At the table but can't break through the glass ceiling: Board leadership positions elude diverse directors

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Laura Casares Field*
Department of Finance
University of Delaware
Newark, DE 19716
(302) 831-3810
lfield@udel.edu

Matthew E. Souther
Department of Finance
University of South Carolina
Columbia, SC 29208
(803) 777-4929
matthew.souther@moore.sc.edu

Adam S. Yore
Department of Finance
University of Missouri
Columbia, MO 65211
(573) 884-1446
yorea@missouri.edu

We explore the labor market effects of gender and race by examining board leadership appointments. Prior studies are often limited by observing only hired candidates, whereas the boardroom provides a controlled setting where both hired and unhired candidates are observable. Although diverse (female and minority) board representation has increased, diverse directors are significantly less likely to serve in leadership positions, despite possessing stronger qualifications than non-diverse directors. While specialized skills such as prior leadership or finance experience increase the likelihood of appointment, that likelihood is reduced for diverse directors. Additional tests provide no evidence that diverse directors are less effective.

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*Corresponding author, U. of Delaware, 306A Purnell Hall, Newark, DE 19716, (302) 831-3810, lfield@udel.edu

1. Introduction

In recent years, institutional shareholders and regulators have been increasingly focused on the diversity of corporate boards. For example, the 2018 Global Policy Survey conducted by Institutional Shareholder Services (ISS) indicated that more than 80% of institutional investors view firms without female board representation as "problematic."[1] Similarly, in some European countries, such as Belgium, France and Norway, mandatory gender diversity of boards has become the norm. Although there is no federal regulation for gender or racial diversity of U.S. boards, the issue has recently received attention from state legislatures.[2,3]

U.S. firms seem to be responding to these calls for greater board diversity: the percentage of female and minority directors has substantially increased in the past 20 years. Nonetheless, females and minorities continue to be underrepresented (Peterson, Philpot, and O'Shaughnessy, 2007; Adams and Ferreira, 2009; Kim and Starks, 2016), and while there has been substantial research on board committee membership for females and ethnic minorities,[4] it is arguably more important that these groups be represented in board leadership. Indeed, the board of directors is the apex of the corporate hierarchy and is commonly viewed as the lynchpin of any effective governance system (Gillan, 2006). Thus, with the responsibility of setting the agenda and direction of the board, its leadership has an immense potential for impact. Therefore, we examine the extent to which women and minorities serve in leadership roles on corporate boards, specifically, as non-executive chairman of the board, lead director, or chair of a major board committee (audit, compensation, nominating, or governance).

This study has broader implications for our understanding of labor markets for females and minorities. By using the allocation of leadership appointments within the corporate boardroom as a laboratory to explore the labor market effects of gender and race, our setting provides key advantages over prior literature, which has primarily studied the issue by measuring pay gaps or under-representation in certain positions. In many of these prior studies, it is unclear whether observed differences in labor market outcomes are a result of varying opportunities or whether they are attributable to the wide range of endogenous factors such as differing levels of experience and education, varying career choices, or traditional gender roles (see Blau and Kahn, 2017, for an extensive review). Much of the uncertainty stems from an incomplete sample of job candidates in

[1] https://www.issgovernance.com/file/policy/2018-2019-iss-policy-survey-results-report.pdf

[2] https://www.wsj.com/articles/california-moves-to-mandate-female-board-directors-1535571904?mod=hp_lead_pos8

[3] https://www.chicagotribune.com/business/ct-biz-corporate-diversity-bill-passed-gutted-20190603-story.html

[4] For research on board committee membership for women, see Kesner (1988), Bilimoria and Piderit (1994), Peterson and Philpot (2007), and Adams and Ferreira (2009). For research on board committee membership for ethnic minorities, see Peterson, Philpot and O'Shaughnessy (2007) and Jiraporn, Singh, and Lee (2009).

combination with incomplete knowledge of their qualifications. By contrast, because we identify all of the directors in the boardroom, we observe the entire population of candidates for a given leadership position. Notably, while most prior studies do not observe the pool of candidates not hired, our setting allows us to directly compare the characteristics of appointed directors to those not appointed to leadership roles. We acknowledge that selection concerns at the initial appointment of directors may prevent fully extending our findings to other leadership choices in the firm; however, the controlled environment presents valuable insights for leadership decisions.

We take advantage of this setting using a large sample of non-employee directors on U.S. corporate boards from 2006 to 2017, which includes 126,044 director-firm-year observations representing 19,686 individual directors serving at 2,254 unique firms. Confirming prior evidence, we find that diverse directors are represented on the four major board committees.[5] Nonetheless, we find that, despite being highly qualified, diverse directors are significantly less likely to be appointed to board leadership roles. Figure 1 provides a graphical representation. The solid lines in Figure 1 show the percentage of directors who are female (Panel A), minority (Panel B) and white male (Panel C) over the sample period, while the dashed lines show the percentage of board leaders (non-executive chairman, lead director, or committee chair of audit, compensation, nominating, or governance) who are female (Panel A), minority (Panel B) and white male (Panel C).

The figures indicate a substantial leadership gap for women and minority directors over the entire sample period: once on the board, women and minorities have lower representation in board leadership roles relative to white males. Moreover, while representation of diverse directors has improved over our sample period, their representation in board leadership roles has lagged their representation on the board. To eliminate the gap between representation and leadership during a time of increasing diversity, the proportion of diverse board leaders would have to increase at a greater rate than overall diversity. We find that this is the case for female directors; progress in both the percentage of female directors and the percentage of female leaders has led to a slight narrowing of the leadership gap for women during our 2006-2017 sample period. However, the gap has actually widened for minority directors, for whom leadership opportunities are increasing at a slower rate than leadership appointments. Projecting trends forward at the same average linear rates, boards should reach 50% female directors in 45 years, but the proportion of female leaders would need to keep increasing for an additional three years beyond that to reach 50%. For minorities, if we assume a target of 28% (the proportion of college graduates in the United States who are minority), boards will reach that target in

[5] Adams and Ferreira (2009) study female directors, while Peterson, Philpot and O'Shaughnessy (2007) study African-American directors.

86 years, but the proportion of minority leaders would need to keep increasing for an additional 40 years beyond that to reach 28%.

It is possible that the board leadership gap can be explained by a lack of director experience and qualifications since, admittedly, Figure 1 provides univariate measures that do not control for qualifications and experience. However, when we examine qualifications and experience, we actually find that diverse directors exhibit a greater number of professional credentials, have more extensive outside board and other firm committee experience, and come from larger director networks than their white male counterparts. Moreover, in a multivariate setting in which we control for director qualifications and experience, we continue to find a substantial leadership gap: diverse directors are nearly four percent less likely to serve as non-executive chairman and five percent less likely to serve as lead director. Given a naïve appointment probability of 11%, this implies a 32-47% reduction in the likelihood of appointment relative to a non-diverse director. Similarly, diverse directors are between 13% and 27% less likely to serve as chair of one of the four major committees (audit, compensation, nominating, or governance).[6]

Beyond general measures of qualifications and experience, we also examine specialized skills, such as finance experience or prior board leadership experience. As Figure 2 shows, although such skills do significantly increase the likelihood of appointment to a leadership position, they are less helpful for diverse directors. For example, a non-diverse director with prior chairman/lead director experience is 10.5% more likely to be appointed as chairman/lead director, while a diverse director with the same experience is only 6.1% more likely to be chosen (Panel B). Similarly, finance experience increases the likelihood of non-diverse directors serving as audit chair by 37%, but the corresponding percentage for diverse directors is only 27.6% (Panel C). Beyond prior board leadership experience and finance experience, we also examine board committee tenure. If chair positions rotate within a committee over time, directors with longer tenure should be more likely to serve as committee chairs. While we do find that directors with longer relevant committee tenure are significantly more likely to become committee chair, the benefit of longer committee tenure is significantly lower for diverse directors (Panel D). Notably, for each skill or experience measure we examine, diverse directors are at a relative disadvantage to their non-diverse counterparts.

[6] These likelihoods are calculated on a relative basis. For example, in an average firm with nine directors, any individual director has an unconditional 11.1% likelihood of serving as chairman. Our Table 3, Panel A regressions shows that diverse directors are 3.6% less likely to serve as non-executive chairman and 5.2% less likely to serve as lead director, which implies a relative economic effect of (3.6%/11.1%) =32% and (5.2%/11.1%) =47%, respectively. By the same logic, diverse directors are 1.4% to 3.0% less likely to serve as a particular committee chair, which implies a relative economic effect of (1.4%/11.1%) = 13% to (3.0%/11.1%) = 27%.

Although our specifications control for a myriad of qualifications and experience, we recognize that personnel decisions may be made on the basis of a host of other factors that are unobservable to the researcher. Therefore, to control for possible endogeneity, we utilize an instrumental variables approach to achieve identification. Specifically, we use the state-by-state variation in legal protection or economic opportunity for female candidates introduced by Huang and Kisgen (2013). We assign the *Gender Equality Index* to where the sample directors attended college. We also exploit the passage of the Civil Rights Act of 1964 as an exogenous shock to the pool of available diverse directors year-by-year who were of college age around the time the Act was passed. This Act made it illegal for college admissions officers to discriminate on the basis of race or gender, thereby increasing the higher education opportunities, and consequentially, occupational mobility, for women and minorities reaching college age after the Act was passed. We employ these instrumental variables in both a two-stage least squares (2SLS) and a Heckman treatment effects analysis. Throughout each of these analyses, we continue to find that diverse directors face challenges to obtaining board leadership positions, suggesting that our results are not driven by omitted variables or self-selection.

While the leadership differences we observe may be due to biases such as stereotype threat (Bergeron et al., 2006), homophily (McPherson et al., 2001), or tokenism (Bourez, 2005; Branson, 2008), we consider several other possible explanations for why diverse directors are less likely to serve in board leadership roles: (1) given the recent focus on board diversity, diverse directors may choose to serve on more boards rather than commit substantial resources to serving in leadership positions on fewer boards; (2) diverse directors may not choose to serve in board leadership positions because they are risk-averse (Croson and Gneezy, 2009) or because they live farther from the firm (Alam et al., 2014); or (3) diverse directors may not be effective in board leadership roles.

Our univariate statistics show that diverse directors serve on more boards, on average, than their non-diverse counterparts. This finding could imply that diverse directors prefer to allocate their time across multiple boards rather than serving in leadership roles on fewer boards. To consider this possibility, we examine various subsamples to identify whether diverse directors choose breadth over depth. First, we posit that directors serving on only one board would be less likely to eschew a board leadership position than directors serving on multiple boards. Second, because it is unlikely that a director who has served on a single board for several years is avoiding board leadership positions in the hopes of gaining other directorships, we also examine directors who serve on only one board and have at least five years' tenure. Finally, we examine directors who have at least three board appointments, as we conjecture that there is little reason for "busy" directors to abstain from a leadership role hoping to get yet another board seat. Within each of these subsamples, we continue to find that diverse

directors are less likely to serve in board leadership roles than are non-diverse directors. Overall, we find no evidence that diverse directors avoid leadership roles in order to serve on more boards.

Another possible explanation for our findings is that diverse directors may prefer not to serve in leadership positions, potentially due to varying degrees of risk preferences, particularly for females, for whom prior literature has shown exhibit higher degrees of risk aversion (see Croson and Gneezy, 2009, for a review). To shed light on this possibility, we identify diverse directors who have previously served in board leadership positions at other firms (as chairman, lead director or chair of a committee). We surmise that if a director has prior board leadership experience, she is clearly not averse to assuming a leadership role. However, the leadership gap for diverse directors persists even for these prior leaders: diverse directors with prior board leadership experience are two to three percent less likely to serve as committee chair and 11.8 percent less likely to serve as chair/lead director.

Yet another possible explanation for our findings is that diverse directors may live farther from the company and may avoid leadership roles due to the extra time commitment. Alam, et al. (2014) study the geographic distance of male and female directors to corporate headquarters and find that, except in the Northeast, female directors in the U.S. tend to live substantially greater distances from corporate headquarters than do their male counterparts. Alam, et al. (2014) find that the median female director in the Northeast resides closer to firm headquarters and travels half the distance of their male counterparts. Thus, to test whether distance prevents diverse directors from pursuing board leadership roles, we limit our sample to firms headquartered in the Northeast, where population densities are much higher and for which distance should not be an issue. Notably, we find nearly identical results for firms headquartered in the Northeast as for the full sample, suggesting that distance from headquarters does not explain why diverse directors are less likely to serve in board leadership roles.

Because we find no evidence that diverse directors are less qualified or avoid board leadership positions, we next examine whether diverse directors may be overlooked in board leadership roles because they are less effective. In fact, this is not the case. Diverse directors are as effective as non-diverse directors: the quality of financial reporting is higher with a diverse chair on the audit committee, the sensitivity of CEO turnover to performance is similar for boards with or without a diverse non-executive chairman or lead director, and abnormal CEO pay is similar for boards with or without a diverse chair on the compensation committee. We also examine shareholder voting to analyze the effectiveness of diverse directors. We find that diverse directors receive significantly higher voting support than do their non-diverse counterparts, suggesting that shareholders view them as effective.

In sum, results point to the conclusions that diverse directors possess at least the same professional skills as their peers and, when serving in leadership roles, they perform their board duties

at least as well as their non-diverse counterparts. Moreover, we find no evidence to suggest that diverse directors avoid serving in board leadership roles. Thus, we posit that biases may at least partially explain the leadership gap we observe for diverse directors. If biases do contribute to the leadership gap, we expect that corrective actions taken by the firm may mitigate the gap.

To identify possible intermediations to mitigate the diversity leadership gap, we consider three interventions suggested by prior literature to enhance board diversity: (1) increase the proportion of diverse directors on the board, (2) adopt a diversity policy in director nominations explicitly considering gender and race, and (3) include a diverse director on the nominating committee. Tinsley et al. (2017) study the first two interventions in a laboratory experiment, and Branson (2008) suggests that to increase board diversity, board nominating committees should include at least one woman. In laboratory experiments, Tinsley et al. (2017) find that increasing the pool of female applicants does mitigate underrepresentation but reminding participants of the importance of diversity does not.[7]

We do not find evidence that diverse board representation reduces the leadership gap. However, we do observe a significant decrease in the leadership gap for firms explicitly stating in their proxy statements that they consider race and gender in their board nomination policy: these firms are six to nine percent more likely to have diverse directors serving in board leadership roles. Additionally, we find that having a diverse director on the nominating committee increases the likelihood of a diverse leadership appointment (outside the nominating committee) by five percent. Although these results do not show causation, our evidence suggests that firms implementing a diversity policy explicitly considering race and gender are more likely to include diverse directors in board leadership roles, as are firms with diverse directors on the nominating committee. Our results indicate that merely increasing diverse representation on the board will not mitigate the leadership gap. Rather, the policy implications of our results suggest that boards should have diverse representation on their nominating committee and explicitly consider diversity when assessing the contribution of a new director to the board.

Our study contributes to prior literature documenting the importance of demographics in the labor market. Many of these studies deal primarily with gender-based pay differences (Blau and Kahn, 2017). A smaller set of studies focus on differences in opportunities for women, finding a pooling of women at lower hierarchical positions (Winter-Ebmer and Zweimuller, 1997; Ginther and Hayes, 1999; Gobillon et al., 2015). Other studies find that at least a portion of the observed differences

[7] In other settings, experiments have suggested that focusing on diversity does promote gender equity. Carnes, et al. (2015) finds that a faculty workshop educating and reminding participants of potential gender biases did increase participants' likelihood of promoting gender equity, and Casadevall (2015) finds that the American Society for Microbiology's reporting of gender statistics and encouraging equal representation of women were effective at achieving gender equity at its General Meeting.

between genders is explained by differences in experience and career choices (Angelov et al., 2016; Buser et al., 2014, Bayard et al., 2003). Gayle et al. (2012) find that women actually earn higher compensation than men and are promoted more quickly, and find that observed pay gaps and job-rank differences are a result of female executives exiting the labor force at higher rates than men. Bertrand and Hallock (2001) find no significant pay gap between executives after controlling for firm size and position type. Matsa and Miller (2013) find that female directors are more likely to appoint female executives. Agarwal et al. (2016) find that female board appointments are more likely when the woman plays golf. Our results show that the gender and race related differences in our setting are not explained by life choices, qualifications, or the potential supply of candidates for the job.

Our study also contributes to the literature exploring the role of race and gender in board appointments and broader executive leadership. Several studies document the lack of board participation for women and minorities (McDonald and Westphal, 2013; Westphal and Stern, 2007; Schnatterly, Berns, da Motta Veiga, and Ward, 2015). To our knowledge, our paper is the first to explore the implications of race and gender following the initial appointment to the board.[8] We also note our contribution to a growing literature concerning racial and gender inequality in finance (Park and Westphal, 2013; Dougal, et al., 2019; Agarwal, et al., 2016) and the importance of having women or minorities in positions of leadership for promoting equity among employees (Tate and Yang, 2015).

Lastly, our study contributes to the discussion of the internal dynamics at corporate boards and how board leadership is determined. While the composition of the board at large has been the focus of several academic studies (Hermalin and Weisbach, 1998; Linck, et al., 2008), as has the importance of certain committees for maximizing shareholder wealth (Klein, 1998), there is scant evidence on how the various leadership roles are allocated among the available talent on the board. Our study adds to recent work by Adams, Akyol, and Verwijmeren (2017) and Adams, Eagly, and Heilman (2016) by exploring how specific skill sets of corporate directors relate to their roles on the board.

2. Data

In this section, we discuss sample construction and characteristics of the firms we study. We also present initial univariate evidence on the differences in qualifications and leadership appointments for diverse directors in our sample.

[8] We have recently become aware of a subsequent working paper (Chidambaran et al., 2018) that examines the role of director demographics in retention and promotion and reaches qualitatively similar conclusions.

2.1. Sample construction

We identify sample observations using the universe of non-employee (outside) directors listed in the Institutional Shareholder Services (ISS), aka RiskMetrics/IRRC, "Directors" database. This database contains over 319,000 director-firm-year observations and reports the composition of the board of directors up for election or continuing service as of their annual meetings at S&P 1,500 companies. We collect the identity, gender, ethnicity, age, tenure, independence, committee membership, title in their primary position of employment, number of outside directorships and outside committee assignments, and attendance for each corporate director for the 2006-2017 annual meetings.

Female directors are identified by the gender listed in the ISS Directors database, and we define a director as *minority* if the ethnicity is listed in the database as "A" (i.e., Asian), "ASIAN", "B" (i.e., African American), "BLACK/AFRICAN AM," "H" (i.e., Hispanic), "HISPAN," "HISPANIC," "HISPANIC/LATIN A," "I" (i.e., Native American), "INDIAN," or "MIDDLE-EASTERN."[9] We further define directors as *diverse* if they are either female or minority. Prior to 2011, on average, 44% of listed directors are missing their ethnicity in a given year in the ISS Directors database (ethnicity is fairly complete after 2011 and gender is well-populated in all years). To ensure that we correctly classify the directors in our sample, for those observations missing ethnicity, we identify whether a given director is ever classified by ISS as a minority and backfill those observations. After performing this procedure, we are able to identify the ethnicity of approximately 93% of the directors in our sample for the 2006-2010 annual meeting years and 97% for the full sample period. Directors not listed as either female or minority are classified as non-diverse.[10]

We supplement the professional data for non-employee directors in the ISS Directors database with biographical data contained in BoardEx. BoardEx contains full biographies on over 700,000 corporate directors and senior managers at over 18,000 U.S. public firms and provides data on gender, nationality, education, professional experience, certifications, finance experience, political connections, committee appointments, and outside board and committee service for each non-employee director. We are careful to account for the academic and professional credentials of sample directors. These characteristics are taken from a combination of ISS (RiskMetrics/IRRC) and BoardEx. Because these two databases do not always agree on the skill sets or qualifications of a particular director, we take the maximum value reported by either database. For example, if BoardEx reports a director as having management experience but ISS does not, we record that director as having management

[9] Other identified ethnicities in ISS that are nonsensical (e.g., "ACADEMIC," "NULL," "LORD") are set to missing.

[10] Prior to backfilling, 17.95% of total director observations are missing ethnicity and, of these, 99.38% are between 2006 and 2010. After backfilling, the percentage of missing ethnicities falls to 3.02%. Our classification of these remaining missing ethnicities does not materially affect our results.

experience. The same classification methods apply to identifying the committees on which a director serves.

We focus on the primary leadership roles on the board: non-executive chairman, lead director, and chair of the four major committees (i.e., audit, compensation, nominating, and governance). According to Section 303A.03 of the NYSE Listed Company Manual, all members of these committees must be independent, or non-employee, directors. By extension, only independent directors may serve in these leadership roles. We, therefore, limit our study to non-employee directors. The role of Chairman of the Board is the primary leadership responsibility for a corporate director. The Chairman typically sets the board meeting agendas, has the power to call special meetings, and may make certain procedural decisions in the adjudication of any meeting items. Although firms may appoint the CEO as Chairman, many of these boards also appoint a "Lead" or "Presiding" director to share this authority so as not to concentrate too much power in the hands of the CEO. In fact, New York Stock Exchange (NYSE) regulations require listed companies to meet regularly without management and to designate a non-management director to preside over these sessions.[11] Committee chairs perform a similar function for their respective committees. These are prestigious and powerful positions on the board, and directors serving in these roles typically receive additional compensation for assuming these responsibilities. We collect director compensation data from the director compensation table ("directorcomp") in ExecuComp.

We gather data on shareholder votes in director elections by utilizing the ISS Voting Analytics database, which contains the outcomes of over 250,000 shareholder votes on director elections, auditor ratifications, and shareholder proposals. Finally, for each firm for which we have board data, we obtain corporate financial data from the Compustat fundamentals annual database and stock prices from the Center for Research on Security Prices' (CRSP) daily and monthly stock files. The final sample consists of 126,044 non-employee director-firm-year observations (16,836 firm-year observations) from 2,254 unique firms for the annual meeting years 2006-2017, with voting data available for 109,538 individual director elections.

