Guidelines (https://www.issgovernance.com/file/policy/2016-americas-policy-updates.pdf).

even for the S&P 500 firms where the percentage of busy directors is about three times higher than for all firms, and which have been under more pressure to reduce overboarding (as evidenced by the sharp decline from 18 per cent to 14 per cent in the per centage of busy directors from 2015 to 2019). As shown in Table 2, in the post-2009 period, there was a steady decline in the number of men holding multiple board seats, while for women, the trend was the opposite. The three-year average number of male directors holding 2, 3 and 4 board seats decreased by 13 percent, 17 percent and 15 percent, respectively from 2009 to 2018; the corresponding numbers for women increased by 64 percent, 94 percent, and 56 percent, respectively.

Our evidence highlights that in the post-2009 period, when recruiting a female director, firms have been relying much more on seasoned directors (i.e., those who already hold at least one board seat) than on first-time directors, compared to when they recruit a male director. Larger firms (e.g., those that are above-median in size) are relying to a greater extent on seasoned women than are smaller firms (e.g., those that are below-median in size). However, the latter group of firms are not appointing that many female directors overall, having increased the proportion of female-to-male director appointments from a pre-2009 period average of 9 percent to a post-2009 period average of only 18 percent. Below-median firms appointed 2199 women to board positions from 2009-2019, compared to 3413 such appointments for above-median firms – i.e., 35 percent fewer women.[4] The ratio of seasoned to rookie appointments of female directors for below-median firms over this period was 48 percent, while for above-median firms, it was 64 percent.[5] Regression results confirm that first-time female board members were less likely to be appointed than first-time male board members at larger firms (including those that are above-median in size, in the highest size-quartile, or in the S&P 500) in the post-2009 period; however, this gender difference disappears when all firms are considered, and reverses for below-median firms. As we elaborate below, the evidence is consistent with smaller firms being at a disadvantage in attracting seasoned board members to their boards—especially seasoned female board members when there is greater pressure for gender diversity.

We provide regression-based evidence that female directors with a single board seat were much more likely to be appointed to an additional board seat relative to comparable male directors during the post-2009 period, when public pressure for and awareness of gender equality increased. While this effect was also present in the pre-2009 period, the female-male gap in the likelihood of a second board appointment is much smaller. We also show that after controlling for the size of the firm of initial appointment and other individual characteristics, the second-seat appointments for women were at larger firms than for comparable

[4] Since we are comparing below median and above median firms, the total number of director appointments for both groups are almost the same, for both the pre-2009 and post-2009 periods.

[5] In contrast, below-median firms appointed 10 percent more male directors than above-median firms (11,692 versus 10,465) over this period. The seasoned-to-rookie ratio for male director appointments for below-median firms was 44 percent, while that for above-median firms was 56 percent.

men. Together, these results are consistent with the idea that, facing high search costs of finding brand new female directors, larger firms were responding to greater pressure for gender diversity by "cream skimming" the visible pool of women directors already with board positions in smaller firms. The results are also consistent with the possibility that, unable to compete for seasoned female members and facing search costs of finding brand new candidates, smaller firms appointed 35 percent fewer female board members overall in the post-2009 period, compared to larger firms.

There could be several economic mechanisms at work that result in (a) first-time female director appointments being less likely in larger firms than first-time male appointments, or (b) seasoned female directors being more likely to get additional seats than seasoned male directors, and at larger firms. However, as we argue, all of these reflect the fact that it is more difficult to identify a first-time female director than a first-time male director, i.e., the presence of a supply constraint. The first of these mechanisms is that additional board seats matter more for women's careers, especially when these are at larger firms; and therefore, it is easier for the larger firms to recruit seasoned women directors. This argument presupposes the presence of search costs in identifying first-time candidates: a first board seat presumably matters as much—if not even more—for a first-time female candidate as a new seat does for a seasoned female candidate. If a large enough pool of qualified new female candidates were available to the nomination committee, any advantage of being able to offer a position that is more highly valued by a female would not be reflected in more seasoned females being appointed relative to rookies. Another possible reason why seasoned women directors might be more likely to be appointed at larger firms is related to a "selection" argument (Adams and Funk, 2012). Given that it is harder for women to reach the top of the corporate hierarchy and attract the attention of nomination committees, women directors would be of higher ability than comparably placed male directors. However, this argument also presupposes a limited pool of available female candidates. If women face bigger hurdles in rising to positions that bring them to the attention of nomination committees, the available pool of women is more limited than that for men, and search costs have to be incurred to find new qualified women directors.

It is important to emphasize that our results do not reject any of these explanations – indeed, these mechanisms are likely to be important for our understanding of how the market for directors responds to greater awareness or pressure for diversity. Our results suggest that it can be costly even for the larger firms to find first-time female directors. Possibly, the larger firms have more at stake in making sure that board members have the right expertise and therefore may have to search or screen more intensively when the pool is limited. However, public pressure for gender diversity could have set in motion a "market mechanism" whereby the smaller firms are at a disadvantage, especially where seasoned female talent is concerned. The costs that the larger firms are able to avoid are thus pushed to the smaller firms. Our

regression results show that in the post-2009 period, below-median firms were more likely to appoint first-time female directors than male directors, which suggests that they were responding to public pressure but having to cope with the higher-cost process of searching for first-time female candidates rather than seasoned ones. The necessity of having to incur large search costs is thus one possible explanation of the fact that the below-median firms end up appointing 35 percent fewer females (25 percent fewer female rookies) than the above-median group. This explanation is consistent with the event-study results in Greene et al. (2020) and Hwang et al. (2019) that the market reaction to the passage of California's Senate Bill 826 was more negative for smaller firms headquartered in California. Equally noteworthy, while the opportunity of sitting on boards of larger firms is valuable experience for women who obtain additional appointments, this comes at a cost of fewer opportunities for new female candidates. Gender quotas will no doubt further intensify the externality that the ability of larger firms to recruit seasoned candidates imposes on the smaller firms.

Since supply and demand side effects are often difficult to disentangle, it is worthwhile to ask whether the much lower level of female hiring by the smaller firms in the post-2009 period compared to the larger firms reflects the possibility that they are subject to less public pressure for diversity, rather than search frictions for new directors. We believe it is unlikely that lower public pressure alone could explain the lower level of female hiring by these firms. First, as we discuss later, the number of female directors appointed by the below-median firms increases 230 percent from the pre-2009 period to the post-2009 period, compared to a 200 percent increase for above-median firms (and 82 percent increase for male plus female appointments). Thus, it seems that the below median firms, starting from a smaller base, were catching up with the above-median counterparts. Second, when public pressure for diversity is mounting, low level of female representation would likely attract attention from activist funds and proxy advisors; thus, if search costs were low, these firm would already be recruiting females to avoid being targeted in the future. The presence of search frictions is also consistent with at least two event-study results (Greene et al., 2020; Hwang et al., 2019) that find that the market reaction to the passage of California's Senate Bill 826 was more negative for smaller firms headquartered in California. Our study adds to the findings in these papers by highlighting the role the market for seasoned directors plays by shifting the burden of searching for new directors to the smaller firms. Our results suggest that mandating larger firms to increase the fraction of female directors who do not hold multiple seats could be necessary to sustain the diversity drive.

Our paper is closely related to two recent papers. Giannetti and Wang (2020) show that greater attention to gender equality leads to a higher ratio of female-to-male directors for quoted U.S. firms. Their measure of gender attention (the Google Search Volume Index (SVI) for the term "gender equality") increases sharply post-2012, consistent with the observation that the drive for board gender diversity

gathered momentum in the second-half of our sample period. Giannetti and Wang (2020) show that, after controlling for supply constraints, the gender ratio increases more for firms with ex ante cultural traits that are associated with more female-friendliness when the SVI is higher. In some respects, however, Giannetti and Wang's (2020) findings are seemingly at odds with our findings. For example, the authors find that, after controlling for firm×year fixed effects, (a) first-time female directors are more likely to be appointed than first-time male directors, and this effect is stronger when the SVI is higher, and (b) newly appointed female directors hold more seats on other boards, but this effect is weakened when the SVI is higher.[6] In contrast, as discussed above, we find that female rookies are less likely to find board seats than male rookies for the entire sample period, and that women are much more likely to be appointed to more than one seat in the post-2009 period. We believe the main difference between these results is that the inclusion of firm×year fixed effects essentially means that Giannetti and Wang's (2020) results derive from firm-years in which the same firm appoints at least one female and one male director, whereas ours apply to all firm-years. In some other respects as well, our narrative is somewhat different from theirs. Giannetti and Wang (2020) find that more attention to gender is associated with the appointment of female directors outside the industry, and with fewer connections to members of the appointing company's board. They interpret these results as evidence that more attention to gender is causing nomination committees to search more widely for new female directors. However, these results could also indicate lack of connections of boards to potential female directors, and higher marginal search costs as firms explore different channels to identify qualified women, which is consistent with our finding that the ratio of female-to-male appointments was as low as 18 percent for the below-median firms in the post-2009 period.

Our paper is also related to Ferreira, Ginglinger, Laguna and Skalli (2020). This paper examines the effect of France's mandatory board gender balance law, introduced in 2011, and finds that departure rates of female directors decreased and arrival rates increased subsequent to the passage of the law. As the authors note, the fact that departure rates for incumbent female board members decreased suggests the presence of search costs. However, an important finding is that boards appeared to have changed their search technologies drastically to meet the quota requirements, since not many female candidates could be recruited via traditional male-dominated network-based channels. Further, relative to pre-quota appointments, gender gaps along several dimensions, such as age, experience and independence, narrowed.

Our paper contributes to the literature on board gender diversity (Adams and Ferreira, 2009; Adams and Funk, 2012; Kim and Starks, 2016), and to a related literature that examines the effect of board gender quotas (Matsa and Miller, 2013; Ahern and Dittmar, 2012; Eckbo, Nygaard and Thorburn (2016); Bertrand,

[6] See Table 5 in Giannetti and Wang (2020).

Black, Lleras-Muney, and Jensen, 2019; Von Meyerinck, Niessen-Ruenzi, Schmid, and Solomon, 2019; Ferreria et al. 2020; Greene et al. 2020). Although we do not directly examine quotas, we contribute to the policy debates associated with the possible adoption of California-type quota policies more widely in the U.S. Our results point to the presence of supply constraints, and suggest that the costs of recruiting new female members is likely to be disproportionately borne by the smaller firms, who are least able to afford them. One major policy implication that emerges is that as public pressure for gender diversity continues to intensify, mandates on the proportion of female board members may be less important than a mandate on larger firms to recruit more *new* female board members.

Our study builds on the findings of Hillman et al. (2002), who show that female directors are more likely to have multiple appointments at a faster rate than comparable male directors, and on those of Farrell and Hersch, (2005), who show that a restricted supply lead to better opportunities for qualified female directors. Our contribution to this literature is to show that an increase in public pressure for gender equality in recent years has unleashed a market mechanism whereby larger firms are able to attract seasoned female board members more easily than the smaller firms. Not only does this push the costs of searching for first-time female members to the smaller firms, it also imposes another type of well-recognized negative externality. Serving of multiple boards presents effort and attention allocation challenges for board members. With the larger firms offering new seats to seasoned female directors, "busyness" may cause them to allocate effort away from their tasks in the smaller firms. Some may give up their positions in the smaller firms, exacerbating the search problems for new directors for these firms.

The rest of the paper is organized as follows. Section 2 discusses our data sources. Section 3 presents some descriptive analysis. Section 4 develops our hypotheses and presents empirical tests. Finally, section 5 concludes by discussing the major policy implications of our findings.

2 Data

We now describe our sample and discuss some director characteristics based on gender and whether the director holds a single board seat or two board seats. This is the sample most relevant for our subsequent empirical analysis.

2.1 Sample

Our sample selection starting point is BoardEx coverage of North American public firms (classified as "quoted" by BoardEx) over the sample period 2000 to 2019. We restrict our analysis to non-executive

directors (also classified as SD directors) and to individuals with both first and second directorships (if one exists) within BoardEx.

Each individual's history is back-filled by BoardEx and kept up to date for as long as the person continues in a firm that is part of the BoardEx main coverage. We extract information about current and historic board roles of individual directors from the Director Profile – Employment files. Individual directors' age and gender are extracted from the Director Profile – Characteristics and Board Summary files.

We merge BoardEx data with Compustat using CIK, CUSIP and company name (sequentially) and retain only boards that are matched in BoardEx and Compustat. We only keep cases in which both the firms for the first and the second appointments of the individual directors can be clearly identified in Compustat.

Firms with insufficient information to calculate total assets have been excluded from the sample, as have individuals who are appointed to the same board where they previously served as a CEO. We also exclude cases in which the director is appointed to the board as an interim position and later promoted to CEO at the same firm. Appendix A0 describes the definition of the main variables used. The result is an initial universe of 30,937 directors with at least one board seat across 8,564 firms during the 20-year sample period.

2.2 Descriptive Statistics

Table 1 reports summary statistics for the main characteristics of first-time directors in our sample. Female directors represent 16% of the total and the average age at the first appointment is roughly 55 years old. Almost 33.4 per cent of first-time directors have an MBA degree, while less than 9 per cent have a PhD degree. Between 54 per cent and 65 per cent of the directors start with a position on one of the three main committees of the board (Compensation, Auditing, and Nomination committees). The average board on which the first directorial appointment takes place has roughly nine members and the mean total assets of the average firm is 7.6 billion USD. This is consistent with a sample selection that consists of rather large quoted firms included in the Russell 3000 index coming from BoardEx database coverage.

There are significant differences by gender in the directors' main characteristics, as reported in Panel B of Table 1. Using univariate tests of difference of means, we find that first-time female directors tend to be on average 2 years younger than first-time male directors (joining their first board at 53 years old, compared to 55 years for male directors), and start their directorial careers at significantly larger boards and firms. While women joining a board for the first time are just as likely to have an MBA, they are more likely to have a PhD. In terms of experience, at the time of the first appointment, 15% of first-time female directors have CEO experience whereas 19% of the first-time male directors have some CEO experience (in either quoted,

private of other types of firms, e.g. non-profit firms). Male directors are more likely to be appointed chairpersons of the board and committees during their term at the first appointment.

Turning to the sample of second appointments to a board seat, 7102 of the directors find a second appointment in our sample period. 27.38% (22.10%) of the female (male) directors find a second appointment. While we do not report these statistics in a table, the differences in educational outcomes are similar for the subsample of directors who find a second non-executive appointment. The firms in which these directors are appointed are generally large with average total assets of US$ 12,734 million and average board size of about nine directors. Directors, both female and male, who get a second appointment are more experienced in committee roles and there is no difference between males and females for audit and compensation committee membership. However, the gender differences in committee chair experience are similar to the sample of all directors. The average time to the second non-executive appointment is 1410 days for female directors and 1385 days for male directors.

