Falling through the Glass Ceiling: The Gender Gap in Directors' Career Paths after Financial Restatements

Tim Liu* Sara Malik[†] Jordan Schoenfeld[‡]

August 2022

Abstract

This study finds that in the year after US public firms restate their financials, the likelihood that female directors depart the board significantly increases compared to male directors at the same firm, especially when the chair of the board is male. The departing female directors receive fewer future directorships at other firms than their male counterparts who depart. Vacancies created by female director departures are more likely to be filled by males than vacancies created by male director departures. These findings are not explained by ex-ante differences in director education or experience. This evidence suggests that the gender gap in director retention after restatements exacerbates the overall gender gap among directors.

JEL: J15, J16, J31, J71, G34, M14

Keywords: corporate governance, directorships, gender gap

^{*}David Eccles School of Business, University of Utah. tim.liu@eccles.utah.edu

†David Eccles School of Business, University of Utah. sara.malik@eccles.utah.edu

‡David Eccles School of Business, University of Utah. jordan.schoenfeld@eccles.utah.edu

1 Introduction

Business and government entities are currently trying to reduce the gender gap among directors of US public firms, with NASDAQ recently enacting a rule requiring firms on its exchanges to eventually have at least one female director (or disclose why they do not), and California passing a similar mandate for large firms based there (which is currently unenforced due to litigation). Shareholder interest in this issue also abounds: a recent survey by Institutional Shareholder Services (ISS) indicates that over 80 percent of institutional investors consider the lack of gender diversity among directors as "problematic." However, the sources of the director gender gap are not well understood, as prior research on this question tends to focus only on gender-based differences in director appointments (e.g., Adams and Kirchmaier, 2016; Ahern and Dittmar, 2012; Bertrand et al., 2019; Eckbo et al., 2022; Field et al., 2020; Gormley et al., 2021). Gender-based differences in director retention, by contrast, has received surprisingly limited research attention. Accordingly, we examine whether there are differences in departure rates for female versus male directors, and whether these differences contribute to the director gender gap.

Our analysis consists of two parts: (1) we document gender-based differences in director departure rates in the steady state, and (2) we examine board dynamics under adversity by testing for gender-based differences in director departure rates after financial restatements, which is an important question for two key reasons. First, recent research finds that adversity can foster workplace discrimination that widens gender gaps in career outcomes (e.g., Egan et al., 2022).² Second, a primary duty of the board is to monitor financial reporting and accounting controls (Adams et al., 2010, Section 2.2). Restatements are therefore likely to expose directors to workplace adversity that may impact the gender gap.

 $^{^{1}} https://www.issgovernance.com/file/policy/2018-2019-iss-policy-survey-results-report.pdf$

²Egan et al. (2022) find that gender gaps in career outcomes widen for financial advisers after job misconduct, but they do not examine boards. Egan et al. (2022, p. 1185) note that the link between adverse career events and gender gaps in career outcomes "has received little attention in academia or in policy."

We first document the gender-based differences in directorship composition and retention for US public firms over the last two decades. In 2001, female directors accounted for about nine percent of total directorships according to BoardEx data. Since then, this share increased almost monotonically, reaching about 18 percent in 2018. We find that in a year with no financial restatement, the unconditional likelihood of a director departure is 8.7 percent, and female directors are 0.7 percentage points less likely than their male counterparts on the same board to depart after controlling for a comprehensive set of other director attributes (e.g., education, experience), firm attributes (e.g., profitability), and firm-time-fixed effects. Men thus hold the vast majority of directorships in the US, while female directors are less likely than male directors to depart a board in a given year conditional on being appointed.

We next examine whether the career paths of female and male directors differ after financial restatements. If gender-based differences in directors' career outcomes after such adverse career events are not systematic phenomena, we would expect female and male directors to follow relatively similar career paths after these experiences when controlling for pre-existing differences in director and firm attributes. In comparison, the presence of such systematic gender-based differences after these experiences would lead us to expect female and male directors to take different future career paths. Either way, our study can inform businesses and policymakers whether gender-based career differences after adverse events—in our case, restatements—are important sources of the gender gap in director composition that should be considered in remediation efforts.

We argue that financial restatements—being plausibly outside the immediate control of any single director—expose all of a firm's directors to nearly identical adverse career concerns. Therefore, our main unit of analysis is at the director-firm-year level, which allows us to control for any pre-existing firm-level differences in director departure rates. We initially look at career paths from the perspective of whether directors keep their positions after the restatement, and follow up by looking at other career outcomes such as who replaces

departing directors and whether departing directors find roles at other firms. Note that for the vast majority of directors who depart a board on their own terms, their replacements are typically handpicked by the board with no shareholder vote, which provides a strong setting to identify firm preferences in directors (e.g., Cai et al., 2009).

We find that in the year after a firm's financial restatement, male director departures at that firm are equally as likely to occur compared to non-restatement years, whereas female director departures are significantly more likely to occur compared to non-restatement years. The economic magnitude of this finding is an increase in the female departure rate of 1.1 percentage points, which equates to a 13 percent increase from the unconditional departure rate of 8.7 percent in non-restatement years (more than eliminating the aforementioned advantage that females have over men in keeping their board seat in non-restatement years). Our primary identification strategy employs stringent firm-year-fixed effects, which allow us to compare the departure rates of female and male directors on the same board at the same time. This fixed-effects structure controls for time-varying firm characteristics that affect both restatement likelihood and board turnover, such as declining profitability, elevated stock volatility, and greater regulatory scrutiny. We also control for a host of director attributes to ensure that the gender departure gap is not driven by features such as age, experience, or committee membership.

We validate and extend our main finding by exploring heterogeneity by restatement type and director responsibility. Since adverse (EPS decreasing) restatements have disproportionately negative effects on firm value compared to improving (EPS increasing) restatements (e.g., Karpoff et al., 2017), we expect adverse career effects to be concentrated among adverse restatements. We indeed find this to be the case: the female departure rate significantly increases by an additional 1.1 percentage points for adverse restatements while exhibiting no difference for improving restatements. We also expect the career impact of financial restatements to be more severe for audit committee chairs since the audit committee is responsible for monitoring financial reporting and accounting controls. Indeed, we find that female di-

rectors who chair the audit committee are 2.7 percentage points more likely to depart the board after a restatement.

We next consider several potential explanations for the gender gap in director departures. First, we consider whether the gender gap is associated with leadership biases such as prejudice against females or favoritism toward men (Becker, 1957) by testing whether the gap is more pronounced when the chair of the board is male and less pronounced when the chair of the board is female in the restatement year. We indeed find this to be the case: the female departure rate significantly increases by an additional 2.8 percentage points when the chair of the board is male. Second, we consider whether heightened female departure rates are driven by weaker credentials or less experience among female directors. If female directors have weaker credentials or less experience, then they may be more likely to experience a job separation during periods of higher board turnover. However, we find the gender gap in departures persists when comparing female and male directors with the same credentials and similar levels of experience. Third, we consider whether female directors depart the board after restatements to preserve their reputation in the director labor market or take directorships at other firms. Our evidence does not support this conclusion: in the short term, the departing female directors in fact receive significantly fewer future directorships at other firms than their male counterparts who depart the same firm.

Having established a gender gap in director departure rates in the year after a restatement, we next explore whether this effect contributes to the overall gender gap in board composition by analyzing the gender composition of directors installed to replace the directors who depart after a restatement (these new directors are typically handpicked by the board with no shareholder vote). To benchmark this result, we first quantify director replacement rates during non-restatement years. We find that when either a female or male director departs a board during non-restatement years, both genders are significantly more likely to be replaced by males, which is consistent with males having the bulk of total available directorships. In the year after a restatement, we find that when male directors depart the board, their replacements are as likely to be males as they are in non-restatement years. By contrast, when female directors depart the board after a restatement, their replacements are a significant 50 percent more likely to be male than in non-restatement years. These results obtain after controlling for a variety of firm and director characteristics, such as director age, experience, and committee membership, and also firm- and time-fixed effects.

To rule out any concern that our findings are driven by minority status instead of gender, we test this idea directly. We find that similar to female directors, minority (i.e., non-white) directors have lower departure rates in non-restatement years compared to non-minority directors. Unlike female directors, however, minority directors on average do not exhibit any significant difference in departure rates after financial restatements relative to non-minority directors. These findings do not support the hypothesis that our main results are being driven by minority status instead of gender.

We follow up on the above analyses with identified instrumental variable (IV) analyses, falsification tests, and other robustness checks. Following Field et al. (2020), we take advantage of the exogenous increase in the pool of potential female directors following the passage of the Civil Rights Act of 1964, which prohibited discrimination in college admission on the basis of gender and led to many universities adopting affirmative action policies. We instrument for director gender using a variable that tracks whether a director came of college age after 1964. Field et al. (2020, Section 3.2 and Table 4) make a strong case that the institutional features of this setting are such that our instrument satisfies the exclusion restriction, i.e., it is unrelated to our outcomes of interest except through its effect on gender diversity. We find that the gender gap in director departures persists when instrumenting for gender, providing evidence that our results are not driven by omitted variables or self-selection of female directors into restatement-prone firms. In additional robustness tests, we find that our results are not driven by the pre-Sarbanes-Oxley period or the 2007-2008 financial crisis, and are not sensitive to dropping boards with no female directors. Our findings also obtain when we match restatement to non-restatement firms on observable characteristics,

and when we use a Cox proportional hazard model. Simulation-based falsification tests, where restatements and gender are randomly assigned, further confirm that our findings are unlikely to be spurious.

In sum, we find that in the year after a firm restates its financials, female directors are significantly more likely to depart the board than their male counterparts at the same firm. Female directors who depart a board after a restatement also receive significantly fewer future directorships at other firms than their departing male counterparts at the same firm. Directorship vacancies created by these female departures are more likely to be filled by males relative to non-restatement years, whereas vacancies created by male departures after restatements are equally as likely to be filled by males as in non-restatement years. This evidence suggests that the gender gap in director retention after restatements exacerbates the overall gender gap among directors.

Our study contributes to prior research on the role played by demographics in the labor market, particularly the literature exploring the role of gender in corporate leadership appointments. Field et al. (2020) find that female and minority director candidates are less likely than others to be voted onto boards holding constant education and other individual attributes. Adams and Kirchmaier (2016) find that female directors are less represented in finance and science sectors. Gow et al. (2022) find that institutional investors' voting patterns do not materially favor minority director candidates, while Gormley et al. (2021) find that index investors can increase board diversity. Westphal and Stern (2007), McDonald and Westphal (2013), and Agarwal et al. (2016) find that the director gender gap is associated with females having fewer corporate social connections than males. However, none of these studies examines gender-based differences in director retention rates and directors' career outcomes after leaving a board. Srinivasan (2005) uses 264 financial restatements to analyze how restatements affect the future career paths of outside directors, but that study does not analyze other types of directors, gender gaps in directors' career paths, or who replaces directors when they depart a board. As a potential remedy for the demographic gaps in

director composition, Erel et al. (2021) develop an algorithmic machine-learning technique for nominating directors, but this technique would not capture our director departures and replacements that occur outside the voting process. Several studies also analyze the value effects of board gender diversity and find mixed results (e.g., Adams and Ferreira, 2009; Ahern and Dittmar, 2012; Eckbo et al., 2022; Gertsberg et al., 2022; Greene et al., 2016; Hwang et al., 2021; Kim and Starks, 2016; Matsa and Miller, 2013). These studies, however, do not analyze the drivers of gender diversity in boards or restatements.