2.2. Female and minority board representation, firm characteristics, and diversity policies

Figure 1 shows the proportion of diverse directors over time. Specifically, Panel A shows the percentage of female directors (solid line) and the percentage of female directors in board leadership roles (dashed line), while Panels B and C show the same for minority directors and white male directors, respectively. Although the proportion of diverse directors (particularly female directors) increases

[11] NYSE Listed Company Manual Section 303A.03.

during our time series, female (minority) directors account for approximately 21% (12%) of all board members in the average firm as of 2017. As a basis for comparison, according to the 2010 census, minorities make up more than 34% of the population of the United States, and females account for 51%. Furthermore, the percentage of women in the population having completed at least four years of college has exceeded that of men since 2014,[12] and 53% of those earning doctorate degrees in the U.S. in 2017 were female.[13] Within the population of college graduates, nearly 28% are minorities.[14] While these statistics do not necessarily reflect the available director labor force, it is clear that minorities and females are substantially underrepresented in the boardroom relative to the general population.

In each panel of Figure 1, the dashed line displays the percentage of board leadership positions that are held by each group of directors. The displayed percentage is the average firm's ratio of each group's (female, minority, white male) director appointments to total director appointments. As the gap in Panels A and B (between each solid line and the corresponding dashed line) demonstrates, women and minorities are under-represented in board leadership roles over the entire sample period. While women (minority) directors represented 21% (12%) of the average firm's directors in 2017, only 17% (9%) of the average board's leadership roles are held by women (minorities). By extension, white male directors are overrepresented in leadership roles, as is shown in Panel C. Also of note, Panel A indicates a slight narrowing of the gap between representation and leadership roles over time for female directors; however, the gap widens during the sample period for minority directors.

In Panel A of Table 1, we report the prevalence of diversity within our sample of corporate boards at major S&P 1,500 companies between 2006 and 2017. Over the sample period, 53% of boards include at least one minority director while 76% of boards include at least one female. As shown in the right two columns of Panel A, the proportion of minority and female directors has increased over the sample period: in 2006, 50% of boards included at least one minority director and 71% included at least one female; by 2017, 59% of boards included at least one minority and 88% included at least one female.

The statistics for the early part of our sample are similar to those reported by Adams and Ferreira (2009), who find that 9% of directors are female, and 61% of firms have a female board member during their 1996 to 2003 sample period; Fedaseyeu, Linck, and Wagner (2018), who find 15% of their directors are female in their 2006 to 2010 sample; and Peterson, Philpot and

[12] https://www.statista.com/statistics/184272/educational-attainment-of-college-diploma-or-higher-by-gender/

[13] https://www.statista.com/statistics/185167/number-of-doctoral-degrees-by-gender-since-1950/

[14] The Census does not formally report this statistic; however, we estimated the percentage using education statistics at https://www.census.gov/content/dam/Census/library/publications/2016/demo/p20-578.pdf and population data at https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_DP05&src=pt.

O'Shaughnessy (2007), who find that 6.3% of their Fortune 500 company directors in 2002 are African American. Panel B of Table 1 shows the breakdown of minority directors by ethnicity. The largest ethnic group of directors is African American, comprising 51% of minority directors, followed by Asian directors (26%) and Hispanic directors (20%).[15] Panel C of Table 1 describes the sample of firms. The average firm in this sample has $7.2 billion in sales and 9.39 directors on its board. These figures are in line with other published work (e.g., Coles, Daniel, and Naveen, 2008, 2014), suggesting that our sample is not unusual.

In Panel D, we provide annual statistics on the proportion of firms with a diversity policy on gender or race for director nominations. To identify whether firms have a diversity policy with respect to gender and/or race, we used Python to search the terms "divers," "gender," "ethnic," or "race" in annual proxy statements. We then read each of the flagged proxies to identify which firms have a diversity policy on gender or race for director nominations. A firm is determined to have a diversity policy in a particular year if the proxy statement mentions that the board considers race and/or gender when it selects director nominees. Note that the firm must specifically mention diversity in terms of gender, race, or ethnicity to be deemed to have a diversity policy. For example, Republic Services is not considered to have a diversity policy in 2012 because, although the proxy statement mentioned diversity as a factor in board candidacy, it did not explicitly include race and/or gender:

> *"Although we have no formal policy regarding diversity relating to Board candidacy, our Corporate Governance Guidelines state that directors should be selected in the context of assessing the Board's needs at the time and with the objective of ensuring diversity in the background, experience and viewpoints of Board members. The Board and Governance Committee value diversity as a factor in selecting Board members and believe that the diversity of opinions, perspectives, personal and professional experiences, and backgrounds reflected on our Board provides us significant benefits."*

In 2013, however, Republic Services began to explicitly address diversity of gender and race:

> *"In February 2013, we revised our Corporate Governance Guidelines to make a more specific statement regarding diversity relating to Board candidacy. Before this, our Corporate Governance Guidelines already stated that directors shall be selected in the context of assessing the Board's needs at the time and with the objective of ensuring diversity in the background, experience and viewpoints of Board members. The Corporate Governance Guidelines now further state that Republic and the Board are committed to a policy of Board inclusiveness. To assist in promoting such diversity, the Board shall, to the extent consistent with applicable legal requirements and with its fiduciary duties, take reasonable steps to ensure that new Board nominees are drawn from a pool that includes diverse candidates, including women and minority candidates."*

Many firms discuss diversity broadly but do not explicitly consider gender and/or race in director nominations (see Appendix B for examples). Others do not consider diversity in director nominations. For example, Berkshire Hathaway's 2017 proxy states: *"In identifying director nominees, the*

[15] We note that our tests reach similar conclusions when limiting the sample to African Americans, and when limiting the sample to non-African American minorities.

Governance Committee does not seek diversity, however defined. Instead, as previously discussed, the Governance Committee looks for individuals who have very high integrity, business savvy, an owner-oriented attitude and a deep genuine interest in the Company." Similarly, from Alcoa Corp.'s 2017 proxy, "*Our policy provides that while diversity and variety of experiences and viewpoints represented on the Board should always be considered, a director nominee should not be chosen nor excluded solely or largely because of race, color, gender, national origin or sexual orientation or identity*."

In 2010, the Securities and Exchange Commission (SEC) issued "Proxy Disclosure Enhancements" that mandate issuers to disclose whether and how diversity is considered in the director nomination process. As shown in Panel D of Table 1, about 9%-10% of firms discussed a diversity policy with regard to gender or race in their proxy statements even before the 2010 SEC mandate (see Appendix B for examples of early adopters). After the 2010 rule, about 40% of firms describe such a policy with respect to gender and/or race (from 39% in the 2010 proxy season to 48.8% by the 2017 proxy season).[16]

2.3. Director qualifications and board responsibilities

Table 2 describes the sample of directors. For each director, we identify relevant experience (classified as finance, management, legal/consulting, academic, political, or military) from BoardEx employment histories and primary occupations reported by ISS. We also identify the educational background of each director from BoardEx. We follow Fedaseyeu, Linck, and Wagner (2018) in computing an aggregate measure of a director's qualifications, the *Qualifications Index*. This index is computed as the sum of six experience variables (finance experience, management experience, legal or consulting experience, academic experience, political experience, and military experience) and three education variables (undergrad degree, MBA degree, and advanced graduate degree). Finally, we identify the director's responsibilities in terms of committee appointments and leadership roles. We classify committee service into the four major committees: audit, compensation, governance, and nominating (though the terminology may differ on the proxy statement or in BoardEx). Leadership roles include the chair of each committee, along with non-executive chairman and lead director.

Table 2 shows averages for non-minority male, minority, and female directors. Asterisks in the *Minority* and *Female* columns denote significant differences from the *non-minority male* population, and we note that the minority and female subgroups are not mutually exclusive. Relative to non-minority males, both minority and female directors have served on significantly more boards, served more years as a director across all firms, served on more board committees, and have larger networks.

[16] We note that more than 98% of firms with a diversity policy explicitly consider both gender and race.

However, they tend to be younger and have shorter tenures on the board of the focal firm. In terms of career and educational experience, minorities and females have on average similar or significantly higher levels of education and professional experience than non-minority males in every category except for finance experience. The qualifications index reports higher levels of qualifications for the minority and female director populations. This holds true even on a firm-adjusted basis, suggesting that minority and female directors tend to have more qualifications on average than the non-minority males serving on the same board. Committee responsibilities also differ between the populations. Minority and female directors are less likely to serve on the audit and compensation committees, and more likely to serve on the nominating and governance committees.

We next report univariate differences in board leadership appointments. Table 2 shows that minority and female directors are significantly less likely than non-minority males to be appointed to each of these leadership roles. Non-minority males are more than twice as likely as minorities to be appointed as Non-Executive Chairman or Lead Director, and they are nearly three times as likely as females to be appointed to these roles. While 42.1% of non-minority male directors serve as a committee chair, only 28.8% of minorities and 32.8% of females are committee chairs: these differences are especially evident in the audit and compensation committee chair positions. Despite their higher likelihood of appearing as members of the nominating and governance committees, minority and female directors are less likely than non-minority males to serve as chair of these committees.

3. Multivariate Analysis

The univariate analysis shows that diverse directors are less likely to serve in board leadership roles. Although Table 2 also shows that, on average, diverse directors exhibit higher credentials, diverse directors not chosen for board leadership roles may be less qualified. Indeed, early evidence on board committees found that women were less likely to serve on board committees due to a lack of experience (Kesner, 1988; Bilimoria and Piderit, 1994). However, using more recent data, Adams and Ferreira (2009) find that female directors are more likely than men to sit on audit, nominating and corporate governance committees but are less likely to serve on the compensation committee.[17] Peterson, Philpot, and O'Shaughnessy (2007) find that race is not a significant factor for membership on the nominating or compensation committees, but that African-Americans are more likely to sit on the audit committee than their white counterparts. We note that early work on committee membership does not account for the full breadth of experience variables that influence committee participation. For diverse directors, relevant predictors for committee service such as finance experience or

[17] We replicate the results of Adams and Ferreira (2009) using our sample in Internet Appendix Table C-1.

legal/consulting experience have meaningfully increased in frequency even over our sample period, and the evolution of these omitted variables over time might explain the differences among these studies.[18] Such confounding effects are perhaps a reason why the question of diversity in the boardroom is so difficult to answer.

Given this more recent evidence on committee membership, one might expect no significant differences in representation by diverse directors in board leadership roles once qualifications are considered. However, several studies have documented that women and minorities are less likely to rise to corporate management positions (e.g., Lam, McGuinness, and Vieito, 2013; Kaplan and Sorensen, 2017), so one might expect diverse directors to also be underrepresented in board leadership roles. To empirically examine this issue, we estimate multivariate regression models to evaluate the role that race and gender play in a director's appointment to board leadership positions, controlling for the observable and latent characteristics that might influence this choice. We support this investigation of leadership appointments by also looking at the monitoring ability, shareholder support, and compensation levels of diverse directors relative to their non-diverse counterparts on the same board.

In order to draw conclusions about the responsibilities, performance, support, and pay of the directors in our sample, we must control for a wide range of director qualifications and experience that might plausibly explain the differences we observe in the data. Previous studies such as Fich (2005), Fedaseyeu, Linck, and Wagner (2018) and Adams, Akyol, and Verwijmeren (2017) provide a blueprint on how to estimate director skills and experience. We follow these prior studies by including indicator variables for academic, legal/consulting, finance, management, political, and military experience. We control for education at the undergraduate, advanced graduate, and MBA levels, and we control for outside board experience, industry experience, and the size of the director's professional network. When analyzing director pay, we also control for the potential variations in pay resulting from paid work such as committee chair and Chairman of the Board appointments.

In addition to addressing director-specific attributes, we account for a wide range of firm characteristics that are consistent with prior studies of board composition and compensation (e.g., Adams and Ferreira, 2008, 2009, and Ryan and Wiggins, 2004), and each model includes controls for firm size [*ln(Sales)*], *Return on Assets*, *Volatility,* and whether the *CEO is Chairman*. To control for unobserved heterogeneity across firms, the ensuing models implement firm fixed effects that account for time invariant systematic differences at firms choosing to employ diverse directors. By including firm fixed effects, we focus our study on within-board variation in appointments, so we are comparing

[18] For example, the proportion of female directors with finance experience has increased from 26% in 2006 to 36% in 2017 in our sample (not reported).

diverse directors to others serving on the same board. Therefore, the estimates reported should be interpreted as variations from conditional firm averages. To control for the varying likelihood of appearing on certain committees across diversity status, we include committee fixed effects.[19] All of our models employ robust Rogers (1993) standard errors clustered at the individual director level to account for serial dependence. All specifications also include year fixed effects.

3.1. Board leadership positions for diverse directors

The major leadership roles on the board we consider are non-executive chairman, lead (or presiding) director, and committee chair positions on the four principal committees: audit, compensation, nominating and governance. Our specifications are linear probability models with firm, year, and committee fixed effects. Our dependent variable is an indicator taking a value of one if the director chairs the board, is the lead director, or chairs a specific committee and zero otherwise.

Table 3 presents the results. These multivariate results show that diverse directors are significantly less likely to serve as chairman or as lead director, consistent with the univariate evidence presented in Table 2. The coefficients in columns 1 and 2 indicate that diverse directors are 3.6 percentage points less likely to serve as chairman of the board and 5.2 percentage points less likely to serve as lead director. For an average board of nine directors, implying a naïve probability of chairman/lead director of 0.111 or 11.1 percentage points, these coefficients represent relative decreases in the likelihood of diverse directors serving these key leadership positions in the magnitude of 32-47%.[20]

We next turn our analysis to committee chairs. Overall, diverse directors are significantly less likely to serve as committee chairs. We find that diverse directors are 8.8 percentage points less likely to serve as chair of any committee (untabulated). On a relative basis, if we were to assume four randomly assigned chair positions per nine director board, this suggests a 19.8% decrease in the likelihood that diverse directors will serve as chairperson of any of the four major committees. For the individual committees, we find that the variable, *Diverse director,* is significantly negatively related to the probability of serving as chair of each of the four committees. The strongest effect is for the compensation committee, where diverse directors are three percentage points less likely to serve as chair.

Given recent social attention to diversity-related issues, one might expect these differences in leadership appointments to dissipate in the later years of the sample. To examine this possibility, we rerun the models in Table 3 cross-sectionally by year and examine the regression coefficients on

[19] We reach qualitatively similar conclusions without these controls.

[20] Computed as 3.6%/11.1% = 32% and 5.2%/11.1% = 47%, respectively.

Diverse director from each year's regression.[21] We find that the coefficients on *Diverse director* are significantly negative throughout the sample. For non-executive chairman, lead director, audit chair, and compensation chair, the coefficients are significant at the 1% level for each year in the sample. For the Nominating and Governance committees, the coefficients are significant at the 5% or 10% level for nearly every year. The only position for which diverse directors become increasingly likely to gain appointment over the sample period is the compensation chair; however, the coefficients are significantly negative even at the end of the sample period. We also analyze female and minority directors separately.[22] We find that women are significantly underrepresented in chairman/lead director roles and as compensation and audit committee chair throughout the sample, but there are minimal differences in their likelihood of being appointed as nominating or governance chair. Minorities are underrepresented in every leadership role throughout the entire sample.

We next focus on differences between minority and non-minority directors in Panel B of Table 3. We again find that every column reports a negative and significant coefficient for *Minority director*, indicating that minority directors are less likely than their non-minority counterparts to fulfill any leadership role on the board. The parameter estimates suggest that minority directors are two to five percentage points less likely to serve as chairman or lead director than are non-minorities, and they are significantly less likely to chair any of the four major committees. The effect for compensation chair is the strongest, suggesting that minorities are 3.6 percentage points less likely to serve as chair of the compensation committee. Overall, the probability of a minority director chairing any committee is 12.0 percentage points lower than that for a non-minority (untabulated).

As shown in Panel C, female directors are 4.1 percentage points less likely to serve as chairman of the board and 4.7 percentage points less likely to serve as lead director than are male directors. Female directors are also significantly less likely to chair the audit and compensation committees, but results for the governance and nominating committees are insignificant. The effect on the compensation committee is strongest, indicating that the probability of female directors serving as compensation committee chair is 2.6 percentage points lower than for their male counterparts.

We note that these results are robust to a variety of alternative specifications.[23] They are robust to multiplicative firm-by-year fixed effects (rather than the firm and year fixed effects of Table 3). We also restrict the committee leadership tests to members of the specified committee for each committee. Both models report a significantly lower likelihood of appointment for diverse directors to any

[21] See Internet Appendix, Figure C-1, for a graphical representation of these coefficients annually.

[22] See Internet Appendix, Figures C-2 for female directors and C-3 for minority directors.

[23] Results shown in Internet Appendix Table C-2.

leadership position. Finally, we restrict the sample to only years with turnover for the specified leadership position, so we can better analyze an active choice of a new leader. The results are again consistent, documenting a lower likelihood of appointment for diverse directors to each leadership position. Results also hold for minority and female directors run separately.[24]

3.2. Accounting for unobserved heterogeneity and self-selection

In this section, we explore how potentially endogenous diverse director appointments might affect our results. Existing work indicates that diverse director appointments are not random (Carter, Simkins, and Simpson, 2003; Farrell and Hersch, 2005; Eckbo, Nygaard, and Thorburn, 2018), but rather, selection relates to director supply constraints resulting from population characteristics and qualifications (Ahern and Dittmar, 2012). Whereas prior work centers on the likelihood of board appointments, our study focuses on the subsequent question of how responsibilities are allocated between directors, conditional on their being chosen for board service. Therefore, our research question should be less sensitive to these initial selection issues. Because directors have already been deemed suitable for board service and their qualifications are largely observable, the first-stage identification problems of selection onto the board should not bias our findings.

Nonetheless, we conduct additional tests to ensure the robustness of our results by employing established identification strategies for diverse board appointments. We acknowledge that, while a director's race and gender are determined independently at birth, diverse directors may be chosen to fulfill a public relations role on the board that is orthogonal to their qualifications. Thus, diversity itself is exogenous, but the likelihood of observing a diverse director in our sample is not because their existence in our data is conditional on appointment. The propensity for a firm to engage in this selection behavior may be a function of unobservable firm characteristics correlated with the process for allocating board responsibilities and the governance of the firm as a whole. To address such concerns, we utilize two instrumental variable (IV) approaches that account for self-selection and unobserved heterogeneity to identify exogenous variation in the diverse director population at a given firm.

In our first IV approach, we re-estimate the primary regression model in Panel A of Table 3 with a two-stage least squares (2SLS) linear probability model using two distinct instruments. To achieve identification, the instruments in this model must satisfy both the relevance condition (i.e., be significantly related to the likelihood of observing a diverse director in our sample) and the exclusion condition (i.e., be unrelated to our outcome variable, except for its indirect influence on diversity). This IV approach seeks to induce an exogenous increase in diverse representation on corporate boards.

[24] Shown in Internet Appendix Table C-3.

These instruments achieve the desired outcome by influencing the likelihood of observing an individual diverse director appointment at a particular firm.

Our first instrument, the *Gender equality index*, comes from prior literature. Huang and Kisgen (2013) utilize the *Gender equality index* to study the effects of CEO gender on M&A activity. They argue that the gender status equality of a given state moderates the upward mobility of women in business and, therefore, the prevalence of female executives in that state. We obtain the index from Sugarman and Straus (1988), who report a state-by-state composite index of factors in economic egalitarianism, political attainment in state and local government, and legal standards for women's rights in the early-1980s (i.e., when many of the diverse directors in our sample would have begun their careers). While calculated with women in mind, many of the provisions included in this index would apply to minorities as well (e.g., fair employment practices, housing laws, banking laws, etc.). For each director, we assign the *Gender equality index* based on the state in which the director obtained her undergraduate degree. We use the director's college state, rather than the firm headquarter state, for two reasons. First, unlike line employees, many directors live outside the firm's headquarter state, so the firm's local, legal, and cultural environment might not apply to them. Second, the director's career advancement is likely to occur close to where she went to college, and therefore, the employment opportunities proximal to the director's undergraduate institution are most relevant.

To provide additional assurance of robustness, we introduce a second IV that relies on the exogenous increase in the population of available diverse directors following the passage of the Civil Rights Act of 1964. Of note, this Act made it illegal for college admissions officers to discriminate based on race or gender, thereby increasing the higher education opportunities for women and minorities, as many schools adopted affirmative action policies subsequent to the Act. Prior research indicates that these policies have positively influenced the occupational mobility of women and minorities (Fosu, 1995, 1997). Accordingly, our second instrument (*Affirmative action*) takes the value of one if the director was 18 years-old or younger in 1965 (i.e., born after 1947) and zero otherwise. Approximately half of our sample directors were college-aged in 1965. There is meaningful variation across the time series, with 30% of sample directors subject to the Act in 2006 and 82% in 2017. Because it is specific to an individual's birth year and the average age of directors is stationary at about 63 in each sample year, this instrument has the advantage of varying both cross-sectionally at the individual director level and across time as each cohort ages through our sample.

We report the estimation of our first stage regression in model (1) of Table 4.[25] Consistent with the findings in Huang and Kisgen (2013), the *Gender equality index* is significantly positively related to the probability of observing a diverse director. We are also more likely to observe a diverse director in our sample if that individual was of college-age after the passage of the Civil Rights Act of 1964: the *Affirmative action* indicator is both positive and significant, suggesting that the Act's influence on the pool of qualified directors has indeed increased diverse director representation on corporate boards. These results confirm that the relevance condition is satisfied.

