# Mandatory Disclosure and Female Representation in Corporate Leadership: Evidence from NASDAQ

Dhruv Baswal

Bhargav Gopal*

Tanvir Ahmed Khan

Bailey M. Kraus

**Preliminary and Incomplete (Do Not Cite) — February 8, 2026**

**Abstract**

We study how firms and financial markets respond to mandates requiring disclosure of information. The context is NASDAQ's board diversity rule, a comply-or-explain regulation requiring listed firms to disclose board gender composition and either appoint at least one female director or explain non-compliance. Unlike gender quotas, this disclosure-based mandate operates through market pressures rather than financial penalties, allowing reputational concerns to shape firm behavior. Using NYSE-listed firms as a control group, we find that mandatory disclosure increases female board representation by 5%, with effects concentrated among larger firms and those with higher pre-regulation Environmental, Social, and Governance ratings. Event-study evidence shows abnormal returns of approximately 0.5% for NASDAQ firms around regulatory approval and -0.5% around judicial repeal, with larger effects for firms with all-male boards. Firms that choose to explain most often cite supply-side constraints such as an inability to find qualified candidates. Our findings indicate that mandatory disclosure generates positive valuation effects but only modestly increases gender diversity in corporate leadership.

*Corresponding Author: Smith School of Business, Queen's University. Email: b.gopal@queensu.ca. Gopal acknowledges funding from CPA Ontario Research Centre and SSHRC. We are grateful to Justin McCrary and Evan Jo for helpful discussions. We thank Alliyah Barry and Gigi Juriansz for excellent research assistance.

# 1 Introduction

How do firms and financial markets respond to information disclosure mandates? A new regulatory frontier has emerged to increase diversity in corporate boardrooms: mandates that require disclosure of diversity statistics and explanations for non-diverse boards. Unlike quotas, mandatory disclosure affects behavior by altering information available to market participants, potentially generating market pressures that can influence firm conduct (Stiglitz 2002; Leuz and Wysocki 2016). If firms face sizable reputational costs from stakeholders for revealing a lack of diversity, they may add women to their boards to avoid negative scrutiny, rather than merely providing an explanation. Alternatively, if information surrounding board diversity was already widely available to stakeholders prior to the regulation, perhaps through voluntary disclosures (e.g., Ross 1979; Grossman 1981), then mandatory disclosure regulations should have limited impacts.

In this paper, we provide the first causal evidence on the effects of mandatory diversity-disclosure regulations in the United States. We find that mandatory disclosure increases female board representation by 5% and raises firm valuations by 0.5%. Our setting is the NASDAQ board diversity rule, approved by the Securities and Exchange Commission (SEC) on August 6, 2021. The rule required NASDAQ-listed firms to disclose the annual gender and demographic composition of their boards and either (i) include at least one female and one other diverse director, or (ii) explain why they did not.[1] The regulation featured a multi-year phase-in period (one diverse director by 2023 and two by 2025) and was ultimately struck down by the Fifth Circuit Court in a split decision on December 11, 2024. We answer four sets of questions: 1) Do firms increase gender diversity in response to the mandatory diversity-disclosure requirement, and what types of firms are most responsive? 2) How do investors perceive the regulation as reflected by share price reactions to its adoption and unexpected repeal? 3) How does the regulation affect medium-run financial outcomes? and 4) How do firms that maintain non-diverse boards explain their choice,

[1] More specifically, firms are required to have at least one director who self-identifies as female and another who self-identifies as an underrepresented minority or LGBTQ+. If a firm has five or fewer board members, it needs only one diverse member to comply. We focus on gender diversity in this paper because data on board gender composition is more complete and reliably measured than information on ethnic, racial, or sexual orientation diversity. The rule imposed no financial penalties for companies choosing to explain.

based on a textual analysis of their explanations?

To evaluate the causal effects of mandatory disclosure on annual measures of board diversity and financial outcomes, we compare NASDAQ-listed firms (treated) with NYSE-listed firms (control) using a difference-in-differences design. NYSE-listed firms serve as an ideal control group because they are subject to similar U.S. regulations enforced by the SEC but are not subject to the NASDAQ-specific mandate to disclose diversity. Although the two exchanges differ cross-sectionally, the identifying assumption relies on parallel trends and not identical baseline characteristics. As a robustness check, we use the synthetic difference-in-differences (SDiD) estimator of Arkhangelsky et al. (2021), which constructs a counterfactual for NASDAQ firms as weighted combinations of NYSE firms that best reproduce pre-treatment trends.[2] We use firm fixed effects and cluster standard errors at the firm level.

We find mandatory disclosure increases the female board share by 0.8 percentage points – approximately a 5% increase relative to a baseline mean of 20% (Figure 1). The increases in the female share are concentrated among larger firms and those with higher Environmental, Social, and Governance (ESG) scores prior to the regulation (both defined as above the median in 2020), suggesting these firms may have faced greater reputational costs for disclosing a lack of diversity. Compliance occurs primarily at the extensive margin, consistent with all-male boards adding a single female director to avoid filing an explanation. The SDiD estimator yields qualitatively similar results.

In standard asset-pricing frameworks, news about expected firm value is reflected in share prices at the time it arrives (MacKinlay 1997). We examine Cumulative Abnormal Returns (CARs) around both the SEC's approval of NASDAQ's diversity rule and its subsequent split-decision repeal by the Fifth Circuit. Following the rule's approval, NASDAQ-listed firms experienced larger positive abnormal returns than NYSE-listed firms, with gains concentrated among firms that pre-

[2]As additional robustness checks, we restrict the sample to firms that were diverse in 2020 (the year before implementation) and track them over time, before and after the regulation. We also estimate a triple-difference specification using variation between NASDAQ and NYSE firms, before and after the regulation, and among companies that did and did not have diverse boards prior to the regulation. Both specifications typically yield insignificant effects, as there are only 86 firms on the NYSE with all-male boards prior to the regulation.

viously had no female directors. The one-day CAR after SEC approval is 0.486% for NASDAQ firms and statistically significant at conventional levels, compared with –0.056% and statistically insignificant for NYSE firms. In contrast, the rule's split-decision judicial repeal is associated with negative abnormal returns for NASDAQ firms (–0.531%) and negligible returns for NYSE firms (0.038%), with the losses again concentrated among firms that lacked board diversity prior to the court's decision.[3] We highlight the losses from judicial repeal closely mirror the gains from adoption for NASDAQ firms and the null effects for NYSE firms, mitigating the usual concerns about event-anticipation and confounding events.

In the three years following the regulation, we find precisely estimated null effects on firm operating performance and key governance outcomes, including CEO turnover and compensation. We find no evidence of evasive behavior, such as delistings or shifts in IPO venue. Firms did, however, adjust board composition at the margin: boards became more educationally credentialed and included more first-time directors, though we observe no reductions in other forms of relevant experience. Textual analysis of explanations provided by firms that remained non-diverse indicates that supply-side constraints such as a lack of qualified candidates and merit-based hiring considerations constitute the majority of stated rationales. Taken together, these findings indicate that mandatory disclosure generates value-positive market responses while inducing only modest changes in board composition, highlighting both the promise and limits of disclosure-based governance.