[Insert Table 1 near here]

3. Descriptive Analysis of Director Appointments

We next present descriptive analysis on the gender composition of new appointments to board positions, with a particular focus on how the appointment of seasoned versus first-time directors varied for male and female director appointments, and over the first half (pre-2009) and second half (post-2009, with the year 2009 included) of our sample period. We argue that the collective descriptive evidence is most consistent with an increase in the demand for female directors in the second half of our sample period. However, we show that the balance between seasoned and first-time director appointments has also shifted between genders in a way that suggests that supply constraints in finding first-time directors is playing an important role, especially for the smaller firms. Following the descriptive analysis, we present regression-based analysis to further explore the nature of director appointments.

Figure 1 shows the time trend for the fraction of individuals holding board positions who are female (dashed lines) and the fraction of board members who are female (dotted lines) for both firms in the S&P 500 and the full sample. For both sets of firms, both measures increase over time, but the rate of growth more than doubles in the second half of our sample period. This is consistent with more attention being paid to gender equality issues over time (Giannetti and Wang (2020), and more public pressure for board gender diversity in the second-half of our sample period. In our subsequent discussion, we refer to this latter period

as the post-2009 period, but do not attach any particular importance to the cut-off year 2009. It is chosen as the demarcation year because it is the mid-point of our sample period.[7]

The drive for boardroom diversity created a demand for female directors. Absent supply constraints, i.e., if first-time female directors could be recruited to boards at a cost comparable to that for first-time male directors, we would expect the proportion of seasoned-to-new directors to be comparable for female and male directors. However, if these costs are higher for females, then we would expect the seasoned-to-new ratio to be higher for females than for males in the post-2009 period.

In Figure 2, we show time trends in board "busyness", for all sample firms, those in the S&P500, and those outside the S&P500. Following standard practice, a "busy" director is defined as one holding three or more board seats. A large literature documents that board members' monitoring functions are stretched when directors become busy, with adverse consequences for firm performance.[8] More importantly, busyness is increasingly frowned upon by proxy advisors and institutional shareholders. Consistent with this, we see that the fraction of busy directors, shown by the dashed lines, has dropped in recent years, especially for the S&P500 firms. In contrast, the fraction of busy female directors, shown by the spread-out dashed lines, has increased sharply for all three categories of firms, particularly since the beginning of the second-half of our sample period. The solid line, showing the fraction of females among busy directors, also starts to trend upwards around that time. Overall, Figure 2 shows some initial evidence suggesting that even for the largest firms, the search costs for first-time female directors is considerable. Some firms choose to appoint female directors who are already serving on multiple boards, possibly because the cost of finding comparable quality of first-time female directors is high.

In Table 2A, we take a more detailed look at how the number of seats occupied by male and female board members has changed over time. For the entire sample period, 66.4% of male directors hold just one

[7] While the acceleration in the post-2009 period likely reflects a combination of developments in the rest of the world starting with Norway in 2003 and growing public pressure for diversity in the U.S., there were several noteworthy developments near the beginning of this period. In February 2008, the California State Controller recommended that CalPERS and CalSTRS consider amending their corporate governance policies to address diversity when the funds nominate directors, which was immediately adopted. Another seemingly important development is the SEC's 2009 Proxy Disclosure Enhancements Rule (effective as of February 28, 2010 for publicly traded companies with fiscal years ending on or after December 20, 2009), which required publicly traded companies to provide additional disclosure on whether and how the board nominating committee considers diversity in identifying director nominees, and how diversity policy is implemented, in the company's Definitive Proxy Statement (form DEF 14A). In 2012, U.S. Securities and Exchange Commissioner Elisse B. Walter, speaking at the Third SAIS Global Conference on Women in the Boardroom, argued in favor of action at the shareholder level, and cited evidence that the SEC's rule was leading to more detailed discussions regarding the composition of boards, and as a result, investors are more engaged in the issue. As discussed above, shareholder pressure then gradually built up throughout the decade.

[8] Several studies have found that busy directors attend fewer board meetings, have fewer committee appointments, are less likely to be Chair of the board committees (Masulis and Zhang, 2019; Hauser, 2018), and are less effective as advisors and monitors (Shivdasani and Yermack, 1999; Core et al. 1999). Consequently, firms with busy directors have lower profitability, weaker merger and acquisition returns, and lower accounting quality (Fich and Shivdasani, 2006; Ahn Jiraporn and Kim, 2010; Falato, Kadyrzhanova and Lel, 2014, Stein and Zhao, 2019). Director busyness is more detrimental to the performance of large firms (Chen and Guay, 2019; Field, Lowry, and Mkrtchyan, 2013; Cashman, Gillan, and Jun 2012).

seat per year, on average; 19.4 per cent hold 2 seats and 8.3 per cent hold 3 seats. The corresponding numbers for female directors are 57.7 per cent, 22.3 per cent, and 11.2 per cent. Thus, on average, a higher percentage of female directors hold more than one seat in any year. The tables in the lower panels in Table 2A show that the number of female directors holdings multiple seats has increased substantially post-2009, while that for male directors has decreased. The tables show the 3-year average number of individuals holding multiple seats, centred around the years 2009 and 2018, respectively. The percentage of male directors holding 2, 3 and 4 seats decreased by 13 per cent, 17 per cent and 15 per cent; however, the corresponding numbers for female directors increased by 64 per cent, 96 per cent and 57 per cent, respectively.

[Insert Table 2A near here]

The above results show that especially since the second-half of our sample period, female board members are increasingly taking up multiple board positions while the trend is opposite of male directors. We next show that, while the proportion of seasoned to first-time appointments in the post-2009 period is higher for females than for males as a result, this difference in primarily driven by the larger firms.

In Table 2B, we summarize the total number of new appointments, by gender, and based on whether the appointment was of a seasoned director already holding at least one seat, or of a first-time director. These numbers are shown separately for the pre-2009 and post-2009 period. The ratio of female to male appointments doubled in the post-2009 period compared to the preceding period for the overall sample, and for the samples of firms that are above-median and below-median in size (book value of assets). However, the proportion is lower for the below median firms in both periods, and the gap widens considerably in the post-2009 period (17 per cent for above-median firms versus 10 per cent for below-median firms pre-2009, compared with 33 per cent versus 19 per cent, respectively, in the post-2009 period).

[Insert Table 2B near here]

Importantly, the above-median firms rely more on appointing seasoned female directors than on appointing first-time female directors in the post-2009 period than the below-median firms. In Table 2B, the seasoned-to-rookie ratio of new female appointments is 65 per cent for above-median firms, but 46 per cent for below-median firms, in the post-2009 period. For the above-median firms in the post-2009 period, the seasoned-to-rookie ratio for female director appointments was higher by 9 percentage points than the corresponding ratio for male director appointments; for the below-median firms, this gap was 2 percentage points. These statistics suggest that the larger firms were able to compete more effectively for the available pool of seasoned directors (especially, seasoned female directors), thereby avoiding the potential search costs of finding first-time (female) directors.

The search costs for new directors had to be borne by the smaller firms. The fact that the gap between the ratio of female-to-male appointments for below-median firms and above-median firms further widened during the post-2009 period could reflect these costs. The total number of appointments in each period for the above and below-median groups in each period, as expected, was almost identical.[9] However, the number of female appointments in the latter period for the below-median firms was only 2199, which was 35 percent lower than the corresponding number (3413) for the above-median firms. The difference was more in percentage terms (48 per cent) for seasoned female appointments than for rookie female appointments (27 per cent), suggesting that failure to compete for seasoned female candidates was forcing the smaller firms to incur the search costs of locating first-time candidates, but such costs were at the same time limiting their ability to respond to the public pressure for more female representation in their boards. Interestingly, the below-median firms actually hired 20 per cent more male rookie directors than the above-median firms over the same period. This speaks further not only to the ability of the larger firms to attract seasoned candidates at a lower cost, but also to the higher cost of finding first-time female candidates relative to first-time male candidates for the smaller firms.

Finally, it is worth noticing that in Table 2B, the ratio of seasoned-to-rookie appointments for both male and female directors was substantially smaller in the pre-2009 period than in the post-2009 period, for the overall sample as well as the size-based subsamples. In the post-2009 period, as new firms entered the economy, there were 27,769 appointments compared to 15,175 for the earlier subperiod. If first-time directors (of either gender) could be recruited at a cost comparable to seasoned directors, one would not expect the balance to shift towards the latter type of directors in the post-2009 period.

4. Hypotheses and Tests

We now present a conceptual framework for our hypotheses and then report our empirical results.

4.1 Conceptual Framework and Hypotheses

We develop our hypotheses on how supply constraints and public pressure for more gender balance impact the market for seasoned and first-time directors from a simple conceptual framework. To begin with, we assume that a particular board has decided whether it wants to appoint a female or a male director to a board position. The board would follow this gender-based appointment policy as long as the cost of following

[9] The total number of appointments for the above-median and below-median groups in the pre-2009 period were 7585 (=1128+6457) and 7590 (=667+6923), respectively; the corresponding numbers for the post-2009 period were 13878 (=3413+10,465) and 13891 (=2199+11,692), respectively.

such a policy does not become prohibitively high.[10] The intensity of public pressure will determine the fraction of boards that would like to appoint a female board member.

The board can recruit from two pools – the pool of seasoned directors, or the pool of first-time directors. We assume that the board already has identified the "best" seasoned candidate that would be willing to join the board, and this candidate could be either a female or a male.

The board can incur search cost and engage in a reservation search for a first-time candidate. The intensity of that search depends on the search cost. Throughout, we interpret a "supply constraint" for first-time female directors to mean that it is more costly to search for a first-time female candidate than a first-time male candidate. It is clear then that the presence of a supply constraint implies that a firm that wishes to appoint a woman will be more likely to appoint a seasoned director than a first-time one, compared to a firm that wishes to appoint a man. Let ρ_1 denote the likelihood that the seasoned female candidate will be appointed conditional on a firm appointing a woman, and ρ_2 denote the likelihood that the seasoned male candidate will be appointed, conditional on an otherwise identical firm appointing a man. Then we have $\rho_1 > \rho_2$. The empirical implication is that if a firm appoints a new director, then that director is more likely to be a seasoned director if the director is female.

Let μ_g denote, for g=f (female) and m (male), the ratio of the number of firms that want to appoint a female (male) director to the number of seasoned female (male) directors seeking second appointments. The probability of a seasoned female finding a second appointment is $\text{Min}(\mu_f \times \rho_1, \rho_1)$ while that for a seasoned male is $\text{Min}(\mu_m \times \rho_2, \rho_2)$. In general, depending on μ_f and μ_m, females could be either more or less likely to obtain a second appointment compared with an otherwise identical male.[11] However, if μ_f increases relative to μ_m, then a seasoned female director will be more likely to obtain a second board seat than a comparable seasoned male director. Smaller firms appoint fewer female directors, hence for seasoned directors in firms that are below-median in size, μ_f is likely to be higher relative to μ_m. Thus, one empirical implication is that a seasoned female director will be more likely to obtain a second board seat than a seasoned male director at least in firms that are below-median in size. Moreover, to the extent that more public pressure for gender diversity also increases μ_f relative to μ_m, we expect that seasoned female directors will be more likely to obtain second seats than comparable males when public pressure is high.

Next, consider the situation in which not all firms are identical, and assume that a larger firm can outbid a smaller firm when they both compete for the same seasoned director (of either gender). Smaller

[10] It is easier to discuss the effect of public pressure on gender diversity if we assume a gender-based appointment policy. However, our conclusions do not change if we compare a strict merit-based policy with no gender preference to one where the policy becomes gender-based when there is public pressure.

[11] However, if $\mu_f \geq 1$, a seasoned female director will be more likely to obtain a second board seat than a comparable male director.

firms wanting to appoint a seasoned director to a board position would no longer be able to do so and would appoint more first-time directors. Given that it is costlier to search for first-time female directors, larger firms wanting to appoint females would compete more aggressively for seasoned female candidates than they would for seasoned male candidates. Thus, seasoned female candidates would be more likely to get second appointments at larger firms than comparable male candidates. This effect will be stronger if there is more public pressure for female director appointments.

When public pressure for female director appointments intensifies and there is more intense competition from the larger firms for seasoned female directors, some of the smaller firms will end up searching for first-time females and appointing them at greater cost. Others may decide that the cost is too high, and deviate from their plan to appoint a female. These firms would then appoint either a seasoned male or a first-time male director, depending on the search outcome. In other words, the smaller firms will be less likely to appoint a female director, and a female director appointment will be more likely to be a first-time appointment than if the appointment were a male director appointment.

We now summarize the main implications of the above discussion:

Hypothesis 1. (a) A new director appointment is more likely to be a seasoned director appointment if the director is female. (b) For smaller firms, more public pressure for gender diversity will lower the likelihood that the director appointed is a seasoned director if the director is female (compared to if the director is male).

Hypothesis 2. (a) Seasoned female directors will be more likely to obtain a second board seat relative to comparable seasoned male directors when (i) public pressure for gender diversity is high, and (ii) their first appointments are in firms that are below-median in size. (b) Conditional on obtaining a second appointment, female directors holding a single appointment will obtain that appointment at a larger firm than comparable males. Moreover, this gender gap will be more pronounced when there is more public pressure for gender diversity.

Hypothesis 3. With more public pressure for gender diversity, smaller firms will be less likely to appoint females than larger firms.

Before discussing our empirical results, we note some caveats for the interpretation of our results.

Search costs for first-time females are expected to be higher than for males because fewer women are visible to the nomination committees. One reason for this is that women face bigger hurdles in rising to the top of the corporate hierarchy. Those who attain these positions are immediately recruited to board

positions at low cost. Because they rise to these positions despite facing bigger hurdles, they are also likely to be of very high ability. If the pool of seasoned directors comprises of a sufficiently high proportion of these women, on average, the average "quality" of female directors in the pool of seasoned directors should be higher than that of male directors. It is possible that these attributes are not properly recognized at first appointment and women are underplaced (e.g., sit on boards of smaller firms than they would if the attributes were properly recognized) – it is only when their abilities get noticed by other boards that they get appointments that reflect their abilities. If this were the case, then even after controlling for attributes of the director and that of the firm where they currently hold a board position, women could outperform men in terms of their second appointment. We do not rule out such an argument; however, if this selection argument explains some of our findings, it still validates the idea that the search costs for first-time females are higher than for males, and likely to manifest as a supply constraint if firms face gender quota mandates.

Second, the formulation of our hypotheses does not consider possible heterogeneity of public pressure for large versus small firms, or the heterogeneity of search costs. For example, it is likely that smaller firms face less public pressure to appoint women, and this could also deliver Hypothesis 3. However, this demand heterogeneity without the other ingredients (in particular, the assumption that the search cost for first-time females is higher than that for first-time males) would not lead to the other hypotheses. Moreover, turning to the present U.S. context, it seems unlikely that public pressure, even if currently less important for smaller firms, would remain so if these firms are falling behind in achieving board gender diversity. The California gender quota law did not spare the smaller firms, and these firms experienced the most negative price reactions to the passage of the law. Thus, when public sentiment on diversity is rapidly changing, even smaller firms would anticipate pressure.

