Falling through the Glass Ceiling: The Gender Gap in Director Retention after Financial Restatements*

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Abstract

This study provides some of the first evidence on gender-based differences in director retention at US public firms. While men hold the bulk of directorships, female directors are less likely than male directors to depart a board in a given year. However, when boards face adversity by way of financial restatements, the likelihood that female directors depart the board significantly increases compared to male directors at the same firm, especially when the board chair is male. The departing female directors receive fewer future directorships at other firms and are more likely to be replaced by male directors compared to their male counterparts who depart.

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

The gender gap among directors of US public firms is an important issue for both business and government entities, 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 hampered by litigation). Investor 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," and BlackRock said in 2022 that it wants firms in which it invests to "have at least two directors on their board who identify as female " (BlackRock, 2022; ISS, 2018). However, our understanding of the sources of the director gender gap is incomplete: prior research tends to focus on gender-based differences in director appointments but not gender-based differences in director retention (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). To fill this gap in the literature, we provide some of the first evidence on gender-based differences in director departure rates after being appointed, and whether these differences contribute to the director gender gap.

Since the choice to join or depart a board derives from factors that are typically hard for outside researchers to measure directly (workplace environment, directors' assessment of reputation risks, etc.), most prior studies on directors (1) analyze some (but not all) of these factors, and (2) conjecture that these factors systematically correlate with measurable factors and test if directors' behaviors are explained by these factors (e.g., see the analyses of directors in Hermalin and Weisbach, 1988, Tables 3-8; Srinivasan, 2005, Table 6; and Yermack, 2004, Tables V-VII). This is the well-established revealed preference approach in economics (Samuelson, 1948), where, in our case, the variation in director departures itself can be used to indirectly estimate directors' motives for departing a board.

Following the framework above, we start by taking board composition as given and test

for gender-based differences in director departure rates in the steady state. We then move to a dynamic setting that examines how directors respond to adversity, which is an important question because recent research suggests that workplace adversity is one of the leading factors that can foster behaviors that increase gender gaps in career outcomes (e.g., Egan et al., 2022).[1] Specifically, we test for gender-based differences in director departure rates after financial restatements since a primary duty of the board is to hire competent managers to produce accurate financial reports and to monitor financial reporting and accounting controls (Adams et al., 2010, Section 2.2).

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 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 a systematic phenomenon, we would expect female and male directors to follow relatively similar career paths after these experiences when controlling for differences in director and firm attributes. In comparison, the presence of 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

[1] In a substantively different setting than ours, Egan et al. (2022, p. 1185) find that gender gaps in career outcomes widen for financial advisers who commit job misconduct, and note that the link between adverse career events and gender gaps in career outcomes "has received little attention in academia or in policy."

and policymakers whether gender-based career differences after workplace adversity—in our case, restatements—are important sources of the gender gap in director composition that should be considered in future 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 include firm-year-fixed effects that control for any persistent and time-varying firm-level differences that may affect director departure rates. For example, the firm-year-fixed effects control for any differences in corporate culture at the firm and board level as well as any trends related to a firm's industry. We initially look at career paths from the perspective of whether directors keep their positions after the restatement. We follow this up by looking at other career outcomes such as who replaces departing directors and whether departing directors find roles at other firms. Note that virtually all directors who depart a board do so on their own terms without being voted out, and their replacements are handpicked by the firm 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, the likelihood of male director departures is not significantly different compared to non-restatement years, whereas female director departures are significantly more likely compared to non-restatement years. The economic magnitude of this finding is an increase in the female director departure rate of 1.1 percentage points compared to non-restatement years. In conjunction with the plausible exogeneity of restatements from the perspective of individual directors, our identification strategy also employs 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 any persistent and time-varying firm characteristics that may affect both restatement likelihood and board turnover, such as corporate culture at the firm and board level, declining profitability, heightened 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 director age, experience, or committee membership.

To put the economic magnitude of the above result into perspective, we compare the 1.1 percentage point increase in the female director departure rate after financial restatements to the mean director departure rate in non-restatement years (the baseline in the regression). Recall that in years with no restatement, the unconditional likelihood a director departs a board is 8.7 percent on average. Thus, the 1.1 percentage point increase in the female director departure rate after restatements equates to 13 percent of the unconditional director departure rate of 8.7 percent in non-restatement years, which is economically meaningful and more than eliminates the aforementioned 0.7 percentage point difference that females have over men in keeping their board seats in non-restatement years. We also find a comparable economic magnitude when we use as our baseline the mean director departure rate in restatement years of 9.8 percent.

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 directors 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 test whether the gender gap is associated with leadership gender biases (e.g., Becker, 1957; Folke and Rickne, 2022) by checking 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 test 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. 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 test 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 take on significantly fewer future directorships at other firms than their male counterparts who depart the same firm. Fourth, we test whether our findings may be driven by minority status instead of gender. We find that minority directors on average do not exhibit any significant difference in departure rates after financial restatements relative to non-minority directors. Fifth, we test whether our findings are driven by female directors causing restatements or being hired to help firms navigate restatements. We find that the gender composition of a firm's directors does not predict future restatements. Sixth, we test whether female directors may be busier in their professional or personal lives (e.g., sitting on many boards and childcare duties), which may lead them to depart boards at a higher rate after adverse events compared to male directors. Using several proxies for professional and personal busyness, we find that the gender gap in departures after restatements is not driven by busyness.