**Relationship to the Literature:** Our paper contributes to three strands of literature. It is most directly related to nascent research studying the effects of mandatory disclosure of diversity statistics. Bakke et al. (2021) and Hu, Hung, and Li (2025) study Canada's 2014 policy that required mandatory disclosure of female representation on corporate boards. Bakke et al. (2021) find that Canada's regulation increased the female share by 4 percentage points or approximately 40%. From examining share prices, they find that firms most affected by the regulation exhibit positive

[3]As a robustness check, we also compute abnormal returns at the portfolio level (Jaffe 1974; Allen and Wahid 2023). Under this specification, we do not detect significant abnormal returns around SEC approval, while the judicial repeal is associated with negative abnormal returns of –0.6% for all NASDAQ firms and –1.3% for NASDAQ firms with all-male boards; no discernible effects are observed for NYSE firms.

and statistically significant cumulative abnormal returns around the announcement, with two-day abnormal returns of 2%. Hu, Hung, and Li (2025) find similar first-stage point estimates and show that the increase in the percentage of women directors is larger when firms face stronger shareholder oversight, as reflected by ESG-friendly investors, pension fund ownership, and institutional ownership. In addition, they show that firms with stronger diversity commitments experience a greater increase in ownership by ESG-friendly investors.[4]

Unlike the Canadian context, we document substantially smaller effects of NASDAQ's mandatory disclosure regulation on female representation. Our evidence does not support the view that the "naming and shaming" effect of comply-or-explain regulations has similar effects on board composition as quotas, as argued by Fried (2021). Several factors may contribute to the smaller point estimates in our study. First, this regulation did not bundle requirements to disclose diversity statistics with requirements to disclose specific policies for increasing female representation.[5] Second, the U.S. corporate governance model is associated with shareholder rather than stakeholder primacy, as articulated by Friedman (1970). Third, the time period also plays a factor – board gender diversity doubled from 2010 to 2020 in the U.S., and Diversity, Equity, and Inclusion (DEI) policies in the workplace faced backlash over our sample period (Bian, Li, and Li 2023). Despite these differences, we similarly find that ESG-oriented firms particularly increased female representation and that investors appear supportive of mandatory disclosure. Given the small changes to financial outcomes following the regulation, we share the interpretation of Hu, Hung, and Li (2025) that investors' positive reaction to mandatory disclosure reflects changes to expected returns rather than cash flows. Relative to prior work, our study is also unique in providing a textual analysis of comply-or-explain justifications in the diversity setting.

Research on DEI in the workplace has largely focused on gender quotas on corporate boards.

[4] See also Bourveau, Gao, and Hope (2025), who study Canada's follow up 2020 regulation that requires disclosure of racial diversity as opposed to gender diversity. They find racial diversity on corporate boards increases by roughly 33% relative to baseline levels, but document minimal effects for racial diversity in senior management.

[5] As discussed in Bakke et al. (2021), the Canadian regulation required firms to disclose the details of any policies concerning the identification and nomination of women directors, the board's consideration of the representation of women in the director identification and selection process, whether the firm has adopted targets for representation of women on the board, and whether the firm has director term limits. The amendment is principles-based, as listed firms are required to disclose these policies or to provide an explanation for their absence.

While their effects on firm performance remain debated, there is broad consensus that quotas substantially increase female board representation. For example, studies of Norway's 2003 quota document increases in the female share of roughly 30–35 percentage points, alongside evidence of firm restructuring to avoid quota requirements and mixed valuation effects (Ahern and Dittmar 2012; Bertrand et al. 2019; Eckbo, Nygaard, and Thorburn 2022). Within the U.S., research on California's gender quota finds first-stage effects of approximately 10 percentage points in the three years preceding NASDAQ's regulation (Allen and Wahid 2023; Gopal 2025). Some studies find non-negative to positive market responses (Allen and Wahid 2023), while other work reports short-run negative share-price reactions of 1-2% following the quota's adoption or repeal (Hwang, Shivdasani, and Simintzi 2018; Greene, Intintoli, and Kahle 2020; Von Meyerinck et al. 2018; Klick 2025).[6] Institutional investor pressure has also been shown to increase female board representation in magnitudes comparable to quotas (Gormley et al. 2023). In contrast to these quota and pressure-based interventions, we show that mandatory disclosure imposes minimal constraints on firms, as reflected by minimal evasion and smaller increases in diversity induced by the regulation.

Finally, we contribute to the broader literature on the economics of disclosure and financial reporting regulation, as recently reviewed by Leuz and Wysocki (2016). A central challenge identified in this literature is the difficulty of establishing credible counterfactuals—specifically, unaffected control groups and natural experiments that enable clean identification of regulatory effects and their economic consequences. We view our study as making progress in addressing this challenge by using an unaffected control group of NYSE-listed firms and conducting an event study around both adoption and split-decision repeal. Leuz and Wysocki (2016) further categorize the potential economic benefits of disclosure into seven dimensions: market liquidity, cost of capital, Tobin's Q, investors' portfolio allocations, the analyst and broader information environment, capital raising and structure, and investment behavior. We typically find small or null effects in the mechanisms we examine—including changes in cash flows, return on assets, corporate governance

[6] As in Gopal (2025), board gender diversity exhibits mean reversion in our sample, motivating the use of difference-in-differences methods rather than the traditional shift-share instrument used in prior literature. We similarly observe a cross-sectional relationship between diversity and firm size in our sample.

actions, and observable board characteristics—so these mechanisms do not appear to explain the positive announcement returns.[7] We leave the exploration of other channels to future work.

# 2 Legal Context

The NASDAQ board diversity rule, proposed on Dec 1, 2020, seeks to enhance diversity among the board members of NASDAQ-listed companies. Approved by the U.S. Securities and Exchange Commission (SEC) on Aug 6, 2021, the rule requires companies to comply by including diverse members on their board, or explain why they have not. Specifically, companies must have at least two diverse directors: one identifying as female, and one from an underrepresented racial or ethnic minority group or identifying as LGBTQ+. The rule was not a mandate; a company that did not meet the board's diversity objective could satisfy it by providing an explanation along with its board diversity matrix in its proxy statement, information statement, or company website. One important aspect to note for our study is that firms were initially only required to meet one of these two requirements.

NASDAQ provided a transition period to meet compliance requirements. Full compliance with the requirement for two diverse directors was expected five years after implementation of the policy, or two years after the company's listing, whichever came later. For the requirement of one diverse director, full compliance was expected by two years post policy implementation, or one year after the company's listing, whichever comes later. For firms with five or fewer directors, the policy only required that the firm include one diverse director on their board or provide an explanation for their absence. These firms faced the same two year deadline.

The SEC unexpectedly repealed the rule on Dec 11, 2024. We have used both the approval and repeal dates to assess the market's short-term reaction to the rule. Table A1 outlines these key milestones related to the NASDAQ's board diversity rule. The response from the policy by investors and firms allows for an understanding of how both entities react to the presence of a

[7] We observe negative effects for Tobin's Q, though its use as a measure of firm value is contested (Bartlett and Partnoy 2020).

policy that allows for compliance through diversity or explanations.

Before 2010, corporate diversity disclosure was largely voluntary for companies in the US. Companies that provided the information typically included it as part of their corporate social responsibility or annual reports, which often aimed to build legitimacy with stakeholders. Although voluntary disclosure was prevalent, there was a lack of disclosure standardization. For example, disclosure often varied in content, making company comparisons difficult.

Even without mandated diversity disclosure, investors could gather clues. For example, inferences could be made from proxy statements with director photos, and gender identification from names. Photos were optional, many firms provided text-only proxy statements, names could be ambiguous, and there was no racial identification. Recent developments indicate a shift in the landscape of proxy statements. For example, in the U.S. major proxy advisors like ISS announced they will no longer consider racial or gender board diversity when making voting recommendations for director elections.

Reporting gender statistics by companies took place, but it was rare and unregulated. Before 2021, voluntary board diversity disclosure in the U.S. was driven primarily by investor pressure, rather than mandatory federal rules.found that firms are more likely to voluntarily disclose gender diversity when women comprise a higher proportion of their workforce, consistent with managerial incentives to disclose favorable information.

Past accounts suggest that diversity data was weak. The 2015 US Government Accountability Office report found that comprehensive and comparable data on the diversity of board members was incomplete and limited. The GAO noted that companies were not consistently required to report comprehensive board demographic data in a standardized format, which led to significant gaps.