4.2. Regression Results

Next, we present regression results on director appointments. In these regressions, the three most important explanatory variables of interest are an indicator variable for the board member's gender (*Female director*=1if the board member is female, *Female director*=0 if male); an indicator variable for the time period (*Period 2009-2019*=1 if the appointment occurs in the post-2009 period, *Period 2009-2019*=0 otherwise); and the interaction of these two indicator variables (in some specifications). We control for individual director characteristics, such as age and age squared, educational qualifications, and an indicator variable whether or not the director has previous CEO experience. We also control for characteristics of the firm where the appointment is obtained, such as size (book value of assets), profitability (return on assets), and the number of directors on the board (board size). When we examine second appointments, we have a

larger set of individual characteristics, such as the time since the first appointment, membership of committees, and characteristics of the firm of first directorial appointment.

4.2.1 First-time versus Seasoned Director Appointments

In Table 3, we address Hypothesis 1, and examine how the likelihood of appointing a first-time director as opposed to a seasoned one differs for female and male appointments depending on (a) time period and (b) firm size. Since we use interaction terms, we present results for a linear probability model. The dependent variable is an indicator variable that takes the value of 1 if the appointed director is a first-time director, and zero if the director is seasoned. Each column represents a different sample of firms where the appointment is restricted to occur. The first column presents results for the entire sample, i.e., no restrictions. The second column restricts the appointment to occur in below-median firms, and the third column to above-median firms. The fourth and fifth columns restrict the appointments to firms in the top size quartile, while the last to firms in the S&P500 only. The regressions include year and 2-digit industry fixed effects.

We focus on the coefficients of the *Female director* dummy and its interaction with the *Period 2009-2019* dummy. The coefficient of the *Female director* dummy is negative and significant in all the columns, which implies that in the pre-2009 period, an appointment was less likely to be a first-time appointment if it was a female appointment than a male appointment for all the categories of firms considered. However, this was especially the case in the larger firms. For example, compared to a male appointment, a female appointment was 10 percent less likely to be a first-time appointment. These results are consistent with Hypothesis 1(a). The hypothesis could not say anything specifically about whether the effect is expected to be stronger for larger firms, as we find. However, this is likely for moderate degrees of public pressure to appoint female directors. First, as argued in section 4.1, larger firms have an advantage over smaller firms in attracting seasoned directors, and they will compete more aggressively if they want to appoint a woman (given the higher cost of recruiting a first-time female director). However, if public pressure is high enough to appoint female directors, the pool of seasoned females may not be sufficient, and more female rookies may have to be recruited. In this case, the gender gap on the likelihood of a first-time versus a seasoned appointment will decrease even for larger firms.

[Insert Table 3 near here]

This is what we find in Table 3. With more public pressure for gender balance, the gender gap on the likelihood of a first-time versus seasoned appointment was lower, but still significant, for the larger firms. However, there was no gender gap for the overall sample, and the gender gap was reversed for the below-median firms. In other words, consistent with Hypothesis 1(b), a new appointment was more likely

to be a first-time appointment if it were a female appointment rather than a male appointment at the smaller firms, even though these firms are expected to have more difficulty in locating new female members. As discussed in section 4.1, one reason why this happened is that these firms were unable to compete for seasoned board members with the larger firms. If it is less costly (or less risky) to recruit or locate seasoned candidates than first-time ones, then both large and small firms would prefer the former; however, larger firms offer more in terms of connectivity, reputation, visibility etc. and can outbid the smaller firms. In the next section, we provide evidence consistent with this argument.

Among the other control variables that are significant, we find that directors who are older at appointment are more likely to be seasoned; while M.B.A. degree holders and directors with more qualifications are more likely to be seasoned, those with Ph.D. degrees are more likely to be first-time. More importantly for our purposes, larger firms are more likely to appoint seasoned directors, within each subgroup of firms.

4.2.2 The Likelihood of a Second Appointment

We next examine whether the implications of Hypothesis 2(a) hold in the data. We focus on second seats, since (as can be checked from Table 2A), about 60% of directors holding more than one seat hold exactly two seats. Our interest is to see whether women directors holding exactly one seat are more likely to obtain a second seat than male directors after controlling for observable director attributes and characteristics of the firm of first appointment, and how this likelihood changes depending on the time period of appointment.

Table 4 reports the results from a Cox proportional hazard model. Failure occurs if a director obtains a second appointment. The main explanatory variable of interest is the *Female director* dummy. We control for the director's age, age square, educational qualifications, and whether the director has the experience of serving on particular committees at the board of first appointment. We also control for characteristics of the firm of first appointment. Here, we include *cohort* fixed effects, based on the year of first director appointment, and 2-digit SIC industry fixed effects.

[Insert Table 4 near here]

For the overall sample (Columns (1) and (2)), we see that the "hazard" of finding a second appointment is about 28 percent more for a female director than a comparable male director. There is a significant difference in this hazard ratio between the two subperiods. For the pre-2009 period, the hazard for a female director is 17 percent higher than that for a male director; however, this gender gap is 38 percent in the post-2009 period. Hypothesis 2(a) does not have any specific predictions about either the overall sample nor the subperiods as to whether the gender gap in the likelihood of a second appointment will favour

women. However, as we observe, in both sub-periods, the gender gap favors women, which is consistent with the ratio of the number of appointing designated for female candidates to the available number of seasoned female candidates seeking a second appointment being not too much lower than the corresponding ratio for males. The result that the likelihood of a second seat for a female is higher in the post-2009 period than the pre-2009 period supports Hypothesis 2(a)-(i).

Among other significant control variables, director age increases the likelihood of a second appointment, but at a decreasing rate. An MBA degree is associated with a 10 percent higher likelihood of a second appointment. An additional qualification increases the likelihood by 3 percent. Previous CEO experience increases the likelihood of a second appointment, but only in the earlier period. Committee membership has a significant positive effect on the likelihood of a second appointment; however, committee chairs are less likely to find a second appointment, which could be related to director workload or business. Compensation and audit committee members are in high demand in the director labor market.

In Table 5, we examine separately the subsamples of firms of first-appointment in the below-median size group and above-median size groups. Consistent with Hypothesis 2(a)-(ii), the gender gap favouring women in the likelihood of a second appointment is significantly positive for the below median firms, and higher for the entire sample period as well as each sub-period than the above-median firms. The hazard ratio for the entire sample period, the pre-2009 period and the post-2009 period associated with the *Female director* dummy is 1.396, 1.310 and 1.473, respectively, for the below-median group; the corresponding numbers for the above-median group are 1.236, 1.132, and 1.334. It is interesting to note that the gender gap for the above-median group in the pre-2009 period (when public pressure was lower) is quite small and marginally significant at the 10% level, which is exactly what we would expect based on our arguments in section 4.1. In contrast, the gender gap for the below-median group was still quite high, and became even higher when public pressure for gender balance intensified.

[Insert Table 5 near here]

4.2.3 Second Appointment Destination Firms

We next examine Hypothesis 2(b). This hypothesis predicts that women will get better second seat positions (as measured by firm size, which is typically associated with more connections, reputation and visibility) than comparable males, and this gender gap will widen as there is more public pressure for gender balance. In Table 6, we present results for three models. In the OLS (Ordinary Least Squares) models of columns (1), (4) and (7), the dependent variable is the size of the firm (log of total assets) where the second directorial appointment takes place. In the LPM (Linear Probability Model) and Probit models in columns (2), (5) and

(7) and columns (3), (6) and (9), respectively, the dependent variable is an indicator variable equal to 1 if the size of the firm of the second seat is above the median, and is zero otherwise.

[Insert Table 6 near here]

Consistent with Hypothesis 2(b), after controlling for the size of the firm of first appointment, profitability, and its board size, plus available individual characteristics including the director's age and age squared, qualifications, and the time that elapses since the first appointment, we find that women are appointed at larger firms (more likely to be appointed at above-median firms). Moreover, this gender gap favouring women is larger in the post-2009 period when public pressure is higher. For example comparing the LPM estimates associated with the *Female director* dummy in columns (5) and (8), a female director is more likely to get an appointment in the above-median group than a comparable male director by 4.3 percentage points; but this gap increases to 11.6 percentage points in the post-2009 period.

Among the remaining control variables, the firm size or board size of the firm of first appointment has a positive effect on the size of the firm of second appointment.[12] This is expected because directors from larger firms are more in the radar of even larger firms.[13] Director age has a positive effect but this effect diminishes with director age. The duration since the first appointment also has a significant positive effect in the overall sample and the first sub-period, which could reflect the possibility that directors who wait longer to accept another offer may eventually get a better offer. Somewhat surprisingly, most of the experience or qualification variables that were significant in Table 4 are insignificant. This suggests that qualifications of board committee experience may enhance the appointability of a director to a second seat, but not particularly important for them in establishing connections with larger firms.

4.2.4 Female Appointments Overall

While the results in Table 3 showed that smaller (below-median in size) firms were more likely to appoint a first-time director than a seasoned director if the director was female rather than a male in the post-2009 period. This appears counter-intuitive because the search costs for new female directors should be more difficult for the smaller firms to bear. As argued, the reason for this is that when there is public pressure to appoint female directors, the smaller firms cannot compete with the larger firms for seasoned female directors as all firms try to avoid the search costs for first-time female directors. However, the higher cost of recruiting first-time female directors is likely to constrain the below-median firms in the female hiring,

[12] For the LPM and Probit models, we control for an indicator variable that reflects whether the firm of first appointment is an above-median firm at the time of first appointment.
[13] In unreported results, we find that women are also more likely to move to a firm larger than their current firm.

with the result that they would appoint even fewer females compared to the above-median firms when public pressure for gender diversity builds up (Hypothesis 3).

This is exactly what we find in Table 7. The dependent variable is an indicator variable that takes a value of 1 if a female director is hired, and zero if a male director is hired. The LPM estimates indicate that in the pre-2009 period, above-median firms are 3.7% more likely to appoint a female than a below median firm. This gap increases to 6.4% in the post-2009 period. If the director is brand new, then the appointee is more likely to be male, consistent with the idea that is it costlier to recruit a first-time female director. If the appointed director is older, has more qualifications, and has a Ph.D. degree, then the director is more likely to be female. On the other hand, if the appointed director has an M.B.A. degree or previous CEO experience, then the director is more likely to be male.

[Insert Table 7 near here]

We note that there is potentially an alternative explanation for the result that smaller firms are even less likely to appoint females than larger firms when overall public pressure for gender diversity is higher – namely, that the pressure or focus is disproportionately on the larger firms. However, this appears unlikely because while the below median firms appointed 35 percent fewer females in the post-2009 period than their above-median counterparts, as seen from Table 2B, the change from the pre-2009 period total to the post-2009 total was 200 percent for above median firms and 230 percent for below-median firms (compared to a change of 82 percent in total appointments of both genders for both groups for firms). Thus, to the extent that increased public pressure was driving the higher rate of female appointments in the latter period compared to total appointments, there is evidence that both groups were responding to pressure.

4.2.5 Other Evidence

Finally, we provide three types of evidence broadly consistent with our main argument that the pressure for board gender diversity in the second-half of our sample period has made seasoned female directors comparatively more busy than seasoned male directors and presented challenges for the smaller firms. In Table 8, we examine whether seasoned female directors were less likely to give up their initial seat after accepting a second seat than seasoned male directors. We present results for a Cox proportional hazard model where failure occurs when a director gives up the initial seat. We only present the results when the samples are partitioned based on whether the firm size of first appointment is above or below median, for each of the two subperiods.[14]

[14] There are no significant differences between male and female directors for the overall sample in either sub-period. These results are not reported in a table.

For the above-median sample, women are significantly less likely to drop the first seat in both sub-periods, and the gender gap is larger in the latter subperiod. For the below median firms, the gender gap is in the opposite direction, although not significant at conventional levels. The evidence is consistent with the attractiveness of positions at larger firms for women, and points to the difficulties the smaller firms face in retaining female directors in competition with the larger firms.

In Table 9, we examine the opposite of what we do in Table 4, namely, here we examine the likelihood that a director with a single appointment retires. Retirement is defined to occur if the board member with an initial board seat no longer shows up in the data. The regression model is the Cox proportional hazard model. Failure is defined to occur if a director with a single board seat retires. We find that for both sample periods, women are less likely to retire than men (Table 9A). However, while for the below-median firms, women were less likely to retire in the post-2009 period than the pre-2009 period, for the above-median firms, the opposite was the case. This suggests that inability to attract new seasoned or first-time directors were causing smaller firms to extent the tenure of the female directors on their boards in the latter period.

Finally, in Table 10, we examine whether a first-time director holds the position of a committee member (audit, compensation or nominating committee), committee chair, or a board chair at any point. We find that in above-median firms and in the second-half of our sample period, first-time female directors are significantly more likely to (a) hold committee positions, but (b) hold significantly less like to be committee chairs, than first-time male directors. The first result suggest that the larger firms are also cream-skimming in the market for first-time directors, but the costs are likely high, which is why they only engage in first-time hiring when the pressure to increase diversity is high, and do not appoint enough (Table 3) because of that. The second result may simply reflect that in the typical board or committee, there are more males than females, so women are less likely to head the chair the committee.

5. Policy Implications and Conclusions

As many states in the U.S. appear poised to pursue legislation mandating gender diversity targets, the question of whether supply constraints, i.e., availability of a sufficiently deep pool of actual or potential female directors, becomes a major issue. It is unclear to what extent the experience of other countries, with different levels of female representation in the corporate sector, or different social policies that enable female participation in the workplace, can extend to the U.S. A related issue is that, given that gender balance has progressed significantly in the U.S. in the last decade as a result of public pressure and greater sensitivity to gender equality issues (Giannetti and Wang (2020), it is unclear whether quota laws are even necessary.

In this paper, we provide evidence that suggests that the supply constraints are non-trivial. These are sufficiently important that an uneven playing field has been created via the market for seasoned directors, where the larger firms are able to attract seasoned female candidates relatively easily at the expense of the smaller firms, and thereby avoid some of the costs of recruiting first-time females to the director pool. This has meant that the smaller firms, who are least able to afford the search costs for first-time directors, have to look outside the seasoned director pool. The costs of such search have likely limited the smaller firms' ability to respond to the pressure for gender balance. Quota mandates could be particularly costly for such firms, consistent with the evidence in Greene et al. (2020) and Hwang et al. (2019) around the passage of California's recent quota law.