In their related study on financial advisers, Egan et al. (2022) find that relative to male financial advisers, female financial advisers who commit job misconduct are more likely to lose their jobs and less likely to find new jobs. Our setting differs from theirs in several meaningful ways. First, directors of public firms have job responsibilities, incentives, and a labor market that differ substantively from those of financial advisers, with directors typically having more experience, more influence over the firm, and a direct financial interest in increasing firm value (Field et al., 2020). Second, because the job misconduct of a specific financial adviser is likely the result of that adviser's idiosyncratic actions, it is hard to ensure that any two advisers are being exposed to similar career shocks when comparing their future career paths after misconduct against each other. By contrast, financial restatements expose both female and male directors to nearly identical adverse career shocks at the same firm that are outside their immediate control. We therefore believe that prior results from non-directors cannot be generalized to directors, and that evidence specific to directors is warranted to appropriately inform the efforts aimed at remedying the director gender gap.

We also contribute to the studies of other settings that look at how adverse events affect female versus male workers. Sarsons (2017) finds that female surgeons lose more patient referrals than male surgeons after patient deaths, whereas male surgeons receive more patient referrals than female surgeons after positive surgical outcomes. Gayle et al. (2012) find gender gaps in job security among corporate executives holding constant firm performance. Our study also relates to the research on the consequences of corporate fraud

(e.g., Call et al., 2018; Dyck et al., 2010, 2021; Povel et al., 2007) and other gender-based differences in career outcomes, such as wage and hiring differentials among workers (see the surveys by Altonji and Blank, 1999; Bertrand, 2011; Blau and Kahn, 2017; Roethlisberger et al., 2022).

2 Institutional setting, data, and sample

2.1 Financial restatements

We combine a steady-state analysis of gender-based differences in director departure rates with a dynamic analysis of director departure rates after financial restatements. We are motivated by recent research that finds that adversity can foster workplace discrimination that widens gender gaps in career outcomes (e.g., Egan et al., 2022). We use financial restatements because one of the board's main duties is to monitor financial reporting and accounting controls to ensure that investors receive financial information in a timely and accurate manner (Adams et al., 2010). Failing to do so can lead to financial restatements that adversely impact firms through negative stock returns (Palmrose et al., 2004), costly litigation (Dechow et al., 2011; Larcker et al., 2007), labor turnover (Srinivasan, 2005), merger cancellations (Amel-Zadel and Zhang, 2015), and damaged reputations for directors and managers (Chakravarthy et al., 2014). Financial restatements are therefore an institutionally important setting for understanding whether board adversity impacts board gender diversity. As an empirical setting, financial restatements also have three key attributes important for studying board gender diversity: (1) they are within the monitoring scope of the board; (2) ex-ante gender-neutrality, i.e., there is no reason to believe that restatements would disproportionately affect directors of one gender more than another; and (3) pervasiveness: 7.5 percent of the firm-years in our sample are associated with financial restatements.³

³Alternatives such as CEO deaths (e.g., Bennedsen et al., 2020) and natural disasters (e.g., Brown et al., 2021; Ouazad and Kahn, 2022) have causes that are much less within the monitoring scope of the board, while defaults and bankruptcies are relatively rare events.

2.2 Data sources

We begin by assembling a comprehensive sample of financial restatements. The various data sets on financial restatements are surveyed by Karpoff et al. (2017, p. 141), who ultimately recommend that researchers interested in studying financial restatements are best served by using the Audit Analytics (AA) restatement database, which is one of the most comprehensive databases that covers all financial restatements for US public firms since 2000. Restatement records are identified by AA's analysts and typically come from firms' 8-Ks and periodic reports. We therefore identify financial restatements using the AA restatement database and later make use of the distinction for adverse (i.e., EPS decreasing) and improving (i.e., EPS increasing) restatements.⁴

Our main unit of observation is at the director-firm-year level. We obtain data on the directors of US public firms from BoardEx, whose team of over 350 analysts assembles its data using a variety of public sources.⁵ We use BoardEx to create an annual director-firm matched sample, identify each director's committee membership each year, and measure director attributes such as gender, age, experience, education, credentials, and leadership positions. To generate our main data set, we merge the BoardEx director data, the Audit Analytics restatement data, and firm-level data from CRSP-Compustat. Our main sample consists of 6,887 unique publicly listed firms and 54,322 firm-years across the 18-year period from 2001 to 2018. We observe 4,070 firm-years in which a financial restatement occurred. Our sample contains 63,564 unique directors, of which 6,721 are women.

⁴Note that Karpoff et al. (2017) also analyze SEC enforcement actions, which we do not focus on because these occur for only about 10 percent of restatements and SEC enforcement attention is subject to such selection biases as geographic effects (Parsons et al., 2018), career concerns of SEC staff (DeHaan et al., 2015), SEC budget constraints (Choi et al., 2013), and cooperation with regulators (Files et al., 2019). Karpoff et al. (2017) find that while the quality of the data on SEC enforcement actions varies across database providers, restatement data in the AA database are accurate and comprehensive.

⁵See https://www.boardex.com/data-quality/.

2.3 Descriptive statistics

Table 1, Panel A reports sample descriptive statistics separately for director-firm-year observations with restatement and director-firm-year observations without restatements. The exact variable definitions can be found in Appendix A.1. In general, the descriptive statistics between the two subsamples exhibit a few differences but are mostly comparable. Importantly, the percentage of female directors in both sets of firms is about equal at 11 percent, while the likelihood of director departure is greater for firms that restate their financials. Directors of restatement firms typically have shorter tenures on boards relative to those of non-restatement firms. Restatement firms also tend to have higher leverage and lower market-to-book ratios than non-restatement firms. In a subsequent robustness analysis, we match on director and firm characteristics that differ across the restatement and non-restatement subsamples and find that our main results hold.

Table 1, Panel B reports sample descriptive statistics separately for female and male directors. Again, the firm-level descriptive statistics are comparable across the two subsamples with some exceptions, namely that male directors are more likely than female directors to depart a board in a given year, while female directors are generally less likely than male directors to hold board committee positions and serve as the CEO. We also observe that female directors tend to be younger and have few years of board experience than male directors on average. In subsequent analyses, we show that our findings are not driven by differences in board characteristics across gender. Appendix Table B.1 provides summary statistics comparing the characteristics of the firms in our sample to those of all Compustat firms.

3 Empirical results

3.1 Director departure rates by gender in the steady state

To begin, we first establish differential patterns in departure rates for female and male directors by estimating the following benchmark linear probability model of director departure that includes director and firm attributes, with gender as our main variable of interest:

$$Departed_{i,i,t+1} = \beta \times Female_i + \gamma \times \vec{X}_{i,i,t} + \psi_{i,t} + \varepsilon_{i,i,t}, \tag{1}$$

i indexes director, j indexes firm, and t indexes year. $Departed_{i,j,t+1}$ is an indicator equal to one if the director left the firm's board in the following year and zero otherwise. $Female_i$ is an indicator equal to one if the director is a woman and zero otherwise. $\vec{X}_{i,j,t}$ is a vector of time-varying director characteristics, including director age; the number of years the director has served on the board; an indicator equal to one if the director is a chairperson and zero otherwise; an indicator equal to one if the director serves on the board audit committee; an indicator equal to one if the director serves on the board nomination committee; and an indicator equal to one if the director serves on the board executive committee (exact variable definitions can be found in Appendix A). $\psi_{j,t}$ is a firm-year-fixed effect that absorbs time-varying firm-year characteristics. We also consider less rigid specifications without firm-year-fixed effects, instead including firm- and year-fixed effects separately alongside a vector of time-varying firm characteristics motivated by prior research (e.g., Hermalin and Weisbach, 1988; Yermack, 2004), such as firm size, ROA, leverage, and market-to-book ratios. Standard errors ($\varepsilon_{i,j,t}$) are double-clustered at the firm and year level.⁶

Table 2 analyzes the relation between gender and director departure rates, ignoring for a moment the incidence of financial restatements. Column 1 is the baseline regression for the

⁶Our results are robust to alternative reasonable standard error clustering schemes (see Appendix B).

independent variable Female and the dependent variable Departed. We augment the specification starting in column 2 by adding the covariates and increasing the fixed effects density until we match Equation 1 in column 4. Across all specifications, we find a negative and significant relation between Female and Departed, which suggests that on average female directors are less likely to leave a board relative to male directors on the same board. We use column 4 to characterize the departure likelihood's economic magnitude. The inclusion of firm-year-fixed effects in column 4 allows us to quantify the departure rate of female directors relative to male directors on the same board in the same year. We find that relative to male directors on the same board in the same year, female directors are a significant 0.7 percentage points less likely to depart from a board. This effect is economically large, accounting for 8.0 percent of the unconditional mean director departure rate of 8.8 percent across the entire sample.

Furthermore, the lower female director departure rate is consistent across time. Figure 1 shows that the female departure rate is lower than that of males in every year of our sample, with the gap in departure rates widening over time. In 2001, the male departure rate was 9.1 percent compared to the female departure rate of 8.2 percent. In 2018, the male departure rate increased to 9.6 percent, while the female departure rate decreased to 6.1 percent. The result of both the lower female departure rate and the widening gap between male and female departure rates is a steady accumulation in the stock of female directors over time. Figure 2 shows that the female share of directors has doubled from 8.9 percent in 2001 to 17.8 percent in 2018.⁷

We continue to use Table 2, column 4 to study the impact of director attributes on director departure. We find that the likelihood of departure is increasing in director age and years on the board. The likelihood of departure decreases if the director is the board chair or the CEO, or serves on the audit, nomination, compensation, or executive committees. The fixed effects in column 4 subsume firm characteristics, so we use column 3 to study the

⁷Our numbers for female director share differ slightly from those in Field et al. (2020), as their primary data source is ISS, while our primary data source is BoardEx.

impact of firm characteristics on director departure. The coefficients on Size and ROA load negatively and significantly, indicating that directors are less likely to depart when serving on boards of large or profitable companies. In contrast, the likelihood of departure rate increases in Debt/Assets and has no economically significant relation to M/B.

3.2 The gender gap in director departures after restatements

We next turn to our main test of interest: whether there are gender-based differences in director departure rates after financial restatements. We interact *Female* with *Restatements* in Table 3, where the interacted coefficient captures the relation between gender and director departure in the year after a restatement occurs. Specifically, we estimate the following specification:

$$Departed_{i,j,t+1} = \beta_1 \times Female_i + \beta_2 \times Restatement_{j,t}$$

$$+\beta_3 \times Female_i \times Restatement_{j,t} + \gamma \times \vec{X}_{i,j,t} + \psi_{j,t} + \varepsilon_{i,j,t},$$

$$(2)$$

where i indexes director, j indexes firm, and t indexes year. $Restatement_{j,t}$ is an indicator equal to one if the firm announced a restatement during the year and zero otherwise. All other variables are the same as in Eq. (1). Like before, we also analyze less rigid specifications without firm-year-fixed effects.

We begin in column 1 with a parsimonious regression including only firm- and year-fixed effects alongside our variable of interest. We subsequently control for director-level characteristics in column 2 and firm-level characteristics in column 3. Columns 1-3 of Table 3 shows that in the year after a firm's financial restatement, female director departures at that firm are significantly more likely to occur than in non-restatement years. On the other hand, male director departures are equally as likely in restatement years as in non-restatement years, as evidenced by the insignificant coefficient on *Restatement* in columns 1-3.