The dependent variable in the second stage of our 2SLS model is an indicator denoting whether a director is chosen to serve in a board leadership role. As reported in model (2) of Table 4, the instrumented diverse director indicator remains negative and statistically significant. The point estimate suggests that an exogenously appointed diverse director is 14% less likely to serve as a board leader. We note the strength of our first-stage models based on the partial F-statistics of 76.04, which is above the critical value of 11.59 (Stock and Yogo, 2002; Larcker and Rusticus, 2010). Furthermore, while the instrumented coefficient is larger than our baseline result, it is still within the same order of magnitude, indicating stability in the IV estimate (Jiang, 2017).

In our second IV specification, shown in models (3) and (4) of Table 4, we implement a Heckman treatment effects model using a two-stage framework similar to our 2SLS analysis. Our first stage, reported in model (3), contains a probit model estimating the likelihood of observing a diverse director in our sample. We capture the inverse mills ratio (λ) from this first stage and enter it as an additional explanatory variable in our second stage model of leadership appointments. Assuming we achieve proper identification in the first stage using our instruments, the inverse mills ratio will capture and control for the selection effects attributable to both the observable variables entered in the first stage as well as the unobservable latent factors not included in the model (Li and Prabhala, 2007). The second stage estimate, reported in model (4) of Table 4, is similar to the 2SLS estimate. Controlling for self-selection, diverse directors are 10% less likely to be appointed to a leadership role. Following Lennox, Francis, and Wang (2012), the variance inflation factors (VIF) for both the diverse indicator and the inverse mills ratio are below the accepted critical value of 10, suggesting the model is well specified (Greene, 2008), while the estimate on the inverse mills ratio suggests self-selection is not a major problem in these tests.

We conduct supplemental analyses to ensure robustness. We repeat our 2SLS and Heckman analyses using alternative instruments with variation at the headquarter level.[26] The first alternative is

[25] Table 4 reports only the coefficients of interest. The full model is in Panel A of Internet Appendix Table C-4.

[26] These tests are reported in Panel B of Internet Appendix Table C-4.

the *Gender equality index (company HQ)*, where the index is based on the state of corporate headquarters, following Huang and Kisgen (2013). The second alternative instrument is the *Non-local diverse director supply* from Bernile, Bhagwat, and Yonker (2018), who argue that a greater supply of diverse directors increases the likelihood of observing them on the board of a given firm and construct their instrument by leveraging the exogenous introduction of direct flights between the company headquarters and the potential diverse directors' residences.[27] Finally, we construct a propensity score matched sample, which compares our sample of diverse directors to a matched sample of non-diverse directors within the same board on the basis of qualifications.[28] Each estimation produces qualitatively similar results to those in Tables 3 and 4. We conclude that endogenous factors are unlikely to account for the observed differences in leadership appointments.

3.3. Board leadership positions and relevant experience

Thus far, we have shown that minority and female directors are less likely to serve in leadership roles on corporate boards. Our regressions include controls for director experience and qualifications. Nonetheless, it is possible that diverse directors systematically lack other job-specific experience that may be important for the various leadership roles, such as relevant committee or chair experience. In this section, we consider these types of relevant experience.

We posit that directors who have previously served on a given committee at another firm would be particularly qualified to serve as chair of that committee at the focal firm. For example, we might expect a director to be more likely to serve as chair of the audit committee if she has prior experience serving on the audit committee of another firm. However, we recognize that prior committee membership alone may not be a sufficient prerequisite if board leadership requires a specialized skill set. Thus, we also consider prior relevant committee chair experience. Additionally, we recognize that leadership may be as much a social skill as it is a technical one. Firms may wish to reserve leadership roles on their boards for those directors who have spent a considerable amount of time at the company forming relationships among their fellow board or committee members. Further, some firms may rotate committee appointments between directors, making an appointment more likely for directors with longer tenures on the committee. Therefore, we also explore the effect of committee tenure on board appointments.

[27] We thank the authors for providing their data for this instrument.

[28] Reported in Panel C of Internet Appendix Table C-4.

Panel A of Table 5 provides tests of these relevant prior committee chair positions, using a regression framework including firm, board, and director characteristics.[29] Each regression includes indicators for whether a director has relevant leadership experience, and, to determine the marginal effects for diverse directors, these indicators are interacted with the *"Diverse director"* indicator variable (as in Table 3, it is equal to one for minority and female directors).[30]

As posited, we find that prior relevant committee experience is positively related to receiving a chair appointment, with such experience increasing the odds of being tapped for a leadership role by two to five percent. Notably, such experience is less valuable for diverse directors: the joint effect from the interaction term of relevant experience and diversity implies that such qualifications are worth about half as much for diverse directors. The coefficient on *Diverse director* indicates that diverse directors without relevant committee experience are one to three percentage points less likely to obtain a leadership role than are their similarly inexperienced, non-diverse counterparts.

Panel B of Table 5 restricts the relevant experience to a prior leadership position on a similar committee at another firm or as Chairman/lead director of another firm. Similar to the evidence in Panel A, we find that relevant experience increases the likelihood of being appointed as either committee chair or as chairman/lead director. Notably, we find that the effect size for prior chair service (Panel B) is generally larger than that for prior membership on a committee (Panel A), consistent with the notion that prior leadership experience may be more important than the simple subject matter familiarity engendered by committee membership. Indeed, directors with prior board chair/lead director or committee chair experience are eight to fifteen percent more likely to serve in a leadership role. However, as in the prior panel, we find that relevant leadership experience is less beneficial for diverse directors. For example, non-diverse directors with chairman/lead director experience are 10.5% more likely to be chosen as chairman/lead director, while their similarly experienced diverse counterparts are only 6.1% more likely to be chosen.

In Panel C, we examine the effects of finance experience on the likelihood of serving as chair of the audit committee. We find that finance experience is a significant determinant of audit chair service: finance experience increases the likelihood of non-diverse directors serving as audit chair by 37.1%. For diverse directors, however, the corresponding percentage is only 27.6%.

In addition to past experience, we conjecture that tenure on the relevant committee may affect the likelihood for a director to serve in a board leadership role, and committee tenure might matter if

[29] We omit our estimations of the determinants of Chairman of the Board/Lead Director in this panel, since we are testing experience on the specific committees.

[30] We replicate all tests using the *Minority* and *Female* indicators (reported in Internet Appendix Table C-5).

the chair role is rotated amongst its members. Indeed, given recent attention to board diversity, many diverse candidates may have less tenure on the committee than do their non-minority male peers. This difference in committee tenure could account for the observed differences in leadership appointments, particularly if committee-specific board experience is especially valuable for managing other committee members or at-large directors, or if committee chair assignments are rotated. Thus, in Panel D, we add an interaction term of committee tenure and the diverse director indicator variable to our leadership appointments regressions. Our estimates suggest that committee tenure does appear to be an economically relevant experience as well, but again the effect is attenuated for diverse directors.

In sum, we have examined a variety of metrics beyond those commonly used in the literature to control for director expertise, including prior committee experience, prior committee leadership experience, finance experience, and board tenure. While we find that these types of experience do, indeed, increase the likelihood that a director will serve in a board leadership position, the effects of such experience are attenuated for diverse directors. That is, diverse directors with these qualifications are less likely than non-diverse directors with comparable qualifications to hold the same leadership roles on the board. Figure 2 graphically summarizes the effects of relevant experience for non-diverse and diverse directors. Regardless of the type of relevant experience we examine, as shown in Figure 2, diverse directors are always at a disadvantage.

3.4. Do diverse directors serve on multiple boards instead of pursuing leadership roles?

To this point, we have assumed that diverse directors are less likely to serve in board leadership roles because they are provided fewer opportunities to do so. However, the univariate statistics in Table 2 show that diverse directors serve on more boards on average than do their non-diverse counterparts. This suggests that diverse directors may prefer to allocate their time across multiple boards rather than serve in leadership roles on fewer boards. To shed light on this possibility, Table 6 provides robustness tests on various subsamples to help us understand whether diverse directors seem to prefer quantity or quality in terms of their board service. Specifically, Table 6 repeats the analysis of Table 3 on board leadership roles for various subsamples designed to help enlighten the question of whether diverse directors prefer to allocate their time across multiple boards rather than serving in leadership roles.

We posit that a director who serves on only one board would be less likely to eschew a board leadership position than a director serving on multiple boards. Thus, Panel A of Table 6 examines a subsample of directors who serve on only one board. In Panel B, we examine directors who serve on only one board but have served there for at least five years, as it is unlikely that a director with high tenure is avoiding board leadership roles to avail herself of possible assignments with other firms. Finally, in Panel C, we examine directors who have at least three board appointments, as we posit that

there is little reason for "busy" directors to abstain from a leadership role in the hopes of getting yet another board seat.

Panel A of Table 6 demonstrates that, even among directors with no other outside board appointments, diverse directors are less likely to serve in board leadership roles than are non-diverse directors. Specifically, diverse directors with no other outside board appointments are 7.2% less likely to serve as chairman or lead director, 2.4% less likely to serve as audit chair, 3.2% less likely to serve as compensation chair, and 1% less likely to serve as nominating and governance chairs than are their non-diverse counterparts. For directors with only one board appointment and at least five years tenure, Panel B shows that diverse directors are significantly less likely to serve as chairman or lead director (-8.8%), audit chair (-1.6%), compensation chair (-3.6%), or nominating chair (-0.9%). Finally, Panel C shows that, for busy directors who serve on at least three boards, diverse directors are significantly less likely to serve in each of the board leadership roles than are their non-diverse counterparts.

Overall, findings indicate that diverse directors are less likely than their non-diverse counterparts to obtain board leadership roles, and we find no evidence that diverse directors avoid leadership roles in order to serve on more boards. Results also demonstrate that diverse directors are, on average, quite qualified, and controlling for their qualifications, we continue to find that they are less likely to serve in board leadership roles.[31]

3.5. Does risk aversion or geography affect leadership appointments?

Prior literature documents some director characteristics that vary by gender. We now consider whether these might be driving our findings. We first examine the possibility that director risk aversion may vary by gender or race. For example, directors may be averse to taking on leadership roles because of potential risks associated with assuming the role, such as an increased litigation risk. Given the higher degrees of risk aversion for female directors documented in prior literature (Croson and Gneezy, 2009), such an aversion could explain our results. In Panel A of Table 7, we restrict our sample to directors that have previously served in a leadership role at a different firm (as chairman, lead director, or committee chair). If a director was willing to serve in a leadership role in the past, then that director is clearly not averse to taking on leadership responsibilities. In each column of Panel A, however, we find a negative and significant coefficient on *Diverse director* for these prior leaders, indicating that the differences in leadership roles persist even within the sample of directors with a documented willingness to take on leadership responsibilities. We conclude that varying degrees of risk aversion do not drive our main results.

[31] We report similar tests for *Minority* and *Female* directors in Internet Appendix Table C-6.

Another possible explanation for why diverse directors are less likely to serve in board leadership roles could be that they live farther from the company and thus choose not to serve in leadership roles, which may entail a larger time commitment. Alam, et al. (2014) find that, with the exception of the Northeast, women directors in the U.S. tend to reside farther from corporate headquarters than do male directors. Thus, if female directors live far from corporate headquarters, they may choose not to serve in board leadership roles. We explore this possibility by testing the subset of firms headquartered in the Northeast, where Alam, et al. (2014) find that the median female director actually resides closer to firm headquarters and travels half the distance of their male counterparts. In this region of the country, population density is higher, and firms are therefore located in closer proximity to larger populations of qualified diverse directors. Panel B of Table 7 reports our test of firms in the Northeast.[32] Even in the Northeast, we find that diverse directors are less likely to be appointed to each of the leadership roles, suggesting that geographic differences are unlikely to be driving our main results.

3.6. Are diverse directors effective monitors?

Thus far, we have found that diverse directors are at least as qualified as their non-diverse counterparts, but they are less likely to be chosen to fill leadership roles on the board. One possible explanation for this finding could be that diverse directors are less effective as monitors. Outside directors are often viewed as shareholders' monitors on the board, and this role is a primary responsibility of their position (Fama, 1980; Fama and Jensen, 1983; Faleye, Hoitash, and Hoitash, 2011). However, monitoring ability is not an easily measurable characteristic ex-ante like education or experience. Prior research has examined the execution of this monitoring role in several key dimensions, including CEO turnover, executive compensation, and fraud prevention. In Table 8, we therefore present results of tests along these lines as a means of estimating an unobservable component of director quality with respect to monitoring to explore whether diverse directors perform these duties any differently than their non-diverse counterparts.

The sensitivity of CEO turnover to firm performance is a widely-used measure of board monitoring quality. Several studies, including Weisbach (1988), Fich and Shivdasani (2006), Adams and Ferreira (2009), and Coles, Daniel, and Naveen (2014) use this sensitivity to measure the monitoring quality of the board. In model (1) of Table 8, we report the results of our estimation of the performance-CEO turnover relation using a regression specification close to that used by Adams and Ferreira (2009). The dependent variable is an indicator taking a value of one if the CEO leaves the

[32] We report additional specifications at the *Minority* and *Female* levels in Internet Appendix Table C-7.

position during the following year. We include *Diverse chairman/lead director* (an indicator for the presence of a minority and/or female chair or lead) and *Percent diverse* (the percentage of minority and/or female directors serving on the board) as explanatory variables. We also interact these variables with return on assets (ROA) as our performance measure. The interaction term is the variable of interest; if we find a positive effect, we can conclude that diverse directors are less effective monitors. Consistent with prior research (e.g., Weisbach, 1988), we document a strong inverse performance-turnover relation, where poorly performing CEOs are more likely to be dismissed (the coefficient for *Return on assets* is -0.200). Moreover, we find that this relationship is significantly stronger when there are more diverse directors on the board (as the interaction term of -0.059 is significant at the 10% level). This is consistent with prior work on gender diversity by Adams and Ferreira (2009). We find no significant differences when a diverse director is board chairman or lead director, suggesting that diverse chairmen are as effective as their non-diverse counterparts.

CEO compensation is another avenue frequently examined to observe the effectiveness of board oversight. Numerous studies contend that CEO pay is more likely to be abnormally high when board oversight is lax (Core, Holthausen, and Larcker, 1999; Bebchuk, Fried, and Walker, 2002; Fich, Starks, and Yore, 2014; Kim, Mauldin, and Patro, 2014). In model (2) of Table 8, we test whether CEO compensation is abnormally high when a diverse director is either the chair of the compensation committee (*Diverse leadership position on committee=1*) or a member of the compensation committee (*Diverse membership on committee=1*). The dependent variable, *Abnormal CEO compensation*, follows from Yermack (2006) and is the residual of annual cross-sectional regressions of total CEO compensation (TDC1) on firm size (ln(sales)), net of market model stock returns, CEO tenure, and industry effects. The estimates for both of our key independent variables of interest are insignificant, suggesting that CEO pay is no different when diverse directors serve on or lead the compensation committee.

A third monitoring role performed by the board is to ensure the quality of the internal controls and the veracity of the reported financials. Klein (2002), Xie, Davidson, and DaDalt (2003), and Ahmed and Duellman (2007) show that more monitoring-intense boards are associated with greater accounting conservativism and less earnings management. Taking this role a step further, Beasley (1996), Uzun, Szewczyk, and Varma (2004), and Anderson, Mansi, and Reeb (2004) suggest that monitoring intensive boards are also associated with a lower incidence of fraud. Following this literature, we estimate how earnings quality varies when diverse directors either chair the audit committee or serve as a member. The dependent variable in model (3), *Discretionary Accruals*, is the absolute value of performance-adjusted abnormal total accruals as in Kothari, Leone, and Wasley

(2005). Results show that diverse representation on the audit committee has no measureable effect on reported earnings, but leadership by a diverse director leads to a reduction in discretionary accruals.

Collectively, we find no evidence that diverse directors are less effective monitors than their non-diverse counterparts. In fact, our evidence suggests that forced CEO turnover for poor performance is higher with a greater percentage of diverse directors on the board, and there are significantly fewer discretionary accruals for firms whose audit committee is chaired by a diverse director. Thus, there appears to be no compelling monitoring reason to exclude a director from these influential board roles based on their demographics alone.

3.7. Are diverse directors valued by shareholders at the ballot box?

We next examine how shareholders view diverse directors by examining voting outcomes in director elections. One might argue that high visibility boards face pressures to acquiesce to public pushes for diversity, even if it means appointing under-qualified directors (Ahern and Dittmar, 2012). We posit that if this is the case, the effects should be apparent in the voting results: value-maximizing shareholders should be less likely to vote in favor of an underqualified director. In this case, we may observe a negative relation between the diversity indicators and the percentage of votes cast in favor of the underqualified director. If diverse director candidates are just as effective as their peers, we should expect to see no relation between director demographics and votes cast in favor. Alternatively, if shareholders view diverse directors as more valuable contributors (Kim and Starks, 2016), then one might expect boards to recruit and appoint them to positions of leadership.

We test this relation in Table 9. We use the percentage of votes cast in favor of the director at the annual meeting (*Percentage vote*) as the dependent variable in our empirical specification. Tests control for the full range of director qualifications, experience, and firm-level controls (as in Table 3), as well as ISS recommendations, following Cai, Garner, and Walkling (2009). Our variables of interest are indicators for diverse directors (model 1) and separately for minority and female directors (models (2) and (3), respectively). We include firm, year and committee fixed effects and cluster standard errors by shareholder meeting.

As shown in Column 1, shareholders are more likely to vote in favor of a diverse director candidate. A diverse director, on average, receives voting support 0.36% greater than her peers. The positive and significant effect remains for minority candidates in Column 2, with a point estimate of 0.25%. Female directors in Column 3 also find significantly higher vote totals by approximately

0.38%.[33] While the estimates appear small, the coefficients are of similar magnitude to other director characteristics of interest. Furthermore, Cai, Garner, and Walkling (2009) have noted that directors typically receive voting totals in excess of 90% and the range of votes is small, so even minor variations in vote totals are strong enough signals to influence corporate policy. We report the coefficients from annual regressions in Internet Appendix Figure C-4. Although voting support for diverse directors has increased somewhat over our sample period, the trend is not strong.

In sum, we find little to suggest that diverse candidates are valued less by shareholders. In fact, the consistently positive effects of *Diverse director*, *Female director*, and *Minority director* provide evidence that shareholders actually place a premium on the services of diverse candidates.

3.8. What are the consequences of the leadership gap?

In this section, we examine the labor market consequences of the lower likelihood of leadership appointments for diverse directors. Specifically, we analyze director compensation and retention. In Table 10, we model individual director compensation as a function of gender, ethnicity, experience, board responsibilities, and firm characteristics. The dependent variable in columns 1 and 2 is the natural log of director compensation levels. Our variables of interest is the indicator variable for diverse directors. Overall, our results suggest that diverse directors earn lower total pay, but we implement several specifications to ensure robustness. Among our set of director-level controls, the estimates on legal/consulting experience, finance experience, undergraduate degree, and MBA degree are significantly positive, while academic experience and management experience are negatively related to compensation levels. The statistically significant parameter estimate of -0.019 on *Diverse director* in model (1) indicates that minority and female directors receive approximately 2% ($=\exp^{-0.019}-1$) lower compensation than non-diverse directors.

Committee service is also a significant determinant of total compensation. This control suggests that director compensation is increasing in the number of committees on which he/she serves. In Column 2, we also consider committee chair service and chairman/lead director appointments as additional determinants of compensation levels. Although these explain a large proportion of variation in compensation and have a meaningful effect on overall pay (i.e., +3% and +17%, respectively), the effect of diversity remains negative and significant. While committee and leadership assignments

[33] In unreported tests, we consider the abnormal vote percentage for each director, which we define as the percentage vote "for" for each director minus the average percentage "for" vote for all directors at the meeting, effectively adding a meeting fixed effect to the regression. The abnormal vote tests produce similar results at the meeting level.

explain most of the variation in director compensation, diverse directors earn slightly less even controlling for these roles.

Overall, the results with regard to director compensation produce clear and consistent evidence that minority and female directors receive lower compensation levels, at least partially driven by committee and leadership roles. These findings are in line with prior work examining corporate pay of diverse executives or employees (Bell, 2005; Tate and Yang, 2015). Moreover, the differences we observe are present among both the minority and female components of our diverse director measure (untabulated).

We next examine the consequences of passing over qualified directors with regard to director retention. If these leadership positions and associated compensation gaps are meaningful, qualified directors who are passed over may leave for better opportunities. Table 3 documented the lower likelihood of the appointment of diverse directors to leadership positions. We quantify this "leadership gap" by regressing a leadership indicator onto the full range of director qualifications. The *Leadership gap* is computed by running a linear probability model that regresses an indicator of whether the director has any board leadership responsibilities upon attendance, other board experience, other industry experience, director network size, outside committee experience, director age and tenure, director education and professional experience, board size and independence, CEO-chairman duality, firm size, and return on assets (untabulated). To frame this as a gap, we take the negative of the residual from this regression.

In column 3 of Table 10, we use a linear probability model to determine the causes of director turnover. The dependent variable is equal to one if a director resigns in a particular year. Our variable of interest is the *Leadership gap* variable. As shown in model (3), the coefficient on *Leadership gap* is positive and highly statistically significant, indicating turnover increases with the leadership gap. This implies that qualified directors are more likely to leave the board to pursue other opportunities when they are passed over for the leadership positions they might reasonably expect to obtain. Interestingly, the coefficient on the diverse director indicator is negative and significant. This suggests that diverse directors, everything else being equal, are less likely to depart from a board once appointed. This is consistent with Yermack (2004), who also finds that female directors are generally less likely to depart from their boards. We find that the interaction term of the leadership gap with the diverse director indicator has a negative coefficient as well. This indicates that diverse directors are less sensitive to being passed over for leadership appointments when it comes to ending their service on the board. We note that the joint effect of the leadership gap and the interaction term remains significantly positive at conventional levels. That is, diverse directors are more likely to resign when passed over, just less so

than their non-diverse peers. We confirm this result in model (4), which is run on only the diverse directors in our sample. In this restricted sample, diverse directors are more likely to step down when they do not obtain the leadership positions we predict they should based on their qualifications.