Yet another symptom of the supply constraint is a rapidly growing trend of busyness among female directors. In 2019, 43 percent of women directors held more than one seat, and 20 percent held three or more seats (the typical threshold for "busyness"). There is considerable evidence from the academic literature that busyness has adverse consequences for board members' ability to fulfil their responsibilities and firm performance. As long as the supply constraints remain and the larger firms continue to rely on the market for seasoned directors to address their gender diversity goals (or indeed, any other diversity goal), the problem of female director busyness is likely to become more serious. A possible outcome would be that some female members holding multiple seats may resign from board positions in the smaller firms, which again would slow down the overall move towards greater diversity since the smaller firms might find the cost of recruiting new directors prohibitively costly, as some of our results suggest.

Gender quotas would, no doubt, accelerate some of these problems. However, somewhat paradoxically, not having any mandates may not be ideal, either. This is because all the evidence we document in this paper is a consequence, not of gender quotas, but of greater public pressure and awareness. To the extent such pressure and awareness continue to grow and firms become more active in addressing gender diversity, the problems are likely to become even more challenging for the smaller firms. Thus, a policy response may be needed which requires the larger firms to appoint first-time female directors to relieve the pressure on the seasoned market and on the smaller firms.

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Figures 1. Evolution of Female Non-Executives in the US, 2000 – 2019. Figure 1A shows the evolution of female non-executive directors in the US over the period 2000 to 2019, and Figure 1B shows the evolution of female non-executive directors in S&P 500 firms over the same time period. The dotted line tracks the growth of the average fraction of female non-executives in as the percentage of the total number of seats in all boards of the sample firms, and the dashed line tracks the growth of female non-executives as the proportion of the total pool of non-executive directors.

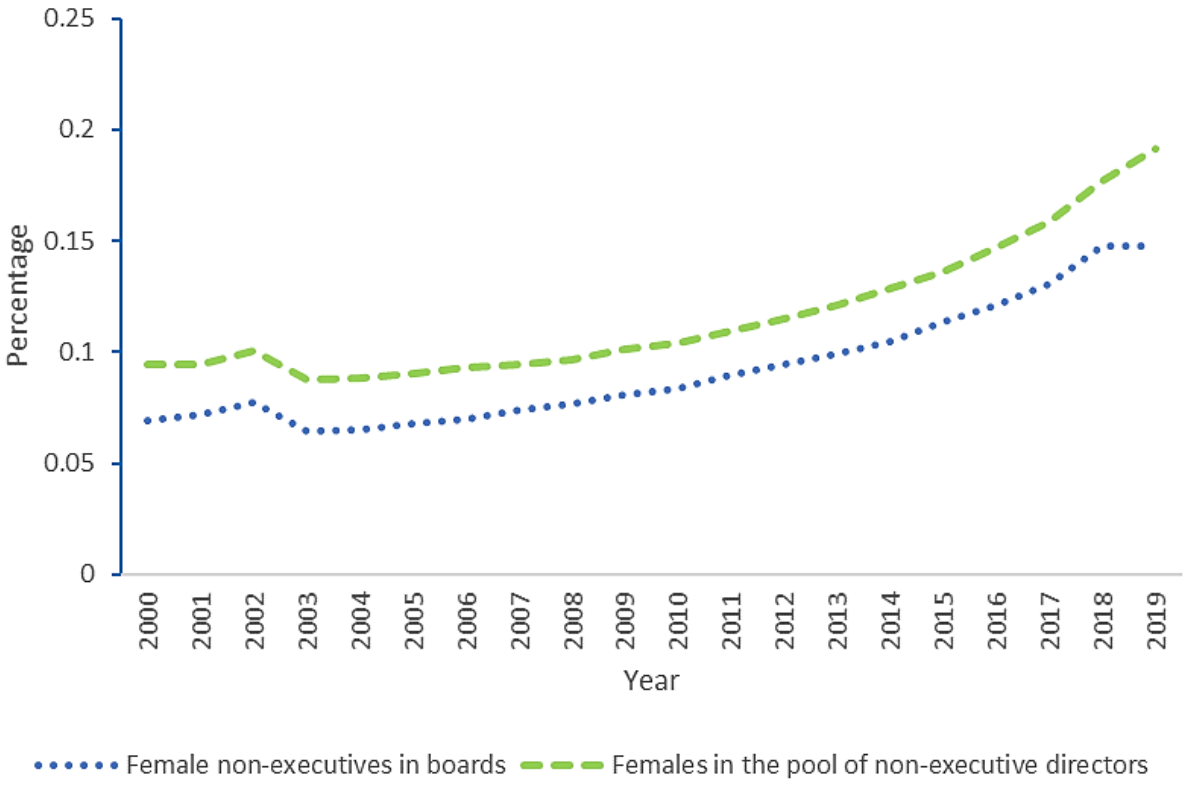

Figure 1A: All BoardEx Firms

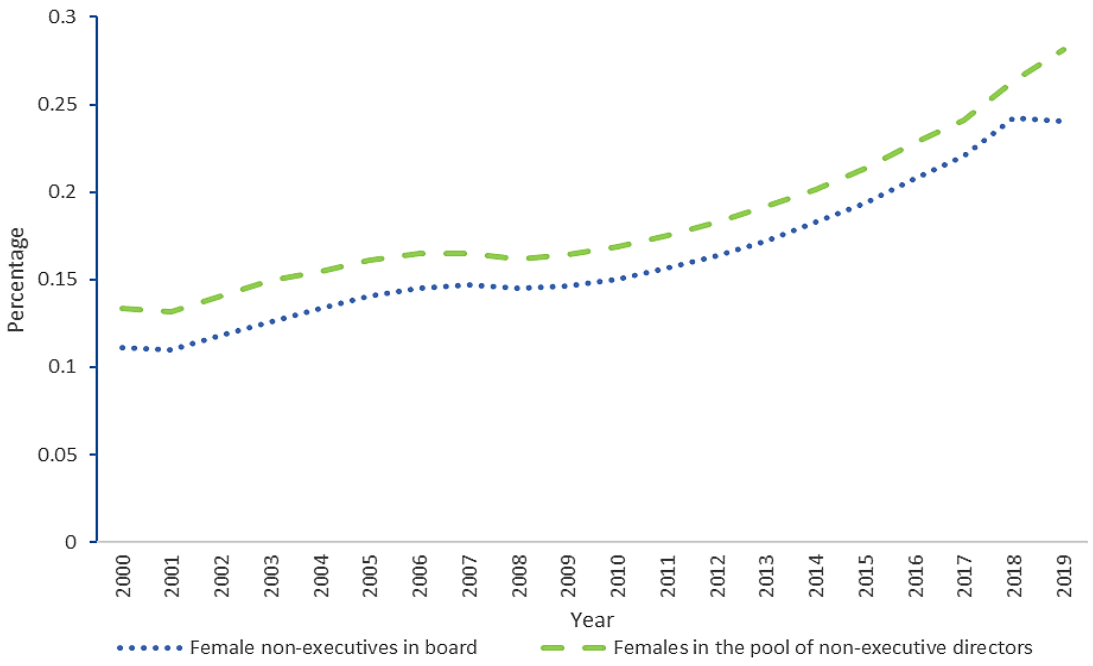

Figure 1B: S&P 500 Firms

Figure 2. Evolution of Busy Non-Executive Directors, 2000 – 2019. This figure shows the evolution of busy non-executive directors in the US over the period 2000 to 2019. Busyness is defined as more than three concurrent non-executive positions for an individual. Figure 1A shows the plots for all publicly listed firms in the BoardEx sample, and Figure 1B shows the plots for S&P 500 firms only. The dotted line tracks the growth of busy non-executives as the percentage of the total number of seats in all firms in the sample of firms. The dashed line tracks the growth of female non-executives as the proportion of the total pool of non-executive directors. The solid line tracks the ratio of busy female non-executive directors among all busy directors.

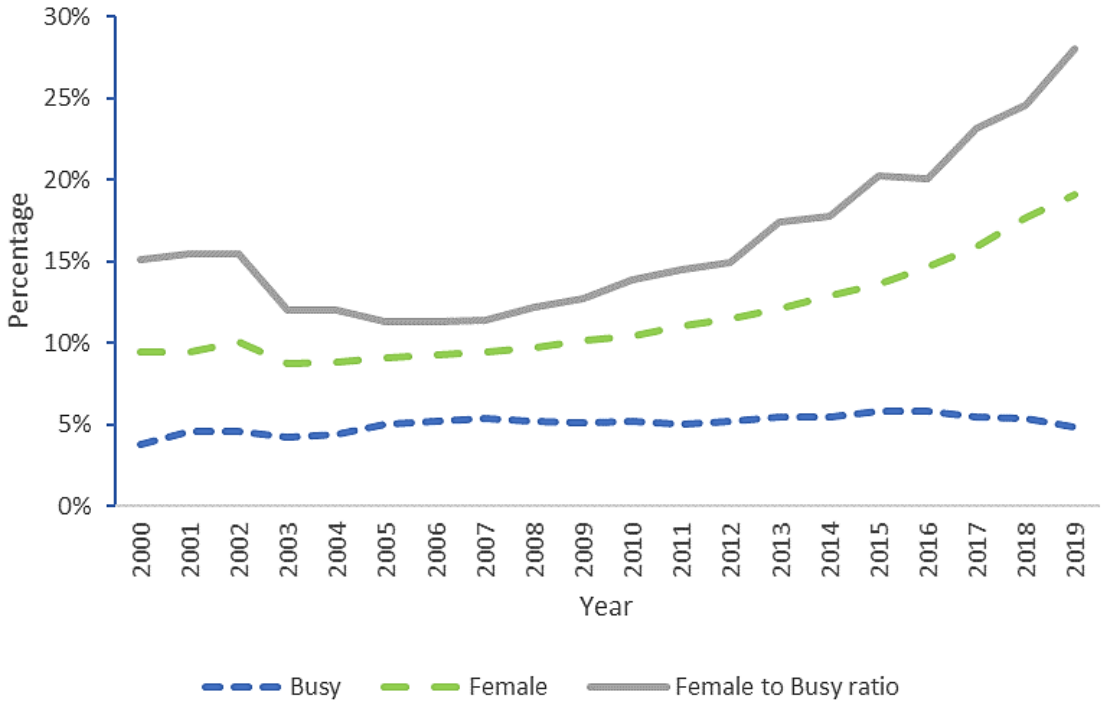

Figure 2A: All BoardEx Firms

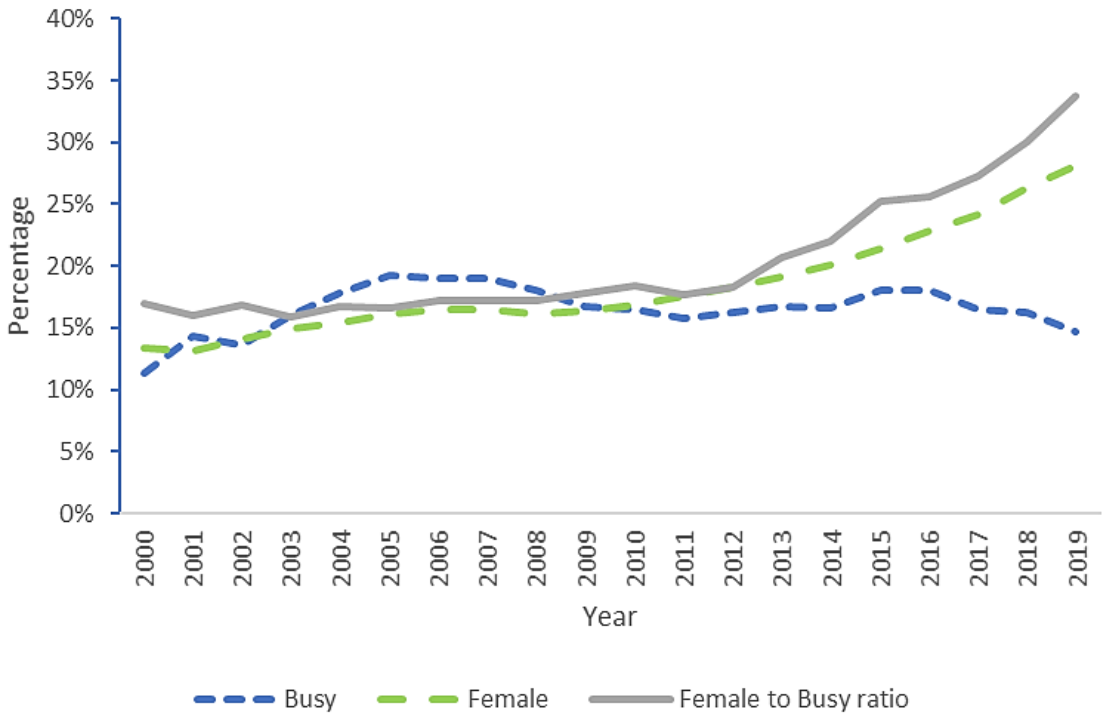

Figure 2B: S&P 500 firms

Table 1

Summary Statistics

Panel A presents summary statistics for director and board characteristics, and firm-level financial variables. The sample covers 30,937 directors from 8564 firms over the period 2000-2019. *Female Director* is a binary indicator for female non-executive directors. *Director Age* is defined as the age of a director in years. *MBA Degree* and *PhD Degree* are indicators for directors with MBA and PhD degrees. *# of Qualifications* is a count of the total number of qualifications achieved by an individual director. *CEO Experience* is an indicator for CEO experience at the time of a non-executive appointment. *Board Chair* is an indicator for experience as board chairperson at the time of a non-executive appointment. *Compensation Committee Member, Audit Committee Member* and *Nomination Committee Member* are indicators for experience as members of the named committees at the time of a non-executive appointment. *Compensation Committee Chair, Compensation Committee Chair*, and *Compensation Committee Chair* are indicators for experience as chairpersons of the named committees at the time of a non-executive appointment. *Board Size* is the number of directors on the board of a firm. *Total Assets* is a measure of the size of a firm. *ROA* is calculated as net income divided by total assets. Panel B compares the characteristics of male and female non-executive directors, and the appointing firms at the time of the first appointment. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively. Source: Director characteristics and board data are from BoardEx, and the firm-level financial variables are from Compustat.