Companies are legally required to list directors' names in annual reports or filings. For example, in the US, public companies file detail forms such as the 10-K with the SEC which mandate disclosure of directors and officers. Companies have been disclosing these director names for decades under US securities laws including the Securities Exchange Act of 1934, requiring dis-

closure of directors, officers, and significant shareholders through periodic filings (10-K, 10-Q) as well as proxy statements. However, companies did not always have to disclose director names on annual reports because these disclosure rules have evolved. The Corporate Transparency Act of 2021 mandated much broader beneficial ownership and director info for FinCEN (a bureau of the US Treasury) which was enacted in 2021 and effective January 1, 2024. While companies have long included director names on annual reports, recent laws have dramatically expanded who must disclose.

# 3 Data Description and Summary Statistics

## 3.1 Data Sources

We link data from BoardEx, Compustat, and the Center for Research in Security Prices (CRSP) to examine both compliance and firm performance in response to the NASDAQ board diversity rule[8]. Our sample size following our matching process across these three data sets can be found in Table 1. Our yearly sample ranges from approximately 3,100 to 4,100 firm observations per year between 2017 and 2024, with the policy being approved on August 6th, 2021. These data from BoardEx allow for the construction of two key measures in our sample: (i) the share of women on the board, and (ii) an indicator for all-male boards (AMB).

To study the financial performance of firms in response to the NASDAQ policy, we link the BoardEx data to Compustat and CRSP. Table A11 shows the yearly match rate of observations from BoardEx with CRSP and Compustat Fundamentals. We find a match rate of both datasets with BoardEx of around 90-95%. From Compustat, we observe firm value and performance, through return on assets, Tobin's Q, total assets, sales, leverage, and cash-to-assets ratio. Industry classification codes are pulled from Compustat. We also observe company policies, which are derived from CRSP in the Events dataset.

Most of our financial variables come from Compustat in quarterly and annual form. We calcu-

[8]We use the crosswalk provided by WRDS to match data across BoardEx, Compustat, and CRSP.

late key parameters with the following definitions using Compustat data. Tobin's Q is the ratio of market value to book value of assets, where market value is calculated as common shares outstanding multiplied by price per share added to long- and short-term debt. Return on assets is calculated as the ratio of net income to total assets. Leverage is the ratio of long- and short-term debt to total assets. Cash-to-assets ratio is the ratio of cash and other short-term investments to total assets. To study the turnover and compensation of board members, we link our data to Execucomp using the gvkey from Compustat. Additionally, we merge with ESG scores from Sustainalytics and MSCI.

## 3.2 Sample Description

In comparing the full sample across NASDAQ- and NYSE-listed firms, there are notable cross-sectional differences. Table 2 provides summary statistics for the variables described above. The summary statistics are based on a cross section of the data of firms that were domestic and listed on NASDAQ or NYSE in 2020. The top half of the table includes the full sample, and the bottom half restrict to AMB as of 2020, which is immediately before the approval of the NASDAQ policy. NASDAQ firms are smaller, have more AMBs, are less likely to have expanded board size, are younger, and are smaller in terms of number of employees compared to NYSE firms. In terms of firm characteristics, NASDAQ firms have lower return on assets, total assets, sales, and leverage than NYSE firms, and higher Log(Tobin's Q) and cash to assets. There are also notable differences in industry composition, with there being a higher proportion of firms in Energy, Materials, Industrials, Consumer Discretionary, and Utilities among NYSE firms, and a higher proportion of firms in Health Care and Information Technology among NASDAQ firms. Note that all differences listed here are statistically significant at the 1% level. When we restrict to AMBs in Table A2, some of these differences are no longer statistically significant at this level. Notably, these cross-sectional differences do not pose a challenge to our identification strategy, which relies on parallel trends assumptions, rather than identical baseline characteristics.

As described in Section 2, firms that did not comply with NASDAQ's disclosure policy were expected to provide an explanation for their lack of compliance. We hand-collected data on a subset

of noncompliant NASDAQ companies regarding their explanations that they provided. We use this data to understand the reasons firms provide when they are unable to fulfill the requirement. We performed this textual analysis by linking the explanations to the firm data from BoardEx, Compustat, and CRSP.

# 4 Results

## 4.1 Compliance

Unlike evidence from other countries, we find no indication that firms systematically avoided the NASDAQ diversity rule through delisting or IPO listing decisions. For example, studies of Norway's 2003 gender quota document substantial evasion: only one-third of treated companies ("ASA" companies in Norway) remained listed within five years of the announcement of the quota (Bertrand et al. 2019). In comparison, the NASDAQ diversity rule is a 'soft-touch' regulation. As a "comply or explain" mandate without financial penalties, the rule plausibly operates through disclosure and reputational incentives rather than through binding constraints that would induce exchange avoidance. Consistent with this reasoning, the difference in the rate of delisting and IPO listing between NASDAQ (treated) and NYSE (control) followed similar patterns before and after the regulation. Strategic avoidance might show up as (i) a higher NASDAQ delisting/attrition relative to NYSE, and/or (ii) a reduction in the NASDAQ–NYSE IPO rate differential on or after 2020.

We find no evidence of either response at the policy onset. On the exit margin, the NASDAQ–NYSE attrition differential is negligible in 2021 (Diff $\approx 0.0$ pp; $p = 0.892$), providing no indication of an immediate delist-to-avoid response when the rule takes effect (Table A1). On the entry margin, NASDAQ continues to attract more IPOs than NYSE in 2021 (Diff $= 7.1$ pp; $p < 0.001$), but the NASDAQ–NYSE IPO differential is not smaller in the post-2021 period than in the pre-period (average Diff 2017–2020 $= 3.2$ pp versus average Diff 2021–2023 $= 3.6$ pp; implied DiD $= +0.4$ pp) (Table A2). While outcomes vary across post-treatment years—most notably, NASDAQ

attrition exceeds NYSE in 2022 (Diff $\approx 2.1$ pp; $p = 0.002$)—the absence of an attrition response in 2021 and the non-compression of the IPO differential are inconsistent with systematic evasion.

In terms of average share of women on corporate boards, we observe a steady increase for both NASDAQ (treated) and NYSE (control) over 2017–2023 (Figure 1). This broad upward movement is consistent with a secular trend toward greater gender diversity in U.S. board composition. In the pre-treatment period (2017–2020), the two series move in broadly similar fashion, with NYSE firms consistently exhibiting higher levels. Following the start of the treatment period in 2021, we observe a visibly sharper rise among NASDAQ-listed firms, which narrows the gap relative to NYSE. These descriptive patterns motivate the difference-in-differences analysis that follows, where we test whether the post-2021 relative increase on NASDAQ is statistically distinguishable from the contemporaneous change on NYSE.

First, we examine how NASDAQ-listed firms adjusted board composition in response to the NASDAQ's 2021 board diversity rule. We compare NASDAQ-listed firms (treated) and NYSE-listed firms (control) using a difference-in-differences design. Formally, we estimate the parameters of the following difference-in-differences and event-study models using ordinary least squares.

$$Y_{fti} = \beta_0 + \beta_1(\text{NASDAQ} \times \mathbb{I}(t > 2020)) + \delta_f + \gamma_{ti} + \varepsilon_{fti} \tag{1}$$

$$Y_{fti} = \theta_0 + \sum\nolimits_{t \neq 2020} \theta^t \Big(1[Year = t] \times NASDAQ\Big) + \delta_f + \gamma_{ti} + \varepsilon_{fti} \tag{2}$$

where $Y_{fti}$ is a board composition outcome for firm $f$ in year $t$ and industry $i$, $\delta_f$ are firm fixed effects, $d_{ti}$ are industry-by-year fixed effects. $\beta_0$ and $\theta_0$ are constants. These regressions use an unbalanced panel of firms from 2017 to 2023, with standard errors clustered at the firm level. Firm fixed effects account for time-invariant firm characteristics. Industry-by-year fixed effects control for shocks common to all firms within an industry in a given year, allowing for different time trends across industries. Accounting for industry-specific trends is important because treated and control firms differ in industry composition, and relying alone on year fixed effects would

require the stronger assumption of common trends across industries – one that may not hold in this setting. For example, using the 11 SIC divisions, we observe that treated firms are relatively more concentrated in technology and healthcare (Table III).