4. Policy Implications

In sum, results show that diverse directors possess at least the same qualifications and professional skills as their peers, and when serving in leadership roles, diverse directors perform their board duties at least as well as their non-diverse counterparts. Additionally, diverse directors are valued by shareholders. Nonetheless, there is a pervasive gap in board leadership positions for women and minority directors. So what might firms do to mitigate this gap? In this section, we examine approaches that firms may take to address these issues.

Branson (2008) suggests that to increase board diversity for women, board nominating committees should include at least one woman. Tinsley et al. (2017) conduct laboratory experiments to study two interventions that may mitigate the underrepresentation of women on boards: reminding participants of the importance of diversity and increasing the number of females in the pool. Tinsley et al. (2007) found that the first intervention, reminding participants of the importance of diversity did not reduce underrepresentation, but increasing the number of females in the pool did. Based on this discussion, we examine the effects of the following three strategies firms may implement to mitigate the board leadership gap: (1) include a diverse director on the nominating committee, (2) adopt a diversity policy on gender and race, and (3) increase the proportion of diverse directors on the board.

Approximately 34% of firms over the entire sample period have a diversity policy stating that the nominating committee will consider gender or racial status when nominating directors to the board. In Panel A of Table 11, we measure the effect that such a policy has on the likelihood a firm appoints a diverse director to a board leadership role. The linear probability model, run at the firm-level, has a dependent variable equal to one if the firm has a diverse director in any leadership position (the sample for this test is limited to 13,409 firm-year observations with at least one diverse director). In column 1, run for the full time series, the coefficient on the term, *Firm has diversity policy on gender or race,* is positive and significant, suggesting that firms which explicitly consider race and gender in the appointment of directors are more likely to appoint diverse directors to leadership roles. The point estimate suggests that a diversity policy is associated with an 8.6% higher likelihood of diverse leadership appointments. However, as noted in Panel D of Table 1, there was a discrete jump in the proportion of firms reporting a diversity policy on gender or race starting in 2010, after the SEC implemented the rule requiring firms to disclose their diversity policy for director nominations. Because some firms may have had a diversity policy on race or gender before 2010 but may not have disclosed

it before the SEC mandate requiring disclosure of the diversity policy, we rerun our regression in column 2 including only the mandated disclosure period since 2010. For this subperiod, the point estimate is also positive and significant, suggesting that a diversity policy on gender or race in director nominations is associated with a 4.4% higher likelihood of diverse leadership appointments. We conclude that explicit diversity policies seem to be an effective means to reducing the leadership gap.

We next test whether the appointment of diverse directors to the nominating committee, which typically bears the responsibility of appointing directors to leadership positions, affects the likelihood of diverse director appointments to leadership roles. The variable of interest, *Diverse director on nominating committee*, takes a value of one if at least one diverse director serves on the nominating committee and zero otherwise. If the board does not have a nominating committee, we use the governance committee. The dependent variable in column (3) takes a value of one if the firm has diverse director appointments to the following board leadership roles: non-executive chairman, lead director, audit committee chair, or compensation committee chair positions (the sample for this test is limited to the 12,316 firm-year observations that have diverse directors serving outside of the nominating committee).[34] The coefficient for *Diverse director on nominating committee* has a positive and significant effect on the likelihood of diverse leadership appointments. The point estimate suggests that the presence of a diverse director on the nominating committee increases the likelihood of diverse leadership appointments by 5.1%.[35] We conclude that diverse representation on the nominating committee also seems to be an effective means to addressing leadership gaps.

Next, in Panel B of Table 11, we examine the proportion of diverse directors on the board. If more diverse directors are appointed to the board, then as a group they should have more influence. In this case, diverse directors should be more likely to be appointed into leadership roles. The test shown in Panel B is identical to Panel A of Table 3 but adds two variables: *Percent diverse*, which measures the percent of directors who are diverse, and the interaction term *Diverse director* × *Percent diverse*. If having more diverse directors increases the likelihood of diverse appointments to board leadership positions, the interaction should be positive. However, we find no significant effects of the interaction term in any of the six columns of Panel B. The result suggests that increasing the proportion of diverse directors does not mitigate the board leadership gap.

Our results demonstrate that there are pervasive leadership gaps for diverse directors serving on the boards of S&P 1500 firms. Merely increasing the representation of diverse directors on the board

[34] Because many firms combine the nominating and governance committees, we exclude the governance committee from the dependent variable.

[35] Unreported tests yield similar results if we run this test separately by female and minority. That is, female (minority) directors increase the likelihood of female (minority) leadership appointments.

does not seem to reduce the leadership gap. For companies wishing to mitigate this problem, the evidence indicates that they should implement policies that explicitly promote diversity and include diverse directors on the nominating committee.

5. Conclusion

Board diversity has been a focus of recent corporate governance policy debates. Despite receiving much attention from the media and social activists, women and minority directors remain underrepresented in the boardroom. This study points to several areas of concern with regard to board representation. We find that diverse directors stand out from their peers in terms of academic and professional credentials, possess more outside board and committee experience, and enjoy greater support from shareholders in director elections. However, despite these qualifications, diverse directors remain less likely to be appointed to key board leadership positions. Although we find some recent progress in leadership opportunities for females, these trends do not hold for minorities. It is important to note that our results are not attributable to differences in relative experience, taste preferences for leadership service, monitoring ability, or pre-existing commitments to service on the boards of other firms. In fact, while relevant experience is a significant determinant of leadership appointments, for diverse directors, these skills appear to be valued less by boards.

We observe several meaningful labor market consequences for this primary result. Diverse directors earn lower pay than their peers on the same board, despite having superior qualifications. This is, in large part, due to their failure to obtain special duties on the board that are awarded additional compensation. Our results suggest that being passed over for leadership positions ultimately discourages participation by diverse directors at major U.S. corporations: leadership gaps increase the likelihood of director departures from the board. Our evidence suggests that firms may take measures to mitigate the gap, as we find that firms with a diverse director on the nominating committee and those with diversity policies on gender and race appear to be more equitable when it comes board leadership positions.

Our research setting provides key advantages over prior literature exploring the role of gender and race in the labor market. In prior research, a wide range of endogenous factors often clouds the analysis of labor outcomes for diverse candidates. These difficulties are magnified by observing an incomplete sample of job candidates. In contrast, our study allows us to observe the entire pool of board leadership candidates, providing a controlled setting in which we can directly compare the qualifications of both hired and unhired candidates.

Our paper raises important questions about board inequality and lends justification to several recent public concerns on the issue. While most concerns raised by advocates have focused primarily on board composition, we point to evidence of inequality even after these directors have been elected to the board.

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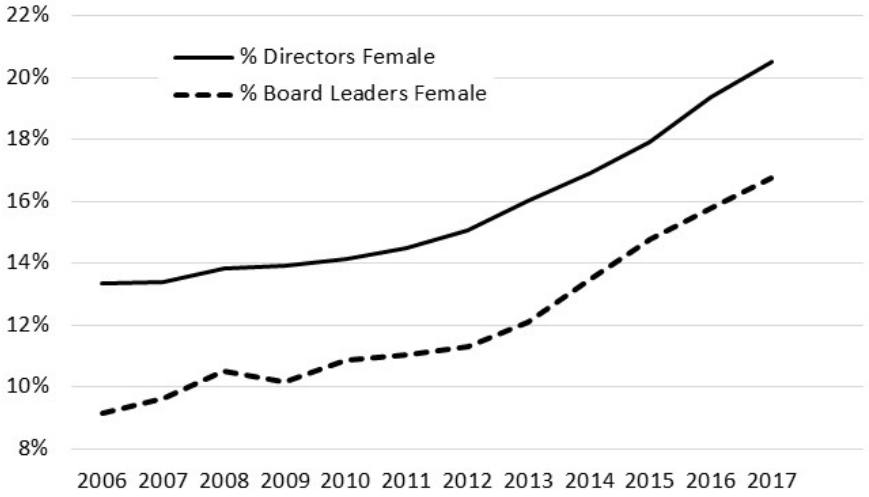
Figure 1.

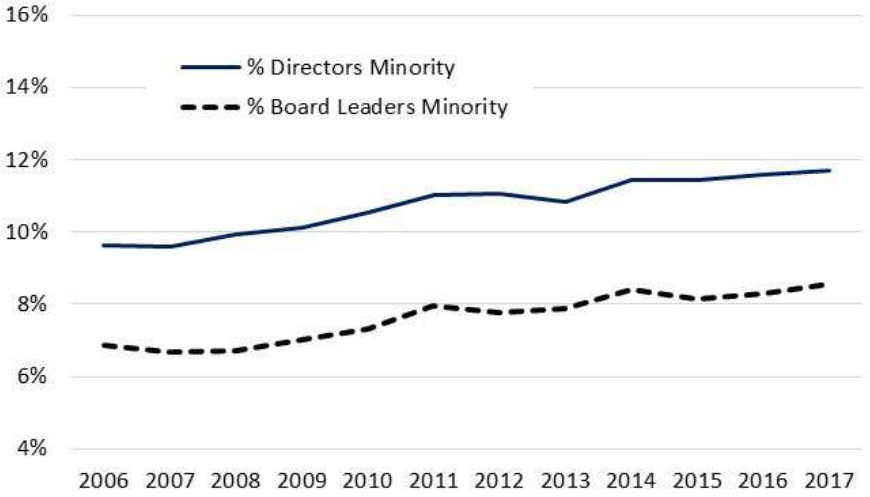
Board representation and leadership by diverse directors over time

This figure describes female and minority representation and board leadership roles for our sample from 2006 to 2017. The solid lines report the percentage of female and minority directors over time. Panel A presents the percentage of directors that are female (solid) and the percentage of board leaders who are female (dashed). Panel B presents the percentage of directors who belong to an ethnic minority (solid) and the percentage of board leaders who belong to an ethnic minority (dashed). Panel C presents the percentage of directors who are white males (solid) and the percentage of board leaders who are white males (dashed).

Panel A. Board representation by female directors



Panel B. Board representation by minority directors



Panel C. Board representation by white male directors

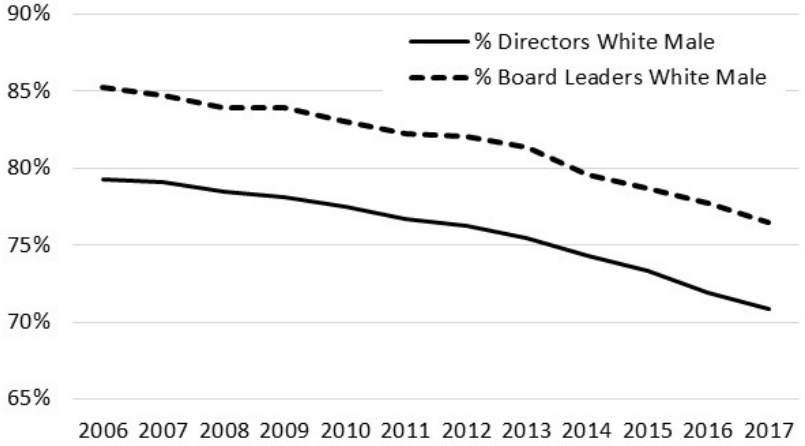
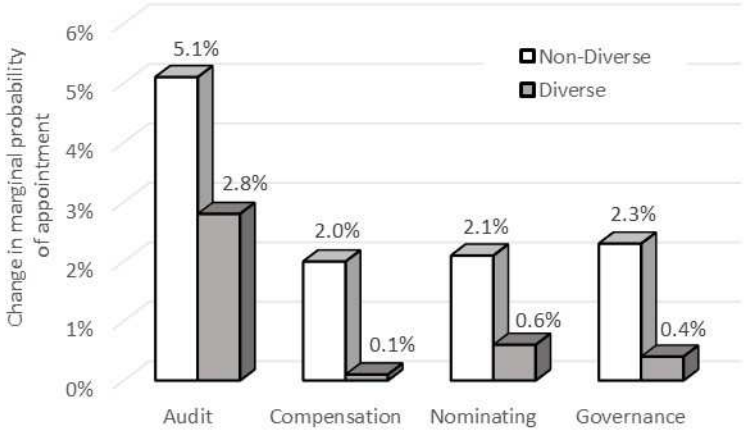


Figure 2.

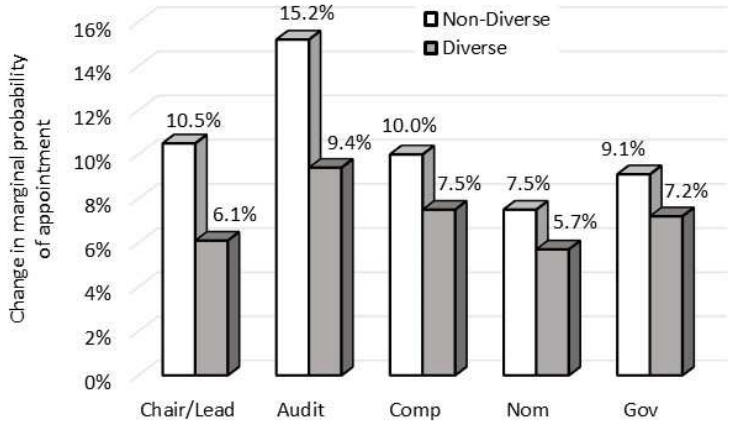
The value of relevant experience for serving in a leadership role

This figure presents the value for diverse and non-diverse directors of relevant experience in securing board leadership roles. The reported estimates reflect the change in the marginal probability of appointment to a given leadership role for having the listed experience. Panel A presents the coefficients from Table 5, Panel A, for relevant committee experience for non-diverse directors (Relevant committee experience) and for diverse directors [calculated as: (Relevant committee experience × Diverse director)+(Relevant committee experience)]. Panel B presents the coefficients from Table 5, Panel B, for relevant chair experience for non-diverse directors (Relevant chair experience) and for diverse directors [calculated as: (Relevant chair experience × Diverse director)+(Relevant committee experience)]. Panel C presents the coefficients from Table 5, Panel C, for directors designated as having finance experience for non-diverse directors (Finance experience) and for diverse directors [calculated as: (Finance experience × Diverse director)+(Finance experience)]. Panel D presents the coefficients from Table 5, Panel D, for tenure on the relevant committee for non-diverse directors (Relevant committee tenure) and for diverse directors [calculated as: (Relevant committee tenure × Diverse director)+(Relevant committee tenure)].

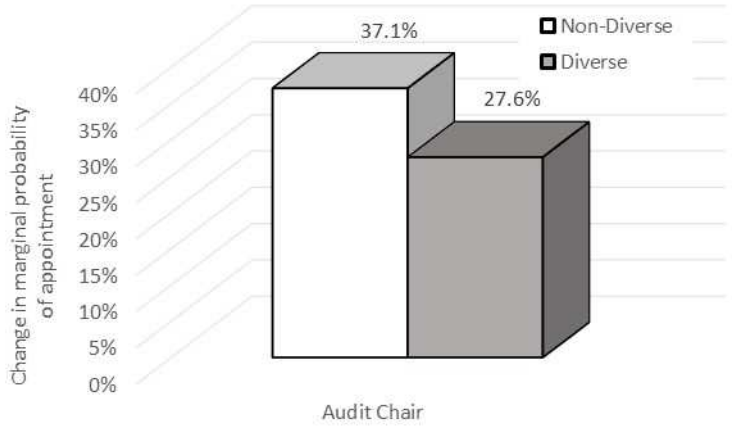
Panel A. Relevant committee experience



Panel B. Relevant chair experience



Panel C. Finance experience



Panel D. Relevant committee tenure

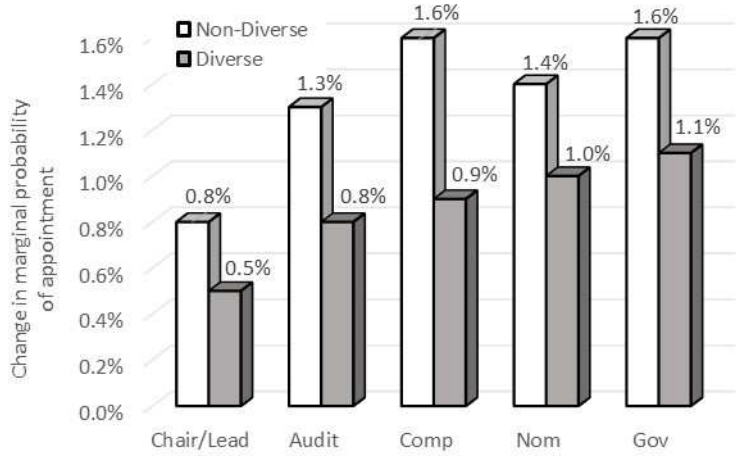


Table 1.

Summary statistics

This table describes our sample obtained from the universe of companies listed in the merged ISS(RiskMetrics) / Compustat / ExecuComp / BoardEx database from 2006 until 2017. The sample consists of 16,836 firm-year observations (126,044 directors). Panel A offers basic characteristics of board diversity. Panel B shows the breakdown of ethnicities for minority directors. Panel C provides firm-level statistics for sample firms. Panel D shows the proportion of sample firms each year with a diversity policy on gender or race (as described in the proxy statement). ***, **, and * indicate significant differences between the 2006 and 2017 sample proportions at the 1%, 5%, and 10%, respectively, using Chi-squared difference in proportion tests.

Panel A. Female and minority board representation

	Full sample (2006-2017)	2006	2017
Percent of board-year observations with diversity	84.2%	80.9%	92.1%***
Board-year observations with at least one minority director	53.1%	50.1%	58.9%***
Board-year observations with at least one female director	75.9%	70.6%	87.5%***
Percent of directors who are diverse	24.2%	20.8%	29.2%***
Minority directors	10.8%	9.6%	11.7%***
Female directors	15.8%	13.3%	20.5%***

Panel B. Breakdown of minority directors by ethnicity

Ethnicity	Proportion of Minority Directors
African American	50.88%
Asian	25.92%
Hispanic	19.78%
Indian	2.20%
Middle Eastern	1.21%

Panel C. Sample description

	Mean	SD	P25	Median	P75
Firm characteristics:					
Total assets ($ millions)	16,336	50,102	1,023	3,052	9,828
Sales/turnover (net, $ millions)	7,239	16,992	691	1,820	5,633
Return on assets	0.05	0.08	0.01	0.04	0.08
Long-term debt to total assets	0.23	0.20	0.07	0.21	0.35
Market to book ratio	3.88	19.50	1.42	2.16	3.48
Capital expenditures to sales	0.07	0.17	0.02	0.03	0.06
R&D to total assets	0.04	0.06	0.00	0.02	0.06
Board characteristics:					
Percent independent directors	78%	11%	71%	81%	89%
CEO is chairman	47%	50%	0%	0%	100%
Board size	9.39	2.34	8.00	9.00	11.00

Panel D. Proportion of firms with diversity policy on gender or race, by year

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
8.9%	8.9%	9.5%	8.8%	39.0%	42.0%	41.7%	42.4%	41.5%	42.9%	45.5%	48.8%

Table 2.

Director qualifications and responsibilities by diversity

This table examines director qualifications and responsibilities for our 126,044 director-firm-year observations. The columns contain sample averages for several non-mutually exclusive subsamples: non-minority male, minority (includes both males and females), and female (which includes minorities and non-minorities). Director characteristics and experience are taken from a combination of ISS (RiskMetrics) and BoardEx databases. If a director is reported as serving on a committee, chairing a committee, or having a particular experience or education level in either of the two databases, we consider the director to have that particular characteristic in our combined database. ***, **, and * indicate significant differences from the corresponding population (between female and male, and between minority and non-minority) at the 1%, 5%, and 10%, respectively, using Chi-squared difference in proportion tests and student's t difference in means tests.

	Non-minority male	Minority	Female
Director board experience and attendance:			
Number of other major company boards	0.86	1.16***	0.96***
Number of years served on boards of firms	5.56	8.48***	6.55***
Percent with service on other committees	0.47	0.58***	0.53***
Director network size	27.94	37.35***	31.54***
Director age (years)	63.98	62.01***	60.53***
Director tenure (years)	9.93	8.76***	8.58***
Attendance problem (<75% of meetings)	0.006	0.007*	0.005
Career and education experience:			
Finance experience	0.34	0.26***	0.29***
Management experience	0.26	0.28***	0.27*
Legal or consulting experience	0.24	0.30***	0.30***
Academic experience	0.05	0.09***	0.08***
Political experience	0.04	0.07***	0.06***
Military experience	0.005	0.006	0.004**
Undergrad degree	0.86	0.91***	0.91***
MBA degree	0.37	0.40***	0.36*
Advanced graduate degree	0.62	0.75***	0.66***
Qualifications index	2.79	3.08***	2.93***
Firm-adjusted qualifications index	-0.03	0.19***	0.07***
Committee assignments *Percent serving as:*			
Audit committee member	54.1%	48.9%***	50.8%***
Compensation committee member	54.1%	47.6%***	49.5%***
Nominating committee member	53.0%	54.8%***	54.0%**
Governance committee member	52.0%	54.3%***	54.1%***
Leadership roles on the board *Percent serving as:*			
Non-executive chairman/lead director	13.5%	6.4%***	4.7%***
Chair of any committee	42.1%	28.8%***	32.8%***
Audit committee chair	15.4%	8.2%***	10.4%***
Compensation committee chair	14.9%	9.5%***	10.5%***
Nominating committee chair	13.3%	12.0%***	12.7%***
Governance committee chair	13.4%	12.1%***	12.8%**
Number of observations	95,206	13,589	19,921

Table 3.