Panel A: Full Sample Summary Statistics				
	N	Mean	SD	50%
Female Director	30,937	0.16	0.37	0.00
Director Age	30,090	54.94	9.16	55.31
MBA Degree	28,509	0.33	0.47	0.00
PhD Degree	28,509	0.09	0.28	0.00
PhD Degree	28,509	0.09	0.28	0.00
CEO Experience	30,939	0.18	0.39	0.00
Board Chair	30,939	0.45	0.50	0.00
Compensation Committee Member	30,939	0.61	0.49	1.00
Compensation Committee Chair	30,939	0.17	0.38	0.00
Audit Committee Member	30,939	0.65	0.48	1.00
Audit Committee Chair	30,939	0.17	0.37	0.00
Nomination Committee Member	30,939	0.54	0.50	1.00
Nomination Committee Chair	30,939	0.15	0.36	0.00
Board Size	19,550	8.63	2.77	8.00
Total Assets	19,728	8,286.13	7,6129.26	628.78
ROA	16,794	-0.038	57.14	0.012

Panel B: Male Directors' and Female Directors' Characteristics at the time of the first appointment

	Male Directors		Female Directors		Difference t-stats
	N	Mean	N	Mean	
Director Age	25,305	55.32	4,785	52.96	16.37***
MBA Degree	23,789	0.33	4,718	0.34	-0.88
PhD Degree	23,789	0.09	4,718	0.10	-2.77**
# of Qualifications	23,789	2.25	4,718	2.40	-8.33***
CEO Experience	25,949	0.19	4,988	0.15	6.98***
Board Chair	25,949	0.48	4,988	0.27	27.60***
Compensation Committee Member	25,949	0.62	4,988	0.56	7.91***
Compensation Committee Chair	25,949	0.18	4,988	0.14	6.79***
Audit Committee Member	25,949	0.66	4,988	0.59	9.16***
Audit Committee Chair	25,949	0.18	4,988	0.12	9.66***
Nomination Committee Member	25,949	0.54	4,988	0.52	2.73**
Nomination Committee Chair	25,949	0.15	4,988	0.13	3.89***
Board Size	25,384	8.66	4,876	9.30	-13.98***
Total Assets	25,576	6,741.47	4,908	12,208.54	-5.02***
ROA	19,130	-0.588	4,201	-1.54	-2.55*

Table 2A: Frequency of Busy Directors by Gender

This table presents the statistics for the busyness of non-executive directors in the US. Panel A shows the number of individual directors with *k* number of non-executive seats per year (*k* = 1, 2, 3, 4, 5+). The count only includes non-executive positions in publicly listed firms. Panel B shows the change in the average number of individuals with multiple board seats from 2008 – 2010 to 2017 – 2019.

Panel A: Number of Non-Executive Positions by Gender

	Male directors						Female directors					
Year	1 seat	2 seats	3 seats	4 seats	5+ seats	Total	1 seat	2 seats	3 seats	4 seats	5+ seats	Total
2000	6,587	1,738	597	200	148	9,270	657	195	114	28	24	1,018
2001	7,787	2,127	861	299	183	11,257	766	254	156	48	46	1,270
2002	7,867	2,278	852	354	191	11,542	833	290	156	52	52	1,383
2003	13,975	3,670	1,431	548	299	19,923	1,301	385	192	56	71	2,005
2004	17,087	4,524	1,751	790	429	24,581	1,606	473	225	104	82	2,490
2005	18,474	5,093	2,217	916	666	27,366	1,794	548	270	100	130	2,842
2006	19,241	5,487	2,356	983	1,106	29,173	1,912	624	278	132	169	3,115
2007	19,246	5,446	2,492	1,013	1,031	29,228	1,898	720	295	140	219	3,272
2008	17,912	5,266	2,314	847	878	27,217	1,816	715	297	138	192	3,158
2009	17,193	5,039	2,166	834	815	26,047	1,819	740	309	117	197	3,182
2010	16,812	4,922	2,197	791	782	25,504	1,842	719	360	108	173	3,202
2011	16,479	4,922	2,073	746	786	25,006	1,906	777	342	122	232	3,379
2012	16,067	4,912	2,175	703	705	24,562	1,948	828	382	127	209	3,494
2013	15,904	5,014	2,143	796	683	24,540	2,045	839	445	176	185	3,690
2014	16,158	5,018	2,142	902	698	24,918	2,230	920	484	168	183	3,985
2015	16,057	5,067	2,254	894	672	24,944	2,343	973	594	192	214	4,316
2016	15,390	4,847	2,213	860	548	23,858	2,460	1,035	581	183	192	4,451
2017	15,248	4,710	2,019	774	477	23,228	2,692	1,043	605	200	210	4,750
2018	14,965	4,543	1,960	726	451	22,645	2,968	1,273	664	200	198	5,303
2019	13,739	3,963	1,555	596	306	20,159	2,975	1,263	630	173	170	5,211

Panel B: Multiple board seats by gender over the sample period

	Male directors				Female directors			
	2 seats	3 seats	4 seats	5+ seats	2 seats	3 seats	4 seats	5+ seats
Average 2008-2010	5,076	2,226	824	825	725	322	121	187
Average 2017-2019	4,405	1,845	699	411	1,193	633	191	193
Change (%)	-13.21	-17.12	-15.21	-50.14	64.63	96.58	57.85	2.84

Table 2B: Appointments of Seasoned and First-time Non-Executive Directors

This table summarizes the appointment statistics of seasoned and first-time non-executive directors. A director with no previous experience serving as a non-executive in a quoted board is classified as first-time. Panel A presents the statistics for non-executive appointments in all firms in the sample. Panel B presents the statistics for non-executive appointments in firms above the median size, and Panel C presents the statistics for non-executive appointments in firms above the median size. Firm size is measured in terms of total assets. Within each panel, the ratio of seasoned-to-first-time directors by gender, and the female-to-male ratio (F/M) of all appointments, seasoned appointments, and first-time appointments is shown for the pre-2009 and post-2009 periods.

Panel A: All firms

	Appointments of Seasoned			Appointments of First-time			Seasoned/First-time		All Female (F)	All Male (M)	(F/M) All	(F/M) Seasoned	(F/M) First-time
	Male	Female	Total	Male	Female	Total	Male	Female					
Pre 2009	2,419	413	2,832	11,144	1,410	12,554	22%	29%	18,23	13,563	13%	17%	13%
Post 2009	8,022	2,231	10,253	14,805	3,578	18,383	54%	62%	5,809	22,827	25%	28%	24%
Total	10,441	2,644	13,085	25,949	4,988	30,937	40%	53%	7,632	36,390	21%	25%	19%

Panel B: Firms above Median Size

	Appointments of Seasoned			Appointments of First-time			Seasoned/First-time		All Female (F)	All Male (M)	(F/M) All	(F/M) Seasoned	(F/M) First-time
	Male	Female	Total	Male	Female	Total	Male	Female					
Pre 2009	1,374	279	1,653	5,083	849	5,932	27%	33%	1,128	6,457	17%	20%	17%
Post 2009	3,760	1,339	5,099	6,705	2,074	8,779	56%	65%	3,413	10,465	33%	36%	31%
Total	5,134	1,618	6,752	11,788	2,923	14,711	44%	55%	4,541	16,922	27%	32%	25%

Panel C: Firms below Median Size

	Appointments of Seasoned			Appointments of First-time			Seasoned/First-time		All Female (F)	All Male (M)	(F/M) All	(F/M) Seasoned	(F/M) First-time
	Male	Female	Total	Male	Female	Total	Male	Female					
Pre 2009	862	106	968	6,061	561	6,622	14%	19%	667	6,923	10%	12%	9%
Post 2009	3,592	695	4287	8,100	1,504	9,604	44%	46%	2,199	11,692	19%	19%	19%
Total	4,454	801	5,255	14,161	2,065	16,226	31%	39%	2,866	18,615	15%	18%	15%

Table 3: Probability of Hiring a First-time Director

This table presents the linear probability estimates of the likelihood of appointing first-time non-executive directors (directors with no previous experience serving as a director in a quoted board). The dependent variable in all the specifications is a binary indicator for the appointment of a first-time director. Column 1 presents the results for the full sample. Columns 2 and 3 present results for non-executive appointments in firms below and above the median firm size (book value of total assets), respectively. Column 4 reports the results for non-executive appointments in firms in the top quartile of size. Column 5 reports the results for the subsample of S&P 500 firms. *Female Director* is a binary indicator for female non-executive directors. *Period 2009-2019* is an indicator for the years2009-2019. *Director Age* is defined as the age of a director in years. *Board Size* is the number of directors on the board of a firm. *Firm Size* is the natural log of total assets. *ROA* is the three-year average return of assets if the appointing firm (calculated as net income divided by total assets). *MBA Degree* and *PhD Degree* are indicators for directors with MBA and PhD degrees. *# of Qualifications* is a count of the total number of qualifications achieved by an individual director. *CEO Experience* is an indicator for CEO experience at the time of a non-executive appointment. Robust standard errors, clustered at the firm level, are reported in the parentheses below the estimates. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

	Full Sample	Below Median	Above Median	Top Quartile	S&P500
	(1)	(2)	(3)	(4)	(5)
Female Director	-0.057***	-0.051***	-0.064***	-0.080***	-0.106***
	(0.012)	(0.018)	(0.016)	(0.022)	(0.035)
Period 2009 – 2019	-0.263***	-0.318***	-0.160	-0.134	-0.047
	(0.041)	(0.040)	(0.106)	(0.211)	(0.131)
Female Director X Period 2009 – 2019	0.060***	0.107***	0.035*	0.057**	0.064
	(0.014)	(0.022)	(0.018)	(0.026)	(0.041)
Director Age	-0.012***	-0.007**	-0.019***	-0.024***	-0.023*
	(0.003)	(0.003)	(0.004)	(0.007)	(0.012)
Director Age^2	0.000	0.000	0.000**	0.000*	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm Size	-0.039***	-0.042***	-0.052***	-0.043***	-0.030***
	(0.002)	(0.004)	(0.003)	(0.005)	(0.008)
Board Size	-0.002	-0.001	-0.002	-0.003	0.001
	(0.001)	(0.002)	(0.002)	(0.002)	(0.004)
ROA (3-year average)	-0.000	-0.000	-0.003***	-0.003***	0.019
	(0.000)	(0.000)	(0.001)	(0.001)	(0.123)
MBA Degree	-0.041***	-0.049***	-0.036***	-0.048***	-0.039**
	(0.006)	(0.008)	(0.008)	(0.011)	(0.017)
PhD Degree	0.050***	0.038***	0.068***	0.064***	0.080**
	(0.010)	(0.013)	(0.015)	(0.021)	(0.032)

# of Qualifications	-0.008*** (0.002)	-0.010*** (0.003)	-0.006* (0.003)	0.000 (0.005)	-0.002 (0.008)
CEO Experience	-0.002 (0.007)	0.014 (0.009)	-0.014 (0.009)	-0.004 (0.013)	-0.031 (0.019)
Constant	1.794*** (0.095)	1.704*** (0.114)	2.010*** (0.191)	2.126*** (0.309)	1.902*** (0.346)
Observations	29,990	13,417	16,573	8,957	3,791
R^2	0.117	0.095	0.132	0.130	0.103

Table 4: Probability of a Second Non-Executive Director Position

This table presents estimates from Cox Proportional Hazard models for the probability of a second non-executive director appointment for directors with an existing non-executive director appointment. We present the results for the full sample (columns 1 and 2), the period 2000 – 2008 (columns 3 and 4), and the period 2009 -2019 (columns 5 and 6). For each set of results, we present the coefficients and the hazard ratios of a duration model where *Failure* is defined as the start of the second seat (if any). *Female Director* is a binary indicator for female non-executive directors. *Director Age* is defined as the age of a director in years. *Firm Size* is measured by the natural log of total assets of the firm of first appointment. *Board Size* is the number of directors on the board of the firm of first appointment. *ROA* is the three-year average return of assets of the firm of first appointment (calculated as net income divided by total assets). *MBA Degree* and *PhD Degree* are indicators for directors with MBA and PhD degrees. *# of Qualifications* is a count of the total number of qualifications achieved by an individual director. *CEO Experience* is an indicator for CEO experience at the time of the second non-executive appointment. *Board Chair* is an indicator for experience as board chairperson at the time of a second non-executive appointment. *Compensation Committee Member*, *Audit Committee Member* and *Nomination Committee Member* are indicators for experience as members of the named committees at the first non-executive appointment. *Compensation Committee Chair*, *Compensation Committee Chair*, and *Compensation Committee Chair* are indicators for experience as chairpersons of the named committees at the first non-executive appointment. All specifications include cohort (year of first director appointment) fixed effects and 2-digit SIC industry fixed effects. Standard errors are reported in the parentheses below the estimates. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

	Full Sample		Period 2000 - 2008		Period 2009 - 2019	
	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio
	(1)	(2)	(3)	(4)	(5)	(6)
Female Director	0.248***	1.282***	0.163***	1.177***	0.324***	1.382***
	(0.035)	(0.045)	(0.053)	(0.062)	(0.049)	(0.067)
Director Age	0.057***	1.058***	0.057**	1.058**	0.050*	1.051*
	(0.018)	(0.019)	(0.026)	(0.027)	(0.026)	(0.027)
Director Age^2	-0.001***	0.999***	-0.001***	0.999***	-0.001***	0.999***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm Size	0.086***	1.090***	0.104***	1.110***	0.069***	1.072***
	(0.009)	(0.010)	(0.013)	(0.014)	(0.013)	(0.014)
Board Size	-0.007	0.993	-0.012	0.988	0.004	1.004
	(0.007)	(0.007)	(0.010)	(0.009)	(0.011)	(0.011)

ROA (3-year average)	-0.000 (0.001)	1.000 (0.001)	-0.001 (0.003)	0.999 (0.003)	-0.000 (0.001)	1.000 (0.001)
MBA Degree	0.098*** (0.030)	1.103*** (0.033)	0.110*** (0.041)	1.117*** (0.046)	0.082* (0.045)	1.086* (0.049)
PhD Degree	-0.087 (0.055)	0.917 (0.051)	-0.128* (0.074)	0.880* (0.065)	-0.018 (0.084)	0.982 (0.083)
# of Qualifications	0.032** (0.013)	1.032** (0.014)	0.026 (0.019)	1.026 (0.019)	0.033* (0.019)	1.034* (0.020)
CEO Experience	0.063* (0.038)	1.066* (0.040)	0.160*** (0.055)	1.173*** (0.065)	-0.029 (0.051)	0.972 (0.050)
Compensation Committee Member	0.384*** (0.035)	1.468*** (0.051)	0.234*** (0.049)	1.264*** (0.062)	0.515*** (0.050)	1.674*** (0.084)
Compensation Committee chair	-0.061* (0.035)	0.941* (0.033)	-0.102** (0.045)	0.903** (0.041)	0.036 (0.054)	1.037 (0.056)
Audit Committee Member	0.458*** (0.037)	1.581*** (0.058)	0.308*** (0.052)	1.361*** (0.070)	0.589*** (0.052)	1.803*** (0.094)
Audit Committee Chair	0.119*** (0.034)	1.127*** (0.039)	0.091** (0.044)	1.095** (0.049)	0.191*** (0.055)	1.211*** (0.066)
Nomination Committee Member	0.251*** (0.033)	1.285*** (0.042)	0.134*** (0.045)	1.143*** (0.052)	0.365*** (0.048)	1.441*** (0.069)
Nomination Committee Chair	-0.071* (0.037)	0.931* (0.034)	-0.117** (0.048)	0.890** (0.043)	0.037 (0.057)	1.038 (0.059)
Observations	21,022	21,022	8,676	8,676	12,346	12,346
Pseudo R^2	0.027	0.027	0.018	0.018	0.037	0.037