Having established a gender gap in director departure rates in the year after a restatement, we next explore whether this effect may contribute to the overall gender gap in board composition by testing for a gender gap in the composition of directors who 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 men, which is consistent with men 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 male 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.

We next perform instrumental variable (IV) analyses, falsification tests, and other robustness checks. Adopting the instrument used in Field et al. (2020), we use the plausibly exogenous increase in the pool of potential female directors following the passage of the Civil Rights Act of 1964, which outlawed gender discrimination in college admissions 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 this instrument satisfies the exclusion restriction, i.e., it is unrelated to our outcomes of interest except through its effect on board gender diversity. We find that the gender gap in director departures obtains when instrumenting for gender, suggesting that our results are not likely to be driven by any systematic self-selection of female directors into restatement-prone firms or omitted variables.

In additional 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 implement 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 gender is a key driver of director retention behavior, and 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 candidate education and other attributes. Adams and Kirchmaier (2016) find that females are less represented on boards in the 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 workplace social ties 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 does not analyze gender, other types of directors, 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 a machine-learning technique for nominating directors, but this technique does not incorporate director departures and their replacements, which 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), but these studies do not analyze board gender diversity in settings beyond government mandates.

In their related study on the career paths of 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 substantive ways. First, evidence specific to financial advisers cannot inform future research on boards and the business and policy efforts aimed at reducing the gender gap among directors. Second, directors of public firms have job responsibilities, incentives, and a labor market that differ 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 due to their stock ownership in the firm (Field et al., 2020). Third, 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. By contrast, financial restatements expose both female and male directors at the same firm to nearly identical adverse career shocks. Prior results on financial advisers therefore cannot be generalized to directors.

We also contribute to studies on whether adverse events asymmetrically affect female and male workers in other settings. 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 wages and hiring behavior (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, motivated by recent research suggesting that workplace adversity is one of the leading factors that can foster behaviors that increase 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 hire competent managers to produce accurate financial reports, and to monitor financial reporting and accounting controls (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. Empirically, financial restatements are also ideal due to their pervasiveness, with 7.5 percent of the firm-years in our sample being associated with financial restatements.[2]

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 com-

[2]Alternatives 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.

prehensive databases that covers all financial restatements for US public firms since 2000. Restatement records are identified by AA's analysts using firms' financial statements and other SEC filings. We therefore identify financial restatements using the AA restatement database and later use its distinction for adverse (i.e., EPS decreasing) and improving (i.e., EPS increasing) restatements.

Note 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, financial restatement data in the AA database are accurate and comprehensive.

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.[3] 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, with 4,070 firm-years in which a financial restatement occurred. Our sample contains 63,564 unique directors, of which 6,721 are women.

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 (Ap-

[3]See https://www.boardex.com/data-quality/.

pendix A.1 provides the exact variable definitions). 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 test for differential patterns in departure rates for female and male directors by estimating the following linear probability model of director departure that includes director and firm attributes, with gender as our main variable of interest (this is our "baseline"

model):

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

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; 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 (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.[4]

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 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

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

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 8.7 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.[5]

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 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 firms. In contrast, the likelihood of departure rate increases in $Debt/Assets$ and has no economically significant relation to M/B.

[5]Our 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.

3.2 The gender gap in director departures after restatements

We next run our main regression of interest that tests 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:

$$\begin{aligned} Departed_{i,j,t+1} =& \beta_1 \times Female_i + \beta_2 \times Restatement_{j,t} \\ &+ \beta_3 \times Female_i \times Restatement_{j,t} + \gamma \times \vec{X}_{i,j,t} + \psi_{j,t} + \varepsilon_{i,j,t}, \end{aligned} \tag{2}$$

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.[6]

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 behavior. 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.

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,

[6]In 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.

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 next examine 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 $Adverse\,Restatement$ 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.[7]

[7]For example, investors tend to react more negatively to adverse restatements (e.g., Karpoff et al., 2017). If, by contrast, the restatements in our sample are systematically not decision relevant to directors, this would bias against us finding our results.

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.

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 a culture of corporate favoritism toward men, which may be the result of homophily whereby male directors favor other male directors over female directors (Becker, 1957; McPherson et al., 2001). Another possibility is

that a bias against women stems from negative perceptions of female success in traditionally male-dominated roles (Heilman et al., 2004) or minimizing the contributions of female members in a group (Sarsons et al., 2021). We argue that the gender of the person who chairs the board is one proxy for the presence of such behaviors (the chair is held by a male 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 such 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.

3.4.2 Differences in director attributes by gender

We next test whether specific director attributes may 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 members of their respective boards. This could also mean that with a longer average board tenure, men may be more likely than women to leave a board. Accordingly, in Table 6, columns 3 and 4, we test whether firms shed their least-experienced directors after financial statements. 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).[8] 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. 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.

[8]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,∞).

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

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

3.4.4 Director race

We next test whether our findings are specific to female directors or would obtain for all directors who are minorities (i.e., non-white males). For 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 firms. Similar to female directors, Appendix 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 more likely to be minorities: Appendix 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.