In column 4, we increase the fixed-effect density through the inclusion of firm-year-fixed effects until we match Eq. (2). Using our specification in column 4 to interpret economic magnitudes, we find that financial restatements are associated with an increase in the female departure rate of about 1.1 percentage points, which is an economically large effect that accounts for 12.6 percent of the unconditional mean director departure rate of 8.7 percent in non-restatement years. Note that the coefficient of *Female* captures the differential departure rate for female directors in the absence of financial restatements. Therefore, financial restatements more than eliminate the positive differential of 0.8 percentage points that females have over men in keeping their directorships in non-restatement years. In sum, the likelihood that female directors depart the board significantly increases after a financial restatement at the firm, whereas male directors do not exhibit this effect.⁸

Importantly, in the most robust specification in Table 3, column 4, we include firm-year-fixed effects that absorb any persistent time-varying firm-level variation in director departure behaviors. The coefficient on $Female \times Restatement$ captures the departure probability of female directors relative to male directors on the same board in the same year. Therefore, any challenges to the identification in the form of simultaneity or reverse causality must provide an alternative explanation for the positive relation between financial restatements and within firm-year heterogeneity in departures by gender. For example, one might be concerned that firms with declining financial health may simultaneously experience decreased accounting quality and increased turnover of senior leadership. This concern is controlled for with firm-year-fixed effects. To present a threat to identification in our setting, one must believe that declining financial health simultaneously explains declining accounting quality and the disproportionate turnover of female directors relative to male directors within the same firm-year. Because of its robust fixed effects structure, we consider the model in column 4 to be our benchmark for our subsequent cross-sectional analyses of gender-based differences in director departure rates after restatements.

⁸In Appendix Table B.2, we show that the main result in column 4 of Table 3 is robust to clustering at the firm, firm-year, industry, industry and year, and industry-year level.

In sum, across all the specifications, regardless of the fixed-effect structure, we find a positive and significant relation between $Female \times Restatement$, suggesting that, relative to male directors, female directors are more likely to leave a board in the year following a restatement than in other years. This result is also economically significant in magnitude, with the lower departure rate for female directors in non-restatement years more than erased due to financial restatements. Note that the absence of lower departure rates for female directors is a troubling finding. As of 2018, under 18 percent of directors were female. If departure rates for male directors equal or are less than that of female directors, then the gender composition of female directors is unlikely to exceed current levels.

3.3 Restatement type and director responsibility

We now turn to validating our main finding in the cross-section. Specifically, we analyze whether the gap is more pronounced for adverse restatements and when a female director serves as the chair of the audit committee in the year of the restatement. We follow Dechow et al. (2011) and classify financial restatements into adverse (i.e., EPS decreasing) and improving (i.e., EPS increasing) restatements using data from Audit Analytics. Of the observations in which an accounting restatement occurred, 82.3 percent contain instances of adverse restatements, while 20.2 percent contain instances of improving restatements. Note that the sum of adverse and improving restatement shares exceeds 100 percent. This is the result of a small subset of observations having multiple restatements in a given firm-year, in which at least one was adverse and one was improving.

In Table 4, columns 1 and 2, we estimate the specification in Eq. (2) except that column 1 replaces Restatement with AdverseRestatement and column 2 replaces Restatement with $Improving\ Restatement$. Like in our other specification, we continue to include firm-year-fixed effects and all the controls from Table 2, column 4. We find a positive and significant relation between $Female \times Adverse\ Restatement$ and Departed, and a positive and insignificant relation between $Female \times Improving\ Restatement$ and Departed. These results are

consistent with prior research that finds that relative to improving restatements, adverse financial restatements are more detrimental to the firm's financial reporting environment.⁹

We next analyze whether restatement-driven departures are exacerbated when female directors are in leadership positions more responsible for monitoring financial reporting. We further add to our baseline specification triple interaction terms for Female, Restatement, and an indicator variable that equals one when females hold board committee chair roles, while continuing to include the fixed effects and controls. We also include all the appropriate main effects, making our new benchmark the gender-based difference in the change in direct departure rates when directors are not board committee chairs. In Table 4, column 3, we find a significant positive relation between Departed and $Female \times Restatement \times Audit Committee Chair$, which indicates that female directors who are also the audit committee chair are even more likely to depart the board after a restatement, whereas male directors are equally as likely to depart the board regardless of whether they are also the audit committee chair, as evidenced by the insignificant coefficient on $Restatement \times Audit Committee Chair$. By comparison, in Table 4, columns 4 to 6, we find insignificant coefficients on the interaction terms for when a female director is the chair of the nomination and governance committee, the compensation committee, or the executive committee.

In sum, we find that female director departures are concentrated around adverse financial restatements and not present around improving restatements. Female directors also depart the board at an increased rate when they are in positions more responsible for monitoring financial reporting, such as being the chair of the audit committee.

⁹For example, investors tend to react more negatively to adverse restatements (e.g., Karpoff et al., 2017).

3.4 Potential explanations for the director departure gender gap

3.4.1 Gender bias not attributable to other director attributes

We next consider potential mechanisms that give rise to the director departure gender gap. One possibility is that the departure gender gap arises from favoritism toward men or biases against women (Becker, 1957). Favoritism towards men may be the result of homophily where male directors favor other male directors over female directors (McPherson et al., 2001). Biases against women may result from negative perceptions of female success in traditionally male-dominated roles (Heilman et al., 2004). We test this mechanism by focusing on who serves as the chair of the board—a position held by males for about 359,000 or 97 percent of our approximately 371,400 director-firm-year observations. If gender bias for men or against women is present, departure rates for female directors should be higher in the presence of a male chair. On the other hand, if gender bias does not exist, then departure rates should be the same regardless of the gender of board leadership.

Table 5, column 1 shows that when female directors serve as the chair of the board, female directors are as likely to depart the board after a restatement as they are in non-restatement years. By contrast, Table 5, column 2 shows that when male directors serve as the chair of the board, female directors are significantly more likely to depart the board after a restatement than they are in non-restatement years. In column 3, we test whether departure rates are statistically higher for female directors who serve on boards with male chairs. We pool the samples in columns 1 and 2 together and consider the triple interaction between Female, Restatement, and Male Chair, which is an indicator taking the value one if a director's board has a male chair. We find a positive and significant coefficient on the triple interaction term, suggesting that restatement-driven departure rates for female directors are higher by 2.8 percentage points in the presence of a male chair relative to boards with a female chair. This result is consistent with Tate and Yang (2015), who find that female workers suffer greater wage loss resulting from plant closures if the plant is led

by a male manager. This finding provides suggestive evidence that bias may explain the increase in departure rates for female directors.

3.4.2 Differences in director attributes by gender

We next test whether director attributes can explain the departure gender gap around financial restatements. If female directors have weaker credentials and less experience, then their departure after financial restatements may simply reflect the board shedding its least-qualified members. We begin in Table 6 by augmenting our baseline specification with firm-year-MBA-fixed effects (column 1) and firm-year-CPA-fixed effects (column 2), which allows us to compare male and female directors within the same firm, year, and level of credentials. Within credentials, we continue to find that female directors have higher increases in their departure rates than their male counterparts at the same firm in the year after financial restatements.

Another possibility is that the growing share of female directors across US firms may result in female directors being the newest and least experienced members of their respective boards. Accordingly, in Table 6, columns 3 and 4, we test the possibility that firms shed their least-experienced directors after financial statements, which would disproportionately affect female directors. Specifically, we proxy for experience with the number of years served on a board and the director's age, and we augment our baseline specification with firm-year-time-on-board-fixed effects (column 3) and firm-year-age-fixed effects (column 4).¹⁰ Therefore, we are comparing male and female directors within the same firm, same year, and same level of experience. We continue to find that female directors have higher increases in their departure rates than their male counterparts at the same firm in the year after financial restatements, which suggests that our results are not driven by the least-experienced directors. Director

 $^{^{10}}$ To create firm-year-time-on-board-fixed effects, we first create experience categories determined by the number of years served on the board. Specifically, we create experience categories with the following cutoffs: [0,1), [1,5), [5,10), [10,15), [15,20), [20,∞). Similarly, to create firm-year-age-fixed effects, we create age categories with the following cutoffs: [0,25), [25,30), [30,35), [35,40), [40,45), [45,50), [50,55), [55,60), [60,65), [65,∞).

attributes therefore do not appear to explain the higher increases in departure rates of female directors after financial restatements. This finding is consistent Field et al. (2020), who find that female directors pursuing leadership positions tend to be more, not less, qualified than their male counterparts.

3.4.3 Face-saving pressure and the pursuit of other career opportunities

We next consider the possibility that female directors depart boards at increased rates after restatements to preserve their reputation in the director labor market and take directorships at other firms. We test this idea by examining whether restatements are associated with female directors' number of future board appointments. We measure the effect of restatements separately at one to five years ahead using a regression comparable to Eq. (2) but instead with logged board seats as the dependent variable. The average director in our sample sits on 1.9 boards in a given year, with the average female director sitting on more boards than the average male director at 2.4 versus 1.8.

In Table 7, column 1, the negative coefficient on $Female \times Restatement$ indicates that after experiencing a restatement, female directors receive a significant 1.0 percent fewer board appointments in the year after the restatement than their male counterparts at the same firm. This magnitude is economically meaningful when compared to the fact that females currently account for only about 20 percent of total directorships in the US, and it is consistent with our baseline departure rate estimates in Table 3 that indicate that financial restatements are associated with a 1.1 percentage point increase in female director departure rates. The negative and significant coefficient on $Female \times Restatement$ in Table 7, column 2 further shows that for up to two years following a restatement, female directors continue to have fewer board appointments than their male counterparts at the same firm. We continue

¹¹This magnitude is an approximation due to the addition of one before log transformation of the dependent variable.

to find similar negative effects for years three to five (columns 3-5), but these results are not statistically significant at conventional levels.

To synthesize the results in this section, one would expect that if female directors depart boards after restatements to preserve their reputation in the labor market or take other directorships, they would have equal or more, not fewer, future directorship appointments relative to their male counterparts at the same firm. Our findings do not support this explanation. We therefore interpret our findings as evidence that the increase in female director departures after restatements is at least partially driven by a gender bias not explained by other director attributes such as education and experience.

3.5 Restatements and new director appointments after female director departures

Having established a gender gap in director departure rates in the year after a restatement, we next examine whether this effect contributes to the overall gender gap in board composition by analyzing the gender composition of directors installed to replace the directors who depart after a restatement. Note that these new directors are typically handpicked by the board with no shareholder vote. We use the following empirical model:

New Male
$$Director_{i,j,t+1} = \beta_1 Restatement_{j,t} \times Female Departure_{j,t}$$

 $+ \beta_2 Restatement_{j,t} + \beta_3 Female Departure_{j,t}$ (3)
 $+ \gamma \times \vec{X}_{i,j,t} + \delta \times \vec{Y}_{j,t} + \lambda_t + \psi_j + \varepsilon_{i,j,t},$

where i indexes director, j indexes firm, and t indexes year. The dependent variable of interest is $New\ Male\ Director_{i,j,t+1}$, which is an indicator variable equalling one if the firm hires a new male director in the following year. $Female\ Departure_{j,t}$ is an indicator equal to one if a female director left the firm's board during that year and zero otherwise. $\vec{X}_{i,j,t}$ is a vector of time-varying director characteristics, including director age; the number of years the

director has served on the board; an indicator equal to one if the director is a chairperson and zero otherwise; an indicator equal to one if the director serves on the board audit committee; an indicator equal to one if the director serves on the board nomination committee; an indicator equal to one if the director serves on the board compensation committee; and an indicator equal to one if the director serves on the board executive committee. $\vec{Y}_{j,t}$ is a vector of time-varying firm characteristics including firm size, ROA, debt to assets, and market-to-book (exact variable definitions are in Appendix A). λ_t is a year-fixed effect to absorb any time trends during our sample period. ψ_j is a firm-fixed effect to absorb any time-invariant firm characteristics. Note that we can no longer include firm-year-fixed effects, as both Restatement_{j,t} and Female Departure_{j,t} are firm-year level observations and would be unidentifiable in the presence of firm-year-fixed effects. In an additional analysis, we use a more rigid specification with industry-year-fixed effects instead of year-fixed effects, which controls for any time-varying industry trends such as the possibility that certain industries are persistently more biased toward hiring male directors.