Board leadership positions

This table examines the characteristics of directors being appointed to major leadership positions on the board for our full sample of 126,044 director-firm-year observations obtained from the universe of companies listed in the merged ISS(RiskMetrics) / Compustat / ExecuComp / BoardEx database from 2006 until 2017. Each column contains the results of a firm fixed effects linear probability model, where the dependent variable takes a value of one if the director is the Chairman of the Board, Lead Director, or chair of the specified committee, respectively, and zero otherwise. Panels B and C are presented in reduced form but include the same controls as Panel A. All specifications include robust (Rogers, 1993) standard errors with clustering by director reported in brackets. ***, **, * indicate statistical significance at the 1%, 5%, 10% levels, respectively.

Panel A. Diverse chair

	Non-executive chair	Lead director	Chair of:			
			Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)	(6)
Diverse director	-0.036***	-0.052***	-0.026***	-0.030***	-0.014***	-0.015***
	[0.003]	[0.003]	[0.004]	[0.004]	[0.005]	[0.005]
Finance experience	-0.012***	0.010***	0.350***	-0.045***	-0.046***	-0.046***
	[0.003]	[0.004]	[0.006]	[0.005]	[0.004]	[0.004]
Management experience	-0.020***	-0.008***	-0.023***	-0.004	-0.004	-0.004
	[0.002]	[0.003]	[0.004]	[0.004]	[0.004]	[0.004]
Legal or consulting experience	-0.008*	-0.001	0.001	-0.005	0.019***	0.020***
	[0.005]	[0.007]	[0.004]	[0.005]	[0.005]	[0.005]
Political experience	-0.008*	-0.001	-0.007	-0.005	0.015*	0.014*
	[0.005]	[0.007]	[0.007]	[0.008]	[0.008]	[0.008]
Academic experience	-0.025***	-0.027***	0.004	-0.042***	-0.008	-0.011
	[0.004]	[0.006]	[0.007]	[0.007]	[0.009]	[0.009]
Military experience	-0.007	-0.003	-0.015	-0.008	-0.020	-0.017
	[0.012]	[0.018]	[0.014]	[0.024]	[0.024]	[0.024]
Experience on board in another industry	-0.0010***	0.0004	-0.001	0.000	-0.001	-0.001*
	[0.0002]	[0.0003]	[0.000]	[0.001]	[0.001]	[0.0005]
Other firm committee experience	0.006*	0.009**	0.022***	0.019***	0.020***	0.019***
	[0.003]	[0.004]	[0.005]	[0.005]	[0.005]	[0.005]
Director network size	0.001***	0.001***	0.000	0.0004**	0.0012***	0.0014***
	[0.0003]	[0.0003]	[0.000]	[0.0002]	[0.0003]	[0.0003]
Undergrad degree	0.016***	0.001	0.018***	0.003	0.012**	0.011***
	[0.004]	[0.004]	[0.005]	[0.005]	[0.005]	[0.005]
MBA degree	0.006	0.008*	0.017***	0.010*	-0.002	-0.003
	[0.004]	[0.004]	[0.005]	[0.006]	[0.006]	[0.006]
Advanced graduate degree	-0.002	0.007	-0.028***	-0.005	0.017***	0.017***
	[0.004]	[0.004]	[0.005]	[0.006]	[0.006]	[0.006]
Percent of years with attendance problems	-0.032***	-0.010	-0.049***	-0.055***	-0.034***	-0.035***
	[0.004]	[0.008]	[0.007]	[0.008]	[0.009]	[0.009]
Number of other major company boards	0.007***	0.001	0.008***	0.001	-0.001	-0.001
	[0.001]	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]
Board size	-0.005***	0.000	-0.005***	-0.004***	-0.005***	-0.005***
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
Percent independent directors	0.001***	-0.001***	-0.0004**	-0.0003	-0.0004**	-0.0003*
	[0.0002]	[0.0003]	[0.0001]	[0.0002]	[0.0001]	[0.0001]

(Continued)

Table 3, Panel A (continued)

Director tenure	0.004***	0.004***	0.002**	0.003***	0.003***	0.003***
	[0.0001]	[0.0006]	[0.0004]	[0.0005]	[0.0004]	[0.0004]
Director age	0.0004***	0.000	0.001*	-0.0002	0.0002	0.0003
	[0.0001]	[0.000]	[0.0002]	[0.0002]	[0.0002]	[0.0002]
ln(Sales)	-0.011***	0.005	-0.006	-0.006	-0.004	-0.004
	[0.003]	[0.004]	[0.004]	[0.005]	[0.005]	[0.005]
Return on assets	-0.005	0.003	0.008	0.000	0.006	0.005
	[0.009]	[0.009]	[0.010]	[0.012]	[0.011]	[0.011]
CEO is chairman	-0.056***	0.040***	0.002	0.002	-0.0004	0.000
	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]
Volatility	0.083	0.567	0.794	-0.152	-0.094	0.071
	[0.479]	[0.608]	[0.698]	[0.749]	[0.756]	[0.754]
Fixed effects	←		Firm, year, committee			→
Adjusted R-squared	0.108	0.081	0.296	0.158	0.158	0.162
Number of observations	126,044	126,044	126,044	126,044	126,044	126,044

Panel B. Minority chair

	Non-executive chair	Lead director	Chair of:			
			Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)	(6)
Minority director	-0.021***	-0.047***	-0.032***	-0.036***	-0.023***	-0.025***
	[0.004]	[0.004]	[0.006]	[0.006]	[0.006]	[0.006]
Additional controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	←		Firm, year, committee			→
Adjusted R-squared	0.104	0.077	0.296	0.158	0.158	0.162
Number of observations	126,044	126,044	126,044	126,044	126,044	126,044

Panel C. Female chair

	Non-executive chair	Lead director	Chair of:			
			Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)	(6)
Female director	-0.041***	-0.047***	-0.017***	-0.026***	-0.008	-0.008
	[0.002]	[0.003]	[0.005]	[0.005]	[0.005]	[0.005]
Additional controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	←		Firm, year, committee			→
Adjusted R-squared	0.108	0.078	0.295	0.158	0.158	0.162
Number of observations	126,044	126,044	126,044	126,044	126,044	126,044

Table 4:

Accounting for self-selection and unobserved heterogeneity

In this table we use an instrumental variables approach to control for potential endogeneity for the subsample of 95,733 observations in which we can identify the director's undergraduate institution. Columns 1 and 2 report a two-stage least squares model and models 3 and 4 report a Heckman treatment effects model. We report endogeneity tests using the following instruments: *Gender Equality Index*, following Huang and Kisgen (2013), is assigned an index value for the state where the director obtained their undergraduate degree and *Affirmative Action*, which takes a value of one if the director turned 18 following the Civil Rights Act of 1964 and zero otherwise. The dependent variable in models (1) and (3) is an indicator variable for observing a *Diverse* director. The dependent variable in models (2) and (4) is an indicator variable of whether the director is selected as Chairman of the Board, Lead Director, or one of the four committee chairs.

	Two-stage least squares models		Heckman models	
	First stage	Second stage	First stage	Second stage
Dependent variable:	*1 = Diverse*	*1 = Leadership role*	*1 = Diverse*	*1 = Leadership role*
	(1)	(2)	(3)	(4)
Gender equality index	0.002***		0.008***	
	[0.001]		[0.001]	
Affirmative action	0.300***		0.392***	
	[0.035]		[0.015]	
Diverse director		-0.142***		-0.103***
		[0.031]		[0.011]
λ				**0.059**
				[0.038]
Additional controls	Yes	Yes	Yes	Yes
Fixed effects	Firm, year, committee		Firm	Firm, year, committee
Partial R-squared	0.088			
Partial F-statistic	76.04			
Sargan-Hansen test p-value		0.510		
Number of observations	95,733	95,733	95,733	95,733

Table 5.

Prior experience and board leadership positions

This table examines the characteristics of directors being appointed to major leadership positions on the board for our full sample of 126,044 director-firm-year observations obtained from the universe of companies listed in the merged ISS(RiskMetrics) / Compustat / ExecuComp / BoardEx database from 2006 until 2017. The linear probability models reported in each column of Panel A augment the models in Table 3 by including a (0,1) indicator for whether the director has served on the type of committee regressed to date at the firm in question or at another firm (e.g., the relevant committee experience for the chair of the audit committee is prior service on an audit committee). Panel B includes a (0,1) indicator for whether the director has prior chairman/lead director experience (model 1) or has chaired the type of committee regressed (models 2-5). Panel C includes a (0,1) indicator for whether the director is deemed as having finance experience to examine the effects of finance experience on the likelihood that a director is chosen as Audit Committee Chair. In Panel D, the relevant experience indicators are replaced by the director's tenure on the committee in years. Each of these experience variables is then interacted with the Diverse Director indicator. The models include additional controls for education, additional professional experience, board characteristics, and firm characteristics. All specifications include robust (Rogers, 1993) standard errors with clustering by director reported in brackets. ***, **, * indicate statistical significance at the 1%, 5%, 10% levels, respectively.

Panel A. Likelihood of diverse committee leadership based on past relevant committee experience

	Chair of:			
	Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)
Relevant committee experience	0.051***	0.020***	0.021***	0.023***
	[0.006]	[0.007]	[0.006]	[0.006]
Relevant committee experience	-0.023***	-0.019**	-0.015*	-0.019**
× Diverse director	[0.009]	[0.008]	[0.008]	[0.010]
Diverse director	-0.018***	-0.027***	-0.009*	-0.008
	[0.005]	[0.005]	[0.005]	[0.005]
Additional controls	Yes	Yes	Yes	Yes
Fixed effects	← Firm, year, committee →			
Adjusted R-squared	0.297	0.159	0.159	0.163
Number of Observations	126,044	126,044	126,044	126,044

Panel B. Likelihood of diverse committee leadership based on past relevant committee leadership experience on other boards

	Chair/lead director	Chair Of:			
		Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)
Relevant chair experience	0.105***	0.152***	0.100***	0.075***	0.091***
	[0.011]	[0.010]	[0.010]	[0.010]	[0.011]
Relevant chair experience	-0.044**	-0.058***	-0.025**	-0.018*	-0.019**
× Diverse director	[0.021]	[0.014]	[0.013]	[0.010]	[0.010]
Diverse director	-0.079***	-0.016***	-0.026***	-0.013***	-0.013***
	[0.004]	[0.004]	[0.004]	[0.005]	[0.005]
Additional controls for:	Yes	Yes	Yes	Yes	Yes
Fixed effects	← Firm, year, committee →				
Adjusted R-squared	0.093	0.309	0.164	0.162	0.167
Number of observations	126,044	126,044	126,044	126,044	126,044

Table 5 (continued)

Panel C. Likelihood of diverse audit committee leadership based on finance experience distinction

	Audit committee chair
Finance experience	0.371***
	[0.007]
Finance experience × Diverse director	-0.095***
	[0.013]
Diverse director	0.001
	[0.002]
Additional controls	Yes
Fixed Effects	Firm, year, committee
Adjusted R-squared	0.298
Number of Observations	126,044

Panel D. Likelihood of diverse committee leadership based on committee tenure

	Chair of:				
	Chair/lead director	Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)
Relevant committee tenure	0.008***	0.013***	0.016***	0.014***	0.016***
	[0.000]	[0.001]	[0.001]	[0.001]	[0.001]
Relevant committee tenure × Diverse director	-0.003***	-0.005***	-0.007***	-0.004**	-0.005***
	[0.001]	[0.001]	[0.002]	[0.002]	[0.002]
Diverse director	-0.069***	-0.043***	-0.021***	-0.022***	-0.020***
	[0.006]	[0.006]	[0.006]	[0.005]	[0.005]
Additional controls	Yes	Yes	Yes	Yes	Yes
Fixed effects	← Firm, year, committee →				
Adjusted R-squared	0.087	0.304	0.169	0.166	0.171
Number of observations	126,044	126,044	126,044	126,044	126,044

Table 6.

Do diverse directors avoid leadership positions to instead serve on multiple boards?

This table examines the characteristics of directors being appointed to major leadership positions on the board for our full sample of 126,044 director-firm-year observations obtained from the universe of companies listed in the merged ISS(RiskMetrics) / Compustat / ExecuComp / BoardEx database from 2006 until 2017. The table provides evidence on leadership positions for diverse directors with no outside board appointments (Panels A and B) and on diverse directors with several board appointments (Panel C). Each column contains the results of a firm fixed effects linear probability model similar to Table 3, where the dependent variable takes a value of one if the director is the Chairman of the Board, lead director, or chair of the specified committee, respectively, and zero otherwise. For Panel A, the sample includes all directors with no outside board appointments. Panel B includes all directors with no outside board appointments and at least five years of service on the Board. Panel C includes all directors with at least three board appointments.

Panel A. Directors with no outside board appointments

	Chair/lead director	Chair of:			
		Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)
Diverse director	-0.072***	-0.024***	-0.032***	-0.010*	-0.011*
	[0.005]	[0.006]	[0.006]	[0.006]	[0.006]
Additional controls included	Yes	Yes	Yes	Yes	Yes
Fixed effects	← Firm, year, committee →				
Adjusted R-squared	0.130	0.317	0.197	0.196	0.200
Number of observations	60,516	60,516	60,516	60,516	60,516

Panel B. Directors with no outside board appointments and at least five years of service

	Chair/lead director	Chair of:			
		Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)
Diverse director	-0.088***	-0.016**	-0.036***	-0.009*	-0.008
	[0.007]	[0.007]	[0.008]	[0.005]	[0.005]
Additional controls included	Yes	Yes	Yes	Yes	Yes
Fixed effects	← Firm, year, committee →				
Adjusted R-squared	0.141	0.358	0.223	0.220	0.095
Number of observations	45,936	45,936	45,936	45,936	45,936

Panel C. Directors with at least three board appointments

	Chair/lead director	Chair of:			
		Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)
Diverse director	-0.106***	-0.048***	-0.035***	-0.018*	-0.022**
	[0.009]	[0.009]	[0.009]	[0.009]	[0.009]
Additional controls included	Yes	Yes	Yes	Yes	Yes
Fixed effects	← Firm, year, committee →				
Adjusted R-squared	0.225	0.415	0.281	0.261	0.267
Number of observations	20,498	20,498	20,498	20,498	20,498

Table 7:

Do diverse directors avoid board leadership positions due to either risk aversion or distance to headquarters?

This table examines whether risk aversion (Panel A) or distance to firm headquarters (Panel B) might explain the board leadership gap. Panel A restricts the sample to directors with prior board leadership experience, while Panel B restricts the sample to firms headquartered in the Northeast. We consider a firm to be in the Northeast if its headquarters are in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, or Vermont. The specifications are otherwise identical to those in Table 3.

Panel A. Does risk aversion explain the leadership gap? Sample restricted to directors with prior board leadership experience

	Chair/lead director	Chair of:			
		Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)
Diverse director	-0.118***	-0.031***	-0.033***	-0.020**	-0.021**
	[0.009]	[0.009]	[0.010]	[0.009]	[0.009]
Additional controls	Yes	Yes	Yes	Yes	Yes
Fixed effects	← Firm, year, committee →				
Adjusted R-squared	0.185	0.425	0.267	0.259	0.260
Number of observations	35,450	35,450	35,450	35,450	35,450

Panel B. Are diverse directors too distant? Sample restricted to firms in the Northeast

	Chair/lead director	Chair of:			
		Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)
Diverse director	-0.038***	-0.028***	-0.046***	-0.015**	-0.016**
	[0.005]	[0.008]	[0.008]	[0.007]	[0.007]
Additional controls	Yes	Yes	Yes	Yes	Yes
Fixed effects	← Firm, year, committee →				
Adjusted R-squared	0.105	0.291	0.162	0.161	0.166
Number of observations	33,389	33,389	33,389	33,389	33,389

Table 8.

Monitoring by diverse directors

This table examines the monitoring ability of diverse directors at the firm level for our full sample of 16,836 firm-year observations from 2006 until 2017. In each of the reported linear probability models, we regress various monitoring proxies upon our measures for diverse participation in board leadership or diverse representation on the board at large. The dependent variable in model (1) is forced CEO turnover, which indicates the departure of a CEO under the age of 62 for reasons other than retirement, death, or appointment to another firm (Parrino, 1997). The dependent variable in model (2), Abnormal CEO Compensation, is the residual of Total Pay (i.e., TDC1) on firm size, CEO tenure, abnormal market model stock returns, and industry (Yermack, 2006). The dependent variable in model (3) is the absolute value of performance-adjusted discretionary total accruals (Kothari, Leone, and Wasley, 2005). The relevant committee/leadership position in model (1) is a diverse chairman of the board or lead director and in Models (2) and (3) it is the compensation and audit committee, respectively. All regressions include robust (Rogers, 1993) standard errors clustered by firm reported in brackets. ***, **, * indicate statistical significance at the 1%, 5%, 10% levels, respectively.

	Forced CEO turnover	Abnormal CEO compensation	Discretionary accruals
Committee/leadership position:	*N/A*	*Compensation*	*Audit*
	(1)	(2)	(3)
Diverse chairman (or lead director)	-0.009		
	[0.017]		
Diverse chairman × Return on assets	-0.037		
	[0.171]		
Percent diverse	-0.001		
	[0.000]		
Percent diverse × Return on assets	-0.059*		
	[0.031]		
Diverse leadership position		193.96	-0.019*
on committee		[231.21]	[0.011]
Diverse membership on committee		48.47	-0.005
		[153.73]	[0.008]
CEO age	-0.008***	3.62	-0.001
	[0.001]	[15.57]	[0.001]
CEO insider ownership	-0.004***	-36.11	0.0002
	[0.002]	[26.10]	[0.002]
Female CEO	-0.047	-267.42	0.007
	[0.036]	[348.80]	[0.019]
CEO is chairman	0.025*	330.50**	-0.018**
	[0.014]	[158.08]	[0.008]
Estimated CEO tenure	-0.005**	14.12	-0.0003
	[0.001]	[18.36]	[0.001]
Board size	0.012***	107.38*	-0.004**
	[0.003]	[56.47]	[0.002]
Percent independent directors	-0.002**	0.01	0.0001
	[0.000]	[10.16]	[0.074]
ln(Sales)	0.008	-433.92	-0.007**
	[0.011]	[283.20]	[0.003]
Return on assets	-0.200***	1,547.40**	-0.216***
	[0.071]	[686.31]	[0.055]
Long-term debt to total assets	0.038	-1,208.42*	0.049**
	[0.039]	[709.65]	[0.024]
Market to book ratio	-0.0002	4.77***	-0.0001
	[0.000]	[1.74]	[0.000]
Volatility	3.631	-22,234.21	-6.207
	[3.455]	[38,304.78]	[4.421]
Capital expenditures to sales	-0.010	1,182.17	0.003
	[0.040]	[739.48]	[0.014]
R&D to total assets	-0.087	-4,851.70	0.407***
	[0.235]	[2,938.17]	[0.110]
Fixed effects	Firm, year	Firm, year	Firm, year
Adjusted R-squared	0.139	0.421	0.049
Number of observations	16,836	16,836	16,836

Table 9.

Shareholder support for diverse directors

This table focuses on voting results in director elections using our sample of 109,538 individual director elections from 2006 to 2017 contained in the ISS Voting Analytics database. The dependent variable is the raw percentage votes cast in support of a director. *Diverse Director* takes a value of one if the director is classified as minority or female according to ISS (RiskMetrics). *Minority Director* (*Female Director)* takes a value of one if the director is classified as minority (female) and zero otherwise. Robust (Rogers, 1993) standard errors clustered by shareholder meeting are reported in brackets. ***, **, * indicate statistical significance at the 1%, 5%, 10% levels, respectively.

	Dependent variable: Percentage vote		
	(1)	(2)	(3)
Diverse director	0.355***		
	[0.028]		
Minority director		0.251***	
		[0.040]	
Female director			0.381***
			[0.032]
Additional controls	Yes	Yes	Yes
Fixed effects	← Firm, year, committee →		
Adjusted R-squared	0.617	0.616	0.617
Number of observations	109,538	109,538	109,538

Table 10.

Labor market consequences

Columns (1) and (2) explore the effect of director characteristics on director pay. *Diverse Director* is one if director is classified as minority or female according to ISS (RiskMetrics) (zero otherwise). Directors with less than one year of service are excluded. Columns (3) and (4) explore the effect of not receiving board leadership position on director retention. The dependent variable in the reported linear probability models is an indicator variable that denotes that the director in question will not serve on the board again in the following year. *Leadership Gap*, measures the extent to which a director was predicted to serve in any board leadership position based on their observable qualifications, but was not appointed to serve in one of those roles. *Leadership Gap* is computed as the negative of the residual of a linear probability model that regresses an indicator of whether the director has any board leadership responsibilities upon attendance, other board experience, other industry experience, director network size, outside committee experience, director age and tenure, director education and professional experience, board size and independence, CEO-chairman duality, firm size, and return on assets. Robust Rogers (1993) standard errors clustered at the individual director level are reported in brackets. ***, **, * indicate statistical significance at the 1%, 5%, 10% levels, respectively.