In our baseline specification, we find mandatory disclosure increases the female board share by 0.8 percentage points (average treatment effect), which is statistically significant at the 1% level (Table 4, panel A). We do not find any evidence of pre-trend in the event studies specification (panel B). We also find a decline in all-male-boards of 8.9 percentage points, which is statistically significant at the 1% level. Event studies specification shows a pre-trend but there is a reversal of sign following the event. NASDAQ firms were more likely to have all-male-boards than NYSE firms in all of the pre-periods but became less likely to have all-male-boards in all of the post periods. Together, these two results indicate that the regulation may have achieved statistically significant effects in the intended direction of having more female participation in the board room. We examine whether the board adjustment process was mostly managed by NASDAQ firms by maintaining a systematically larger board size, by expanding board, or by dropping male board members to make space for new hires of female board members. We do not find any statistically significant effect along these dimensions. This result is expected because the first-order increase in terms of female share of board members and decrease in all-male board members are not very large.

$$\left(\hat{\tau}^{sdid}, \hat{\mu}, \hat{\alpha}, \hat{\beta}\right) = \arg\min_{\tau,\mu,\alpha,\beta} \left\{ \sum_{f=1}^{N} \sum_{t=1}^{T} \left(Y_{ft} - \mu - \alpha_f - \beta_t - D_{ft}\tau\right)^2 \hat{\omega}_f^{sdid} \hat{\lambda}_t^{sdid} \right\}, \tag{3}$$

In this section, we explore the first-stage effect of the NASDAQ diversity rule on board composition. Table 4 presents estimates of difference in differences on how the mandatory disclosure requirement of NASDAQ after 2020 reshaped the board composition relative to NYSE firms. NASDAQ firms exhibit a 1.1 percentage point decline in the male share of directors (col 1) and a 9.3 percentage point decline in the likelihood of maintaining an all-male board (col 2) relative to NYSE firms after controlling for firm fixed effects and industry-year fixed effects. These two effects are statistically significant at the 1% level. The rule is also associated with a modest contraction in

board size by 0.09 seats (col 3), but this contraction is only significant at the 10% level. We found no statistically significant effects on the probability of expanding the board or replacing a male director (cols 4–5), which highlights the lack of a clear pattern in terms of whether the increase in the female share of board members came from the accommodation of a larger board or the replacement of preexisting male board members. All regressions include firm and Year-SIC fixed effects (at the 2-digit GICS industry sector level) and cluster standard errors at the firm level, following the specification style used in Gopal (2023) Table III.

Table 5 decomposes the average treatment effect reported in Table 4 into event-study difference-in-difference type estimates, allowing a visual check of pre-trends and a dynamic view of the mandate's impact. Throughout the 2017-2019 pre-period, treated NASDAQ firms do not exhibit a systematic pattern in the male share of directors, likelihood of expanding board, and likelihood of dropping a male director. The event-study estimates for male share of board members (col 1) therefore align with the difference-in-differences pooled estimate and also rule out existence of a pre-trend. However, there is a statistically significant pre-trend in the likelihood of having all-male boards for NASDAQ firms. NASDAQ firms were about 9, 6, and 2 percentage points more likely to have all male boards going from 2017-2019, the gradual decline indicating that a convergence pattern was already emerging. All regressions include firm and Year-SIC fixed effects with firm-clustered standard errors, following the specification in Gopal (2023) Table III. To summarize, we find support for the conclusion of a 1.1 percentage point decline in the male share of directors as a result of the NASDAQ board diversity rule, although the reduction in the likelihood of having all-male boards cannot be ascribed solely to this rule change.

Table 6 follows the same event-study difference-in-difference specification of Table 5 but restricts the sample to firms that were already diverse in 2020, which is the last pre-treatment period. Note that an analogous approach is to restrict the sample to firms that had all male boards in 2020, which we show in Table 9. However, we like this approach as this allows for a larger sample with more statistical power. The effect on male share of board is not significant when firms for whom the NASDAQ diversity rule binds are omitted. This is consistent with the hypothesis that the re-

duction in the male share of board members for NASDAQ firms was primarily driven by firms for whom the rule was salient.

Table 9 reports event-study difference-in-difference specification of the effect of the NASDAQ diversity rule on board composition, but only for firms with all male boards in 2020 (the last year of the pre-treatment period). We find no significant effects, which can be ascribed to the small power due to the tiny sample size.

## 4.2 Effect on Long-Term Financial Variables

Table 7 shows event-study difference-in-difference estimates on financial variables, namely return on assets, return on equity, log of Tobin's Q, log of market to book ratio, and log of cash flow to assets ratio. We do not find any combination of insignificance in the pre-period and significance in the post-period for any of these variables.

Table 8 replicates the specification in Table 4 of Ahern and Dittmar (2012). It links the disclosure-induced shift in board gender mix to financial variables in an instrumental variable approach, contrasting NASDAQ (col 1) with NYSE (col 2). In Panel A, the financial variables are industry-adjusted by subtracting from the median of the matching 4-digit GICS code industry level firms. Panel A reports two-stage least-squares estimates that instrument current female representation with the interaction of post-rule year dummies and each firm's 2020 women-director share. We find a statistical significant effect for industry-adjusted Returns on Investment only, for both NASDAQ & NYSE firms. Interestingly, this effect is negative for NASDAQ firms and positive for NYSE firms. In other words, when current female representation is instrumented with the interaction of post-rule year dummies and each firm's 2020 women-director share, it had a negative correlation with industry-adjusted Returns on Equity for NASDAQ firms but positive relation for NYSE firms.

In Panel C, the first stage is stronger for the treated group than for the control group (F-statistics of 169 and 103; Panel C), as is the case in Ahern and Dittmar (2012). The interaction dummies are also larger in magnitude for NASDAQ than it is for NYSE, indicating NASDAQ firms with a

smaller percentage of women directors on board in 2020 had to increase women share of board members by more than NYSE firms.

## 4.3 Market Reaction

We examine how the market responded to the two key events: the approval of the diversity rule on August 06, 2021, and its subsequent repeal on December 11, 2024.

We theorize that focusing solely on abnormal return on the event day may not fully capture the full market's response, as the timing of the information event may occur late relative to the market close. To account for this, we employed a two-day event window (on the event date and a day after the event date). Abnormal returns are calculated using the Fama-French model with an added momentum factor model, as specified in the following equation:

$$AR_{f,t} = R_{f,t} - \left(\hat{\beta}_{f,0} + \hat{\beta}_{f,M} R_{M,t} + \hat{\beta}_{f,SMB} SMB_t + \hat{\beta}_{f,HML} HML_t + \hat{\beta}_{f,MOM} MOM_t\right) \tag{4}$$

where $R_{f,t}$ is the firm's return. $R_{M,t}$ is the daily market risk premium, calculated as the value-weighted return of all CRSP firms incorporated in the U.S. minus the risk-free rate. $SMB_t$, $HML_t$, and $MOM_t$ are the daily size, value, and momentum factors, respectively, obtained from French's website.

To measure the overall market impact, cumulative abnormal returns (CAR) are computed by summing the abnormal returns over the two-day window. In the event study, we employed an estimation window of 252 trading days, included a gap of 30 trading days between the end of the estimation window and the event date, and only considered firms with at least 100 stock return observations in the estimation window.