In Table 8, 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 significantly 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 direc-

tors.[10] These findings do not support the hypothesis that our main results are being driven by minority status instead of gender.

In Table 8, 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 $Female \times Restatement \times Minority$ 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.

3.4.5 Female directors as a leading indicator of financial restatements

We next test whether female directors bring about, or are appointed in anticipation of, financial restatements. Adams and Funk (2012) survey directors and CEOs and find that female directors are more independent-minded and value conformity less than male directors, while Gao et al. (2017) suggest that female directors may be more ethically minded. Similarly, Barber and Odean (2001) and Croson and Gneezy (2009), find that females tend to be more risk averse. In light of these documented differences, female directors may be more willing to trigger financial restatements to avoid exposing the firm to fraud risk, even if doing so

[10]Note that the sample size in Table 8 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.

inconveniences the director-group. Furthermore, Adams and Funk (2012) find that female directors care less about achievement and power relative to male directors. As a result, they may be willing to bear adverse career consequences of bringing about restatements, such as departing a board.

In Appendix Table B.3, we examine whether the female board membership is associated with restatement propensity. We estimate firm-level regressions where the dependent variable is an indicator taking the value one if a firm experiences a financial restatement one to three years in the future (columns 1 to 3, respectively). Our independent variable of interest is $\%\,Female\,Directors$, which tracks the female share of a firm's board. All regressions control for size, profitability, leverage, and M/B ratios, in addition to firm- and year-fixed effects. We find that female board representation is not a significant predictor of financial restatements in all the future time horizons considered for restatements. This null result is inconsistent with the hypothesis that the presence of female directors is a leading indicator of financial restatements.

3.4.6 Busy directors

We next test whether our main results are explained by female directors' busyness. We consider two distinct aspects of director busyness: professional busyness and personal busyness. Professional busyness arises when a director sits on many boards. If female directors on average sit on more boards, they may be more inclined to depart a board following an adverse event since they have more directorships to fall back on.[11] Personal busyness arises when a director has personal commitments such as caring for a child. Since childcare duties among married couples fall disproportionately on women, female workers tend to have higher labor supply elasticities (Blau and Kahn, 2007). Therefore, female directors may voluntarily depart a board if an adverse event reduces the attractiveness of a directorship, while their male counterparts may elect to stay.

[11] In our sample, the average female director sits on 2.4 boards, while the average male director sits on 1.8 boards.

In column 1 of Appendix Table B.4, we augment our baseline specification with firm-year-busy director-fixed effects. Following prior literature, we define director busyness as an indicator that equals one if a director sits on three or more boards (Fich and Shivdasani, 2006). Including firm-year-busy director-fixed effects allows us to compare female departure rates following restatements against those of male directors on the same board with similar degrees of professional busyness. We continue to find significant elevated departure rates for female directors following restatements. In column 2, we address personal busyness by including year-age-gender-fixed effects, which allows us to compare female directors within the same age cohort across restatement and non-restatement firms.[12] We assume that women in the same age cohort have similar likelihoods of being married and having dependents. When controlling for personal busyness, we find that the significant gender gap in departures following restatements obtains at economic magnitudes comparable to our main tests, suggesting that director busyness (professional or personal) is not driving our results.

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 financial 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:

$$\begin{aligned} New\ Male\ Director_{i,j,t+1} = {} & \beta_1 Restatement_{j,t} \times Female\ Departure_{j,t} \\ & + \beta_2 Restatement_{j,t} + \beta_3 Female\ Departure_{j,t} \\ & + \gamma \times \vec{X}_{i,j,t} + \delta \times \vec{Y}_{j,t} + \lambda_t + \psi_j + \varepsilon_{i,j,t}, \end{aligned} \tag{3}$$

[12] Note that we cannot include firm-year-age-gender-fixed effects, as our coefficient of interest on $Female \times Restatement$ would not be identifiable.

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 systematically biased toward hiring male directors.

In Table 9, 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.

These findings 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 after restatements. No such effect is observed for the replacement of male directors after restatements. Financial restatements therefore appear to exacerbate the overall gender gap in board composition by driving out female directors who are subsequently more likely to be replaced by males compared to normal times.

3.6 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 plausibly exogenous increase in the pool of potential female directors following the passage of the Civil Rights Act of 1964, which outlawed gender discrimination in college admissions 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 board gender diversity (Field et al., 2020, Section 3.2).

Turning to the IV analysis, Appendix Table B.5 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 $Female \times Restatement$ on $Female \times Affirmative\,Action$. 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 observed gender gap in director departures after financial restatements in these tests.

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 critical concern because our main regressions already include firm-year-fixed effects that eliminate any such differences across firms 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 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 Fig-

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

ure 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 departure 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

This study examines gender-based differences in director retention at US public firms, an important but relatively understudied aspect of directors' careers. We find that while men hold the vast majority of directorships, female directors are less likely than male directors to depart a board in a given year conditional on being appointed. However, following workplace adversity—in our case, financial restatements—the likelihood of male director departures at that firm is not significantly different compared to non-restatement years, whereas female director departures are significantly more likely compared to non-restatement years, especially when the chair of the board is male and when females hold board leadership positions. This

effect more than eliminates the difference that females have over men in keeping their board seats in non-restatement years. We also find that after restatements, the departing female directors receive fewer future directorships at other firms than their male counterparts. The vacancies created by these female director departures are more likely to be filled by males compared to the vacancies created by male director departures at the same firm. All our analyses are performed within firm, and we plausibly rule out alternative explanations for our findings, including director self-selection into restatement-prone firms, changes in board composition leading up to restatements, and director attributes such as busyness, experience, and race. To the best of our knowledge, this is some of the first evidence on gender-based differences in director retention behavior.