Dependent variable:	Ln(Compensation)		Director turnover	
	(1)	(2)	(3)	(4) Diverse only
Diverse director	-0.019***	-0.011***	-0.006***	
	[0.003]	[0.003]	[0.002]	
Leadership gap			0.032***	0.024***
			[0.003]	[0.006]
Leadership gap × Diverse director			-0.010***	
			[0.003]	
Committee chair		0.033***	-0.002	-0.002
		[0.002]	[0.002]	[0.004]
Chairman/lead director		0.169***	-0.022***	-0.016**
		[0.005]	[0.002]	[0.006]
Total number of committees	0.010***	0.007***	-0.005***	-0.003*
	[0.002]	[0.001]	[0.001]	[0.002]
Director tenure	0.002***	0.001***	0.003***	0.004***
	[0.000]	[0.000]	[0.0001]	[0.0004]
Director age	0.0004*	0.0004*	0.003***	0.003***
	[0.0002]	[0.0002]	[0.0001]	[0.0003]
Number of other boards	0.005***	0.005***	-0.008***	-0.004*
	[0.002]	[0.002]	[0.001]	[0.0019]
Other industry experience	-0.001**	-0.001**	-0.001***	-0.001
	[0.000]	[0.000]	[0.0002]	[0.0004]
Director network size	0.000	0.000	0.001***	0.0004***
	[0.000]	[0.000]	[0.0001]	[0.0001]
Other firm committee experience	0.002	0.001	-0.005***	-0.010**
	[0.004]	[0.004]	[0.002]	[0.004]
Percent of years with attendance problems	-0.011	-0.007	0.057***	0.054**
	[0.019]	[0.019]	[0.012]	[0.024]
Finance experience	0.015***	0.017***	-0.012***	-0.010***
	[0.003]	[0.003]	[0.002]	[0.004]
Management experience	0.001	0.002	0.001	0.007**
	[0.004]	[0.004]	[0.002]	[0.004]
Additional controls for:				
Education/professional exp	Yes	Yes	Yes	Yes
Board characteristics	Yes	Yes	Yes	Yes
Firm characteristics	Yes	Yes	Yes	Yes
Fixed effects	Firm, year	Firm, year	Firm, year, committee	
Adjusted R-squared	0.527	0.529	0.043	0.037
Number of observations	126,044	126,044	126,044	30,520

Table 11.

Mechanisms to reduce diversity leadership gap

Panel A examines factors that influence diverse leadership appointments. In the first two columns of Panel A, *Diversity Policy* is set to one if the firm has an official policy in its corporate proxy regarding gender or ethnicity when selecting nominees for the board of directors. The dependent variable takes a value of one if the firm has a diverse leader. The test is run only on firms that have at least one diverse director. Column (3) of Panel A examines the effect of having diverse directors on the nominating committees, which is typically tasked with assigning leadership roles. The test is run only for firms that have diverse directors serving on the board outside of the nominating committee. Panel B examines the effect of having multiple diverse directors on the board. The dependent variable is equal to one if the firm has diverse directors serving as chairman of the board, lead director, chairman of the audit committee, or chairman of the compensation committee, respectively, and zero otherwise. Standard errors in Panel A are clustered by firm. The specifications are identical to those in Table 3 except for the additional term, *Percent Diverse*, and its interaction, *Diverse Director* × *Percent Diverse*.

Panel A. Effects of diversity policy or diverse director on nominating committee

	Dependent Variable: Diverse board leader		
	Full sample	2010-2017	Full sample
	(1)	(2)	(3)
Firm has diversity policy on gender or race	0.086*** [0.011]	0.044** [0.018]	
Diverse director on nominating committee			0.051*** [0.009]
Additional controls	Yes	Yes	Yes
Fixed effects	Firm, year	Firm, year	Firm, year
Adjusted R-squared	0.549	0.613	0.540
Number of observations	13,409	9,224	12,316

Panel B. Effect of more diverse directors on board

Dependent variable: Diverse board leader	Non-executive chair	Lead director	Chair of:			
			Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)	(6)
Diverse director	-0.0048*** [0.005]	-0.043*** [0.007]	-0.029*** [0.009]	-0.020** [0.010]	-0.022** [0.010]	-0.021** [0.010]
Percent diverse	0.030 [0.019]	0.040* [0.022]	0.034* [0.020]	0.039* [0.022]	-0.003 [0.022]	0.001 [0.022]
Diverse director × Percent diverse	0.037 [0.024]	-0.032 [0.022]	0.008 [0.028]	-0.038 [0.030]	0.027 [0.032]	0.021 [0.032
Additional controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	← Firm, year, committee →					
Adjusted R-squared	0.108	0.081	0.296	0.158	0.158	0.162
Number of observations	126,044	126,044	126,044	126,044	126,044	126,044

Appendix A.
Variable definitions

Variable	Definition	Source
Diverse director	=1 if director is classified as minority or female	ISS
Minority director	=1 if director is classified as minority	ISS
Female director	=1 if director is classified as female	ISS
Board size	Number of directors on the board	ISS
Percent independent directors	Number of Independent Directors/Board Size	ISS
CEO is chairman	=1 if CEO is chairman of board	ISS
Capital expenditures to sales	CAPX/SALE	Compustat
Long-term debt to total assets	DLTT/AT	Compustat
R&D to total assets	XRD/AT	Compustat
Return on assets	NI/AT	Compustat
Market to book ratio	MKVALT/AT	Compustat
Tobin's q	(AT+MKVALT-CEQ-TXDB)/AT	Compustat
Volatility	Variance of the prior-year raw daily returns	CRSP
Total assets	Total Assets in millions (AT)	Compustat
Sales	Net Sales in millions (SALE)	Compustat
# of other major company boards	Number of other public board positions held	ISS
Director tenure	Number of years served on board	ISS
Director age	Age in years	ISS
Other industry experience	Number of years serving on boards outside the industry	ISS
Director network size	Number of unique directors connected through board service	ISS
Attended <75% of meetings	=1 if attended fewer than 75% of meetings	ISS
Chairman of the board	=1 if Chairman of the Board in ISS	ISS
Lead director	=1 if Lead Director in ISS	ISS
Other firm committee experience	=1 if served on a committee as director of another firm	ISS/BoardEx
Any committee member (chair)	=1 if served on any committee (chair) in either ISS or BoardEx	ISS/BoardEx
Audit committee member (chair)	=1 if audit committee member (chair) in either ISS or BoardEx	ISS/BoardEx
Compensation committee member (chair)	=1 if comp committee member (chair) in either ISS or BoardEx	ISS/BoardEx
Governance committee member (chair)	=1 if governance committee member (chair) in either ISS or BoardEx	ISS/BoardEx
Nominating committee member (chair)	=1 if nominating committee member in either ISS or BoardEx	ISS/BoardEx
Total number of committees	= Number of committees served on in either ISS or BoardEx	ISS/BoardEx
Chairman/lead director	=1 if Chairman or Lead Director in either ISS or BoardEx	ISS/BoardEx
Academic experience	=1 if has academic experience in either ISS or BoardEx	ISS/BoardEx
Legal or consulting experience	=1 if has legal/consulting experience in either ISS or BoardEx	ISS/BoardEx
Finance experience	=1 if has finance experience in either ISS or BoardEx	ISS/BoardEx
Management experience	=1 if has management experience in either ISS or BoardEx	ISS/BoardEx
Political experience	=1 if has political experience in either ISS or BoardEx	ISS/BoardEx
Military experience	=1 if has military experience in either ISS or BoardEx	ISS/BoardEx
Undergrad degree	=1 if has bachelor's degree in either ISS or BoardEx	ISS/BoardEx
Advanced graduate degree	=1 if has master's degree or PhD in either ISS or BoardEx	ISS/BoardEx
MBA degree	=1 if has MBA in either ISS or BoardEx	ISS/BoardEx
Qualifications index	= Academic experience + Legal or consulting experience + Finance exper. + Management experience + Political experience + Military experience + Undergrad degree + MBA degree + Advanced graduate degree	ISS/BoardEx
Firm-adjusted qualifications index	= Qualifications index – Firm-average qualifications index	ISS/BoardEx
Fees earned or paid in cash	Cash fees earned ($000s)	Execucomp
Incentive-based compensation	Equity-based (stock and option) fees earned ($000s)	Execucomp
Other compensation	Other non-standard compensation ($000s)	Execucomp
Total compensation	Total fees earned as reported ($000s)	Execucomp
Firm-adjusted total compensation	= Total Compensation – Firm-Average Total Compensation	Execucomp
Low pay	=1 if more than 5% below the median board compensation	Execucomp
Percent vote for	= vote "for" / (For + Against)	ISS Voting Analytics
Range of percent vote for	= Max(percentage vote for) – Min(percentage vote for)	Analytics
Accounting restatement	=1 if earnings are restated	Audit Analytics
Nontimely SEC filing	=1 if filing is late	Audit Analytics
Confidential voting	=1 if confidential voting	ISS
Unequal voting rights	=1 if dual class shares	ISS
Majority vote requirement	=1 if majority vote provision in director elections	ISS
Residual of ISS vote 'for' rec.	The residual from the model predicting ISS' recommendation as specified in Cai, Garner, and Walkling (2009)	Various
Litigation	=1 if targeted with class action lawsuit during fiscal year	Stanford SCACs

INTERNET APPENDIX FOR:

At the table but can't break through the glass ceiling: Board leadership positions elude diverse directors

October 3, 2019

Laura Casares Field*
Department of Finance
University of Delaware
Newark, DE 19716
(302) 831-3810
lfield@udel.edu

Matthew E. Souther
Department of Finance
University of South Carolina
Columbia, SC 29208
(803) 777-4929
matthew.souther@moore.sc.edu

Adam S. Yore
Department of Finance
University of Missouri
Columbia, MO 65211
(573) 884-1446
yorea@missouri.edu

Appendix B:
Identifying whether firms have a diversity policy on gender/race for director nominations

To identify whether firms have a diversity policy with respect to gender and/or race for director nominations, we used Python to search firms' proxy statements filed with the SEC on the EDGAR database. Specifically, we searched proxy statements for the following terms: "divers", "gender", "ethnic", or "race". We then read each of the flagged proxy statements to identify which firms have a diversity policy with respect to gender or race for director nominations. A firm is determined to have a diversity policy in a particular year if the proxy statement mentions that the board considers race and/or gender when it selects director nominees. If the firm does not specifically mention race and/or gender with regard to director selection, the firm is determined not to have a diversity policy. Note that the firm must specifically mention diversity in terms of gender, race, or ethnicity to be deemed to have a diversity policy. For example, consider the following excerpts from proxy statements of Republic Services, Inc. from 2012 and 2014:

Firm	No diversity policy	Has diversity policy
Republic Services, Inc.	2012: Although we have no formal policy regarding diversity relating to Board candidacy, our Corporate Governance Guidelines state that directors should be selected in the context of assessing the Board's needs at the time and with the objective of ensuring diversity in the background, experience and viewpoints of Board members. *The Board and Governance Committee value diversity as a factor in selecting Board members and believe that the diversity of opinions, perspectives, personal and professsional experiences, and backgrounds reflected on our Board provides us significant benefits.*	2014: With respect to diversity relating to Board candidacy, our Corporate Governance Guidelines state that directors shall be selected in the context of assessing the Board's needs at the time and with the objective of ensuring diversity in the background, experience and viewpoints of Board members. The Corporate Governance Guidelines further state that Republic and the Board are committed to a policy of Board inclusiveness. *To assist in promoting such diversity, the Board shall, to the extent consistent with applicable legal requirements and its fiduciary duties, take reasonable steps to ensure that new Board nominees are drawn from a pool that includes diverse candidates, including women and minorities.*

In its 2012 proxy statement, Republic Services mentioned diversity as a factor in Board candidacy but did not explicitly discuss race and/or gender. Therefore, Republic Services does not have a diversity policy in 2012. However, as shown below, Republic Services made a conscious choice, described in its proxy statement, to explicitly address diversity of race and gender in 2013:

> *In February 2013, we revised our Corporate Governance Guidelines to make a more specific statement regarding diversity relating to Board candidacy. Before this, our Corporate Governance Guidelines already stated that directors shall be selected in the context of assessing the Board's needs at the time and with the objective of ensuring diversity in the background, experience and viewpoints of Board members. The Corporate Governance Guidelines now further state that Republic and the Board are committed to a policy of Board inclusiveness. To assist in promoting such diversity, the Board shall, to the extent consistent with applicable legal requirements and with its fiduciary duties, take reasonable steps to ensure that new Board nominees are drawn from a pool that includes diverse candidates, including women and minority candidates. Further, the Board will cause to be placed on Republic's website by October 2013, at reasonable expense and omitting proprietary information, a report on the Board's efforts to encourage diverse representation, inclusive of gender and race, on the Board.*

Below, we provide several examples of firms that have never had a diversity policy on race or gender, firms that also switched, or were early adopters of diversity policies on race/gender for director nominations.

Appendix B (continued)
Examples of firms with no diversity policy on gender/race for board nominations

Berkshire Hathaway (Excerpt from 2017 Proxy Statement)

Berkshire does not have a policy regarding the consideration of diversity in identifying nominees for director. In identifying director nominees, the Governance Committee does not seek diversity, however defined. Instead, as previously discussed, the Governance Committee looks for individuals who have very high integrity, business savvy, an owner-oriented attitude and a deep genuine interest in the Company.

Alcoa Corporation (Excerpt from 2017 Proxy Statement)

Our policy on Board diversity relates to the selection of nominees for the Board. Our policy provides that while diversity and variety of experiences and viewpoints represented on the Board should always be considered, a director nominee should not be chosen nor excluded solely or largely because of race, color, gender, national origin or sexual orientation or identity. In selecting a director nominee, the Governance and Nominating Committee focuses on skills, expertise and background that would complement the existing Board, recognizing that the Company's businesses and operations are diverse and global in nature. For example, our directors are citizens of the United States, Mexico, Canada and the United Kingdom and we have four women directors as of the date of this Proxy Statement.

Cloud Peak Energy, Inc. (Excerpt from 2017 Proxy Statement)

We do not maintain a separate policy regarding the diversity of our Board members. However, the charter of the Governance Committee provides that in recommending potential nominees to the Board, the Committee will take diversity into account with the intent of creating a Board that consists of members with a broad spectrum of experience and expertise and with a reputation for integrity. Consistent with its charter, the Governance Committee and ultimately the Board seek nominees with distinct professional backgrounds, experience and perspectives so that the Board as a whole has the appropriate mix of skills, perspectives, personal and professional experiences and backgrounds necessary to fulfill the needs of the company with respect to the current issues it faces. When evaluating recommendations for potential nominees, the Governance Committee considers the contribution of existing directors, as well as the qualifications of new nominees.

Dollar General Corporation (Excerpt from 2017 Proxy Statement)

We have a written policy to endeavor to achieve a mix of Board members that represent a diversity of background and experience in areas that are relevant to our business. To implement this policy, the Committee assesses diversity by evaluating each candidate's individual qualifications in the context of how that candidate would relate to the Board as a whole and also considers more traditional concepts of diversity. The Committee periodically assesses the effectiveness of this policy by considering whether the Board as a whole represents such diverse experience and composition and by recommending to the Board changes to the criteria for selection of new directors as appropriate. The Committee recommends candidates, including those submitted by shareholders, only if it believes the candidate's knowledge, experience and expertise would strengthen the Board and that the candidate is committed to representing the long-term interests of all Dollar General shareholders.

The Nominating Committee assesses a candidate's independence, background and experience, as well as the current Board's skill needs and diversity.

Appendix B (continued)
Examples of firms adding a diversity policy on gender/race for board nominations

Firm name	No diversity policy	Has diversity policy
Bristol-Myers Squibb Co.	2013: Our Corporate Governance Guidelines contain Board membership criteria that apply to nominees for a position on our Board of Directors. Under these criteria, members of our Board should be persons of diverse backgrounds with broad experience in areas important to the operation of our company such as business, science, medicine, finance/accounting, law, education or government and should possess qualities reflecting integrity, independence, wisdom, an inquiring mind, vision, a proven record of accomplishment and an ability to work well with others. In addition, each director must represent the interests of all stockholders. *We do not have a formal policy on Board diversity as it relates to race, gender or national origin.*	2014: Our Corporate Governance Guidelines contain Board membership criteria that apply to nominees for a position on our Board of Directors, including candidates recommended by stockholders in accordance with the procedures described below. Under these criteria, members of our Board should be persons with broad experience in areas important to the operation of our company such as business, science, medicine, finance/accounting, law, business strategy, crisis management, corporate governance, education or government and should possess qualities reflecting integrity, independence, leadership, good business judgment, wisdom, an inquiring mind, vision, a proven record of accomplishment and an ability to work well with others. *The Board believes that its membership should continue to reflect a diversity of gender, race and ethnicity.*
Staples, Inc.	2012: Diversity has always been very important to us. It comprises one of the four pillars of what we call Staples' Soul. We strive to offer an inclusive business environment that offers diversity of people, thought, experience, and suppliers. This also holds true for our Board of Directors. Although we have no formal separate written policy, pursuant to our Corporate Governance Guidelines, the Board annually reviews the appropriate skills and characteristics of the Board members in light of the current composition of the Board, and diversity is one of the factors used in this assessment.	2013: Diversity has always been very important to us. It comprises one of the four pillars of what we call Staples' Soul. We strive to offer an inclusive business environment that offers diversity of people, thought, experience, and suppliers. This also holds true for our Board of Directors. Although we have no formal separate written policy, pursuant to our Guidelines, the Board annually reviews the appropriate skills and characteristics of the Board members in light of the current composition of the Board, and diversity is one of the factors used in this assessment. *Not only does the Board view diversity of experience, industry, skills and tenure as important, but also of gender and ethnic backgrounds. We exceed national averages in both women and minority representation on our Board. We also look to enhance our minority representation by our nomination of Raul Vazquez.*
Donaldson Company	2010: In recommending candidates for nomination by the Board as a Director of Donaldson, *the Corporate Governance Committee will consider appropriate criteria including current or recent experience as a Chairman of the Board, CEO or other senior Officer; business expertise and diversity;* and general criteria such as independence, ethical standards, a proven record of accomplishment, and the ability to provide valuable perspectives and meaningful oversight.	2011: In identifying and recommending candidates for nomination by the Board as a Director of Donaldson, the Corporate Governance Committee will consider appropriate criteria including current or recent experience as a Chairman of the Board, CEO or other senior Officer; business expertise, and diversity factors. *Diversity is meant to be interpreted broadly. It includes race, gender, and national origin and also includes differences of professional experience, global experience, education, and other individual qualities and attributes. The Committee will work periodically with one or more nationally recognized search firms to assist in identifying strong Director candidates and will seek candidates who are minorities and/or women.* We also will consider general criteria such as independence, ethical standards, a proven record of accomplishment, and the ability to provide valuable perspectives and meaningful oversight.

Appendix B (continued)
Examples of firms adding a diversity policy on gender/race for board nominations (continued)

Firm name	No diversity policy	Has diversity policy
Alaska Air Group, Inc.	2009: While there is no formal list of qualifications, the Governance and Nominating Committee considers, among other things, the prospective nominees' relevant experience, intelligence, independence, commitment, ability to work with the Chief Executive Officer and within the Board culture, prominence, *diversity*, age, understanding of the Company's business, and other factors deemed relevant.	2010: While there is no formal list of qualifications, the Governance and Nominating Committee considers, among other things, the prospective nominees' relevant experience, intelligence, independence, commitment, ability to work with the CEO and within the Board culture, prominence, diversity, age, understanding of the Company's business, and other factors deemed relevant to Alaska Air Group Board service. *Diversity is considered broadly, not merely with regard to race, gender, or national origin, but also with regard to general background, geographical location, and other facts.* The consideration of diversity is implemented through discussions at the Governance and Nominating Committee.
Owens-Illinois Inc.	2014: Pursuant to the Policies and Procedures, candidates for the Board must demonstrate strong leadership in their particular field, and have broad business experience and the ability to exercise sound business judgment. *In addition, candidates must possess the highest personal and professional ethics, integrity and values, and be committed to representing the long-term interests of the share owners.*	2015: The Policies and Procedures require the Committee to consider the contributions that a candidate can be expected to make to the collective functioning of the Board based on the totality of the candidate's background, skills, experience and expertise and the composition of the Board at the time. *The Policies and Procedures also state the Committee's belief that diversity is an important attribute of a well-functioning Board and the Policies and Procedures, the Guidelines and the Committee's Charter each require the Committee to take into consideration the benefits of having Board members who reflect a diversity of age, gender, ethnicity and country of citizenship.*
Papa John's International, Inc.	2015: Our Corporate Governance and Nominating Committee considers diversity in its nomination of directors to the Board, and in its assessment of the effectiveness of the Board and its committees. In considering diversity, the Corporate Governance and Nominating Committee looks at a range of different personal factors in light of the business, customers, suppliers and employees of the Company. *The range of factors includes diversity of personal and business backgrounds and prior board service, finance experience, international experience, industry experience, leadership skills, including prior management experience, and a variety of subjective factors.*	2016: Our Corporate Governance and Nominating Committee considers diversity in its nomination of directors to the Board, and in its assessment of the effectiveness of the Board and its committees. In considering diversity, the Corporate Governance and Nominating Committee looks at a range of different personal factors in light of the business, customers, suppliers and employees of the Company. *The range of factors includes diversity of race, ethnicity, gender, age, cultural background and personal and business backgrounds. This includes prior board service, finance experience, international experience, industry experience, leadership skills, including prior management experience, and a variety of subjective factors.*

Appendix B (continued)
Examples of early adopters with diversity policy on gender/race for board nominations

Charles River Laboratories (Excerpt from 2006 Proxy Statement)

The Corporate Governance and Nominating Committee has adopted guidelines regarding the qualifications required for Board nominees. These guidelines are designed to assure that the Board of Directors is composed of successful individuals who demonstrate integrity, reliability, knowledge of corporate affairs, and an ability to work well together. *Diversity in business background, area of expertise, gender and ethnicity are also considered.* The criteria for director nominees include: the candidate's professional experience and personal accomplishments; the candidate's independence from the Company and management; the ability of the candidate to attend Board and committee meetings regularly and devote an appropriate amount of effort in preparation for those meetings; the candidate's ability to function as a member of a diverse group; and an understanding of the Board's governance role.