Table 5: Probability of a Second Director Appointment: Above and Below Median Firms of First Appointment in Size

This table presents estimates from Cox Proportional Hazard Models for the probability of second appointments for directors with one non-executive appointment. In panel A, we present the results for the probability of second non-executive appointment for directors with first appointments in firms that are below the median in size (measured by the natural log of total assets). In panel B, we present the results for directors whose first appointments are in firms that are above the median in size. Within each panel, we present the coefficients and the hazard ratios for the full sample, the period 2000 – 2008, and the period 2009 -2019. *Female Director* is a binary indicator for female non-executive directors. *Director Age* is defined as the age of a director in years. *Firm Size* is measured by the natural log of total assets of the firm of first appointment. *Board Size* is the number of directors on the board of the firm of first appointment. *ROA* is the three-year average return of assets in the firm of first appointment (calculated as net income divided by total assets). *MBA Degree* and *PhD Degree* are indicators for directors with MBA and PhD degrees. *# of Qualifications* is a count of the total number of qualifications achieved by an individual director. *CEO Experience* is an indicator for CEO experience at the time of the second non-executive appointment. *Board Chair* is an indicator for experience as board chairperson at the time of a second non-executive appointment. *Compensation Committee Member*, *Audit Committee Member* and *Nomination Committee Member* are indicators for experience as members of the named committees at the first non-executive appointment. *Compensation Committee Chair, Compensation Committee Chair*, and *Compensation Committee Chair* are indicators for experience as chairpersons of the named committees at the first non-executive appointment. All specifications include cohort (year of first director appointment) fixed effects and 2-digit SIC industry fixed effects. Standard errors are reported in the parentheses below the estimates. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

	Panel A: Below Median Firm Size						Panel B: Above Median Firm Size					
	Full Sample		Period 2000 - 2008		Period 2009 - 2019		Full Sample		Period 2000 - 2008		Period 2009 - 2019	
	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Female Director	0.334***	1.396***	0.270***	1.310***	0.387***	1.473***	0.212***	1.236***	0.124*	1.132*	0.288***	1.334***
	(0.059)	(0.082)	(0.087)	(0.114)	(0.082)	(0.120)	(0.045)	(0.055)	(0.068)	(0.077)	(0.061)	(0.082)
Director Age	0.082***	1.086***	0.070**	1.072**	0.098**	1.103**	0.018	1.018	0.053	1.054	-0.027	0.973
	(0.025)	(0.027)	(0.034)	(0.037)	(0.039)	(0.043)	(0.027)	(0.027)	(0.040)	(0.042)	(0.037)	(0.036)
Director Age^2	-0.001***	0.999***	-0.001***	0.999***	-0.001***	0.999***	-0.000	1.000	-0.001	0.999	0.000	1.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm Size	0.105***	1.110***	0.105***	1.111***	0.093***	1.098***	0.102***	1.107***	0.162***	1.175***	0.046*	1.047*
	(0.021)	(0.023)	(0.028)	(0.031)	(0.032)	(0.035)	(0.016)	(0.018)	(0.023)	(0.027)	(0.023)	(0.025)
Board Size	0.026*	1.027*	0.009	1.010	0.062***	1.064***	-0.020**	0.980**	-0.023*	0.978*	-0.015	0.985
	(0.014)	(0.014)	(0.018)	(0.018)	(0.023)	(0.024)	(0.009)	(0.009)	(0.012)	(0.011)	(0.014)	(0.013)

ROA (3-year average)	-0.000 (0.001)	1.000 (0.001)	-0.000 (0.003)	1.000 (0.003)	-0.000 (0.001)	1.000 (0.001)	-0.007 (0.014)	0.993 (0.013)	-2.227*** (0.349)	0.108*** (0.038)	-0.001 (0.021)	0.999 (0.021)
MBA Degree	0.168*** (0.047)	1.183*** (0.055)	0.214*** (0.063)	1.239*** (0.078)	0.138* (0.072)	1.148* (0.082)	0.041 (0.040)	1.042 (0.041)	0.031 (0.056)	1.031 (0.057)	0.040 (0.058)	1.040 (0.060)
PhD Degree	-0.106 (0.080)	0.899 (0.072)	-0.140 (0.104)	0.869 (0.091)	-0.019 (0.124)	0.981 (0.122)	-0.098 (0.077)	0.907 (0.070)	-0.173 (0.105)	0.841 (0.089)	0.009 (0.116)	1.009 (0.117)
# of Qualifications	0.029 (0.020)	1.029 (0.021)	0.016 (0.028)	1.016 (0.028)	0.029 (0.030)	1.030 (0.031)	0.031* (0.018)	1.031* (0.019)	0.032 (0.026)	1.032 (0.027)	0.029 (0.026)	1.030 (0.026)
CEO Experience	0.052 (0.059)	1.054 (0.062)	0.198** (0.084)	1.219** (0.102)	-0.087 (0.083)	0.916 (0.076)	0.063 (0.049)	1.065 (0.053)	0.070 (0.075)	1.072 (0.080)	0.029 (0.067)	1.030 (0.069)
Compensation Committee Member	0.301*** (0.056)	1.352*** (0.076)	0.159** (0.076)	1.173** (0.089)	0.439*** (0.085)	1.551*** (0.132)	0.433*** (0.045)	1.541*** (0.069)	0.280*** (0.065)	1.323*** (0.085)	0.573*** (0.063)	1.773*** (0.112)
Compensation Committee chair	-0.070 (0.053)	0.933 (0.049)	-0.157** (0.070)	0.855** (0.059)	0.094 (0.082)	1.098 (0.091)	-0.056 (0.046)	0.945 (0.044)	-0.055 (0.061)	0.947 (0.058)	-0.008 (0.073)	0.992 (0.072)
Audit Committee Member	0.303*** (0.058)	1.354*** (0.079)	0.145* (0.080)	1.155* (0.093)	0.450*** (0.086)	1.568*** (0.134)	0.573*** (0.048)	1.773*** (0.084)	0.402*** (0.069)	1.494*** (0.103)	0.724*** (0.066)	2.063*** (0.137)
Audit Committee Chair	0.221*** (0.053)	1.248*** (0.066)	0.187*** (0.068)	1.205*** (0.082)	0.257*** (0.085)	1.293*** (0.110)	0.051 (0.046)	1.052 (0.048)	0.017 (0.060)	1.017 (0.061)	0.140* (0.072)	1.151* (0.083)
Nomination Committee Member	0.197*** (0.052)	1.218*** (0.064)	0.093 (0.070)	1.098 (0.077)	0.330*** (0.080)	1.391*** (0.111)	0.285*** (0.043)	1.329*** (0.057)	0.147** (0.060)	1.159** (0.070)	0.387*** (0.061)	1.473*** (0.090)
Nomination Committee Chair	0.007 (0.055)	1.007 (0.056)	-0.014 (0.073)	0.986 (0.071)	0.077 (0.086)	1.081 (0.093)	-0.132*** (0.050)	0.876*** (0.044)	-0.189*** (0.066)	0.828*** (0.054)	0.020 (0.078)	1.020 (0.080)
Observations	10,040	10,040	4,527	4,527	5,513	5,513	10,980	10,980	4,147	4,147	6,833	6,833
Pseudo R^2	0.027	0.027	0.023	0.023	0.040	0.040	0.035	0.035	0.025	0.025	0.046	0.046

Table 6

Prediction of Firm Size for the Second Non-Executive Appointment

This table presents ordinary least squares (OLS), linear probability (LPM) and Probit estimates for the prediction of firm size for the second non-executive appointment of directors with one appointment. Results are shown for the full sample, and for the 2000-2008 and 2009-2019 periods. In the OLS models (columns 1, 4 and 7) the dependent variable is the size of the firm where the second non-executive appointment takes place. In the LPM and Probit models (columns 2, 3, 5, 6, 8, and 9) the dependent variable is an indicator for the size of the appointing firm being above the median for the second non-executive appointment. *Female Director* is a binary indicator for female non-executive directors. *Director Age* is defined as the age of a director in years. *Firm Size* is measured as the natural log of total assets of the firm of the first non-executive appointment. *Board Size* is the number of directors on the board of the firm of first appointment. *Days to Second Seat* is the difference in days between the start of the first and the second non-executive appointments. *ROA* is the three-year average return of assets of the firm of first appointment (calculated as net income divided by total assets). *MBA Degree* and *PhD Degree* are indicators for directors with MBA and PhD degrees. *# of Qualifications* is a count of the total number of qualifications achieved by an individual director. *CEO Experience* is an indicator for CEO experience at the time of the second non-executive appointment. *Board Chair* is an indicator for experience as board chairperson at the time of a second non-executive appointment. *Compensation Committee Member, Audit Committee Member* and *Nomination Committee Member* are indicators for experience as members of the named committees at the first non-executive appointment. *Compensation Committee Chair, Compensation Committee Chair,* and *Compensation Committee Chair* are indicators for experience as chairpersons of the named committees at the first non-executive appointment. All specifications include cohort fixed effects and 2-digit SIC industry fixed effects. Robust standard errors are reported in the parentheses below the estimates. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

	Full Sample			Period 2000 - 2008			Period 2009 - 2019		
	OLS	LPM	Probit	OLS	LPM	Probit	OLS	LPM	Probit
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Female Director	0.347***	0.084***	0.256***	0.182*	0.043*	0.130*	0.484***	0.116***	0.363***
	(0.067)	(0.016)	(0.049)	(0.102)	(0.024)	(0.072)	(0.090)	(0.022)	(0.070)
Director Age	0.114***	0.031***	0.097***	0.156***	0.044***	0.135***	0.079*	0.019*	0.066*
	(0.031)	(0.007)	(0.024)	(0.047)	(0.011)	(0.034)	(0.041)	(0.010)	(0.034)
Director Age^2	-0.001***	-0.000***	-0.001***	-0.002***	-0.000***	-0.001***	-0.001*	-0.000*	-0.001*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Firm Size	0.527*** (0.018)			0.503*** (0.026)			0.556*** (0.026)		
Above the median		0.270*** (0.017)	0.727*** (0.047)		0.225*** (0.023)	0.611*** (0.063)		0.322*** (0.025)	0.893*** (0.073)
Board Size	0.028* (0.015)	0.020*** (0.003)	0.063*** (0.011)	0.035* (0.020)	0.018*** (0.004)	0.055*** (0.013)	0.019 (0.021)	0.022*** (0.005)	0.073*** (0.018)
Log(Days to Second Seat)	0.059*** (0.021)	0.012** (0.005)	0.035** (0.016)	0.018 (0.029)	0.013* (0.007)	0.038* (0.020)	0.109*** (0.031)	0.005 (0.008)	0.016 (0.026)
ROA (3-year average)	-0.004 (0.008)	-0.001 (0.002)	-0.004 (0.005)	-0.007 (0.006)	-0.002** (0.001)	-0.007 (0.004)	0.007 (0.016)	0.003 (0.002)	0.016 (0.015)
MBA Degree	-0.062 (0.056)	-0.005 (0.013)	-0.013 (0.041)	-0.077 (0.078)	-0.001 (0.019)	0.005 (0.055)	-0.045 (0.081)	-0.011 (0.020)	-0.039 (0.062)
PhD Degree	-0.091 (0.109)	-0.046* (0.024)	-0.148* (0.076)	-0.198 (0.147)	-0.063* (0.033)	-0.187* (0.100)	0.006 (0.167)	-0.030 (0.036)	-0.122 (0.122)
# of Qualifications	-0.007 (0.027)	0.006 (0.006)	0.018 (0.018)	0.041 (0.039)	0.014* (0.008)	0.041* (0.025)	-0.068* (0.037)	-0.004 (0.009)	-0.016 (0.028)
CEO Experience	-0.034 (0.065)	-0.006 (0.015)	-0.020 (0.047)	-0.099 (0.093)	-0.014 (0.022)	-0.041 (0.066)	0.030 (0.090)	0.003 (0.022)	-0.002 (0.069)
Compensation Committee Member	-0.009 (0.059)	-0.007 (0.014)	-0.022 (0.043)	0.100 (0.084)	0.010 (0.020)	0.027 (0.059)	-0.150* (0.084)	-0.030 (0.021)	-0.097 (0.065)
Compensation Committee chair	0.050 (0.077)	0.009 (0.019)	0.022 (0.056)	-0.080 (0.101)	-0.008 (0.024)	-0.032 (0.071)	0.250** (0.120)	0.037 (0.030)	0.134 (0.094)
Audit Committee Member	-0.067 (0.061)	-0.011 (0.015)	-0.031 (0.045)	-0.124 (0.087)	-0.035 (0.021)	-0.102 (0.063)	-0.020 (0.086)	0.013 (0.021)	0.048 (0.066)
Audit Committee Chair	-0.111 (0.072)	-0.059*** (0.017)	-0.182*** (0.052)	-0.146 (0.097)	-0.075*** (0.022)	-0.226*** (0.066)	-0.022 (0.109)	-0.029 (0.028)	-0.093 (0.088)

Nomination Committee Member	-0.038 (0.057)	-0.018 (0.014)	-0.060 (0.042)	0.000 (0.079)	-0.001 (0.019)	-0.007 (0.056)	-0.081 (0.083)	-0.036* (0.020)	-0.121* (0.065)
Nomination Committee Chair	-0.116 (0.091)	0.021 (0.021)	0.064 (0.063)	-0.112 (0.120)	0.027 (0.028)	0.075 (0.082)	-0.058 (0.141)	0.022 (0.033)	0.077 (0.103)
Constant	-1.691 (1.461)	-0.859*** (0.294)	-4.107*** (0.862)	-2.437 (1.756)	-1.202*** (0.365)	-5.073*** (1.109)	-0.278 (2.978)	-0.400 (0.541)	-2.931** (1.390)
Observations	5,197	5,197	5,181	2,852	2,852	2,838	2,345	2,345	2,319
R^2	0.359	0.218		0.340	0.197		0.407	0.270	
Pseudo R^2			0.168			0.151			0.210

Table 7: Likelihood of Appointing Female Directors: Firm Size and Time Period Effects