In Table 8, the significant positive coefficients on Female Departure and Male Departure across all the specifications indicate that when female and male directors depart a board during non-restatement years, both genders are significantly more likely to be replaced by males, which is consistent with our prior finding that males have the bulk of total available directorships. In column 1, the significant positive coefficients on $Restatement \times Female Departure$ indicate that in the year after a restatement, female directors who depart the board are a significant 2.3 percentage points more likely to be replaced by males as they are in non-restatement years, which equates to about a 50 percent increase from their likelihood of being replaced by males in non-restatement years. In column 2, we replace year-fixed effects with industry-year-fixed effects and continue to find similar results. By contrast, in columns 1 and 2, the insignificant coefficients on $Restatement \times Male Departure$ indicate that male directors who depart the board after a restatement are as likely to be replaced by males as they are in non-restatement years.

Overall, our findings in this section continue to reveal a systematic pattern consistent with males being favored for directorships for reasons not explained by a comprehensive set of other director attributes (e.g., education, experience), firm attributes (e.g., profitability), and firm- and time-fixed effects. Director departure rates not only increase more for female directors than for male directors after restatements, but the rate at which female directors are replaced by male directors also increases in this setting (while no such effect is observed for the replacement of male directors). Financial restatements therefore appear to exacerbate the overall gender gap in board composition by driving out female directors and creating director vacancies that are subsequently filled by males.

3.6 Director departures after restatements by race

To rule out any concern that our findings are not specific to female directors but instead would be observed for all directors who are minorities (i.e., non-white males), we test this idea directly. For added context, we first document the widespread minority-based differences in directorship composition for US public firms in the last two decades. Data on directors' racial backgrounds are from the ISS's Directors Database, which contains race data starting from 2007 for S&P 1,500 companies. Similar to female directors, Figure B.1 indicates that the share of minority directors has risen steadily over time. In 2007—the first year that director race data are available in ISS—minority directors account for 6.4 percent of all directors. By 2018, the share of minority directors increases to 11.8 percent. Female minority directors exhibit a similar trend, accounting for 1.7 percent of all directors in 2007 and 3.8 percent in 2018. We also observe that female directors are disproportionately likely to be minorities: Figure B.2 shows that 13.4 to 17.5 percent of female directors are minorities, whereas only 5.5 to 10.7 percent of male directors are minorities (depending on the year).

We next test whether director departures after financial restatements are higher for minority directors. In Table 9, Panel A, column 1, we estimate the specification in Eq. (2) except we replace *Female* with *Minority*, which is an indicator variable that equals one

for minority directors, zero otherwise. We also include firm-year-fixed effects and all the controls from Table 2, column 4. We find a negative and significant standalone coefficient on *Minority*, suggesting that, as with female directors, minority directors have a lower departure rate in non-restatement years relative to non-minorities. However, unlike for female directors, we do not find that the minority director departure rate increases after financial restatements relative to non-minority directors. When we decompose the minority groups, we find that Black and Hispanic directors (columns 2 and 3, respectively) have lower departure rates in non-restatement years but no change in departure rates after restatements relative to non-minority directors. In column 4, we find no difference in departure rates for Asian directors in both non-restatement and restatement years relative to non-Asian directors. These findings do not support the hypothesis that our main results are being driven by minority status instead of gender.

In Table 9, Panel B, we test whether the minority status of female directors increases or decreases the heightened departure rates for these directors after restatements. We begin in column 1 by estimating the specification in Eq. (2), except our main variable of interest is now the triple interaction term between Female, Restatement, and Minority. The coefficient on Female × Restatement × Minority measures the differential departure rate of minority female directors relative to other female directors after financial restatements. For display purposes, we include but do not tabulate the double interaction terms and main effects for Female, Restatement, and Minority. We find that director departure rates after restatements are lower for female minority directors relative to other directors. In columns 2-4, we examine specific minority groups but find no such effects for Black and Hispanic female directors. In column 4, by contrast, we find that Asian female directors are the only female directors who are less likely than other female-race combinations to depart the board after restatements.

¹²Note that the sample size in Table 9 is lower than that of our baseline in Table 3. The small sample size reflects (1) the limited time series of race data from ISS, which begins in 2007, and (2) observations lost due to name matching across ISS and BoardEx, which use different naming conventions for directors.

3.7 Instrumental variables, additional robustness, and placebo

To address the potential concern that female directors self-select into boards that have higher female turnover rates after restatements (or that unobserved or unmeasurable variables may jointly correlate with female director departures and financial restatements), we use the instrumental variables (IV) approach developed by Field et al. (2020). Following Field et al. (2020, Table 4), we take advantage of the exogenous increase in the pool of potential female directors following the passage of the Civil Rights Act of 1964, which prohibited discrimination in college admission on the basis of gender and led to many universities adopting affirmative action policies. Specifically, we instrument for Female with Affirmative Action, which is an indicator variable taking the value one if a director was age 18 or younger in 1965 and zero otherwise. Since our variable of interest is an interaction term (Female \times Restatement), we instrument for this variable using a second instrument, namely the interaction of Affirmative Action and Female (Balli and Sorensen, 2013). Institutional features of this setting suggest that our instrument satisfies the exclusion restriction, i.e., it is unrelated to our outcomes of interest except through its effect on gender diversity (Field et al., 2020, Section 3.2).

Turning to the IV analysis, Table B.3 shows that, consistent with our instrument satisfying the exclusion restriction, whether a director was of college age pre or post the 1964 Civil Rights Act is uncorrelated with their departure rates after controlling for director attributes and firm-year-fixed effects. In our first-stage IV regression in Table 10, column 1, we find that, consistent with our instrument satisfying the relevance condition, Affirmative Action is significantly positively correlated with the likelihood of being a female director after controlling for the other regressors in our baseline regression. Similarly, in column 2, we find a positive and significant correlation between Female × Restatement on Female × Affirmative Action. Our two instruments have a first-stage F-statistic of 77.392, which indicates that our instruments are reasonably strong. In column 3, we find that the instrumented coefficient on

 $Female \times Restatement$ remains positive and significant. These findings suggest that any potential self-selection and omitted variables do not explain the gender gap in director departures after financial restatements.

We next address the potential concern that our results are driven by the lower-regulation pre-Sarbanes-Oxley (SOX) period. In Table 11, column 1, we rerun our baseline specification after dropping observations from before 2004, the year SOX became effective. We find that our main results continue to hold. In column 2, we address the possibility that female turnover and financial restatements were jointly higher during the 2007-2008 financial crisis. We rerun our baseline specification after dropping observations from during the crisis years of 2007-2008 and find that our results continue to hold. In column 3, we drop from our sample all boards that have no female members and our results continue to hold in the sample of boards with at least one female director.

Next, we test whether our findings are driven by systematic differences in restatement and non-restatement directors and firms. Note first that this is not a big concern for us because our main regressions already include firm-year-fixed effects (which eliminate any such systematic differences) and a variety of other director and firm attributes. Nonetheless, in Table 11, column 4, we use Coarsened Exact Matching (where continuous variables are discretized using quartiles) to pair restatement directors to non-restatement directors in the same year based on gender, time on board, firm size, ROA, leverage, and market-to-book ratios.¹³ We find that our inferences continue to hold, further suggesting that any observable systematic differences in director and firm characteristics do not explain our findings.

Next, in Table 11, column 5, we confirm that our main findings hold under a Cox Proportional Hazards Model (Cox, 1972). The positive and significant estimated coefficient on $Female \times Restatement$ indicates that the hazard ratio is higher for female directors in the year after financial restatements, consistent with our regression results.

We next use simulation-based falsification tests to demonstrate that the elevated director

¹³See Iacus et al. (2011) and Iacus et al. (2012) for more information on the Coarsened Exact Matching procedure.

departure rates after financial restatements are unique to females. We begin in Figure 3, Panel A by randomizing restatement events. For each iteration of the simulation, we randomly assign restatement events across our sample such that the fraction of observations corresponding to restatements is the same pre- and post- randomization (7.3 percent of observations). We then re-estimate the specification in column 4 of Table 3 to recover the coefficient on $Female \times Restatement$. We repeat this simulation 1,000 times and plot the density of recovered coefficients on $Female \times Restatement$ in a histogram in Figure 3, Panel A. The darker bar represents our estimated coefficient based on actual data, which corresponds to the 98.9 percentile of simulated coefficients. This result shows that the elevated departure rates for female directors would be highly unlikely if restatements were randomly distributed. Put differently, it is indeed the true restatement events that are driving the increase in female director departures.

We next randomize director gender instead of accounting restatement events. In Figure 3, Panel B, for each iteration of the simulation, we randomly assign gender across our sample such that the fraction of observations corresponding to female directors is the same pre- and post- randomization (11.3 percent of observations). The simulation process otherwise remains unchanged from Figure 3, Panel A. The coefficient on $Female \times Restatement$ estimated from the actual data corresponds to the 98.1 percentile of simulated coefficients, suggesting that the elevated director departure rates after restatements would be highly unlikely if gender was randomly distributed. Put differently, it is indeed being a female director after a restatement that is driving the increase in director departures.

Lastly, in Figure 3, Panel C, we randomize both restatements and gender such that the fraction of observations corresponding to accounting restatements and female directors is the same pre- and post- randomization. The simulation process otherwise remains unchanged. The coefficient on $Female \times Restatement$ estimated from the actual data corresponds to the 98.2 percentile of simulated coefficients. As with the prior two simulations, this result suggests that the elevated director departures rates after restatements would be highly unlikely

if restatements and gender were randomly distributed. Overall, these simulations suggest that the significant relations we observe among director departures, financial restatements, and gender are highly unlikely to be random or spurious.

4 Conclusion

We examine gender-based differences in director retention at US public firms. We find that in the year after firms restate their financials, the likelihood of female director departures significantly increases compared to male directors at the same firm, especially when the chair of the board is male and when females hold board leadership positions. We also find that these departing female directors receive fewer future directorships at other firms than their male counterparts for two years following restatements. The vacancies created by these female director departures are more likely to be filled by males than the vacancies created by male director departures at the same firm. This evidence suggests that the gender gap in director retention after restatements exacerbates the overall gender gap among directors.

To the best of our knowledge, this is one of the first studies to examine gender-based differences in director retention rates. Our findings supplement prior research on gender-based differences in director appointments (e.g., Field et al., 2020) and have broader implications for research that finds that gender gaps in career outcomes can widen as a result of heightened workplace discrimination during adversity (e.g., Egan et al., 2022). A potential extension of our study could be to interview directors to better identify gender-based differences in individual preferences for departing a board, or to examine director retention behaviors in other settings. Future research may also benefit from using restatements as a plausible source of exogenous variation in female director departures.