Our findings supplement prior research on gender-based differences in director appointments (e.g., Field et al., 2020) and have broader implications for research examining the relation between workplace adversity and gender gaps in career outcomes (e.g., Egan et al., 2022). Our findings also inform business and government entities currently trying to reduce the director gender gap (e.g., BlackRock, 2022; ISS, 2018). With our analysis following a revealed-preference approach (Samuelson, 1948), a potential extension of our study could be to interview directors to better identify gender-based differences in individual preferences for departing a board. Historically, this is similar to the path taken by research on gender gaps in other aspects of human decision-making (e.g., risk aversion, willingness to compete), which started largely with observational studies and progressed to smaller-sample surveys and experiments (e.g., Bertrand, 2018; Campbell, 2002; Gneezy et al., 2003; Niederle and Vesterlund, 2007, 2011; Reuben et al., 2022). We also cannot test all possible labor dynamics among directors, so future research could examine director retention behavior in other settings or use restatements as a plausible instrument for female director departures.

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Figures and Tables

Figure 1
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.

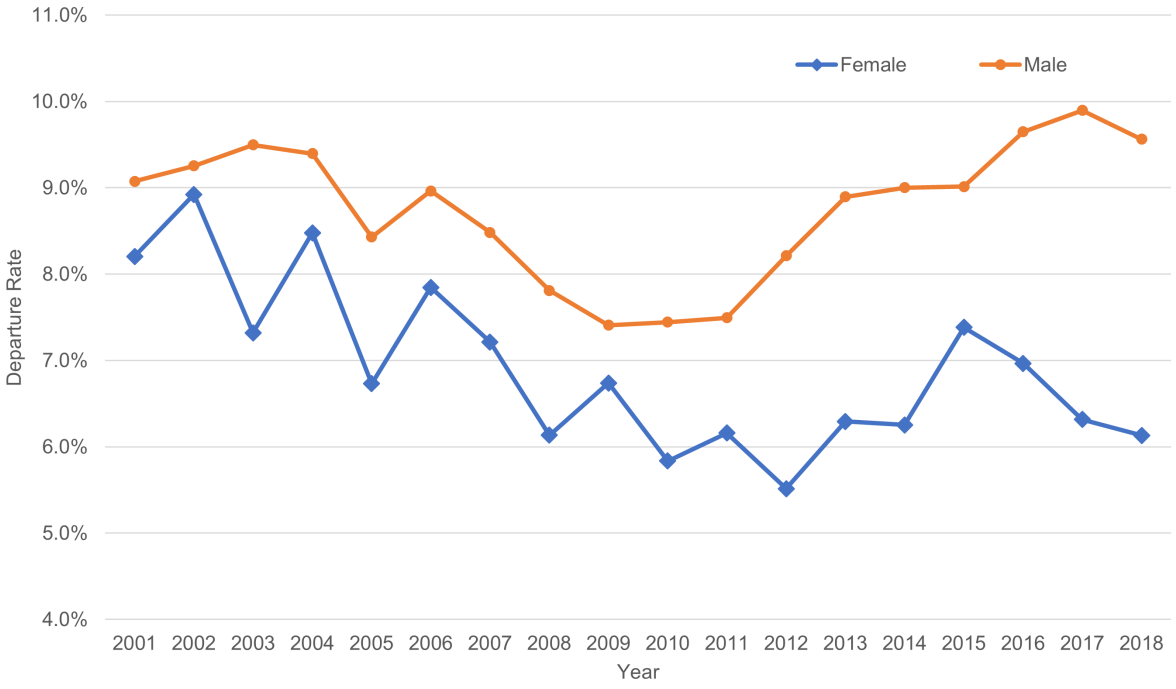


Figure 2
Female Share of Directors over Time

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.