A common concern with evaluating the significance of an event study is that economic factors affecting stock returns often create strong positive contemporaneous return correlations among securities. To address this, we implement multiple statistical tests for significance, including (i)

the standardized cross-sectional t-test; (2) Patell's Z test; (3) a traditional cross-sectional t-test for comparison; and (4) non-parametric tests, such as the generalized signed tests and the Wilcoxon signed rank tests.

Table 5 presents the cumulative average returns over a two-day window - August 06, the approval date of the rule, and the following day. The results indicate that the market responded positively following the approval of the board diversity rule on August 06, 2021. The average CAR(0,1) across all NASDAQ-listed firms was approximately 0.75%, with a particularly pronounced effect for all-male-board (AMB) firms, which experienced an average CAR of 1.483%. This suggests that investors may have perceived the rule as a value-enhancing mechanism, especially for firms that previously lacked board diversity. In contrast, we find no significant cumulative abnormal returns for the firms listed on the NYSE.

Table 6 reports the market reaction to the repeal of the rule on December 11, 2024. The cumulative average returns over the two-day window - December 11, 2024, and the following day were notably negative for the NASDAQ-listed firms, with a CAR (0,1) of -1.3%, exceeding in magnitude the market reaction observed at the time of the rule's approval. Consistent with earlier findings, the effect was more pronounced for all-male-board AMB firms, as shown in Panel B, which experienced a CAR (0,1) of -2.334%.

Additionally, Table A13 reports market response to firms that were in compliance versus firms that were not in compliance (i.e., firms that offered an explanation for their lack of diversity) at the time the rule was repealed. Non-explaining firms experienced negative abnormal returns, withn a CAR (0,1) of -1.31%, mirroring the pattern observed across the full NASDAQ sample. By contrast, we do not observe statistically significant effects for these "explaining firms" and the magnitude was smaller than that observed for compliance firms. The absence of statistical significance may simply reflect the limited size of this subsample.

To support the causal interpretation of our findings, we perform placebo tests by assigning pseudo-event dates encompassing all trading days between -252 and -30 trading days relative to the actual event dates (i.e., August 06, 2021, and December 11, 2024). These placebo tests are

performed using the same sample of NASDAQ-listed firms included in our main analysis (i.e., in Tables 5 and 6). For each placebo event date, we compute CARs over the event window (0,1). Figure 3 presents the distribution of placebo CARs around both the approval and repeal dates. Figure 3 (a) and (b) illustrate the distribution of placebo CARs around the approval date, while (c) and (d) show the distribution around the repeal date. Figure 3 (a) and (c) report results for all NASDAQ-listed firms, while (b) and (d) focus specifically on AMB firms.

The observed CAR for all NASDAQ-listed firms on the actual approval date lies significantly toward the right tail of the distribution: its value exceeds that of 207 (92%) placebo CARs, with only 16 placebo CARs showing a greater value. This indicates a strong positive market reaction to the approval event (Figure 3, (a)). The actual CAR for the repeal event falls significantly on the left tail of the distribution, with only two (0.92%) placebo CARs registering lower values than it (Figure 3, (c)). This sharp asymmetry implies a pronounced negative market response to the repeal. Together, these findings support the view that the market reactions to both approval and repeal events are statistically significant and unlikely to have occurred by chance.

Tables 7 and 8 provide additional evidence on the market reaction to the diversity rule by comparing the approval and repeal returns of NASDAQ-listed firms with those of NYSE-listed firms within a multivariate framework. In most specifications, the NASDAQ dummy is significant and positive for the approval event and negative for the repeal event. The interaction terms capturing the moderating role of board gender diversity for NASDAQ-listed firms are statistically insignificant, indicating that the effect of board diversity on abnormal returns does not differ significantly across exchanges.

The NASDAQ dummy variable becomes insignificant once interaction terms between board gender diversity measures and the NASDAQ indicator are included. This loss of significance following the inclusion of interaction terms appears to be driven by multicollinearity arising from strong correlations among these variables, as reflected in the substantial increase in standard errors.[9]

[9] After standardizing our gender diversity measures to have a mean of zero and standard deviation of one, thereby substantially reducing the correlations between the interaction variables and the NASDAQ indicator, the NASDAQ

### 4.3.1 Additional Tests

As a robustness test, we analyze an equal-weighted calendar time portfolio of NASDAQ-listed firms, following the methodology proposed by Jaffe (1974) and applied in many recent studies, such as Allen and Wahid (2023) and Eckbo, Nygaard, and Thorburn (2022). We calculate the portfolio's daily abnormal return (AR) using the following return-generating process:

$$R_{p,t} = \beta_0 + \beta_1 R_{M,t} + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 MOM_t + AR \times D_t + \varepsilon_t \tag{5}$$

where $R_{p,t}$ is the daily excess portfolio return, calculated by subtracting the daily 1-month Treasury bill rate from the average daily return of the specified portfolio. $D_t$ is an indicator variable equal to 1 on the event day and the next trading day, and 0 otherwise. A statistically significant coefficient on $D_t$ indicates an abnormal market reaction during the event window. The rest of the variables are the same as in Equation 1. The estimation period spans 365 calendar days prior to the event date through one day after the event.

As reported in Table 9, the coefficient on $D_t$ is not statistically significant for the approval event. Although this finding diverges from earlier results, it is not entirely unexpected. The approval was widely anticipated, given that the SEC had already signaled its support for the diversity-related governance initiatives in the months leading up to the decision. Acting Chair Allison Herren Lee, for instance, repeatedly underscored that board diversity was a regulatory priority and advocated stronger SEC involvement in human capital disclosures. In her March 15, 2021 speech *A Climate for Change: Meeting Investor Demand for Climate and ESG Information at the SEC*, she emphasized the need for progress on standardized ESG disclosures and noted that, in the near term, the SEC should consider advancing standalone initiatives-such as issuing guidance on human capital disclosure to encourage reporting of metrics like workforce diversity and developing more specific guidance related to board diversity. Given this early and clear signaling, the market likely incorporated the high probability of approval well in advance, leaving little room for additional adjustment

dummy remains statistically significant across all specifications. Consistent with earlier results, the interaction terms remain statistically insignificant in this analysis.

when the rule was formally approved.

In contrast, the NASDAQ rule was vacated on December 11, 2024, by a narrow 9-8 vote. The slim margin suggests that the ruling was less anticipated and more likely to have been interpreted as a genuine informational surprise. Consistent with this interpretation, Table 10 shows that the coefficient on $D_t$ is both statistically significant and negative during the window surrounding the repeal. Moreover, the magnitude of the effect is larger for the AMB subsample than the full sample of NASDAQ firms. The estimated impact is -1.3 percentage points for AMB firms versus -0.6 percentage points for the full sample, implying a cumulative decline in average returns of -2.6 and 1.2 percentage points, respectively, over the two-day window. This suggests that investors may have viewed the vacatur as especially disadvantageous for firms that had not yet diversified their boards, possibly because the repeal removed an external pressure or incentive that could have helped these firms address perceived governance weakness. By contrast, we observe no significant effect for NYSE-listed firms, which were not subject to the NASDAQ rule and therefore had no or less direct exposure to the regulatory reversal.

To ensure the robustness of our findings, we perform placebo tests using the portfolio-based regression methodology. Figure 4 presents the distribution of the placebo $D_t$ coefficient around both the approval and repeal dates. We perform placebo tests by assigning pseudo-event dates as described earlier. For each placebo event date, $D_t$ is one for the event date and the following trading day, and zero otherwise.

Figure 4 (a) presents the distribution of placebo $D_t$ coefficients for all NASDAQ-listed firms around the approval date. Even though the actual coefficient is not statistically significant, its value exceeds that of 195 (87%) placebo coefficients, with only 20 placebo coefficients showing a greater value, indicating that the estimated effect of the approval is unusually large relative to the placebo distribution, despite not meeting significance levels.