References

- Adams, Renee, Benjamin E. Hermalin, Michael S. Weisbach. 2010. The Role of Boards of Directors in Corporate Governance: A Conceptual Framework and Survey. *Journal of Economic Literature* 48(1) 58–107.
- Adams, Renee B, Daniel Ferreira. 2009. Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics* **94**(2) 291–309.
- Adams, Renee B, Tom Kirchmaier. 2016. Women on boards in finance and STEM industries. American Economic Review 106(5) 277–281.
- Agarwal, Sumit, Wenlan Qian, David M Reeb, Tien Foo Sing. 2016. Playing the boys game: Golf buddies and board diversity. *American Economic Review* **106**(5) 272–76.
- Ahern, Kenneth R., Amy K. Dittmar. 2012. The changing of the boards: The impact on firm valuation of mandated female board representation. Quarterly Journal of Economics 127(1) 137–197.
- Altonji, Joseph G, Rebecca M Blank. 1999. Race and gender in the labor market. *Handbook of Labor Economics* **3** 3143–3259.
- Amel-Zadel, Amel, Yuan Zhang. 2015. The economic consequences of financial restatements: Evidence from the market for corporate control. *The Accounting Review* **90**(1) 1–29.
- Balli, Hatice Ozer, Bent Sorensen. 2013. Interaction effects in econometrics. *Empirical Economics* **45**(1) 583–603.
- Becker, Gary S. 1957. The Economics of Discrimination. University of Chicago Press.
- Bennedsen, Morten, Francisco Perez-Gonzalez, Daniel Wolfenzon. 2020. Do CEOs matter? evidence from hospitalization events. *Journal of Finance* **75**(4) 1877–1911.
- Bertrand, Marianne. 2011. New perspectives on gender. *Handbook of Labor Economics*, vol. 4. Elsevier, 1543–1590.
- Bertrand, Marianne, Sandra Black, Sissel Jensen, Adriana Lleras-Muney. 2019. Breaking the glass ceiling? The effect of board quotas on female labour market outcomes in Norway. *Review of Economic Studies* 86(1) 191–239.
- Blau, Francine D, Lawrence M Kahn. 2017. The gender wage gap: Extent, trends, and explanations. *Journal of Economic Literature* **55**(3) 789–865.
- Brown, James R., Matthew T. Gustafson, Ivan T. Ivanov. 2021. Weathering cash flow shocks. Journal of Finance **76**(4) 1731–1772.
- Cai, Jie, Jacqueline L Garner, Ralph A Walkling. 2009. Electing directors. *Journal of Finance* **64**(5) 2389–2421.
- Call, Andrew C, Gerald S Martin, Nathan Y Sharp, Jaron H Wilde. 2018. Whistleblowers and outcomes of financial misrepresentation enforcement actions. *Journal of Accounting Research* **56**(1) 123–171.

- Chakravarthy, Jivas, Ed deHaan, Shivaram Rajgopal. 2014. Reputation Repair After a Serious Restatement. The Accounting Review 89(4) 1329–1363.
- Choi, Stephen J, Anat Carmy Wiechman, Adam C Pritchard. 2013. Scandal enforcement at the SEC: The arc of the option backdating investigations. *American Law and Economics Review* 15(2) 542–577.
- Cox, David R. 1972. Regression models and life-tables. *Journal of the Royal Statistical Society* **34**(2) 187–220.
- Dechow, Patricia, Weili Ge, Chad R. Larson, Richard G. Sloan. 2011. Predicting material accounting misstatements. Contemporary Accounting Research 28(1) 17–82.
- DeHaan, Ed, Simi Kedia, Kevin Koh, Shivaram Rajgopal. 2015. The revolving door and the SEC's enforcement outcomes: Initial evidence from civil litigation. *Journal of Accounting and Economics* **60**(2-3) 65–96.
- Dyck, Alexander, Adair Morse, Luigi Zingales. 2010. Who blows the whistle on corporate fraud? *Journal of Finance* **65**(6) 2213–2253.
- Dyck, IJ, Adair Morse, Luigi Zingales. 2021. How pervasive is corporate fraud? Rotman School of Management Working Paper.
- Eckbo, B. Espen, Knut Nygaard, Karin S. Thorburn. 2022. Valuation effects of norway's board gender-quota law revisited. *Management Science* **68**(6) 4112–4134.
- Egan, Mark, Gregor Matvos, Amit Seru. 2022. When Harry fired Sally: The double standard in punishing misconduct. *Journal of Political Economy* **130**(5) 1184–1248.
- Erel, Isil, Léa H Stern, Chenhao Tan, Michael S Weisbach. 2021. Selecting directors using machine learning. Review of Financial Studies **34**(7) 3226–3264.
- Field, Laura Casares, Matthew E. Souther, Adam S. Yore. 2020. At the table but can not break through the glass ceiling: Board leadership positions elude diverse directors. *Journal of Financial Economics* **137**(3) 787–814.
- Files, Rebecca, Gerald S Martin, Stephanie J Rasmussen. 2019. Regulator-cited cooperation credit and firm value: Evidence from enforcement actions. *The Accounting Review* **94**(4) 275–302.
- Gayle, George-Levi, Limor Golan, Robert A. Miller. 2012. Gender differences in executive compensation and job mobility. *Journal of Labor Economics* **30**(4) 829–872.
- Gertsberg, Marina, Johanna Mollerstrom, Michaela Pagel. 2022. Gender quotas and support for women in board elections. Working Paper.
- Gormley, Todd A, Vishal K Gupta, David A Matsa, Sandra Mortal, Lukai Yang. 2021. The Big Three and board gender diversity: The effectiveness of shareholder voice. Working Paper.
- Gow, Ian, David Larcker, Edward Watts. 2022. Board diversity and shareholder voting. Working Paper.
- Greene, Daniel, Vincent J Intintoli, Kathleen M Kahle. 2016. Do board gender quotas affect firm value? Evidence from California Senate Bill No. 826. Journal of Corporate Finance 60(101526).

- Heilman, Madeline E, Aaron S Wallen, Daniella Fuchs, Melinda M Tamkins. 2004. Penalties for success: Reactions to women who succeed at male gender-typed tasks. *Journal of Applied Psychology* 89(3) 416–427.
- Hermalin, Benjamin E., Michael S. Weisbach. 1988. The Determinants of Board Composition. RAND Journal of Economics 19(4) 589–606.
- Hwang, Sunwoo, Anil Shivdasani, Elena Simintzi. 2021. Mandating women on boards: evidence from the United States. Working Paper.
- Iacus, Stefano M, Gary King, Giuseppe Porro. 2011. Multivariate matching methods that are monotonic imbalance bounding. Journal of the American Statistical Association 106(493) 345– 361.
- Iacus, Stefano M, Gary King, Giuseppe Porro. 2012. Causal inference without balance checking: Coarsened exact matching. *Political Analysis* **20**(1) 1–24.
- Karpoff, Jonathan M, Allison Koester, D. Scott Lee, Gerald S. Martin. 2017. Proxies and databases in financial misconduct research. *The Accounting Review* **92**(6) 129–163.
- Kim, Daehyun, Laura T Starks. 2016. Gender diversity on corporate boards: Do women contribute unique skills? American Economic Review: Papers & Proceedings 106(5) 267–271.
- Larcker, David F., Scott A. Richardson, İrem Tuna. 2007. Corporate governance, accounting outcomes, and organizational performance. *The Accounting Review* 82(4) 963–1008.
- Matsa, David A, Amalia Miller. 2013. A female style in corporate leadership? evidence from quotas. American Economic Journal: Applied Economics 5(3) 136–69.
- McDonald, Michael L, James D Westphal. 2013. Access denied: Low mentoring of women and minority first-time directors and its negative effects on appointments to additional boards. *Academy of Management Journal* **56**(4) 1169–1198.
- McPherson, Miller, Lynn Smith-Lovin, James M Cook. 2001. Birds of a feather: Homophily in social networks. *Annual Review of Sociology* **27** 415–444.
- Ouazad, Amine, Matthew E Kahn. 2022. Mortgage finance and climate change: Securitization dynamics in the aftermath of natural disasters. *Review of Financial Studies* **35**(8) 3617–3655.
- Palmrose, Zoe-Vonna, Vernon J Richardson, Susan Scholz. 2004. Determinants of market reactions to restatement announcements. *Journal of Accounting and Economics* **37**(1) 59–89.
- Parsons, Christopher A, Johan Sulaeman, Sheridan Titman. 2018. The geography of financial misconduct. *Journal of Finance* **73**(5) 2087–2137.
- Povel, Paul, Rajdeep Singh, Andrew Winton. 2007. Booms, busts, and fraud. Review of Financial Studies **20**(4) 1219–1254.
- Roethlisberger, Claudia, Franziska Gassmann, Wim Groot, Bruno Martorano. 2022. The contribution of personality traits and social norms to the gender pay gap: A systematic literature review. *Journal of Economic Surveys* 1–32.

- Sarsons, Heather. 2017. Interpreting signals in the labor market: Evidence from medical referrals. Working Paper.
- Srinivasan, Suraj. 2005. Consequences of financial reporting failure for outside directors: Evidence from accounting restatements and audit committee members. *Journal of Accounting Research* **43**(2) 291–334.
- Tate, Geoffrey, Liu Yang. 2015. Female leadership and gender equity: Evidence from plant closure. Journal of Financial Economics 117(1) 77–97.
- Westphal, James D, Ithai Stern. 2007. Flattery will get you everywhere (especially if you are a male Caucasian): How ingratiation, boardroom behavior, and demographic minority status affect additional board appointments at US companies. *Academy of Management Journal* **50**(2) 267–288.
- Yermack, David. 2004. Remuneration, retention, and reputation incentives for outside directors. Journal of Finance 59(5) 2281–2308.

Figures and Tables

 $\label{eq:Figure 1} \textbf{Figure 1} \\ \textbf{Board Departures over Time by Gender}$

This figure displays board departure rates by gender over time. The sample reflects directors of firms that can be matched to Compustat from 2001 to 2018. The y-axis represents the share of all female (blue line with square markers) and male (orange line with circle markers) directors who departed their board in a given year.

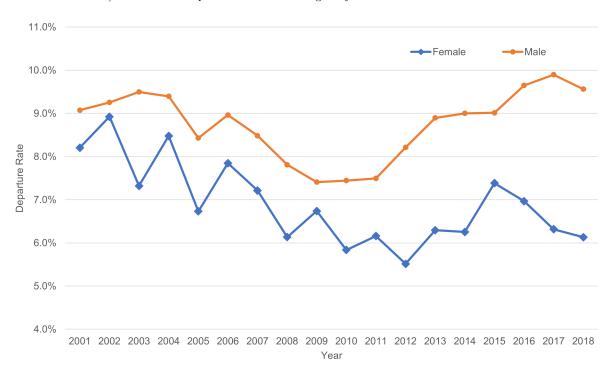
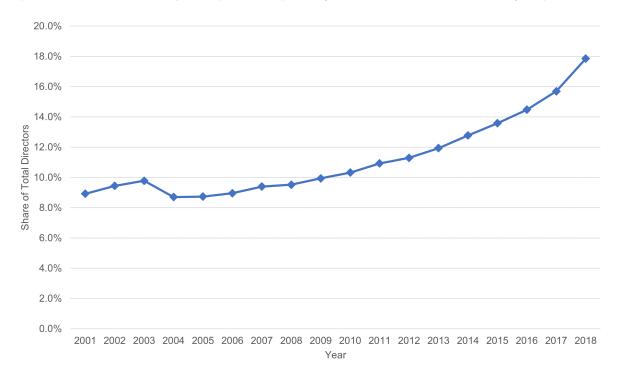


Figure 2
Female Share of Directors over Time

This figure displays the female share of all directors over time. The sample reflects directors of firms that can be matched to Compustat from 2001 to 2018. The y-axis represents the percentage of all directors who are female in a given year.