The Coca Cola Company (Excerpt from 2006 Proxy Statement)

In its assessment of each potential candidate, the Committee on Directors and Corporate Governance will review the nominee's judgment, experience, independence, understanding of the Company's or other related industries and such other factors the Committee on Directors and Corporate Governance determines are pertinent in light of the current needs of the Board. *Diversity of race, ethnicity, gender and age are factors in evaluating candidates for Board membership.* The Committee on Directors and Corporate Governance will also take into account the ability of a Director to devote the time and effort necessary to fulfill his or her responsibilities to the Company.

Eastman Kodak Company (Excerpt from 2006 Proxy Statement)

Directors should be selected so that the Board of Directors is a diverse body, with diversity reflecting gender, ethnic background, country of citizenship and professional experience.

ITT Educational Services, Inc. (Excerpt from 2006 Proxy Statement)

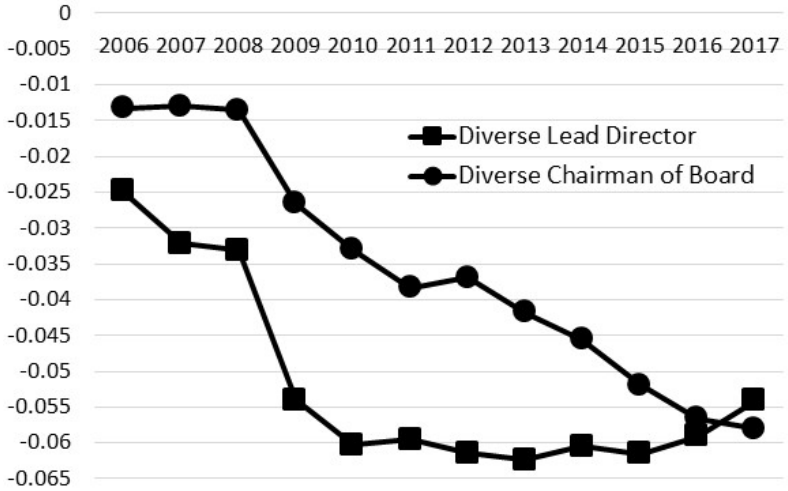
The Nominating and Corporate Governance Committee selects nominees for Directors on the basis of each candidate's broad experience, judgment, integrity, ability to make independent inquiries, understanding of our business environment and willingness to devote adequate time to the duties of our Board of Directors. *The Nominating and Corporate Governance Committee identifies possible nominees for a Director who meet specified objectives in terms of the composition of our Board of Directors that are established by law, the NYSE and/or our Board of Directors, taking into account such factors as geographic, occupational, gender, race and age diversity.* The only minimum specified qualities and skills that the Nominating and Corporate Governance Committee believes are necessary for one or more of our Directors to possess and the only specific standards for the overall structure and composition of our Board of Directors are those imposed by law and the NYSE or contained in our Corporate Governance Guidelines and the charters of the standing committees of our Board of Directors, such as independence, finance experience, and age.

Appendix C: Additional Tables and Figures

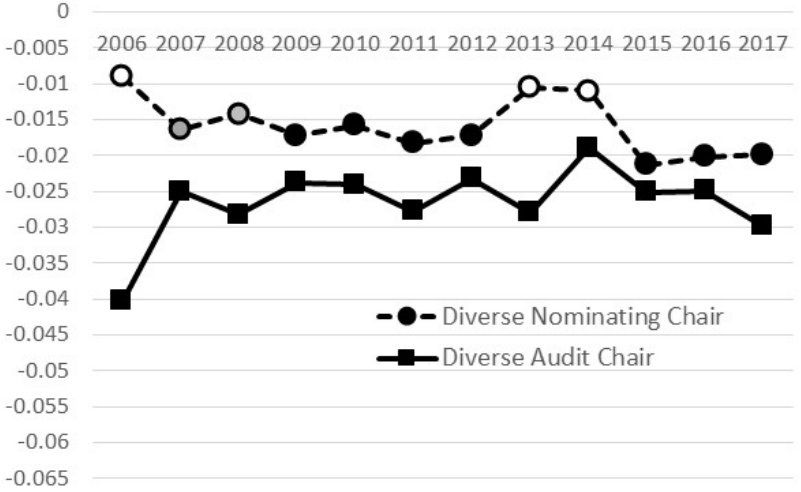
Figure C-1. Regression Coefficients by Year

This figure displays the coefficients on *Diverse Director* from regressions similar to those in Table 3, but run year by year. The specifications are identical to Table 3 with the exception of being run by year. Coefficients that are significant at the 1% or 5% level have a solid marker, coefficients significant at the 10% level have a shaded marker, and coefficients that are insignificant have a clear marker.

Panel A. Annual Coefficients for Lead Director/Chairman of Board



Panel B. Annual Coefficients for Nominating Chair/Audit Chair



Panel C. Annual Coefficients for Governance Chair/Compensation Chair

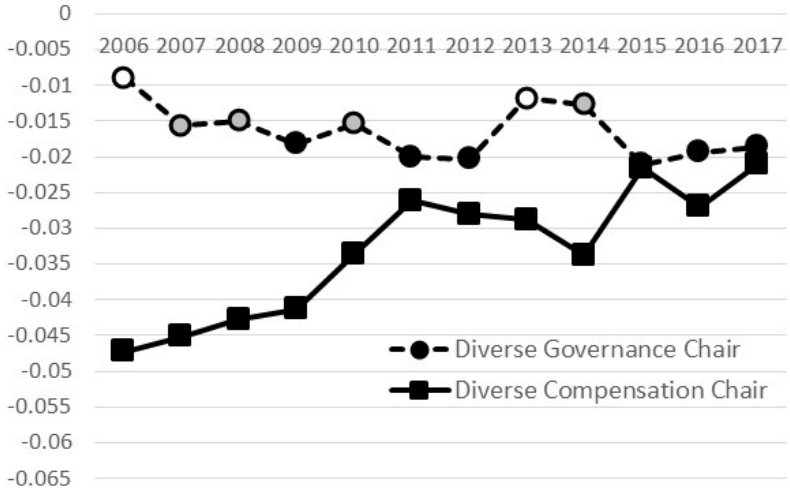
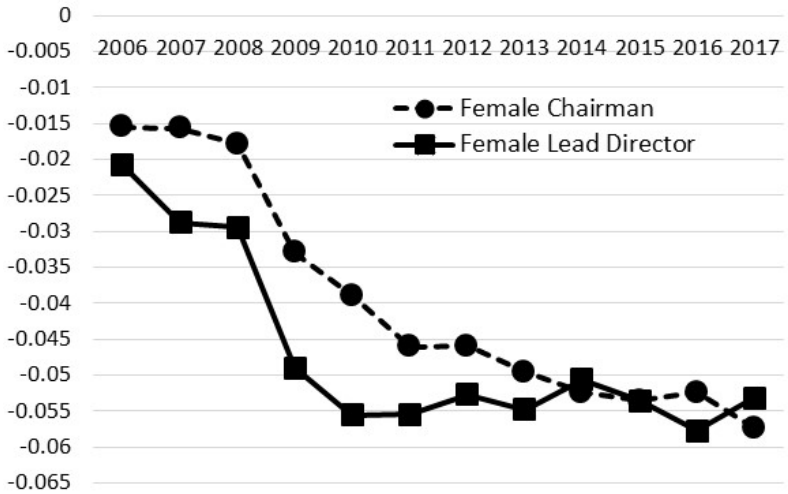


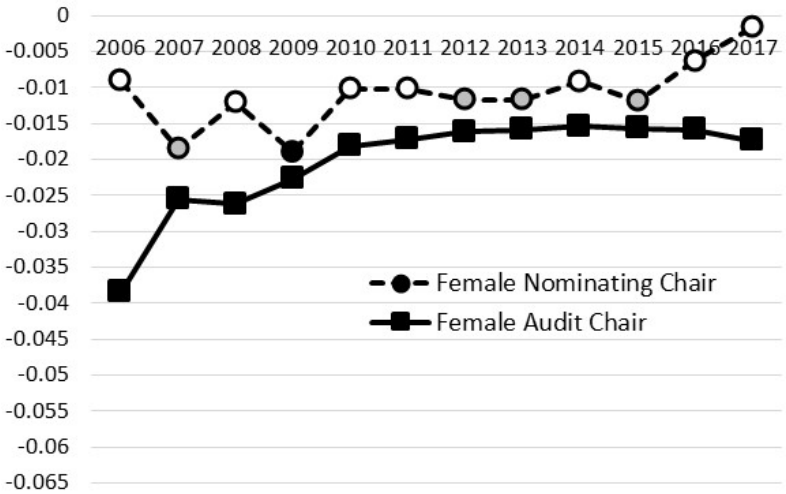
Figure C-2. Regression Coefficients by Year for Female Directors

This figure displays the coefficients on *Diverse director* from regressions similar to those in Table 3, but run year by year for female directors. The specifications are identical to Table 3 with the exception of being run by year for female directors. Coefficients that are significant at the 1% or 5% level have a solid marker, coefficients significant at the 10% level have a shaded marker, and coefficients that are insignificant have a clear marker.

Panel A. Annual coefficients for lead director/chairman of board



Panel B. Annual coefficients for nominating chair/audit chair



Panel C. Annual coefficients for governance chair/compensation chair

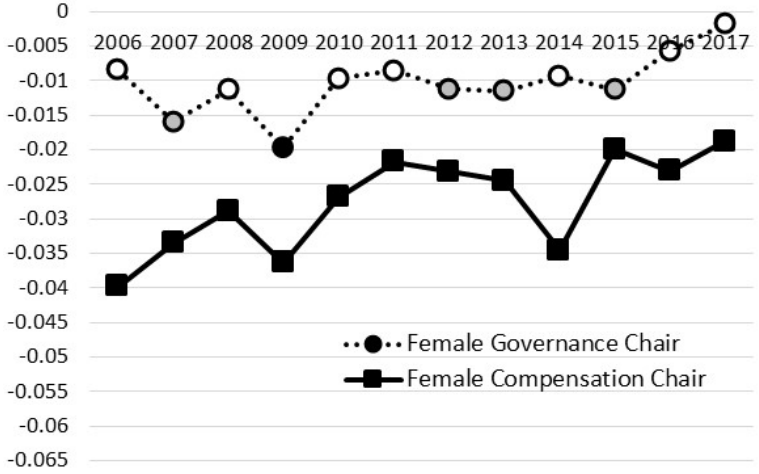
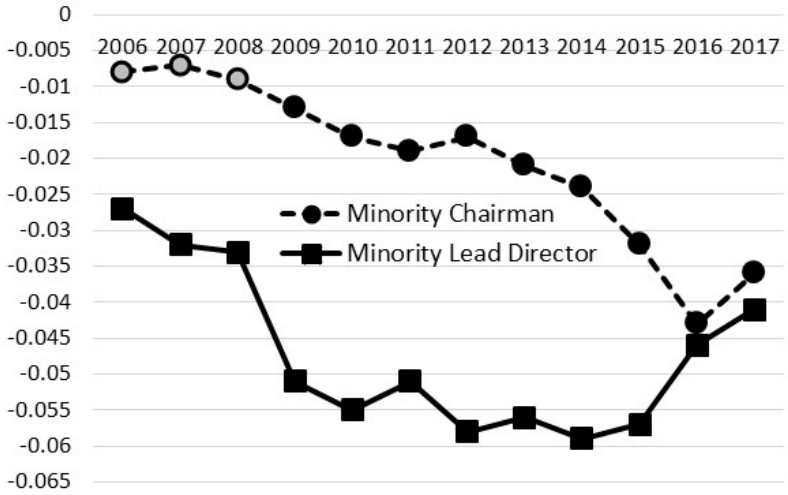


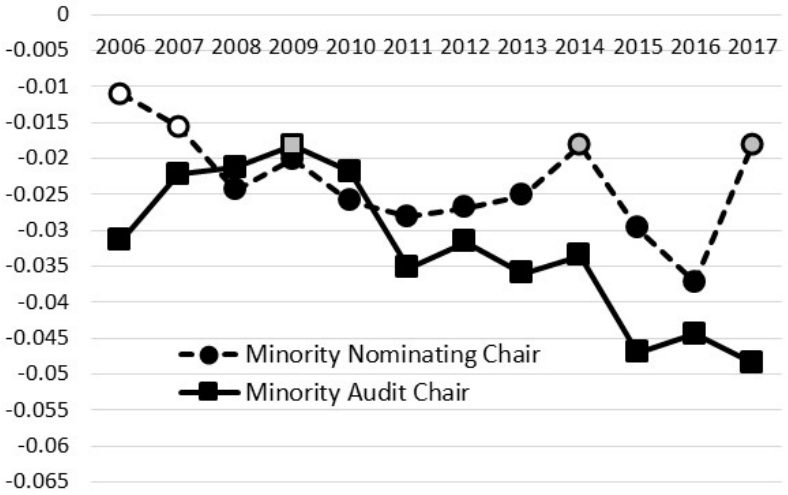
Figure C-3. Regression coefficients by year for minority directors

This figure displays the coefficients on *Diverse director* from regressions similar to those in Table 3, but run year by year for minority directors. The specifications are identical to Table 3 with the exception of being run by year for minority directors. Coefficients that are significant at the 1% or 5% level have a solid marker, coefficients significant at the 10% level have a shaded marker, and coefficients that are insignificant have a clear marker.

Panel A. Annual coefficients for lead director/chairman of board



Panel B. Annual coefficients for nominating chair/audit chair



Panel C. Annual coefficients for governance chair/compensation chair

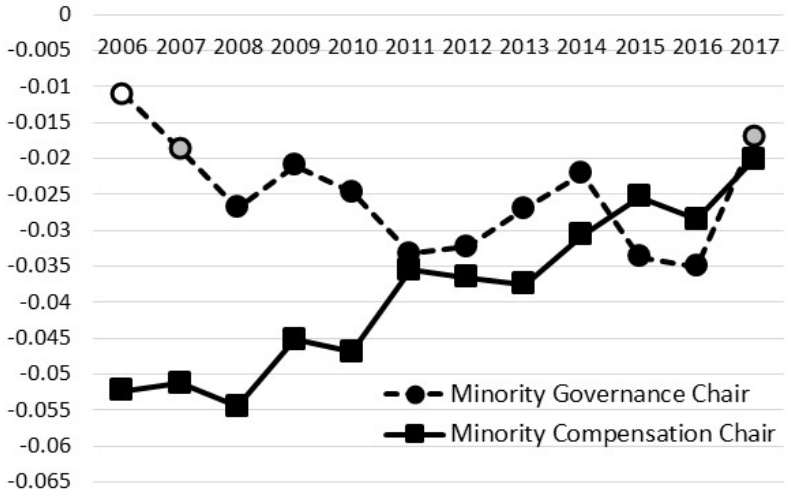
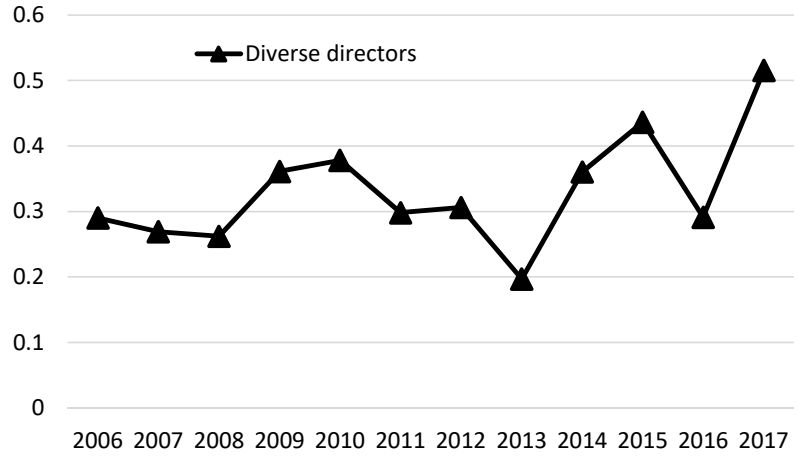


Figure C-4: Regression coefficients by year for votes in favor of minority and female directors

This figure displays the coefficients on *Diverse director* from regressions similar to those in Table 9, but run year by year. Panel A shows the annual coefficients for diverse director, while Panel B shows the annual coefficients for minority and female directors separately. Coefficients that are significant at the 1% or 5% level have a solid marker, coefficients significant at the 10% level have a shaded marker, and coefficients that are insignificant have a clear marker.

Panel A: Diverse directors



Panel B: Minority and female directors separately

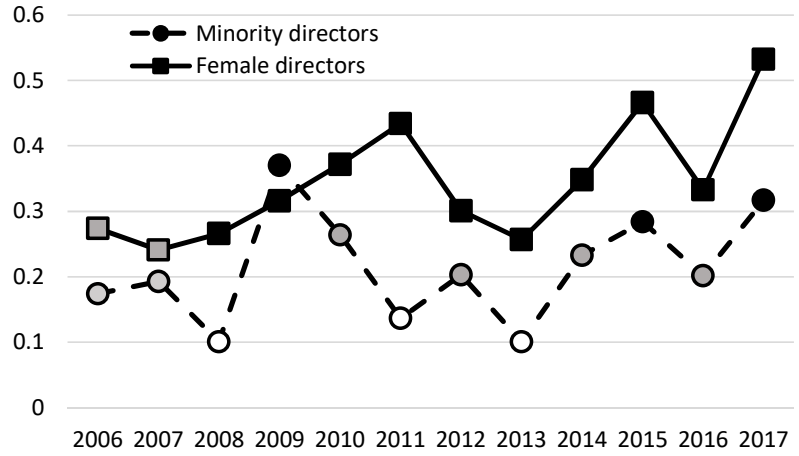


Table C-1. Service on Influential Board Committees

This table examines the characteristics of director appointments to committees for our full sample of 126,044 director-firm-year observations. Each column contains the results of a linear probability model, where the dependent variable takes a value of one if the director serves on the specified committee. Panel A considers all diverse directors, Panel B considers minority directors, and Panel C considers female directors. Panels B and C include the same controls as Panel A. Robust (Rogers, 1993) standard errors clustered by director are reported in brackets. ***, **, * indicate statistical significance at the 1%, 5%, 10% levels, respectively.

Panel A. Diversity on committees

	Member of which committee?			
	Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)
Diverse director	**0.036****	**-0.027*****	**0.031*****	**0.035*****
	[0.006]	**[0.008]**	**[0.007]**	**[0.007]**
Director qualifications not included in Adams and Ferreira (2009):				
Finance experience	0.638***	-0.224***	-0.145***	-0.140***
	[0.005]	[0.007]	[0.006]	[0.006]
Management experience	-0.055***	0.021***	-0.040***	-0.042***
	[0.005]	[0.007]	[0.007]	[0.007]
Legal or consulting experience	0.014**	-0.019**	0.028***	0.029***
	[0.006]	[0.008]	[0.007]	[0.007]
Political experience	0.006	-0.053***	-0.019	0.018
	[0.011]	[0.013]	[0.013]	[0.012]
Academic experience	0.015	-0.066***	0.053***	0.055***
	[0.012]	[0.013]	[0.014]	[0.014]
Military experience	0.026	-0.045	0.044	0.062
	[0.039]	[0.043]	[0.038]	[0.038]
Experience on board in another industry	0.000	0.001	0.000	0.000
	[0.001]	[0.001]	[0.001]	[0.001]
Other firm committee experience	0.006	0.038***	0.019**	0.017**
	[0.007]	[0.008]	[0.008]	[0.008]
Director network size	-0.0013***	0.0012***	0.0012***	0.0018***
	[0.0002]	[0.0003]	[0.0002]	[0.0002]
Undergrad degree	0.003	0.048***	0.030***	0.032***
	[0.008]	[0.009]	[0.009]	[0.009]
MBA degree	0.027***	0.047***	-0.026***	-0.028***
	[0.008]	[0.009]	[0.009]	[0.009]
Advanced graduate degree	-0.002	-0.039***	0.033***	0.036***
	[0.008]	[0.009]	[0.009]	[0.009]
Explanatory variables used in Adams and Ferreira (2009):				
Percent of years with attendance problems	-0.091***	-0.085***	-0.048***	0.047***
	[0.014]	[0.017]	[0.016]	[0.016]
Number of other major company boards	-0.005*	-0.003	-0.008**	-0.006*
	[0.003]	[0.003]	[0.003]	[0.003]
Board size	-0.011***	-0.020***	-0.019***	-0.018***
	[0.001]	[0.002]	[0.002]	[0.002]
Percent independent directors	0.000	0.001**	0.001***	0.001***
	[0.000]	[0.0004]	[0.0003]	[0.0003]

(continued)

Table C-1, Panel A (continued)

Director tenure	-0.004***	-0.003***	0.002***	0.001***
	[0.0003]	[0.001]	[0.001]	[0.001]
Director age	0.001**	0.001***	0.002**	0.002**
	[0.0002]	[0.0003]	[0.001]	[0.001]
ln(Sales)	-0.001	-0.008	-0.015**	-0.011
	[0.006]	[0.007]	[0.007]	[0.007]
Return on assets	-0.005	0.021	0.031*	0.023
	[0.014]	[0.017]	[0.017]	[0.017]
CEO is chairman	-0.003	0.003	-0.001	0.002
	[0.004]	[0.005]	[0.005]	[0.005]
Volatility	2.159**	-1.905*	-1.765	-1.727
	[1.023]	[1.140]	[1.228]	[1.215]
Fixed effects	Firm, year	Firm, year	Firm, year	Firm, year
Adjusted R-squared	0.381	0.105	0.126	0.132
Number of observations	126,044	126,044	126,044	126,044

Panel B. Minorities on committees

	Audit member (1)	Compensation member (2)	Nominating member (3)	Governance member (4)
Minority director	**0.029*** [0.009]**	**-0.052*** [0.011]**	**0.014 [0.010]**	**0.013 [0.010]**
Additional controls	Yes	Yes	Yes	Yes
Fixed effects	Firm, year	Firm, year	Firm, year	Firm, year
Adjusted R-squared	0.380	0.106	0.126	0.131
Number of observations	126,044	126,044	126,044	126,044

Panel C. Females on committees

	Audit member (1)	Compensation member (2)	Nominating member (3)	Governance member (4)
Female director	**0.031*** [0.007]**	**-0.009 [0.009]**	**0.040*** [0.009]**	**0.045*** [0.009]**
Additional controls	Yes	Yes	Yes	Yes
Fixed effects	Firm, year	Firm, year	Firm, year	Firm, year
Adjusted R-squared	0.380	0.105	0.127	0.132
Number of observations	126,044	126,044	126,044	126,044

Table C-2. Robustness tests

This table contains additional tests on the robustness of Table 3 results. Panel A runs the same specifications with firm by year fixed effects. Panel B runs the specifications within committee (so, for example, Column 1 contains only members of the Audit Committee and estimates the likelihood of being appointed chair relative to other audit committee members). Panel C examines the choice of a new director appointment during years in which there is turnover in the specified leadership position. All specifications include robust (Rogers, 1993) standard errors with clustering by director reported in brackets. ***, **, * indicate statistical significance at the 1%, 5%, 10% levels, respectively.