Figure 4 (c) reveals that the realized $D_t$ coefficient for the repeal event lies deep in the left tail of the placebo distribution, with only four (1.8%) placebo coefficients taking lower values. This indicates a strong negative market response to the repeal. Taken together, the placebo test results

for the approval and repeal events suggest that the observed market reactions are unlikely to be driven by random variation and are consistent with a favorable market assessment of the rule.

In addition, we examine whether abnormal returns are significant around other NASDAQ rule-related events, excluding the approval and repeal dates, using the portfolio-based regression methodology. Detailed descriptions of the underlying events are provided in Table A1. As reported in Table A14, the coefficient on $D_t$ variable is statistically insignificant for these events.[10]

Overall, these findings support the interpretation that the market viewed the board diversity rule positively. The absence of a statistically significant response when the rule was approved, combined with a sharp adverse reaction when it was repealed, suggests that investors regarded the rule as value-enhancing, possibly because it provided credible external pressure for improving board composition and signaled a broader regulatory commitment to modern governance standards.

## 4.4 Textual Analysis of Explanations

To better understand the barriers to board diversity, we analyze firms' self-reported explanations for non-compliance with the NASDAQ board diversity disclosure rule. In total, 45 firms provided such explanations. We classify these explanations into three broad categories: demand-side constraints, supply-side constraints, and other organizational limitations. The demand-side constraints refer to barriers or limitations on the part of firms themselves. In this case, the problem isn't a lack of diverse candidates, but that the firms aren't willing or able to make the changes needed to bring them. The supply-side constraints refer to issues related to the availability or qualification of candidates - the "supply" potential of diverse board members.

As illustrated in Figure 2, the most frequently cited barriers relate to supply-side constraints, representing 51% of the total explanations offered by firms. In comparison, demand side constraints account for 18% of the explanations, while the remaining fall into the "other" category. Demand-side explanations are predominantly related to cost implications associated with expanding and restructuring the board. On the supply side, some firms attribute the lack of diversity to

[10]The coefficient is likewise insignificant for the AMB firms sample.

external factors - the "pipeline problem" (i.e., not enough diverse candidates available). In doing so, these firms present themselves as willing, but limited by market conditions or supply. Such explanations account for 20% of the total. An illustrative statement is:

"As of November 29, 2024, our Board has not identified potential nominees having an interest in serving on the Board that qualify as Diverse, while possessing the skillsets and other qualifications to appropriately represent the interests of shareholders and provide strategic oversight of our business."

The largest share of supply-side explanations (accounting for 31.1% of the total explanations) is categorized as "Merit-Based". Here, firms emphasize that their board composition is driven by skill and experience rather than diversity criteria, implying an internal preference for merit over active diversity measures. For example:

"Rather than considering the level of representation of female and/or demographically diverse individuals for director and executive officer positions when making Board of Directors or executive officer appointments, the Company considers all candidates based on their merit and qualifications relevant to the specific role and their experience as a director of our company over the past several years."

Beyond these categories, we also identify certain explanations that do not fall neatly into either the demand or supply side framework. These include the explanations 'optimal board composition' (18%), where firms highlight the existing expertise and balance of the board, suggesting that replacing any director solely to increase diversity would be counterproductive; and 'deferral or delay in compliance' (13.3%), where firms recognize the importance of diversity, but defer changes in board composition. These findings do not necessarily imply an actual shortage of qualified, diverse candidates; rather, they may reflect limitations in locating candidates meeting their specific criteria.

# 5 Conclusion

We examine the impact of the NASDAQ board diversity disclosure rule on the US publicly traded firms that are listed on the NASDAQ and NYSE exchanges. Our findings indicate that the rule led to a moderate increase in board diversity among NASDAQ-listed firms. The increase is smaller than those achieved through institutional investors-led diversity campaigns (Gormley et al. 2023)), gender quotas mandates (Gopal 2025), and mandatory diversity disclosure policies in other countries (Bakke et al. 2021; Hu, Hung, and Li 2025). The relatively limited improvement suggest that firms perceived minimal reputational risk from limited compliance or from disclosing low diversity levels. This indicates that in the U.S. context, a disclosure-based strategy alone may not be sufficient to drive significant progress in board gender diversity.

We also examine investors' sentiment toward board diversity using short-term event studies surrounding key milestones related to the rule. The presence of positive abnormal returns following the rule's approval and negative abnormal returns following its repeal suggests that the US investors generally value the mandatory disclosure framework. Additionally, we analyze the justifications provided by firms for non-compliance. Most firms cited supply-side barriers, particularly a limited pipeline of qualified candidates and a commitment to merit-based hiring, as primary reasons for not meeting the rule's requirements.

# Author Affiliations


- Dhruv Baswal: PhD student at Queen's University, Smith School of Business
- Bhargav Gopal: Assistant Professor at Queen's University, Smith School of Business
- Tanvir Ahmed Khan: PhD student at Queen's University, Department of Economics
- Bailey Kraus: PhD student at Columbia University, Department of Economics

# References


Ahern, Kenneth R. and Amy K. Dittmar (2012). "The Changing of the Boards: The Impact on Firm Valuation of Mandated Female Board Representation." *The Quarterly Journal of Economics* 127.1, 137–197.

Allen, Abigail and Aida Sijamic Wahid (2023). "Regulating gender diversity: Evidence from California senate bill 826." *Management Science*.

Arkhangelsky, Dmitry et al. (2021). "Synthetic Difference-in-Differences." *American Economic Review* 111.12, 4088–4118.

Bakke, Tor-Erik et al. (2021). "The Impact of a Principles-Based Approach to Director Gender Diversity Policy." *SSRN Electronic Journal*.

Bartlett, Robert and Frank Partnoy (2020). "The Misuse of Tobin's Q." *Vanderbilt Law Review* 73.2, 353.

Beaver, William, Maureen McNichols, and Richard Price (2007). "Delisting returns and their effect on accounting-based market anomalies." *Journal of Accounting and Economics* 43.2, 341–368.

Bertrand, Marianne et al. (2019). "Breaking the Glass Ceiling? The Effect of Board Quotas on Female Labour Market Outcomes in Norway." *Review of Economic Studies* 86, 191–239.

Bian, Bo, Jingjing Li, and Kai Li (2023). "Does Mandating Women on Corporate Boards Backfire?" *SSRN Electronic Journal*.

Bourveau, Thomas, Xingchao Gao, and Ole-Kristian Hope (2025). "The Impact of Disclosure on Diversity: Evidence From the *Canada Business Corporations Act*." *Contemporary Accounting Research*, 1911–3846.70018.

Eckbo, B. Espen, Knut Nygaard, and Karin S. Thorburn (2022). "Valuation Effects of Norway's Board Gender-Quota Law Revisited." *Management Science* 68.6, 4112–4134.

Fried, Jesse M (2021). "Will Nasdaq's diversity rules harm investors?" *Harv. Bus. L. Rev. Online* 12, 1.

Friedman, Milton (1970). "The Social Responsibility of Business is to Increase Its Profits."

Gopal, Bhargav (2025). "How Do Firms Respond to Gender Quotas? Evidence from California's Senate Bill 826."

Gormley, Todd A et al. (2023). "The big three and board gender diversity: The effectiveness of shareholder voice." *Journal of Financial Economics* 149.2, 323–348.

Greene, Daniel, Vincent J. Intintoli, and Kathleen M. Kahle (2020). "Do Board Gender Quotas Affect Firm Value? Evidence from California Senate Bill No. 826." *Journal of Corporate Finance* 60, 101526.

Grossman, Sanford J. (1981). "The Informational Role of Warranties and Private Disclosure about Product Quality." *The Journal of Law & Economics* 24.3, 461–483.

Hu, Jinshuai, Mingyi Hung, and Siqi Li (2025). "Reshaping Corporate Boards Through Mandatory Gender Diversity Disclosures: Evidence from Canada." *Management Science*, mnsc.2023.00509.