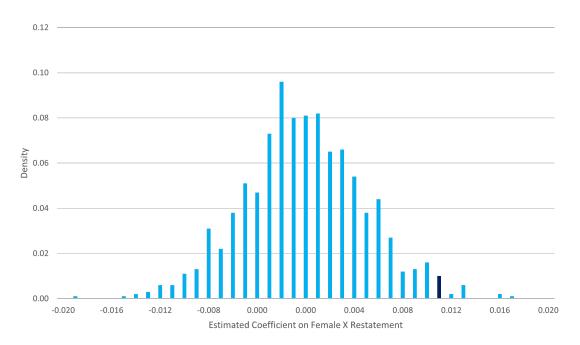


33

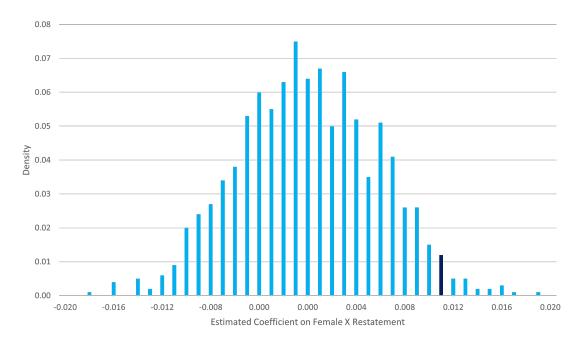
Figure 3 Falsification Tests

This figure displays the results of a simulation-based falsification test. The sample reflects directors of firms that can be matched to Compustat from 2001 to 2018. Each panel plots the density of estimated coefficients on $Female \times Restatement$ from Eq. (2) from 1000 simulations. In Panel A, we randomly assign financial restatements to observations such that the expected share of restatements in the simulation equals the exact share of restatements in the sample. In Panel B, we randomly assign gender to observations such that the expected share of females in the simulation equals the exact share of females in the sample. In Panel C, we randomly assign financial restatements and gender to observations such that the expected share of financial restatements and females in the simulation equals the exact share of financial restatements and females in the sample, respectively. The darker column denotes the actual coefficient on $Female \times Restatement$ obtained from estimating Eq. (2) in our sample.

Panel A: Randomize Restatement



Panel B: Randomize Gender



Panel C: Randomize Restatement and Gender

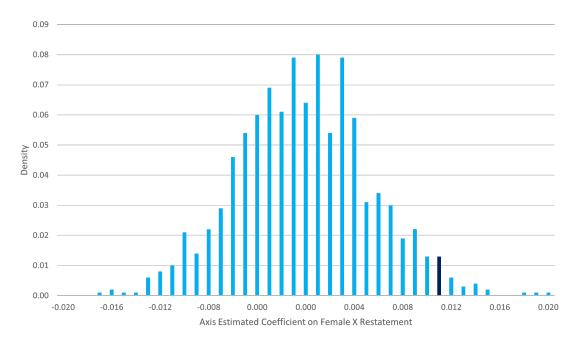


Table 1 Summary Statistics

This table displays summary statistics for the sample used in the baseline analysis. The unit of observation is at the director-firm-year level. The sample reflects directors of firms that can be matched to Compustat from 2001 to 2018. Panel A displays summary statistics for directors affected by restatements (columns 1-3) and directors unaffected by restatements (columns 4-6). Panel B displays summary statistics for female directors (columns 1-3) and male directors (columns 4-6). Variable descriptions can be found in Appendix A. Continuous variables are winsorized at the one percent level.

Panel A: Summary Statistics by Restatement

	Restatement			N	o Restateme	nt
	Mean	SD	N	Mean	SD	N
	(1)	(2)	(3)	$\overline{(4)}$	$\overline{\qquad \qquad }(5)$	(6)
Departure	0.098	0.297	34271	0.087	0.282	433662
Female	0.109	0.312	33435	0.114	0.317	424591
Age	60.885	9.385	33370	61.314	9.304	423558
Board Chair	0.135	0.341	34271	0.132	0.339	433662
CEO	0.115	0.320	34271	0.113	0.317	433662
Years on Board	7.616	7.356	34271	8.062	7.607	433662
Audit Committee	0.558	0.497	27729	0.552	0.497	352026
Nomination Committee	0.517	0.500	27729	0.512	0.500	352026
Compensation Committee	0.536	0.499	27729	0.530	0.499	352026
Executive Committee	0.154	0.361	27729	0.163	0.369	352026
Size	7.060	2.051	34271	7.116	2.140	433662
ROA	0.007	0.044	34271	0.008	0.048	433662
Debt/Assets	0.247	0.221	34271	0.218	0.205	433662
M/B	2.628	4.258	34271	2.882	4.271	433662

Table 1 (Continued) Summary Statistics

		Female			Male	
	Mean	SD	N	Mean	SD	N
Departure	0.069	0.254	51844	0.088	0.284	406182
Restatement	0.070	0.256	51844	0.073	0.261	406182
Age	58.475	7.938	51722	61.641	9.411	405206
Board Chair	0.034	0.181	51844	0.146	0.353	406182
CEO	0.032	0.176	51844	0.124	0.330	406182
Years on Board	6.359	5.973	51844	8.280	7.774	406182
Audit Committee	0.542	0.498	46452	0.555	0.497	325771
Nomination Committee	0.535	0.499	46452	0.509	0.500	325771
Compensation Committee	0.505	0.500	46452	0.534	0.499	325771
Executive Committee	0.106	0.308	46452	0.171	0.377	325771
Size	7.799	2.114	51844	7.021	2.117	406182
ROA	0.013	0.041	51844	0.008	0.048	406182
Debt/Assets	0.234	0.200	51844	0.219	0.208	406182
M/B	3.063	4.451	51844	2.828	4.236	406182

Table 2 Female Director Departures

The dependent variable is an indicator denoting whether a director departs a firm. The unit of observation is at the director-firm-year level. The sample reflects directors of firms that can be matched to Compustat from 2001 to 2018. Variable descriptions can be found in Appendix A. Continuous variables are winsorized at the one percent level. Standard errors are double clustered at the firm and year level. (*** p < 0.01, ** p < 0.05, * p < 0.10)

		Depar	ted_{t+1}	
Female	(1) 022***	(2) 008***	(3) 008***	(4) 007***
Age	[.002]	[.002] .002*** [.000]	[.002] .002*** [.000]	[.002] .002*** [.000]
Board Chair		037***	037***	036***
CEO		[.002] 025*** [.003]	[.002] 025*** [.003]	[.002] 021*** [.003]
Years on Board		.004***	.004***	.004***
Audit Committee		[.000] 027***	[.000] 027***	[.000] 026***
Nomination & Governance Committee		[.001] 017***	[.001] 017***	[.001] 017***
Compensation Committee		[.002] 015***	[.002] 015***	[.002] 014***
Executive Committee		[.001] 012***	[.001] 012***	[.001] 014***
Size		[.002]	[.002] 006***	[.002]
ROA			[.001] 269***	
Debt/Assets			[.036] .026***	
M/B			[.008] 000** [.000]	
Firm FE	Yes	Yes	Yes	No
Year FE	Yes	Yes	Yes	No
Firm-Year FE	No	No	No	Yes
N	458026	371472	371472	371400
R-squared	.04	.06	.06	.24

The dependent variable is an indicator denoting whether a director departs a firm. The unit of observation is at the director-firm-year level. The sample reflects directors of firms that can be matched to Compustat from 2001 to 2018. Variable descriptions can be found in Appendix A. Continuous variables are winsorized at the one percent level. Standard errors are double clustered at the firm and year level. (*** p < 0.01, ** p < 0.05, * p < 0.10)

		Depar	$rted_{t+1}$	
	(1)	(2)	(3)	(4)
$Female \times Restatement$.012***	.013***	.013***	.011**
	[.004]	[.004]	[.004]	[.005]
Female	022***	009***	009***	008***
	[.002]	[.002]	[.002]	[.002]
Restatement	.000	001	002	
	[.003]	[.003]	[.003]	
$\Lambda { m ge}$.002***	.002***	.002***
		[000]	[000]	[000.]
Board Chair		037***	037***	036***
		[.002]	[.002]	[.002]
CEO		025***	025***	021***
		[.003]	[.003]	[.003]
Years on Board		.004***	.004***	.004***
		[000]	[000]	[000.]
Audit Committee		027***	027***	026***
		[.001]	[.001]	[.001]
Nomination & Governance Committee		017***	017***	017***
		[.002]	[.002]	[.002]
Compensation Committee		015***	015***	014***
		[.001]	[.001]	[.001]
Executive Committee		012***	012***	014***
		[.002]	[.002]	[.002]
Size			006***	
			[.001]	
ROA			268***	
			[.036]	
Debt/Assets			.026***	
			[.008]	
M/B			000**	
			[000]	
Firm FE	Yes	Yes	Yes	No
Year FE	Yes	Yes	Yes	No
Firm-Year FE	No	No	No	Yes
V	458026	371472	371472	371400
R-squared	.04	.06	.06	.24

Table 4 Restatement Type, Director Responsibility, and Female Director Departures after Restatements

The dependent variable is an indicator denoting whether a director departs a firm. The unit of observation is at the director-firm-year level. The sample reflects directors of firms that can be matched to Compustat from 2001 to 2018. Age, Board Chair, CEO, Years on Board, Audit Committee, Nomination & Governance Committee, Compensation Committee, and Executive Committee are included as controls but not tabulated for ease of exposition. Variable descriptions can be found in Appendix A. Continuous variables are winsorized at the one percent level. Standard errors are double clustered at the firm and year level. (*** p < 0.01, ** p < 0.05, * p < 0.10)

			Depai	ted_{t+1}		
$\textbf{Female} \times \textbf{Adverse Restatement}$	(1) .011*	(2)	(3)	(4)	(5)	(6)
${\it Female} {\it \times} {\it Improving Restatement}$	[.005]	.002				
${\it Female} \times {\it Restatement} \times {\it Audit Committee Chair}$		[.009]	.027***			
${\it Female} \times {\it Audit Committee Chair}$			[.008]			
$Restatement \times Audit\ Committee\ Chair$			[.004] 004			
Audit Committee Chair			[.006] 029***			
$\textbf{Female} \times \textbf{Restatement} \times \textbf{Nomination \& Governance Committee Chair}$			[.002]	.007		
${\it Female} \times {\it Nomination} \ \& \ {\it Governance} \ {\it Committee} \ {\it Chair}$				[.017] 001		
$Restatement \times Nomination \ \& \ Governance \ Committee \ Chair$				[.005] 004		
Nomination & Governance Committee Chair				[.005] 014***		
${\bf Female} \times {\bf Restatement} \times {\bf Compensation} \ {\bf Committee} \ {\bf Chair}$				[.002]	.016 [.012]	
${\bf Female} \times {\bf Compensation} \ {\bf Committee} \ {\bf Chair}$.003	
$Restatement \times Compensation \ Committee \ Chair$					[.005] 003	
Compensation Committee Chair					[.004] 019***	
${\bf Female} {\bf \times} {\bf Restatement} {\bf \times} {\bf Executive~Committee~Chair}$					[.001]	026
${\it Female} {\it \times} {\it Executive Committee Chair}$						[.027] .017
$Restatement \times Executive\ Committee\ Chair$						[.012] 017* [.010]
Executive Committee Chair						.003
${\tt Female} {\times} {\tt Restatement}$.008	.010*	.010**	[.003]
Female	008***	007***	[.006] 009***	[.006] 008***	[.004] 009***	[.005] 008***
Controls Firm-Year FE N R-squared	[.002] Yes Yes 371400 .24	[.002] Yes Yes 371400 .24	[.002] Yes Yes 371400 .24	[.002] Yes Yes 371400 .24	[.002] Yes Yes 371400 .24	[.002] Yes Yes 371400 .24