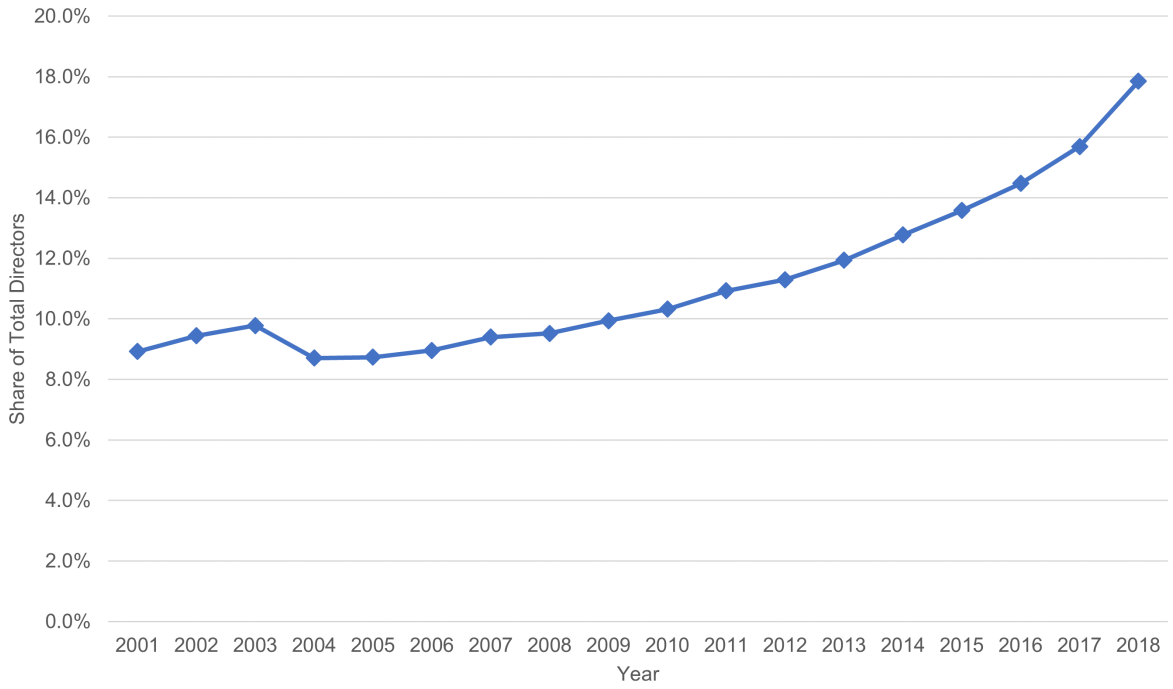
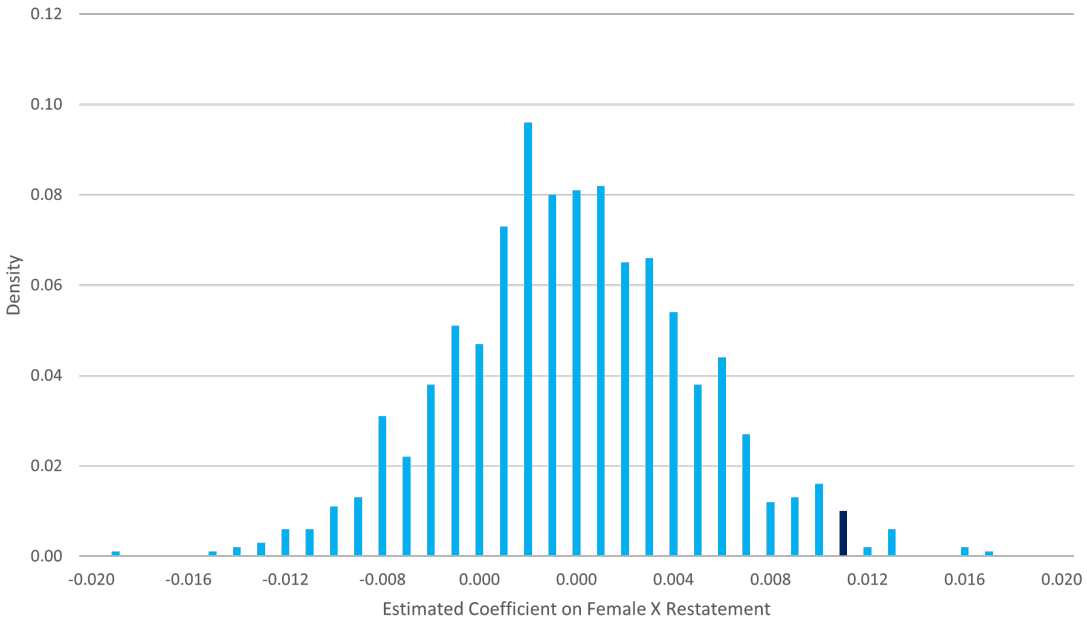