Hwang, Sunwoo, Anil Shivdasani, and Elena Simintzi (2018). "Mandating Women on Boards: Evidence from the United States." *SSRN Electronic Journal*.

Jaffe, Jeffrey F. (1974). "Special Information and Insider Trading." *The Journal of Business* 47.3, 410–428.

Klick, Jonathan (2025). "Market Response to Court Rejection of California's Board Diversity Laws." *Journal of Empirical Legal Studies* 22.1, 4–26.

Leuz, Christian and Peter D. Wysocki (2016). "The Economics of Disclosure and Financial Reporting Regulation: Evidence and Suggestions for Future Research." *Journal of Accounting Research* 54.2, 525–622.

MacKinlay, A. Craig (1997). "Event Studies in Economics and Finance." *Journal of Economic Literature* 35.1, 13–39.

Ross, Stephen A (1979). "Disclosure regulation in financial markets: Implications of modern finance theory and signaling theory." *Issues in financial regulation* 5.1979, 177–202.

Stiglitz, Joseph E. (2002). "Information and the Change in the Paradigm in Economics." *The American Economic Review* 92.3, 460–501.

Von Meyerinck, Felix et al. (2018). “As California Goes, So Goes the Nation? The Impact of Board Gender Quotas on Firm Performance and the Director Labor Market.” *SSRN Electronic Journal*.

Table 1: Sample Size

| Year | All Firms | NASDAQ | | | NYSE | | |
|---|---|---|---|---|---|---|---|
| | | N | N: AMB | Pr(AMB) | N | N: AMB | Pr(AMB) |
| 2017 | 3205 | 1996 | 725 | 0.36 | 1209 | 179 | 0.15 |
| 2018 | 3215 | 2019 | 604 | 0.30 | 1196 | 128 | 0.11 |
| 2019 | 3222 | 2044 | 418 | 0.20 | 1178 | 84 | 0.07 |
| 2020 | 3319 | 2157 | 349 | 0.16 | 1162 | 44 | 0.04 |
| 2021 | 3971 | 2638 | 344 | 0.13 | 1333 | 56 | 0.04 |
| 2022 | 3844 | 2554 | 280 | 0.11 | 1290 | 44 | 0.03 |
| 2023 | 3545 | 2311 | 237 | 0.10 | 1234 | 29 | 0.02 |
| 2024 | 2948 | 1797 | 115 | 0.06 | 1151 | 16 | 0.01 |

Notes: The sample restricts to companies that report board gender. The annual gender composition of corporate boards is provided by BoardEx and reflects the board's composition as of the company's annual report date. We also restrict to companies matched between BoardEx, Compustat, and CRSP using the crosswalk provided by WRDS. AMB refers to companies with All-Male Boards. NASDAQ's gender disclosure requirement required that all firms listed on NASDAQ either have at least one woman or minority represented on their corporate board or provide a reason. This rule was approved on August 6th, 2021.

Table 2: Summary Statistics in 2020

| | NASDAQ | NYSE | Diff | P-Value | N:NASDAQ | N:NYSE |
|---|---|---|---|---|---|---|
| *Board Characteristics* | | | | | | |
| Board Size | 8.03 | 9.57 | 1.54*** | 0.000 | 2157 | 1162 |
| % Directors with MBA | 0.34 | 0.41 | 0.07*** | 0.000 | 1909 | 1107 |
| % Directors with Doctoral Degree | 0.11 | 0.06 | -0.05*** | 0.000 | 1909 | 1107 |
| % Directors with Ivy League Degree | 0.25 | 0.28 | 0.03*** | 0.000 | 1909 | 1107 |
| Average Director Tenure | 0.05 | 0.05 | -0.00 | 0.446 | 1911 | 1107 |
| % Directors with Board Exp | 0.81 | 0.84 | 0.02*** | 0.003 | 1911 | 1107 |
| % Directors with C-Suite Exp | 0.68 | 0.72 | 0.04*** | 0.000 | 1911 | 1107 |
| % Directors with Sector Exp | 0.66 | 0.48 | -0.18*** | 0.000 | 1911 | 1107 |
| 1(AMB) | 0.16 | 0.04 | -0.12*** | 0.000 | 2157 | 1162 |
| 1(Expand) | 0.23 | 0.27 | 0.04*** | 0.007 | 2157 | 1162 |
| Age | 13.30 | 16.07 | 2.77*** | 0.000 | 1310 | 560 |
| Number of Employees (thousands) | 5.24 | 23.85 | 18.60*** | 0.000 | 2049 | 1128 |
| Business-to-Business | 0.64 | 0.66 | 0.02 | 0.435 | 1732 | 814 |
| Business-to-Consumer | 0.36 | 0.34 | -0.02 | 0.435 | 1732 | 814 |

*Continued on next page*

*(Table 2 continued)*

| | NASDAQ | NYSE | Diff | P-Value | N:NASDAQ | N:NYSE |
|---|---|---|---|---|---|---|
| *Firm Characteristics* | | | | | | |
| Return on Assets | -0.05 | 0.00 | 0.05*** | 0.000 | 2076 | 1137 |
| Log(Tobin's Q) | 0.39 | 0.23 | -0.16*** | 0.000 | 2020 | 1090 |
| Total Assets ($ mill) | 4813.97 | 34254.94 | 29440.97*** | 0.000 | 2077 | 1137 |
| Sales ($ mill) | 521.18 | 2579.58 | 2058.40*** | 0.000 | 2076 | 1137 |
| Leverage | 0.23 | 0.35 | 0.12*** | 0.000 | 2037 | 1098 |
| Cash to Assets | 0.35 | 0.15 | -0.20*** | 0.000 | 2077 | 1137 |
| *Company Policy* | | | | | | |
| 1(Merger) | 0.00 | 0.00 | -0.00 | 0.951 | 2157 | 1162 |
| 1(Dividend) | 0.28 | 0.60 | 0.31*** | 0.000 | 2157 | 1162 |
| 1(Dec in Shares Outstanding $\geq$ 5%) | 0.09 | 0.06 | -0.03*** | 0.002 | 2157 | 1162 |
| 1(Incr in Shares Outstanding $\geq$ 5%) | 0.06 | 0.02 | -0.04*** | 0.000 | 2157 | 1162 |
| *ESG* | | | | | | |
| Sustainalytics ESG Score | 29.52 | 27.49 | -2.03*** | 0.000 | 1142 | 941 |

*Continued on next page*

*(Table 2 continued)*

| | NASDAQ | NYSE | Diff | P-Value | N:NASDAQ | N:NYSE |
|---|---|---|---|---|---|---|
| MSCI ESG Score | 4.50 | 4.69 | 0.19*** | 0.000 | 931 | 950 |
| *Industry* | | | | | | |
| Energy | 0.02 | 0.08 | 0.06*** | 0.000 | 2157 | 1162 |
| Materials | 0.01 | 0.09 | 0.07*** | 0.000 | 2157 | 1162 |
| Industrials | 0.10 | 0.20 | 0.11*** | 0.000 | 2157 | 1162 |
| Consumer Discretionary | 0.09 | 0.15 | 0.06*** | 0.000 | 2157 | 1162 |
| Consumer Staples | 0.03 | 0.04 | 0.01* | 0.057 | 2157 | 1162 |
| Health Care | 0.34 | 0.08 | -0.26*** | 0.000 | 2157 | 1162 |
| Financials | 0.20 | 0.15 | -0.04*** | 0.002 | 2157 | 1162 |
| Information Technology | 0.15 | 0.08 | -0.06*** | 0.000 | 2157 | 1162 |
| Communication Services | 0.04 | 0.04 | -0.00 | 0.860 | 2157 | 1162 |
| Utilities | 0.01 | 0.05 | 0.04*** | 0.000 | 2157 | 1162 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Real Estate | 0.01 | 0.02 | 0.01** | 0.025 | 2157 | 1162 |

Notes: The sample restricts to an unbalanced panel of firms that were domestic and listed in 2020.The table comes from a cross section of the data, representing 2020 values. Raw means and p-values from a two-sided t-test are reported. Boardroom characteristics are derived from BoardEx and represent mean values in 2020. Firm characteristics are derived from Compustat and represent mean values in 2020. Return on Assets is net income before extraordinary items and discontinued operations divided by book assets. Tobin's Q is the ratio of the firm's market value to its book value of assets. Total Assets refers to Compustat item AT. Sales refers to Compustat item SALE. Leverage refers to book value of long- and short-term debt divided by total assets. Cash to Assets refers to cash and short-term investments divided by total assets. All company policies indicate if the event occurred for some security during the calendar year, and are derived from CRSP's Events files. Codes for industry classification are also derived from Compustat.