Table 5 Board Chair Gender and Female Director Departures after Restatements

The dependent variable is an indicator denoting whether a director departs a firm. The unit of observation is at the director-firm-year level. The sample reflects directors of firms that can be matched to Compustat from 2001 to 2018. The sample in column 1 and 2 is further restricted to directors on boards with a female and male chair, respectively. Age, Board Chair, CEO, Years on Board, Audit Committee, Nomination & Governance Committee, Compensation Committee, and Executive Committee are included as controls but not tabulated for ease of exposition. Variable descriptions can be found in Appendix A. Continuous variables are winsorized at the one percent level. Standard errors are double clustered at the firm and year level. (*** p < 0.01, ** p < 0.05, * p < 0.10)

	$Departed_{t+1}$				
	Female Chair	Male Chair	Interaction		
	(1)	(2)	(3)		
$Female \times Restatement$	015	.013**	015		
	[.018]	[.005]	[.017]		
Female	.001	009***	.002		
	[.007]	[.002]	[.007]		
$Female \times Restatement \times Male Chair$.028*		
			[.015]		
Female×Male Chair			010		
			[.007]		
Controls	Yes	Yes	Yes		
Firm-Year FE	Yes	Yes	Yes		
N	12333	359068	371401		
R-squared	.23	.24	.24		

Table 6
Director Characteristics and Female Director Departures after Restatements

The dependent variable is an indicator denoting whether a director departs a firm. The unit of observation is at the director-firm-year level. The sample reflects directors of firms that can be matched to Compustat from 2001 to 2018. Age, Board Chair, CEO, Years on Board, Audit Committee, Nomination & Governance Committee, Compensation Committee, and Executive Committee are included as controls but not tabulated for ease of exposition. Column 1 includes Firm-Year-MBA fixed effects, which are created by interacting firm-year categories with an indicator taking the value one if a director has an MBA, and zero otherwise. Column 2 includes Firm-Year-CPA fixed effects, which are created by interacting firm-year categories with an indicator taking the value one if a director has is a CPA, and zero otherwise. Column 3 includes Firm-Year-Time on Board fixed effects, which are created by interacting firm-year categories with time on board categories. Time on board categories are determined based on years served on the board using the following cutoffs: [0,1), [1,5), [5,10), [10,15), [15,20), $[20,\infty)$. Column 4 includes Firm-Year-Age fixed effects, which are created by interacting firm-year categories with age categories. Age categories are determined based on the following age cutoffs: [0,25), [25,30), [30,35), [35,40), [40,45), [45,50), [50,55), [55,60), [60,65), $[65,\infty)$. Variable descriptions can be found in Appendix A. Continuous variables are winsorized at the one percent level. Standard errors are double clustered at the firm and year level. (**** p < 0.01, *** p < 0.05, ** p < 0.10)

	$Departed_{t+1}$						
	Within MBA	Within CPA	Within Experience	Within Age			
	(1)	(2)	(3)	(4)			
$Female \times Restatement$.015**	.011*	.011*	.014*			
	[.006]	[.005]	[.006]	[.007]			
Female	010***	008***	009***	005**			
	[.002]	[.002]	[.002]	[.002]			
Controls	Yes	Yes	Yes	Yes			
Firm-Year-MBA FE	Yes	No	No	No			
Firm-Year-CPA FE	No	Yes	No	No			
Firm-Year-Time on Board FE	No	No	Yes	No			
Firm-Year-Age FE	No	No	No	Yes			
N	319425	364156	305107	283109			
R-squared	.34	.24	.41	.42			

Table 7 Financial Restatements and Female Directors' Future Career Prospects

The dependent variable is the log of one plus the number of board seats a director holds. Columns 1, 2, 3, 4, and 5 reflect the number of board seats a director holds one, two, three, four, and five years in the future, respectively. The unit of observation is at the director-firm-year level. The sample reflects directors of firms that can be matched to Compustat from 2001 to 2018. Age, Board Chair, CEO, Years on Board, Audit Committee, Nomination & Governance Committee, Compensation Committee, and Executive Committee are included as controls but not tabulated for ease of exposition. Variable descriptions can be found in Appendix A. Continuous variables are winsorized at the one percent level. Standard errors are double clustered at the firm and year level. (*** p < 0.01, ** p < 0.05, * p < 0.10)

	$ln(1 + Number\ of\ Future\ Board\ Seats)$							
	One Year	Two Years	Three Years	Four Years	Five Years			
	After	After	After	After	After			
	Restatement	Restatement	Restatement	Restatement	Restatement			
	(1)	(2)	(3)	(4)	(5)			
$Female \times Restatement$	010*	015**	013	007	003			
	[.005]	[.007]	[.011]	[.009]	[.010]			
Female	.014***	.020***	.021**	.019**	.019**			
	[.004]	[.007]	[.008]	[.008]	[.009]			
Controls	Yes	Yes	Yes	Yes	Yes			
Firm FE	Yes	Yes	Yes	Yes	Yes			
N	371400	371400	371400	371400	371400			
R-squared	.66	.64	.63	.61	.59			

Table 8
New Director Appointments after Female Director Departures

The dependent variable is an indicator denoting whether a director is male and new on a board. The unit of observation is at the director-firm-year level. The sample reflects directors of firms that can be matched to Compustat from 2001 to 2018. Age, Board Chair, CEO, Years on Board, Audit Committee, Nomination & Governance Committee, Compensation Committee, and Executive Committee are included as controls but not tabulated for ease of exposition. Variable descriptions can be found in Appendix A. Continuous variables are winsorized at the one percent level. Standard errors are double clustered at the firm and year level. (*** p < 0.01, ** p < 0.05, * p < 0.10)

	$New\ Male\ Director_{t+1}$					
-	(1)	(2)	(3)	(4)		
Female Departure×Restatement	.023*	.024*	` ,	,		
	[.012]	[.014]				
Female Departure	.048***	.048***				
	[.004]	[.004]				
Male Departure×Restatement			.006	.007		
			[.004]	[.004]		
Male Departure			.057***	.057***		
			[.002]	[.002]		
Restatement	.000	.000	001	001		
	[.002]	[.002]	[.002]	[.003]		
Controls	Yes	Yes	Yes	Yes		
Firm FE	Yes	Yes	Yes	Yes		
Year FE	Yes	No	Yes	No		
Ind-Year FE	No	Yes	No	Yes		
N	368352	368352	368352	368352		
R-squared	.12	.13	.13	.14		

Table 9 Financial Restatements and Minority Director Departures

The dependent variable is an indicator denoting whether a director departs a firm. The unit of observation is at the director-firm-year level. The sample reflects directors of firms that can be matched to Compustat from 2007 to 2018. The sample is further restricted to directors with race data available from ISS, which begins in 2007. Age, Board Chair, CEO, Years on Board, Audit Committee, Nomination & Governance Committee, Compensation Committee, and Executive Committee are included as controls but not tabulated for ease of exposition. Variable descriptions can be found in Appendix A. Continuous variables are winsorized at the one percent level. Standard errors are double clustered at the firm and year level. (*** p < 0.01, ** p < 0.05, * p < 0.10)

	$Departed_{t+1}$					
-	(1)	(2)	(3)	(4)		
Minority×Restatement	.005	()	· /	()		
	[.009]					
Inority	012***					
	[.003]					
$lack \times Restatement$		003				
		[.013]				
lack		009**				
		[.003]				
$Iispanic \times Restatement$			001			
			[.021]			
Iispanic			023***			
			[.004]	000		
$sian \times Restatement$.022		
				[.017]		
Asian				005		
Yamtual	Voc	Voc	Voc	[.005]		
Control Cirm-Year FE	Yes Yes	Yes Yes	Yes Yes	Yes Yes		
	res 102746	res 102746	102746	102746		
V R-squared	.19	.19	.19	.19		

Table 9 (Continued) Financial Restatements and Minority Director Departures

(*** p < 0.01, ** p < 0.05, * p < 0.10)

Panel B: Race	and Female	Director	Departures	after	Restatements

	$Departed_{t+1}$					
	(1)	(2)	(3)	(4)		
$Female \times Restatement \times Minority$	039*					
	[.018]					
$Female \times Restatement \times Black$		011				
		[.024]				
$Female \times Restatement \times Hispanic$			032			
			[.030]			
$Female \times Restatement \times Asian$				064**		
				[.029]		
Control	Yes	Yes	Yes	Yes		
Firm-Year FE	Yes	Yes	Yes	Yes		
N	102746	102746	102746	102746		
R-squared	.19	.19	.19	.19		

Table 10 Instrumental Variables Analysis

This table displays the results of the first and second stage of an instrumental variables regression. The dependent variables in columns 1 and 2 are the instruments, Female and $Female \times Restatement$, respectively. The dependent variable in column 3, the second stage regression, is an indicator denoting whether a director departs a firm. The unit of observation is at the director-firm-year level. The sample reflects directors of firms that can be matched to Compustat from 2001 to 2018. Variable descriptions can be found in Appendix A. Continuous variables are winsorized at the one percent level. Standard errors are double clustered at the firm and year level. (*** p < 0.01, *** p < 0.05, ** p < 0.10)

	First Stage		Second Stage	
	$Female_t$	$Female \times \\ Restatement_t$	$\boxed{ Departed_{t+1} }$	
	(1)	(2)	(3)	
Affirmative Action	.073***	003***	. ,	
	[.006]	[.001]		
Affirmative Action×Restatement	000	.122***		
	[.006]	[.007]		
Female×Restatement (Instrumented)			.063**	
,			[.028]	
Female (Instrumented)			087	
,			[.155]	
Age	004***	000***	.002*	
	[.000]	[.000]	[.001]	
Board Chair	047***	003***	039***	
	[.004]	[.001]	[.009]	
CEO	076***	004***	027**	
	[.006]	[.001]	[.011]	
Years on Board	001*	000	.003***	
	[.000]	[.000]	[000.]	
Audit Committee	004	000	026***	
	[.003]	[.000.]	[.001]	
Nomination & Governance Committee	.025***	.002***	015**	
	[.003]	[.000.]	[.005]	
Compensation Committee	003	.000	014***	
о - г	[.003]	[.000.]	[.002]	
Executive Committee	065***	004***	019*	
	[.005]	[.001]	[.011]	
Firm-Year FE	Yes	Yes	Yes	
First-Stage F-Stat	100	100	77.392	
N	371400	371400	371400	
R-squared	.17	.26	.01	

Table 11 Robustness

The dependent variable is an indicator denoting whether a director departs a firm. The unit of observation is at the director-firm-year level. The sample reflects directors of firms that can be matched to Compustat from 2001 to 2018. The sample in column 1 and 2 further excludes pre-Sarbanes-Oxley years before 2004. The sample in column 2 further excludes the Financial Crisis years of 2007 and 2008. The sample in column 3 further excludes all directors on boards with no female directors. In column 4, we match directors who experience a financial restatement to directors who did not experience a financial restatement on year, gender, time on board, firm size, ROA, leverage, and market-to-book ratios. We match using Coarsened Exact Matching where continuous variables are discretized using quartiles (Iacus et al., 2011, 2012). In column 5, we estimate a Cox Proportional Hazard model instead of a linear probability model (Cox, 1972). Age, Board Chair, CEO, Years on Board, Audit Committee, Nomination & Governance Committee, Compensation Committee, and Executive Committee are included as controls but not tabulated for ease of exposition. Variable descriptions can be found in Appendix A. Continuous variables are winsorized at the one percent level. Standard errors are double clustered at the firm and year level. (*** p < 0.01, ** p < 0.05, * p < 0.10)