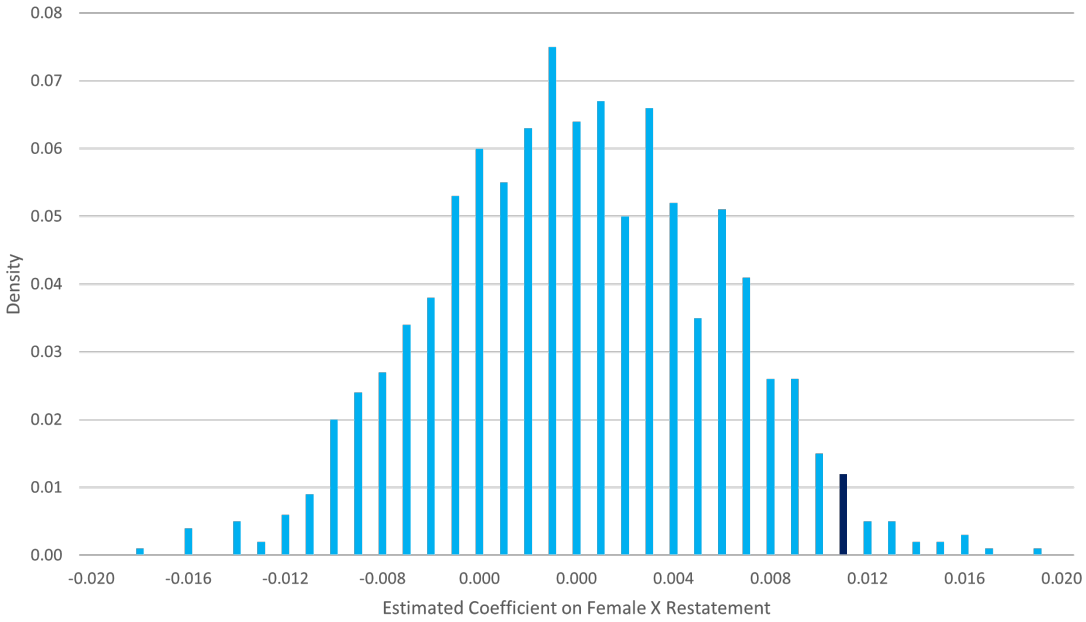
Figure 3
Falsification Tests

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

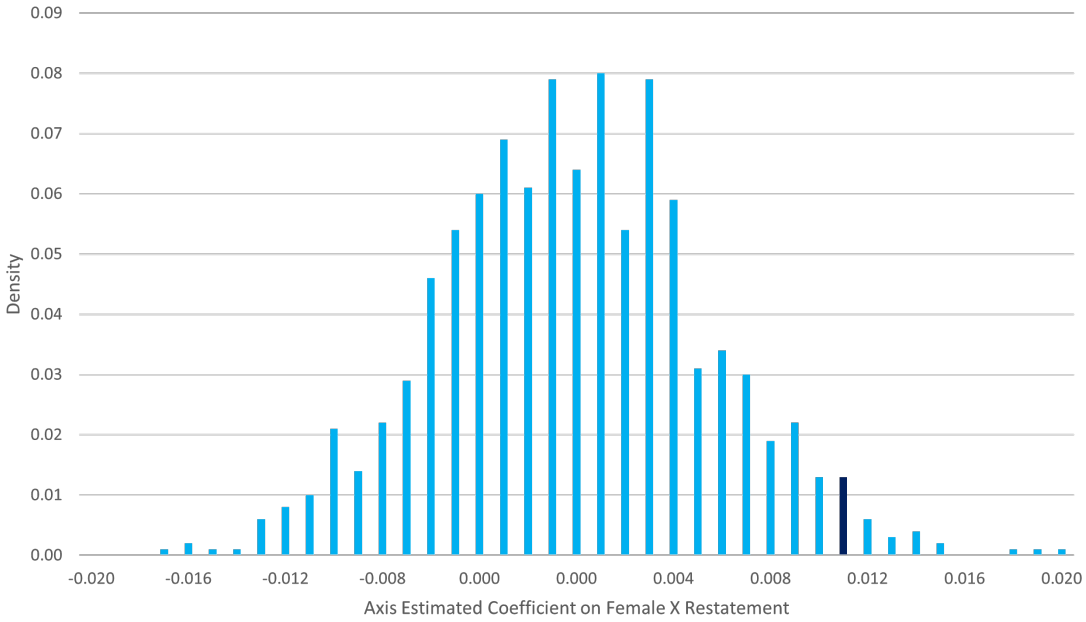


Table 1
Summary Statistics

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			No Restatement		
	Mean	SD	N	Mean	SD	N
	(1)	(2)	(3)	(4)	(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

Panel B: Summary Statistics by Gender

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

	$Departed_{t+1}$			
	(1)	(2)	(3)	(4)
Female	-.022***	-.008***	-.008***	-.007***
	[.002]	[.002]	[.002]	[.002]
Age		.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			-.269***	
			[.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
N	458026	371472	371472	371400
R-squared	.04	.06	.06	.24

Table 3
Financial Restatements and 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. (*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$)

	$Departed_{t+1}$			
	(1)	(2)	(3)	(4)
Female×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]	
Age		.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
N	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. (*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$)

	$Departed_{t+1}$					
	(1)	(2)	(3)	(4)	(5)	(6)
Female×Adverse Restatement	.011*					
	[.005]					
Female×Improving Restatement		.002				
		[.009]				
Female×Restatement×Audit Committee Chair			.027***			
			[.008]			
Female×Audit Committee Chair			.007			
			[.004]			
Restatement×Audit Committee Chair			-.004			
			[.006]			
Audit Committee Chair			-.029***			
			[.002]			
Female×Restatement×Nomination & Governance Committee Chair				.007		
				[.017]		
Female×Nomination & Governance Committee Chair				-.001		
				[.005]		
Restatement×Nomination & Governance Committee Chair				-.004		
				[.005]		
Nomination & Governance Committee Chair				-.014***		
				[.002]		
Female×Restatement×Compensation Committee Chair					.016	
					[.012]	
Female×Compensation Committee Chair					.003	
					[.005]	
Restatement×Compensation Committee Chair					-.003	
					[.004]	
Compensation Committee Chair					-.019***	
					[.001]	
Female×Restatement×Executive Committee Chair						-.026
						[.027]
Female×Executive Committee Chair						.017
						[.012]
Restatement×Executive Committee Chair						-.017*
						[.010]
Executive Committee Chair						.003
						[.003]
Female×Restatement			.008	.010*	.010**	.011**
			[.006]	[.006]	[.004]	[.005]
Female	-.008***	-.007***	-.009***	-.008***	-.009***	-.008***
	[.002]	[.002]	[.002]	[.002]	[.002]	[.002]
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	371400	371400	371400	371400	371400	371400
R-squared	.24	.24	.24	.24	.24	.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×Restatement	-.015	.013**	-.015
	[.018]	[.005]	[.017]
Female	.001	-.009***	.002
	[.007]	[.002]	[.007]
Female×Restatement×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,∞). 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,∞). 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×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 After Restatement	Two Years After Restatement	Three Years After Restatement	Four Years After Restatement	Five Years After Restatement
	(1)	(2)	(3)	(4)	(5)
Female×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
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. (*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$)