Panel A. Multiplicative firm by year fixed effects

	Non-exec. chair	Lead director	Chair of: Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)	(6)
Diverse director	**-0.037*** [0.003]**	**-0.053*** [0.003]**	**-0.026*** [0.005]**	**-0.031*** [0.005]**	**-0.015*** [0.005]**	**-0.016*** [0.005]**
Additional controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	← Firm×year, committee →					
Adjusted R-squared	0.155	0.131	0.327	0.189	0.191	0.194
Number of observations	126,044	126,044	126,044	126,044	126,044	126,044

Panel B. Within-committee tests

	Chair of: Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)
Diverse director	**-0.048*** [0.008]**	**-0.074*** [0.009]**	**-0.031*** [0.009]**	**-0.033*** [0.009]**
Additional controls	Yes	Yes	Yes	Yes
Fixed effects	Firm, year	Firm, year	Firm, year	Firm, year
Adjusted R-squared	0.236	0.024	0.040	0.037
Number of observations	62,999	62,675	62,263	62,293

Panel C. Appointments during turnover years

	Non-exec. chair	Lead director	Chair of: Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)	(6)
Diverse director	**-0.111*** [0.009]**	**-0.084*** [0.007]**	**-0.023*** [0.007]**	**-0.028*** [0.007]**	**-0.011* [0.006]**	**-0.012* [0.006]**
Additional controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	← Firm, year, committee →					
Adjusted R-squared	0.311	0.214	0.311	0.052	0.049	0.049
Number of observations	7,634	14,092	11,769	16,230	16,626	15,994

Table C-3. Additional robustness tests separately for minority and female directors

This table reports the results similar to Table 3, but specifically for Minority and Female directors. Panels A and B examine leadership appointments with firm-year fixed effects. Panels C and D examine leadership appointments within members of the specified committee. Panels E and F examine new leadership appointments following turnover at the specified position.

Panel A. Multiplicative firm-by-year fixed effects, minority directors

	Non-exec. chair	Lead director	Chair of:			
			Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)	(6)
Minority director	**-0.021***** **[0.004]**	**-0.048***** **[0.004]**	**-0.032***** **[0.006]**	**-0.037***** **[0.006]**	**-0.024***** **[0.007]**	**-0.026***** **[0.007]**
Additional controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	← Firm×year, committee →					
Adjusted R-squared	0.151	0.127	0.327	0.189	0.191	0.194
Number of observations	126,044	126,044	126,044	126,044	126,044	126,044

Panel B. Multiplicative firm-by-year fixed effects, female directors

	Non-exec. chair	Lead director	Chair of:			
			Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)	(6)
Female director	**-0.042***** **[0.003]**	**-0.048***** **[0.004]**	**-0.017***** **[0.005]**	**-0.026***** **[0.005]**	**-0.009 [0.006]**	**-0.009 [0.006]**
Additional controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	← Firm×year, committee →					
Adjusted R-squared	0.155	0.129	0.327	0.189	0.191	0.194
Number of observations	126,044	126,044	126,044	126,044	126,044	126,044

Panel C. Within-committee tests, minority directors

	Chair of:			
	Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)
Minority director	**-0.055***** **[0.011]**	**-0.092***** **[0.013]**	**-0.049***** **[0.012]**	**-0.053***** **[0.013]**
Additional controls	Yes	Yes	Yes	Yes
Fixed effects	Firm, year	Firm, year	Firm, year	Firm, year
Adjusted R-squared	0.236	0.023	0.041	0.037
Number of observations	62,999	62,675	62,263	62,293

Table C-3 (continued)

Panel D. Within-committee tests, female directors

	Chair of:			
	Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)
Female director	**-0.035*** [0.009]**	**-0.060*** [0.011]**	**-0.018* [0.010]**	**-0.018* [0.010]**
Additional controls	Yes	Yes	Yes	Yes
Fixed effects	Firm, year	Firm, year	Firm, year	Firm, year
Adjusted R-squared	0.235	0.022	0.040	0.036
Number of observations	62,999	62,675	62,263	62,293

Panel E. New appointments, minority directors

	Non-exec. chair	Lead director	Chair of:			
			Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)	(6)
Minority director	**-0.070*** [0.013]**	**-0.075*** [0.009]**	**-0.033*** [0.010]**	**-0.047*** [0.009]**	**-0.016* [0.010]**	**-0.017* [0.010]**
Additional controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	← Firm, year, committee →					
Adjusted R-squared	0.093	0.055	0.312	0.053	0.049	0.050
Number of observations	7,634	14,092	11,769	16,230	16,626	15,994

Panel F. New appointments, female directors

	Non-exec. chair	Lead director	Chair of:			
			Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)	(6)
Female director	**-0.120*** [0.009]**	**-0.076*** [0.008]**	**-0.016* [0.008]**	**-0.016** [0.008]**	**-0.008 [0.005]**	**-0.007 [0.005]**
Additional controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	← Firm, year, committee →					
Adjusted R-squared	0.104	0.057	0.311	0.052	0.049	0.049
Number of observations	7,634	14,092	11,769	16,230	16,626	15,994

Table C-4: Alternative specifications to account for self-selection and unobserved heterogeneity

In this table we present three alternative specifications to account for potential endogeneity. In Panels A and B, we use an instrumental variables approach to control for potential endogeneity, where Columns 1 and 2 report a two-stage least squares model and models 3 and 4 report a Heckman treatment effects model. In Panel A, we report the full regressions shown in Table 4, with the following instruments: *Gender Equality Index*, following Huang and Kisgen (2013), is assigned an index value for the state where the director obtained their undergraduate degree and *Affirmative Action*, which takes a value of one if the director turned 18 following the Civil Rights Act of 1964 and zero otherwise. In Panel B, we report endogeneity tests using the following instruments: *Gender Equality Index (company HQ)*, following Huang and Kisgen (2013), is assigned an index value for the state where the company is headquartered and *Nonlocal Diverse Director Supply*, following Bernille et al. (2018). For both Panels A and B, the dependent variable in models (1) and (3) is an indicator variable for observing a *Diverse* director, while the dependent variable in models (2) and (4) is an indicator variable of whether the director is selected as Chairman of the Board, Lead Director, or one of the four committee chairs. In Panel C, we report the second stage regression from a propensity score matched sample, where each diverse director is matched to their closest non-minority male director within-board on the basis of qualifications.

Panel A. Full regressions from Table 4

	Two-stage least squares models		Heckman models	
	First stage	Second stage	First stage	Second stage
Dependent variable:	*1 = Diverse*	*1 = Leadership role*	*1 = Diverse*	*1 = Leadership role*
	(1)	(2)	(3)	(4)
Gender equality index	0.002***		0.008***	
	[0.001]		[0.001]	
Affirmative action	0.300***		0.392***	
	[0.035]		[0.015]	
Diverse director		**-0.142*** **		**-0.103*** **
		[0.031]		**[0.011]**
λ				**0.059**
				[0.038]
Finance experience	-0.039***	0.192***	-0.124***	0.195***
	[0.008]	[0.007]	[0.010]	[0.003]
Management experience	-0.016*	-0.066***	0.018*	-0.068***
	[0.009]	[0.007]	[0.011]	[0.004]
Legal or consulting experience	0.042***	0.013	0.110***	0.009**
	[0.010]	[0.008]	[0.012]	[0.004]
Political experience	0.045**	-0.026**	0.147***	-0.031***
	[0.018]	[0.013]	[0.022]	[0.007]
Academic experience	0.097***	-0.085***	0.306***	-0.092***
	[0.019]	[0.014]	[0.019]	[0.007]
Military experience	0.006	-0.049	-0.104	-0.045**
	[0.050]	[0.034]	[0.064]	[0.021]
Other industry experience	0.001	-0.002**	-0.002**	-0.002***
	[0.001]	[0.001]	[0.001]	[0.000]
Other firm committee experience	0.001	0.068***	-0.020	0.068***
	[0.011]	[0.009]	[0.012]	[0.004]
Director network size	-0.0001	0.003***	0.002***	0.003***
	[0.000]	[0.000]	[0.000]	[0.000]
Undergrad degree	-0.006	0.048***	0.009	0.047***
	[0.015]	[0.014]	[0.024]	[0.008]
MBA degree	-0.047***	0.032***	-0.133***	0.035***
	[0.012]	[0.009]	[0.013]	[0.004]
Advanced graduate degree	0.039***	-0.010	0.124***	-0.013***
	[0.012]	[0.010]	[0.014]	[0.005]

(Continued)

Table C-4 (continued)

Attended < 75% of meetings	0.009 [0.017]	-0.189*** [0.017]	0.009 [0.060]	-0.190*** [0.019]
Number of other major company boards	0.012*** [0.004]	0.014*** [0.004]	0.029*** [0.005]	0.012*** [0.002]
Board size	-0.0001 [0.001]	-0.024*** [0.002]	0.021*** [0.002]	-0.024*** [0.002]
Percent independent directors	0.001*** [0.000]	-0.0002 [0.000]	0.007*** [0.000]	-0.0003 [0.000]
Director tenure	0.004*** [0.001]	0.014*** [0.001]	0.004*** [0.001]	0.014*** [0.000]
Director age	0.006 [0.003]	0.002*** [0.000]	0.054*** [0.001]	0.002*** [0.000]
Ln(Sales)	0.014** [0.006]	-0.022*** [0.008]	0.090*** [0.004]	-0.024*** [0.006]
Return on assets	0.0001 [0.012]	0.009 [0.020]	0.187*** [0.056]	0.009 [0.021]
CEO is chairman	0.008* [0.004]	-0.019*** [0.006]	0.018* [0.010]	-0.019*** [0.005]
Volatility	0.760 [0.862]	1.251 [1.213]	-8.280 [5.230]	1.422 [1.771]
Fixed effects	Firm, year, committee		Firm, year	Firm, year, comm.
Partial R-squared	0.088			
Partial F-statistic	76.04			
Sargan-Hansen test p-value		0.510		
Number of observations	95,733	95,733	95,733	95,733

Panel B. Alternative instrumental variables models using company HQ-based instruments

	Two-stage least squares models		Heckman models	
	First stage	Second stage	First stage	Second stage
Dependent variable:	*1 = Diverse*	*1 = Leadership role*	*1 = Diverse*	*1 = Leadership role*
	(1)	(2)	(3)	(4)
Gender equality index (company HQ)	0.002*** [0.000]		0.008*** [0.001]	
Non-local diverse director supply	0.003** [0.001]		0.021*** [0.006]	
Diverse director		**-0.207***** **[0.068]**		**-0.282***** **[0.036]**
λ				**0.104** **[0.064]**
Finance experience	-0.039*** [0.003]	0.200*** [0.005]	0.189*** [0.004]	-0.153*** [0.012]
Management experience	0.015*** [0.003]	-0.061*** [0.004]	-0.070*** [0.004]	-0.153*** [0.012]
Legal or consulting experience	0.041*** [0.004]	0.022*** [0.006]	0.038*** [0.005]	0.182*** [0.013]

(Continued)

Table C-4 (continued)

Panel B (continued)

Political experience	0.062***	-0.015	-0.004	0.162***
	[0.008]	[0.011]	[0.009]	[0.026]
Academic experience	0.111***	-0.078***	-0.049***	0.341***
	[0.007]	[0.014]	[0.008]	[0.022]
Military experience	0.051*	-0.055*	-0.033	0.295***
	[0.027]	[0.031]	[0.031]	[0.091]
Other industry experience	-0.0002	-0.002***	-0.002***	-0.003***
	[0.000]	[0.000]	[0.0003]	[0.001]
Other firm committee experience	-0.002	0.063***	0.0654***	0.033**
	[0.004]	[0.004]	[0.004]	[0.014]
Director network size	0.0002	0.002***	0.003***	0.006***
	[0.000]	[0.000]	[0.0004]	[0.001]
Undergrad degree	0.015***	0.061***	0.0583***	-0.027
	[0.005]	[0.005]	[0.005]	[0.017]
MBA degree	-0.026***	0.044***	0.0298***	-0.163***
	[0.004]	[0.005]	[0.005]	[0.014]
Advanced graduate degree	0.038***	-0.013**	0.000	0.153***
	[0.004]	[0.006]	[0.005]	[0.015]
Attended <75% of meetings	0.016	-0.168***	-0.173***	-0.021
	[0.017]	[0.019]	[0.019]	[0.058]
Percent independent directors	0.002***	-0.0002	0.000	0.005***
	[0.000]	[0.000]	[0.000]	[0.001]
Director tenure	0.001***	0.009***	0.009***	-0.009***
	[0.000]	[0.000]	[0.0004]	[0.001]
Director age	-0.001***	0.003***	-0.001	-0.048***
	[0.000]	[0.000]	[0.001]	[0.001]
ln(Sales)	0.028***	-0.027***	-0.020***	0.071***
	[0.001]	[0.003]	[0.002]	[0.002]
Return on assets	-0.008	-0.016	-0.032	-0.098
	[0.018]	[0.020]	[0.022]	[0.069]
CEO is chairman	0.010***	-0.035***	-0.0317***	0.050***
	[0.003]	[0.004]	[0.004]	[0.011]
Volatility	0.275	2.200	0.500	-28.068
	[1.472]	[1.647]	[1.699]	[5.052]
Fixed effects	Industry, year, committee		Year, comm.	Ind, year, comm.
Partial R-squared	0.037			
Partial F-statistic	59.73			
Sargan-Hansen test p-value		0.418		
Number of observations	78,862	78,862	78,862	78,862

Table C-4 (Continued)

Panel C. Propensity score matching

Dependent variable:	Second stage regression *1=Leadership role*
Diverse director	**-0.078*** [0.004]**
Finance experience	0.179*** [0.004]
Management experience	-0.052*** [0.004]
Legal or consulting experience	0.016*** [0.004]
Political experience	-0.014 [0.008]
Academic experience	-0.095*** [0.008]
Military experience	-0.084*** [0.024]
Other industry experience	-0.002*** [0.001]
Other firm committee experience	0.063*** [0.005]
Director network size	0.003*** [0.0002]
Undergrad degree	0.085*** [0.006]
MBA degree	0.042*** [0.005]
Advanced graduate degree	-0.020*** [0.005]
Attended < 75% of meetings	-0.172*** [0.019]
# of other major company boards	0.014*** [0.002]
Board size	-0.021*** [0.002]
Percent independent directors	-0.0003 [0.0003]
Tenure	0.012*** [0.0003]
Director age	0.003*** [0.0003]
ln(Sales)	-0.025*** [0.008]
Return on assets	-0.028 [0.034]
CEO is chairman	-0.020*** [0.006]
Volatility	-0.855 [3.319]
Fixed effects	Firm, year, committee
Adjusted R-squared	0.156
Number of observations	64,780

Table C-5. Additional specifications for Table 5

This table reports the Table 5 specifications for the *Minority* and *Female* subsets. For brevity, we only report the interaction terms here. Other coefficients and R^2s are generally similar to the tabulated specifications in Table 5. The panels in this table correspond to the panels in Table 5.

Panel A. Likelihood of diverse committee leadership based on past relevant committee experience

	Chair of:			
	(1) Audit	(2) Compensation	(3) Nominating	(4) Governance
Relevant committee experience × Minority director	-0.025** [0.010]	-0.023*** [0.010]	-0.028** [0.013]	-0.030** [0.013]
Relevant committee experience × Female director	-0.019** [0.009]	-0.015* [0.008]	-0.010 [0.010]	-0.011 [0.010]

Panel B. Likelihood of diverse committee leadership based on past relevant committee leadership experience on other boards

	Chair/lead director	Chair of:			
		Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)
Relevant chair experience × Minority director	-0.031* [0.019]	-0.079*** [0.026]	-0.027* [0.015]	-0.032*** [0.012]	-0.041*** [0.014]
Relevant chair experience × Female director	-0.066** [0.024]	-0.049** [0.021]	-0.021* [0.012]	-0.012 [0.010]	-0.005 [0.020]

Panel C. Likelihood of diverse audit committee leadership based on finance experience distinction

	Audit chair
Finance experience × Minority director	-0.128*** [0.019]
Finance experience × Female director	-0.072*** [0.015]

Panel D. Likelihood of diverse committee leadership based on committee tenure

	Chair/lead director	Chair of:			
		Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)
Committee tenure × Minority director	-0.002* [0.001]	-0.004*** [0.001]	-0.005*** [0.001]	-0.003** [0.001]	-0.003** [0.001]
Committee tenure × Female director	-0.004*** [0.001]	-0.005*** [0.001]	-0.007*** [0.001]	-0.005*** [0.001]	-0.004** [0.001]

Table C-6. Additional specifications for Table 6

This table reports the Table 6 specifications for the *Minority* and *Female* subsets. For brevity, we only report the coefficient on the variable of interest here. Other coefficients and R^2s are generally similar to the fully tabulated specifications in Table 6. The panels in this table correspond to the panels in Table 6.

Panel A. Directors with no outside board appointments

	Chair/lead director	Chair of:			
		Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)
Minority director	-0.054***	-0.029***	-0.039***	-0.013*	-0.017*
	[0.007]	[0.008]	[0.008]	[0.008]	[0.008]
Female director	-0.070***	-0.018***	-0.023***	-0.011*	-0.010
	[0.005]	[0.006]	[0.007]	[0.006]	[0.006]

Panel B. Directors with no outside board appointments and at least five years of service

	Chair/lead director	Chair of:			
		Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)
Minority director	-0.066***	-0.024***	-0.051***	-0.010	-0.013*
	[0.010]	[0.010]	[0.011]	[0.008]	[0.008]
Female director	-0.088***	-0.013*	-0.024***	-0.008	-0.008
	[0.008]	[0.008]	[0.009]	[0.006]	[0.006]

Panel C. Directors with at least three board appointments

	Chair/lead director	Chair of:			
		Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)
Minority director	-0.084***	-0.044***	-0.040***	-0.040***	-0.043***
	[0.012]	[0.011]	[0.012]	[0.012]	[0.012]
Female director	-0.107***	-0.040***	-0.027**	-0.015	-0.019**
	[0.009]	[0.011]	[0.011]	[0.010]	[0.010]

Table C-7. Additional specifications for Table 7

This table reports the Table 7 specifications for the *Minority* and *Female* subsets. Panels A and B are run on the sample of directors with leadership experience. Panels C and D are run on the sample of Northeast firms. For the fixed effects, F=firm, Y=year, C=committee.

Panel A. Minority director risk aversion

	Chair/lead director	Chair of:			
		Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)
Minority director	**-0.089***** **[0.012]**	**-0.035***** **[0.012]**	**-0.035***** **[0.012]**	**-0.050***** **[0.012]**	**-0.048***** **[0.013]**
Additional controls	Yes	Yes	Yes	Yes	Yes
Fixed effects	← Firm, year, committee →				
Adjusted R-squared	0.175	0.425	0.267	0.260	0.261
Number of observations	33,389	33,389	33,389	33,389	33,389

Panel B. Female director risk aversion

	Chair/lead director	Chair of:			
		Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)
Diverse director	**-0.122***** **[0.010]**	**-0.020**** **[0.010]**	**-0.022**** **[0.010]**	**-0.001 [0.011]**	**-0.001 [0.011]**
Additional controls	Yes	Yes	Yes	Yes	Yes
Fixed effects	← Firm, year, committee →				
Adjusted R-squared	0.182	0.425	0.267	0.258	0.260
Number of observations	33,389	33,389	33,389	33,389	33,389

Panel C. Minority directors in the Northeast

	Chair/lead director	Chair of:			
		Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)
Diverse director	**-0.036***** **[0.008]**	**-0.037***** **[0.010]**	**-0.030***** **[0.011]**	**-0.017*** **[0.010]**	**-0.017*** **[0.010]**
Additional controls	Yes	Yes	Yes	Yes	Yes
Fixed effects	← Firm, year, committee →				
Adjusted R-squared	0.083	0.291	0.160	0.161	0.166
Number of observations	33,389	33,389	33,389	33,389	33,389

Panel D. Female directors in the Northeast

	Chair/lead director	Chair of:			
		Audit	Compensation	Nominating	Governance
	(1)	(2)	(3)	(4)	(5)
Diverse director	**-0.039***** **[0.007]**	**-0.016***** **[0.009]**	**-0.044***** **[0.008]**	**-0.015*** **[0.008]**	**-0.013 [0.009]**
Additional controls	Yes	Yes	Yes	Yes	Yes
Fixed effects	← Firm, year, committee →				
Adjusted R-squared	0.084	0.290	0.161	0.161	0.166
Number of observations	33,389	33,389	33,389	33,389	33,389