This table presents the linear probability estimates for the appointment of female non-executive directors by firm size and time periods. The dependent variable in all columns is an indicator variable that takes the value of 1 if a female director is appointed, and 0 if a male director is appointed. Column 1 presents the results for the full sample. Columns 2 and 3 present the results for the periods 2000 – 2008 and 2009 – 2019, respectively. *Above Median* is an indicator for the size of the appointing firm (measured by total assets) being above the median. *Period 2009-2019* is an indicator for the years with high public pressure for gender equality. *First-time* is an indicator for directors appointed without any previous experience of serving as a director in a quoted board. *Director Age* is defined as the age of a director in years. *Firm size* is the natural log of total assets of the firm. *Board Size* is the number of directors on the board of a firm. *ROA* is calculated as net income divided by total assets. *MBA Degree* and *PhD Degree* are indicators for directors with MBA and PhD degrees. *# of Qualifications* is a count of the total number of qualifications achieved by an individual director. *CEO Experience* is an indicator for CEO experience at the time of a non-executive appointment. All specifications include year fixed effects and 2-digit SIC industry fixed effects. Robust standard errors, clustered at the firm level, are reported in the parentheses below the estimates. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

	All	Period 2000-2008	Period 2009-2019	Interaction model
	(1)	(2)	(3)	(4)
Above Median	0.055***	0.037***	0.064***	0.033***
	(0.005)	(0.007)	(0.006)	(0.006)
Period 2009 - 2019X Above Median				0.036***
				(0.007)
Period 2009 - 2019				0.275***
				(0.017)
First-time	-0.018***	-0.038***	-0.010*	-0.018***
	(0.005)	(0.008)	(0.005)	(0.005)
Director Age	0.030***	0.010***	0.040***	0.030***
	(0.002)	(0.003)	(0.002)	(0.002)
Director Age^2	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Board Size	0.009***	0.007***	0.010***	0.009***
	(0.001)	(0.001)	(0.001)	(0.001)
ROA	-0.000	0.000***	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
MBA Degree	-0.016***	-0.017***	-0.015***	-0.016***
	(0.004)	(0.006)	(0.006)	(0.004)
PhD Degree	0.013*	0.037***	-0.001	0.013*

	(0.007)	(0.011)	(0.010)	(0.007)
# of Qualifications	0.019***	0.014***	0.022***	0.019***
	(0.002)	(0.003)	(0.003)	(0.002)
CEO Experience	-0.046***	-0.037***	-0.051***	-0.046***
	(0.005)	(0.007)	(0.006)	(0.005)
Constant	-0.736***	-0.080	-1.034***	-0.724***
	(0.055)	(0.086)	(0.068)	(0.056)
Observations	38,247	13,542	24,705	38,247
R^2	0.079	0.055	0.081	0.080

Table 8: Probability of Dropping the First seat after Starting the Second Seat: Above and Below Median Firms of First Appointment in Size

This table presents estimates from Cox Proportional Hazard Models for the probability of dropping the first non-executive appointment after starting the second non-executive appointment. In panel A, we present the results for the probability of retirement for directors with first appointments in firms that are below the median in size (measured by the natural log of total assets). In panel B, we present the results for directors whose first appointments are in firms that are above the median in size. Within each panel, we present the coefficients and the hazard ratios for the full sample, the period 2000 – 2008, and the period 2009 -2019. Failure is defined as dropping the first non-executive appointment after starting the second non-executive appointment. *Female Director* is a binary indicator for female non-executive directors. *Director Age* is defined as the age of a director in years. *Firm Size* is measured by the natural log of total assets of the firm of first appointment. *Board Size* is the number of directors on the board of the firm of first appointment. *ROA* is the three-year average return of assets in the firm of first appointment (calculated as net income divided by total assets). *MBA Degree* and *PhD Degree* are indicators for directors with MBA and PhD degrees. *# of Qualifications* is a count of the total number of qualifications achieved by an individual director. *CEO Experience* is an indicator for CEO experience at the time of the first non-executive appointment. *Compensation Committee Member, Audit Committee Member* and *Nomination Committee Member* are indicators for experience as members of the named committees at the first non-executive appointment. *Compensation Committee Chair, Compensation Committee Chair*, and *Compensation Committee Chair* are indicators for experience as chairpersons of the named committees at the first non-executive appointment. All specifications include cohort (year of first director appointment) fixed effects and 2-digit SIC industry fixed effects. Standard errors are reported in the parentheses below the estimates. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

	Panel A: Below Median Firm Size						Panel B: Above Median Firm Size					
	Full Sample		Period 2000 - 2008		Period 2009 - 2019		Full Sample		Period 2000 - 2008		Period 2009 - 2019	
	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Female Director	0.034	1.035	0.108	1.114	0.078	1.081	-0.154*	0.857*	0.004	1.004	-0.312**	0.732**
	(0.102)	(0.106)	(0.143)	(0.160)	(0.157)	(0.170)	(0.081)	(0.069)	(0.106)	(0.106)	(0.131)	(0.096)
Director Age	-0.024	0.976	-0.011	0.989	-0.065	0.937	-0.133***	0.875***	-0.100*	0.905*	-0.175***	0.840***
	(0.040)	(0.039)	(0.053)	(0.053)	(0.064)	(0.060)	(0.043)	(0.037)	(0.059)	(0.054)	(0.066)	(0.055)
Director Age^2	0.000	1.000	0.000	1.000	0.000	1.000	0.001***	1.001***	0.001*	1.001*	0.001**	1.001**
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Firm Size	-0.098***	0.907***	-0.077*	0.926*	-0.107*	0.899*	-0.059**	0.943**	-0.037	0.963	-0.104**	0.901**
	(0.034)	(0.031)	(0.043)	(0.040)	(0.061)	(0.055)	(0.026)	(0.025)	(0.034)	(0.033)	(0.046)	(0.042)
Board Size	-0.048**	0.953**	-0.053*	0.948*	-0.040	0.961	-0.035**	0.965**	-0.032*	0.968*	-0.054*	0.948*
	(0.022)	(0.021)	(0.027)	(0.026)	(0.043)	(0.042)	(0.014)	(0.014)	(0.017)	(0.017)	(0.029)	(0.028)
ROA (3-year average)	0.009	1.010	0.011	1.011	-0.009	0.991	-1.010***	0.364***	-2.623***	0.073***	-0.692**	0.500**
	(0.012)	(0.012)	(0.015)	(0.015)	(0.023)	(0.023)	(0.179)	(0.065)	(0.536)	(0.039)	(0.308)	(0.154)

MBA Degree	0.164**	1.178**	0.175*	1.192*	0.144	1.155	-0.037	0.963	-0.110	0.896	0.105	1.111
	(0.075)	(0.088)	(0.099)	(0.118)	(0.127)	(0.147)	(0.065)	(0.063)	(0.083)	(0.075)	(0.112)	(0.124)
PhD Degree	0.004	1.004	0.055	1.057	0.009	1.009	-0.090	0.914	0.031	1.032	-0.311	0.733
	(0.128)	(0.129)	(0.153)	(0.162)	(0.257)	(0.259)	(0.125)	(0.114)	(0.149)	(0.153)	(0.247)	(0.181)
# of Qualifications	-0.018	0.983	0.007	1.007	-0.059	0.942	0.017	1.017	-0.020	0.980	0.098*	1.103*
	(0.035)	(0.034)	(0.043)	(0.043)	(0.063)	(0.059)	(0.030)	(0.030)	(0.038)	(0.038)	(0.051)	(0.056)
CEO Experience	0.044	1.045	0.056	1.058	-0.083	0.921	-0.082	0.922	-0.060	0.941	-0.199	0.820
	(0.091)	(0.095)	(0.123)	(0.130)	(0.149)	(0.137)	(0.086)	(0.079)	(0.113)	(0.106)	(0.142)	(0.117)
Compensation Committee Member	-0.095	0.909	-0.140	0.869	-0.052	0.949	0.087	1.091	0.115	1.121	0.139	1.149
	(0.107)	(0.097)	(0.140)	(0.121)	(0.180)	(0.171)	(0.088)	(0.096)	(0.118)	(0.132)	(0.139)	(0.159)
Compensation Committee chair	-0.318***	0.728***	-0.309***	0.735***	-0.323**	0.724**	-0.345***	0.708***	-0.301***	0.740***	-0.352***	0.703***
	(0.076)	(0.055)	(0.095)	(0.070)	(0.138)	(0.100)	(0.069)	(0.049)	(0.085)	(0.063)	(0.128)	(0.090)
Audit Committee Member	-0.054	0.948	-0.139	0.870	0.117	1.124	0.125	1.133	0.116	1.123	0.205	1.227
	(0.121)	(0.115)	(0.174)	(0.151)	(0.186)	(0.209)	(0.094)	(0.106)	(0.129)	(0.144)	(0.145)	(0.177)
Audit Committee Chair	-0.122	0.885	-0.075	0.928	-0.293**	0.746**	-0.404***	0.667***	-0.336***	0.714***	-0.627***	0.534***
	(0.077)	(0.069)	(0.098)	(0.091)	(0.139)	(0.104)	(0.070)	(0.047)	(0.085)	(0.060)	(0.138)	(0.074)
Nomination Committee Member	-0.028	0.973	-0.147	0.864	0.089	1.094	-0.091	0.913	-0.096	0.908	-0.119	0.887
	(0.096)	(0.093)	(0.122)	(0.105)	(0.165)	(0.180)	(0.076)	(0.069)	(0.101)	(0.092)	(0.121)	(0.108)
Nomination Committee Chair	-0.232***	0.793***	-0.301***	0.740***	-0.188	0.829	-0.346***	0.708***	-0.319***	0.727***	-0.515***	0.598***
	(0.078)	(0.062)	(0.099)	(0.073)	(0.138)	(0.115)	(0.074)	(0.052)	(0.089)	(0.065)	(0.142)	(0.085)
Observations	1400	1400	738	738	662	662	2191	2191	1131	1131	1060	1060
Pseudo R^2	0.016	0.016	0.020	0.020	0.041	0.041	0.019	0.019	0.020	0.020	0.044	0.044

Table 9A: Probability of Retiring After First Seat

This table presents estimates from Cox Proportional Hazard Models for the probability of retirement of directors after the first non-executive appointment. We present the results for the full sample (columns 1 and 2), the period 2000 – 2008 (columns 3 and 4), and the period 2009 -2019 (columns 5 and 6). For each set of results, we present the coefficients and the hazard ratios of a duration model where Failure is defined as retirement within our sample period where retirement means no further appointments as a director after the first seat. *Female Director* is a binary indicator for female non-executive directors. *Director Age* is defined as the age of a director in years. *Firm Size* is measured by the natural log of total assets of the firm of first appointment. *Board Size* is the number of directors on the board of the firm of first appointment. *ROA* is the three-year average return of assets of the firm of first appointment (calculated as net income divided by total assets). *MBA Degree* and *PhD Degree* are indicators for directors with MBA and PhD degrees. *# of Qualifications* is a count of the total number of qualifications achieved by an individual director. *CEO Experience* is an indicator for CEO experience at the time of the first non-executive appointment. *Compensation Committee Member, Audit Committee Member* and *Nomination Committee Member* are indicators for experience as members of the named committees at the first non-executive appointment. *Compensation Committee Chair, Compensation Committee Chair*, and *Compensation Committee Chair* are indicators for experience as chairpersons of the named committees at the first non-executive appointment. All specifications include cohort (year of first director appointment) fixed effects and 2-digit SIC industry fixed effects. Standard errors are reported in the parentheses below the estimates. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

	Full Sample		Period 2000 - 2008		Period 2009 - 2019	
	Coefficient (1)	Hazard Ratio (2)	Coefficient (3)	Hazard Ratio (4)	Coefficient (5)	Hazard Ratio (6)
Female Director	-0.143***	0.867***	-0.175***	0.839***	-0.146***	0.864***
	(0.022)	(0.019)	(0.044)	(0.037)	(0.026)	(0.022)
Director Age	-0.039***	0.962***	-0.065***	0.937***	-0.035***	0.966***
	(0.008)	(0.007)	(0.013)	(0.012)	(0.010)	(0.009)
Director Age^2	0.000***	1.000***	0.001***	1.001***	0.000***	1.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm Size	-0.132***	0.877***	-0.196***	0.822***	-0.101***	0.904***
	(0.005)	(0.005)	(0.009)	(0.007)	(0.006)	(0.006)
Board Size	-0.022***	0.979***	-0.024***	0.976***	-0.017***	0.983***
	(0.004)	(0.004)	(0.006)	(0.006)	(0.005)	(0.005)
ROA (3-year average)	-0.000	1.000	-0.004***	0.996***	-0.000	1.000
	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)
MBA Degree	-0.031*	0.969*	-0.042	0.959	-0.020	0.981
	(0.018)	(0.018)	(0.031)	(0.029)	(0.023)	(0.022)
PhD Degree	-0.034	0.966	-0.016	0.984	-0.053	0.948

	(0.031)	(0.030)	(0.047)	(0.047)	(0.041)	(0.039)
# of Qualifications	0.015**	1.015**	0.015	1.015	0.013	1.013
	(0.008)	(0.008)	(0.012)	(0.013)	(0.010)	(0.010)
CEO Experience	0.023	1.023	0.004	1.004	0.033	1.034
	(0.021)	(0.021)	(0.041)	(0.041)	(0.024)	(0.025)
Compensation	-0.089***	0.915***	-0.188***	0.828***	-0.051**	0.951**
Committee Member	(0.018)	(0.016)	(0.030)	(0.025)	(0.022)	(0.021)
Compensation	-0.392***	0.676***	-0.461***	0.630***	-0.285***	0.752***
Committee chair	(0.025)	(0.017)	(0.037)	(0.024)	(0.034)	(0.026)
Audit Committee	-0.070***	0.932***	-0.210***	0.811***	-0.014	0.986
Member	(0.018)	(0.017)	(0.031)	(0.025)	(0.022)	(0.022)
Audit Committee Chair	-0.427***	0.653***	-0.465***	0.628***	-0.367***	0.693***
	(0.025)	(0.016)	(0.036)	(0.023)	(0.035)	(0.024)
Nomination Committee	-0.118***	0.889***	-0.205***	0.815***	-0.078***	0.925***
Member	(0.018)	(0.016)	(0.029)	(0.024)	(0.022)	(0.021)
Nomination Committee	-0.385***	0.681***	-0.455***	0.634***	-0.273***	0.761***
Chair	(0.027)	(0.018)	(0.041)	(0.026)	(0.037)	(0.028)
Observations	21017	21017	8672	8672	12345	12345
Pseudo R^2	0.009	0.009	0.022	0.022	0.006	0.006

Table 9B: Probability of Retiring After First Seat: Above and Below Median Firms of First Appointment in Size