Panel A: Race and Director Departures after Restatements

	$Departed_{t+1}$			
	(1)	(2)	(3)	(4)
Minority×Restatement	.005			
	[.009]			
Minority	-.012***			
	[.003]			
Black×Restatement		-.003		
		[.013]		
Black		-.009**		
		[.003]		
Hispanic×Restatement			-.001	
			[.021]	
Hispanic			-.023***	
			[.004]	
Asian×Restatement				.022
				[.017]
Asian				-.005
				[.005]
Control	Yes	Yes	Yes	Yes
Firm-Year FE	Yes	Yes	Yes	Yes
N	102746	102746	102746	102746
R-squared	.19	.19	.19	.19

Table 8 (Continued)
Financial Restatements and Minority Director Departures

Panel B: Race and Female Director Departures after Restatements

	$Departed_{t+1}$			
	(1)	(2)	(3)	(4)
Female×Restatement×Minority	-.039*			
	[.018]			
Female×Restatement×Black		-.011		
		[.024]		
Female×Restatement×Hispanic			-.032	
			[.030]	
Female×Restatement×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 9
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 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* × *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
	$Female_t$	$Female \times Restatement_t$	$Departed_{t+1}$
	(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***
	[.003]	[.000]	[.002]
Executive Committee	-.065***	-.004***	-.019*
	[.005]	[.001]	[.011]
Firm-Year FE	Yes	Yes	Yes
First-Stage F-Stat			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)	(5)
Female×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 & Governanace Committee	Indicator variable taking the value one if a director sits on the nomination & 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 committee, 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 & Governanace Committee Chair	Indicator variable taking the value one if a director is the nomination & governance 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 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, and zero otherwise. Source: BoardEx
ln(1+Number of Future Board Seats)	Log of one plus the number of board seats a director holds. Source: BoardEx
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 AMERICAN", "NATIVE AMERICAN/ALASKAN NATIVE", or "NATIVE HAWAIIAN/OTHER PACIFIC ISLANDER", and zero otherwise. Source: ISS
Black	Indicator variable taking the value one if a director racial background in ISS is "BLACK/AFRICAN AMERICAN", and zero otherwise. Source: ISS
Hispanic	Indicator variable taking the value one if a director racial background in ISS is "HISPANIC/LATIN AMERICAN", and zero otherwise. Source: ISS
Asian	Indicator variable taking the value one if a director racial background in ISS is 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 (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.

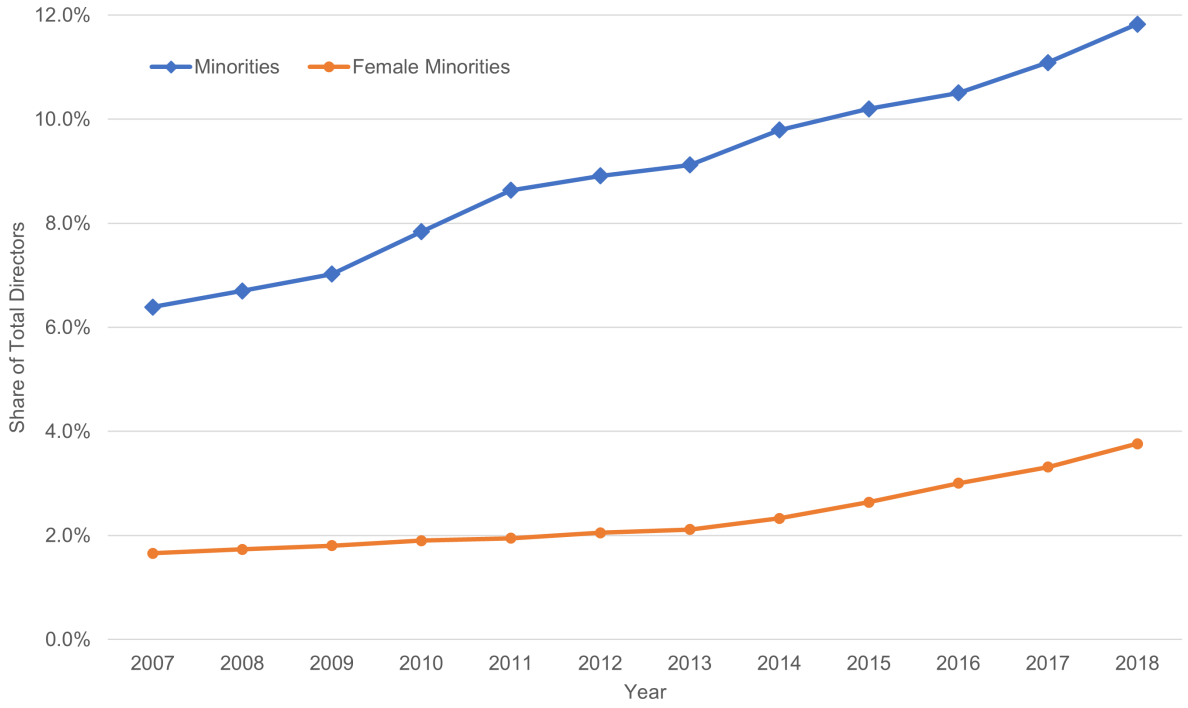


Figure B.2
Minority Share of Female and Male Directors over Time

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.