	$Departed_{t+1}$				
	Drop pre-SOX	Drop Financial Crisis	Drop Boards w/o Females	Matching	Hazard Model
	(1)	(2)	(3)	(4)	$\overline{\qquad \qquad (5)}$
$Female \times Restatement$.011*	.012*	.011**	.015**	1.486**
	[.005]	[.006]	[.005]	[.006]	[.233]
Female	009***	009***	004	012***	.577***
	[.002]	[.002]	[.002]	[.003]	[.040]
Controls	Yes	Yes	Yes	Yes	Yes
Firm-Year FE	Yes	Yes	Yes	Yes	Yes
N	336512	324213	249741	216373	371400
R-squared	.25	.24	.22	.27	.03

A Variable Definitions

Director Level Variables			
Departure	Indicator variable taking the value one if a director is no longer on the board in		
	the following year, and zero otherwise. Source: BoardEx		
Female	Indicator variable taking the value one if a director is female, and zero otherwise.		
	Source: BoardEx		
Age	Age of the director. Source: BoardEx		
Board Chair	Indicator variable taking the value one if a director is the chair of the board, and		
	zero otherwise. Source: BoardEx		
CEO	Indicator variable taking the value one if a director is also the CEO, and zero		
	otherwise. Source: BoardEx		
Audit Committee	Indicator variable taking the value one if a director sits on the audit committee,		
	and zero otherwise. Source: BoardEx		
Nomination & Governance Com-	Indicator variable taking the value one if a director sits on the nomination		
mittee	governance committee, and zero otherwise. Source: BoardEx		
Compensation Committee	Indicator variable taking the value one if a director sits on the compensation		
	committee, and zero otherwise. Source: BoardEx		
Executive Committee	Indicator variable taking the value one if a director sits on the executive commit-		
	tee, and zero otherwise. Source: BoardEx		
Audit Committee Chair	Indicator variable taking the value one if a director is the audit committee chair,		
	and zero otherwise. Source: BoardEx		
Nomination & Governance Com-	Indicator variable taking the value one if a director is the nomination & gover-		
mittee Chair	nance committee chair, and zero otherwise. Source: BoardEx		
Compensation Committee Chair	Indicator variable taking the value one if a director is the compensation committee		
	chair, and zero otherwise. Source: BoardEx		
Executive Committee Chair	Indicator variable taking the value one if a director is the executive committee		
W. W.L. Di	chair, and zero otherwise. Source: BoardEx		
Mew Male Director	Indicator variable taking the value one if a director is male and new on the board,		
1 (1 · N	and zero otherwise. Source: BoardEx		
ln(1+Number of Future Board	Log of one plus the number of board seats a director holds. Source: BoardEx		
Seats)			
Minority	Indicator variable taking the value one if a director racial background in ISS		
	is either "ASIAN (EXCLUDE INDIAN/SOUTH ASIAN)", "INDIAN/SOUTH		
	ASIAN", "BLACK/AFRICAN AMERICAN", "HISPANIC/LATIN AMERI-		
	CAN", "NATIVE AMERICAN/ALASKAN NATIVE", or "NATIVE HAWAI-IAN/OTHER PACIFIC ISLANDER", and zero otherwise. Source: ISS		
Black	Indicator variable taking the value one if a director racial background in ISS is		
Diack	"BLACK/AFRICAN AMERICAN", and zero otherwise. Source: ISS		
Hispanic	Indicator variable taking the value one if a director racial background in ISS is		
Hispanic	"HISPANIC/LATIN AMERICAN", and zero otherwise. Source: ISS		
Asian	Indicator variable taking the value one if a director racial background in ISS is		
1 Dieni	either "ASIAN (EXCLUDE INDIAN/SOUTH ASIAN)" or "INDIAN/SOUTH		
	ASIAN", and zero otherwise. Source: ISS		
Affirmative Action	Indicator variable taking the value one if a director was 18 or younger in 1965		
Timi moore records	(after the Civil Rights Act of 1964 took effect), and zero otherwise. Source: Field		
	et al. (2020)		

Variable Definitions (Continued)

Firm Level Variables			
Market-to-Book	Market cap divided by previous quarter's common equity. Source: Compustat		
Size	Log of total assets. Source: Compustat		
ROA	Net income divided by the total book value of assets. Source: Compustat		
Debt/Assets	Current and long term debt divided by total assets. Source: Compustat		
Restatement	Indicator variable taking the value one if a firm has an accounting restatement,		
	and zero otherwise. Source: Audit Analytics		
Adverse Restatement	Indicator variable taking the value one if a firm has an accounting restatement		
	that decreases EPS, and zero otherwise. Source: Audit Analytics		
Improving Restatement	Indicator variable taking the value one if a firm has an accounting restatement		
	that increases EPS, and zero otherwise. Source: Audit Analytics		
Female Departure	Indicator variable taking the value one if a firm experienced the departure of a		
	female director, and zero otherwise. Source: BoardEx		
Male Departure	Indicator variable taking the value one if a firm experienced the departure of a		
	male director, and zero otherwise. Source: BoardEx		
Male Chair	Indicaator variable taking the value one if a firm's board has a male chair, and		
	zero otherwise. Source: BoardEx		

B Appendix Tables and Figures

Figure B.1
Minority Share of Directors over Time

This figure displays the minority and female minority share of all directors over time. The sample reflects directors of firms that can be matched to Compustat from 2001 to 2018. The sample is further restricted to directors who have race data available from ISS. Detailed descriptions of how minority directors are indentified can be found in Appendix A.

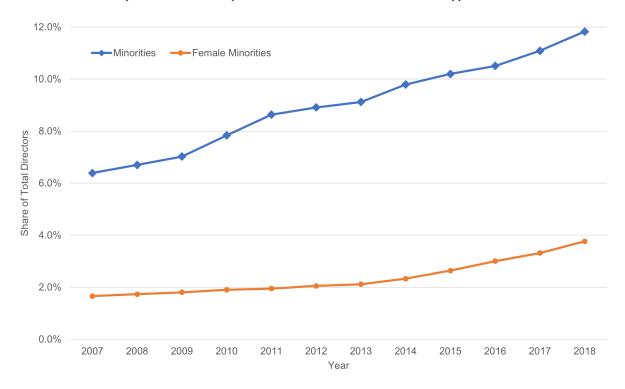


Figure B.2
Minority Share of Female and Male Directors over Time

This figure displays the minority share of female (blue series) and male (orange series) directors over time. The sample reflects directors of firms that can be matched to Compustat from 2001 to 2018. The sample is further restricted to directors who have race data available from ISS. Detailed descriptions of how minority directors are identified can be found in Appendix A.

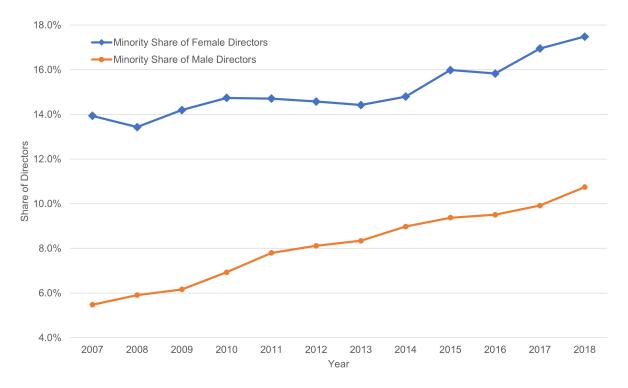


Table B.1 Sample Comparison versus Compustat

This table displays summary statistics for the sample used in the baseline analysis and for the entire Compustat universe. The unit of observation is at the firm level. The sample in columns 1-3 reflects firms with director data available from 2001 to 2018. The sample in columns 4-6 reflects all Compustat firms from 2001 to 2018. Variable descriptions can be found in Appendix A. Continuous variables are winsorized at the 1% level.

		Sample			Compustat	
•	Mean	Median	SD	Mean	Median	SD
Size	7.112	7.113	2.134	6.432	6.399	2.226
ROA	0.008	0.014	0.047	-0.001	0.010	0.062
Debt/Assets	0.220	0.178	0.207	0.215	0.161	0.217
M/B	2.863	1.926	4.271	2.769	1.790	4.634

Table B.2 Clustering Robustness

The dependent variable is an indicator denoting whether a director departs a firm. The unit of observation is at the director-firm-year level. The sample reflects directors of firms that can be matched to Compustat from 2001 to 2018. Variable descriptions can be found in Appendix A. Continuous variables are winsorized at the 1% level. Standard errors are double clustered at the firm (column 1), firm-year (column 2), industry (column 3), industry and year (column 4), and industry-year (column 5) level, where industry is defined at the 4-digit NAICS level. (*** p < 0.01, ** p < 0.05, * p < 0.10)

	$Departed_{t+1}$				
	(1)	(2)	(3)	(4)	(5)
$Female \times Restatement$.011**	.011**	.011**	.011**	.011**
	[.005]	[.005]	[.005]	[.005]	[.005]
Female	008***	008***	008***	008***	008***
	[.001]	[.001]	[.001]	[.002]	[.001]
Age	.002***	.002***	.002***	.002***	.002***
	[000]	[.000]	[.000]	[.000]	[.000]
Board Chair	036***	036***	036***	036***	036***
	[.002]	[.002]	[.002]	[.002]	[.002]
CEO	022***	022***	022***	022***	022***
	[.003]	[.002]	[.002]	[.003]	[.002]
Years on Board	.004***	.004***	.004***	.004***	.004***
	[000]	[.000]	[.000]	[.000]	[.000]
Audit Committee	026***	026***	026***	026***	026***
	[.001]	[.001]	[.001]	[.001]	[.001]
Nomination & Governance Committee	017***	017***	017***	017***	017***
	[.001]	[.001]	[.001]	[.002]	[.001]
Compensation Committee	014***	014***	014***	014***	014***
	[.001]	[.001]	[.001]	[.001]	[.001]
Executive Committee	014***	014***	014***	014***	014***
	[.002]	[.002]	[.002]	[.002]	[.002]
Firm-Year FE	Yes	Yes	Yes	Yes	Yes
Cluster	Firm	Firm \times	Industry	Industry	Industry
		Year	Ť	and Year	\times Year
N	371400	371400	371400	371400	371400
R-squared	.24	.24	.24	.24	.24
-					

Table B.3 Exclusion Restriction

The dependent variable is an indicator denoting whether a director departs a firm. The unit of observation is at the director-firm-year level. The sample reflects directors of firms that can be matched to Compustat from 2001 to 2018. Variable descriptions can be found in Appendix A. Continuous variables are winsorized at the 1% level. Standard errors are double clustered at the firm and year level. (*** p < 0.01, ** p < 0.05, * p < 0.10)

	$Departed_{t+1}$
	(1)
Affirmative Action	005
	[.011]
Female	007***
	[.001]
m Age	.002***
	[.000]
Board Chair	036***
	[.002]
CEO	021***
	[.004]
Years on Board	.004***
	[.000]
Audit Committee	026***
	[.001]
Nomination & Governance Committee	017***
	[.002]
Compensation Committee	014***
	[.001]
Executive Committee	014***
	[.002]
Firm-Year FE	Yes
N	371400
R-squared	.24