This table presents estimates from Cox Proportional Hazard Models for the probability of retirement of directors after the first non-executive appointment. In panel A, we present the results for the probability of retirement for directors with first appointments in firms that are below the median in size (measured by the natural log of total assets). In panel B, we present the results for directors whose first appointments are in firms that are above the median in size. Within each panel, we present the coefficients and the hazard ratios for the full sample, the period 2000 – 2008, and the period 2009 -2019. Failure is defined as retirement within our sample period where retirement means no further appointments as a director after the first seat. *Female Director* is a binary indicator for female non-executive directors. *Director Age* is defined as the age of a director in years. *Firm Size* is measured by the natural log of total assets of the firm of first appointment. *Board Size* is the number of directors on the board of the firm of first appointment. *ROA* is the three-year average return of assets in the firm of first appointment (calculated as net income divided by total assets). *MBA Degree* and *PhD Degree* are indicators for directors with MBA and PhD degrees. *# of Qualifications* is a count of the total number of qualifications achieved by an individual director. *CEO Experience* is an indicator for CEO experience at the time of the first non-executive appointment. *Compensation Committee Member, Audit Committee Member* and *Nomination Committee Member* are indicators for experience as members of the named committees at the first non-executive appointment. *Compensation Committee Chair, Compensation Committee Chair*, and *Compensation Committee Chair* are indicators for experience as chairpersons of the named committees at the first non-executive appointment. All specifications include cohort (year of first director appointment) fixed effects and 2-digit SIC industry fixed effects. Standard errors are reported in the parentheses below the estimates. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

	Panel A: Below Median Firm Size						Panel B: Above Median Firm Size					
	Full Sample		Period 2000 - 2008		Period 2009 - 2019		Full Sample		Period 2000 - 2008		Period 2009 - 2019	
	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio	Coefficient	Hazard Ratio
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Female Director	-0.137***	0.872***	-0.242***	0.785***	-0.108***	0.897***	-0.135***	0.874***	-0.079	0.924	-0.155***	0.857***
	(0.035)	(0.030)	(0.067)	(0.052)	(0.042)	(0.037)	(0.029)	(0.025)	(0.061)	(0.056)	(0.033)	(0.028)
Director Age	-0.020**	0.980**	-0.039**	0.962**	-0.013	0.988	-0.059***	0.943***	-0.118***	0.889***	-0.053***	0.948***
	(0.010)	(0.010)	(0.016)	(0.015)	(0.013)	(0.013)	(0.012)	(0.011)	(0.022)	(0.020)	(0.014)	(0.014)
Director Age^2	0.000**	1.000**	0.000***	1.000***	0.000	1.000	0.001***	1.001***	0.001***	1.001***	0.000***	1.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm Size	-0.163***	0.850***	-0.202***	0.817***	-0.147***	0.863***	-0.096***	0.909***	-0.162***	0.850***	-0.073***	0.929***
	(0.010)	(0.009)	(0.016)	(0.013)	(0.013)	(0.011)	(0.010)	(0.009)	(0.020)	(0.017)	(0.012)	(0.011)
Board Size	-0.033***	0.967***	-0.028***	0.973***	-0.032***	0.969***	-0.020***	0.981***	-0.027***	0.973***	-0.015**	0.985**
	(0.007)	(0.007)	(0.010)	(0.010)	(0.010)	(0.009)	(0.005)	(0.005)	(0.008)	(0.008)	(0.006)	(0.006)
ROA (3-year average)	-0.000	1.000	-0.003**	0.997**	-0.000	1.000	0.001	1.001	-1.226***	0.293***	0.002	1.002
	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.006)	(0.006)	(0.271)	(0.080)	(0.006)	(0.006)
MBA Degree	-0.019	0.981	0.001	1.001	-0.032	0.969	-0.051**	0.950**	-0.132***	0.876***	-0.016	0.984
	(0.026)	(0.025)	(0.041)	(0.041)	(0.034)	(0.033)	(0.026)	(0.024)	(0.048)	(0.042)	(0.031)	(0.030)

PhD Degree	-0.041 (0.042)	0.960 (0.040)	-0.041 (0.061)	0.960 (0.059)	-0.049 (0.058)	0.952 (0.055)	-0.030 (0.046)	0.971 (0.045)	0.008 (0.077)	1.008 (0.077)	-0.058 (0.059)	0.944 (0.056)
# of Qualifications	0.011 (0.011)	1.011 (0.011)	0.002 (0.016)	1.002 (0.016)	0.013 (0.014)	1.013 (0.014)	0.021* (0.011)	1.021* (0.011)	0.041** (0.020)	1.042** (0.021)	0.012 (0.013)	1.012 (0.013)
CEO Experience	0.051* (0.029)	1.052* (0.031)	0.044 (0.054)	1.045 (0.056)	0.050 (0.035)	1.052 (0.037)	-0.008 (0.030)	0.992 (0.029)	-0.031 (0.066)	0.969 (0.064)	0.011 (0.034)	1.011 (0.034)
Compensation Committee Member	-0.084*** (0.026)	0.919*** (0.024)	-0.186*** (0.042)	0.830*** (0.034)	-0.038 (0.034)	0.963 (0.033)	-0.098*** (0.025)	0.906*** (0.023)	-0.194*** (0.045)	0.824*** (0.037)	-0.075** (0.031)	0.928** (0.028)
Compensation Committee chair	-0.344*** (0.033)	0.709*** (0.023)	-0.420*** (0.048)	0.657*** (0.031)	-0.252*** (0.045)	0.777*** (0.035)	-0.456*** (0.040)	0.634*** (0.025)	-0.500*** (0.061)	0.606*** (0.037)	-0.340*** (0.054)	0.712*** (0.038)
Audit Committee Member	-0.069*** (0.026)	0.934*** (0.025)	-0.197*** (0.043)	0.821*** (0.035)	-0.019 (0.034)	0.981 (0.033)	-0.092*** (0.025)	0.912*** (0.023)	-0.264*** (0.046)	0.768*** (0.035)	-0.035 (0.029)	0.965 (0.028)
Audit Committee Chair	-0.372*** (0.033)	0.689*** (0.023)	-0.406*** (0.047)	0.666*** (0.031)	-0.340*** (0.048)	0.711*** (0.034)	-0.499*** (0.038)	0.607*** (0.023)	-0.562*** (0.059)	0.570*** (0.034)	-0.404*** (0.051)	0.667*** (0.034)
Nomination Committee Member	-0.107*** (0.025)	0.899*** (0.023)	-0.203*** (0.040)	0.816*** (0.032)	-0.053 (0.034)	0.949 (0.032)	-0.125*** (0.025)	0.882*** (0.022)	-0.213*** (0.045)	0.808*** (0.036)	-0.095*** (0.031)	0.909*** (0.028)
Nomination Committee Chair	-0.340*** (0.035)	0.712*** (0.025)	-0.418*** (0.052)	0.658*** (0.034)	-0.258*** (0.048)	0.772*** (0.037)	-0.465*** (0.043)	0.628*** (0.027)	-0.532*** (0.065)	0.588*** (0.038)	-0.325*** (0.058)	0.723*** (0.042)
Observations	10041	10041	4526	4526	5515	5515	10976	10976	4146	4146	6830	6830
Pseudo R^2	0.009	0.009	0.017	0.017	0.008	0.008	0.009	0.009	0.027	0.027	0.005	0.005

Table 10: Probability of Appointment in Board Committees, as Board Chairs and Committee Chairs in First Appointment

This table presents the linear probability estimates for the appointment of of a director being appointed as members and chairs of board committees (Compensation, Audit and Nomination committees), as board chairs in the first non-executive position. In panel A, we present the results for directors with first appointments in firms that are below the median in size (measured by the natural log of total assets). In panel B, we present the results for directors whose first appointments are in firms that are above the median in size. Within each panel, we present the estimates for the period 2000 – 2008, and the period 2009 -2019. The dependent variables are the indicators for being a *Committee Member* (columns 1, 4, 7 and 10), a *Committee Chair* (columns 2, 5, 8, and 11), and the *Board Chair* (columns 3, 6, 9, and 12). *Female Director* is a binary indicator for female non-executive directors. *Director Age* is defined as the age of a director in years. *Firm Size* is measured by the natural log of total assets of the firm of first appointment. *Board Size* is the number of directors on the board of the firm of first appointment. *MBA Degree* and *PhD Degree* are indicators for directors with MBA and PhD degrees. *# of Qualifications* is a count of the total number of qualifications achieved by an individual director. *CEO Experience* is an indicator for CEO experience at the time of the first non-executive appointment. *Board Chair* is an indicator for experience as board chairperson at the at the first non-executive appointment. *Committee* is an indicator for appointments to Audit, Nomination, and Compensation Committee at the first non-executive appointment. *Committee Chair* is an indicator for experience as chairpersons of the Audit, Nomination, and Compensation Committee at the first non-executive appointment. All specifications include cohort (year of first director appointment) fixed effects and 2-digit SIC industry fixed effects. Robust standard errors are reported in the parentheses below the estimates. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

	Panel A: Below Median Firm Size						Panel B: Above Median Firm Size					
	Period 2000-2008			Period 2009-2019			Period 2000-2008			Period 2009-2019		
	Committee Member	Committee Chair	Board Chair	Committee Member	Committee Chair	Board Chair	Committee Member	Committee Chair	Board Chair	Committee Member	Committee Chair	Board Chair
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Female Director	-0.002	-0.007	-0.158***	0.014*	-0.038***	-0.165***	0.005	-0.035*	-0.163***	0.040***	-0.030***	-0.163***
	(0.004)	(0.022)	(0.022)	(0.008)	(0.015)	(0.013)	(0.004)	(0.020)	(0.020)	(0.008)	(0.011)	(0.012)
Director Age	-0.001	0.032***	0.033***	0.014***	0.027***	0.016***	0.002	0.055***	0.049***	0.020***	0.035***	0.027***
	(0.001)	(0.006)	(0.006)	(0.003)	(0.004)	(0.004)	(0.002)	(0.007)	(0.008)	(0.004)	(0.004)	(0.005)
Director Age^2	0.000	-0.000***	-0.000***	-0.000***	-0.000***	-0.000**	-0.000	-0.001***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm Size	-0.001	0.005	0.011*	0.003	-0.008*	0.012**	-0.001	0.003	0.047***	-0.009***	-0.016***	0.031***
	(0.001)	(0.006)	(0.006)	(0.002)	(0.005)	(0.005)	(0.001)	(0.006)	(0.006)	(0.003)	(0.004)	(0.005)
Board Size	-0.001	-0.022***	0.000	-0.013***	-0.040***	-0.006**	-0.001*	-0.019***	0.000	-0.012***	-0.022***	-0.001
	(0.001)	(0.004)	(0.004)	(0.002)	(0.003)	(0.003)	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)
MBA Degree	0.002	0.043***	0.035**	-0.002	0.028**	0.028**	0.009***	0.039**	0.016	0.016**	0.006	0.030**
	(0.002)	(0.014)	(0.014)	(0.006)	(0.012)	(0.011)	(0.003)	(0.016)	(0.015)	(0.007)	(0.011)	(0.012)
PhD Degree	0.000	-0.128***	-0.013	-0.021**	-0.084***	0.043**	-0.009	-0.085***	-0.109***	-0.007	-0.116***	-0.053**
	(0.003)	(0.022)	(0.023)	(0.010)	(0.019)	(0.019)	(0.006)	(0.026)	(0.026)	(0.014)	(0.020)	(0.023)

# of Qualifications	0.001* (0.001)	0.017*** (0.006)	-0.023*** (0.006)	0.009*** (0.003)	0.011** (0.005)	-0.023*** (0.005)	0.003** (0.001)	-0.003 (0.007)	-0.021*** (0.007)	0.005* (0.003)	0.014*** (0.005)	-0.015*** (0.005)
CEO Experience	0.004* (0.002)	-0.026 (0.019)	0.174*** (0.018)	-0.009 (0.006)	-0.015 (0.013)	0.203*** (0.013)	0.008** (0.003)	-0.008 (0.022)	0.138*** (0.020)	0.001 (0.008)	-0.038*** (0.012)	0.183*** (0.013)
Constant	1.034*** (0.019)	-0.141 (0.205)	-0.356* (0.197)	0.740*** (0.079)	-0.062 (0.143)	-0.062 (0.145)	0.934*** (0.059)	-0.728*** (0.257)	-1.193*** (0.252)	0.798*** (0.120)	-0.178 (0.198)	-0.963*** (0.231)
Observations	6088	6088	6088	8201	8201	8201	5150	5150	5150	8090	8090	8090
R^2	0.013	0.047	0.059	0.124	0.082	0.100	0.022	0.057	0.082	0.144	0.114	0.109

Appendix A0:

Definition of Main Variables

Variable	Definition	Source
Female Director	Dummy equal to 1 if the director is a female director, 0 otherwise	BoardEx Board Summary
Director Age	Director's age in years	BoardEx Board Summary
MBA Degree	Dummy equal to 1 if the director has an MBA degree qualification, 0 otherwise.	BoardEx Director Profile
PhD Degree	Dummy equal to 1 if the director has a PhD or a doctoral degree qualification, 0 otherwise.	BoardEx Director Profile
# of Qualifications	Count of the total number of qualifications accumulated by the individual (including MBA, PHD, engineering, other degrees)	BoardEx Director Profile
CEO Experience	Dummy equal to 1 if the individual has accumulated CEO experience by the time the corresponding appointment takes place, 0 otherwise.	BoardEx Director Employment
XYZ Committee Member	Dummy equal to 1 if the individual has accumulated experience on the XYZ committee by the time the corresponding appointment takes place, 0 otherwise.	BoardEx Board Summary
XYZ. Committee Chair	Dummy equal to 1 if the individual has accumulated experience on the XYZ committee as a chair by the time the corresponding appointment takes place, 0 otherwise.	BoardEx Board Summary
Board Chair	Dummy equal to 1 if the individual has accumulated experience as board chair by the time the corresponding appointment takes place, 0 otherwise.	Constructed using director title in BoardEx Board Summary
Firm Size	Natural logarithm of total assets	Compustat: at

Board Size	Number of directors on the board.	BoardEx: total number of directors on the board
Days to Second Seat	Difference in days between the start of the first directorial appointment and the start date of the second appointment.	startdate and enddate extracted from Director Employment file in BoardEx
Log(Days to Second Seat)	Natural logarithm of Days to Second Seat	
First-time	Dummy equal to 1 if a new directorial appointment has no previous experience serving as a director in a quoted board, 0 otherwise.	Calculated using the total number of quoted boards to date
Above Median	Dummy equal to 1 if the appointment takes place above the median firm size, and 0 otherwise.	Constructed using Firm size as defined above.
Below Median	Dummy equal to 1 if the appointment takes place below the median firm size, and 0 otherwise.	Constructed using Firm size as defined above.
Top Quartile	Dummy equal to 1 if the appointment takes place above the top quartile of firm size, and 0 otherwise.	Constructed using Firm size as defined above.
S&P500	Dummy equal to 1 if the firm is included in the S&P500 index in the corresponding year.	Compustat variable spmim=10
ROA	Return on Assets calculated as net income divided by total assets.	Compustat: at, ni
Industry	2-digit SIC code	Compustat SIC