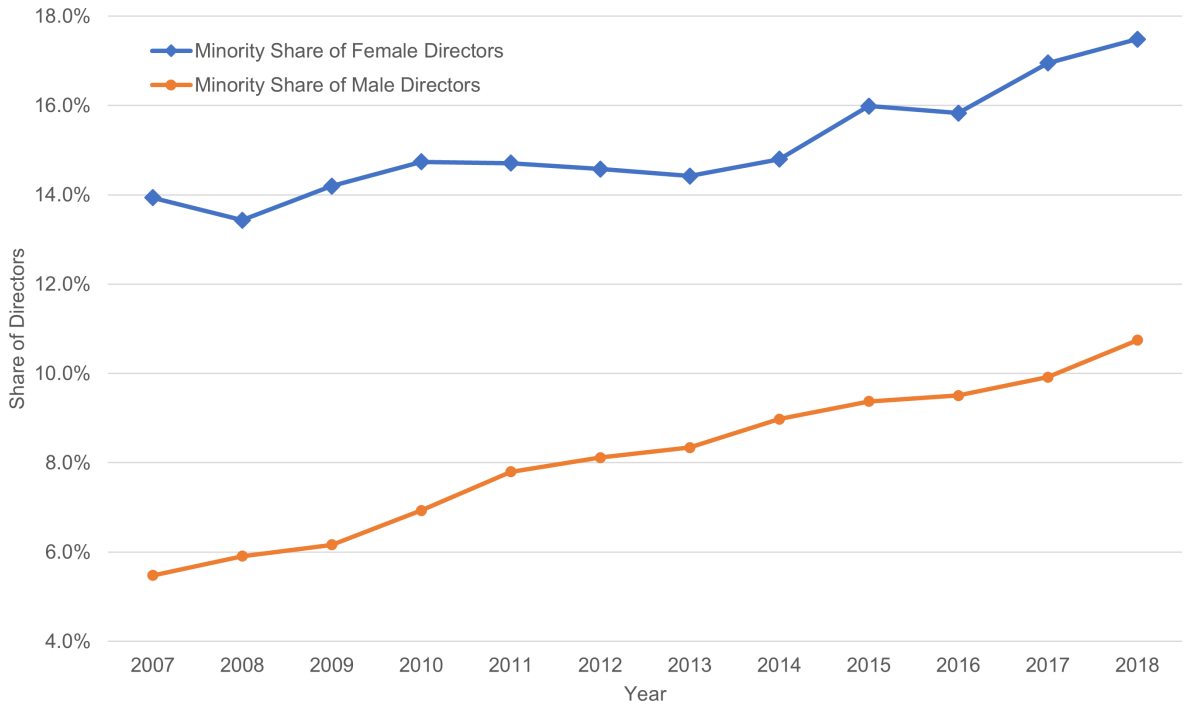


Table B.1
Sample Comparison versus Compustat

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×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 × Year	Industry	Industry and Year	Industry × Year
N	371400	371400	371400	371400	371400
R-squared	.24	.24	.24	.24	.24

Table B.3
Female Director Share and Future Restatements

The dependent variable is an indicator denoting whether a firm experiences a financial restatement one (column 1), two (column 2), or three (column 3) in the future. The unit of observation is at the firm-year level. The sample reflects firms that can be matched to Compustat from 2001 to 2018 with director data availabe. 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. (*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$)

	$Restatement_{t+1}$	$Restatement_{t+2}$	$Restatement_{t+3}$
	(1)	(2)	(3)
% Female Directors	-.011	-.008	-.021
	[.026]	[.030]	[.023]
Size	.012***	.012***	.009**
	[.004]	[.004]	[.004]
ROA	-.065	-.153***	-.096
	[.053]	[.047]	[.064]
Debt/Assets	.025*	.014	.018
	[.012]	[.015]	[.016]
M/B	-.001	.000	-.000
	[.000]	[.000]	[.000]
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
N	52976	46691	40814
R-squared	.17	.17	.17

Table B.4
Director Busyness 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-Busy Director fixed effects, which are created by interacting firm-year categories with an indicator taking the value one if a director sits on three or more board seats, and zero otherwise. Column 2 includes Year-Age-Gender fixed effects, which are created by interacting year categories with age categories and *Female*. 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,∞). 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)
Female×Restatement	.012**	.014***
	[.005]	[.004]
Female	-.008***	
	[.002]	
Restatement		-.001
		[.003]
Controls	Yes	Yes
Firm-Year-Busy Director FE	Yes	No
Firm FE	No	Yes
Year-Age-Gender FE	No	Yes
N	357811	371466
R-squared	.28	.07

Table B.5
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]
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