Table 3: Effect of Mandatory Disclosure on Board Composition

| Dependent Variables: | Male Share of Board | 1(All-Male Board) | Board Size | 1(Expand Board) | 1(Male Dropped) |
|---|---|---|---|---|---|
| Model: | (1) | (2) | (3) | (4) | (5) |
| Panel A: Intent to Treat Effect Estimates | | | | | |
| NASDAQ $\times \mathbb{I}$(Year $>$ 2020) | -0.008*** | -0.089*** | -0.074* | 0.021* | -0.001 |
| | (0.003) | (0.009) | (0.045) | (0.013) | (0.008) |
| Panel B: Event Studies Estimates | | | | | |
| NASDAQ X Year = 2017 | 0.000 | 0.082*** | 0.077 | 0.010 | -0.020 |
| | (0.004) | (0.015) | (0.059) | (0.024) | (0.013) |
| NASDAQ X Year = 2018 | 0.004 | 0.066*** | 0.094* | 0.035 | -0.024* |
| | (0.004) | (0.013) | (0.053) | (0.025) | (0.014) |
| NASDAQ X Year = 2019 | 0.002 | 0.017* | 0.075* | 0.045* | -0.016 |
| | (0.003) | (0.009) | (0.044) | (0.027) | (0.015) |
| NASDAQ X Year = 2021 | -0.006** | -0.031*** | -0.027 | 0.033 | -0.015 |
| | (0.003) | (0.008) | (0.044) | (0.026) | (0.015) |
| NASDAQ X Year = 2022 | -0.009*** | -0.056*** | 0.009 | 0.061** | -0.003 |
| | (0.003) | (0.009) | (0.053) | (0.024) | (0.014) |
| NASDAQ X Year = 2023 | -0.005 | -0.065*** | -0.027 | 0.037 | -0.028** |
| | (0.004) | (0.010) | (0.058) | (0.024) | (0.014) |
| *Fixed-effects* | | | | | |
| Firm | Yes | Yes | Yes | Yes | Yes |
| Year-SIC | Yes | Yes | Yes | Yes | Yes |
| *Fit statistics* | | | | | |
| Observations | 25766 | 25766 | 25766 | 23958 | 23958 |
| Dependent variable mean | 0.783 | 0.133 | 8.63 | 0.266 | 0.066 |
| Number of Firms | 4593 | 4593 | 4593 | 4356 | 4356 |

*Clustered (Firm) standard-errors in parentheses. Signif. Codes:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: The sample restricts to an unbalanced panel of firms that were domestic and listed covering 2017–2023. Panel A reports event studies estimates relative to the 2020 baseline. Panel B shows estimates of difference-in-difference average treatment effect for comparison. Standard errors are clustered at the firm level. Treated firms are listed in NASDAQ. Control firms are listed in NYSE. The outcome variables are derived from BoardEx's organizational summary files, which provide the director roster as of the company's annual report date. The 'Expand Board' indicator equals one if board size increases relative to the prior year. 'Male Dropped' equals one if board size is unchanged relative to the prior year while the proportion of male directors fall. Industries are categorized into 11 divisions using the 4-digit GICS code. GICS codes are obtained from Compustat. The NASDAQ board diversity rule was approved on August 6, 2021, mandating companies to have at least two diverse directors on board (at least one for companies with five or fewer directors by December 31, 2026) or explain why they do not comply.

# Table 4: Effects of Mandatory Disclosure: Heterogeneity

| | Baseline (1) | High ESG (2) | Size Control (3) | Large Board (4) | Male Industry (5) | B2B (6) | Triple Diff (7) |
|---|---|---|---|---|---|---|---|
| *Board Composition* | | | | | | | |
| Male Share of Board | -0.008*** | -0.018*** | -0.008*** | -0.012*** | -0.004 | -0.015*** | 0.009 |
| | (0.003) | (0.005) | (0.003) | (0.003) | (0.004) | (0.005) | (0.013) |
| I(All-Male Board) | -0.089*** | -0.050*** | -0.084*** | -0.053*** | -0.088*** | -0.122*** | 0.043 |
| | (0.009) | (0.011) | (0.009) | (0.008) | (0.013) | (0.014) | (0.062) |
| Observations | 25766 | 6590 | 2401 1 | 15315 | 14609 | 13500 | 25766 |
| *Financial Outcomes* | | | | | | | |
| Index of Financial Outcomes | -0.027** | -0.023 | -0.027** | -0.033*** | -0.035* | -0.020 | -0.063 |
| | (0.012) | (0.014) | (0.011) | (0.011) | (0.019) | (0.017) | (0.076) |
| Observations | 25475 | 6575 | 24011 | 15257 | 14431 | 13456 | 25475 |
| Log(Q) | -0.076*** | -0.058*** | -0.068*** | -0.067*** | -0.097*** | -0.083*** | -0.091 |
| | (0.014) | (0.022) | (0.014) | (0.015) | (0.021) | (0.021) | (0.085) |
| Observations | 22725 | 5967 | 21382 | 13619 | 12785 | 12063 | 22725 |
| RoA | -0.001 | -0.006 | -0.005 | 0.001 | 0.003 | 0.002 | -0.005 |
| | (0.004) | (0.005) | (0.005) | (0.004) | (0.006) | (0.006) | (0.03) |
| Observations | 25453 | 6575 | 24011 | 15254 | 14424 | 13443 | 25453 |
| *Board Experience* | | | | | | | |
| Share with MBA | 0.015** | 0.030*** | 0.014** | 0.023*** | 0.029*** | 0.007 | 0.002 |
| | (0.006) | (0.009) | (0.006) | (0.007) | (0.008) | (0.010) | (0.041) |
| Share with Doctoral Degree | -0.000 | -0.005 | 0.001 | -0.003 | 0.000 | -0.001 | -0.014 |
| | (0.003) | (0.005) | (0.003) | (0.003) | (0.005) | (0.005) | (0,020) |
| Share from Ivy League | 0.011* | 0.023*** | 0.013** | 0.013** | 0.008 | 0.018** | -0.053 |
| | (0.006) | (0.008) | (0.006) | (0.006) | (0.008) | (0.009) | (0.035) |
| Observations | 19035 | 6231 | 18020 | 12950 | 11074 | 9516 | 19035 |
| Share with Tenure | -0.001 | -0.012** | -0.001 | -0.005 | 0.002 | -0.004 | -0.006 |
| | (0.003) | (0.006) | (0.003) | (0.004) | (0.004) | 0.006 | (0.018) |
| Share with Board Experience | -0.013** | -0.010 | -0.013** | -0.008 | -0.018** | -0.016* | 0.030 |
| | (0.006) | (0.010) | (0.006) | (0.006) | (0.007) | (0.009) | (0.028) |
| Share with Csuite Experience | 0.002 | 0.006 | 0.002 | 0.010* | 0.001 | -0.003 | -0.006 |
| | (0.006) | (0.008) | (0.006) | (0.006) | (0.008) | (0.009) | (0.033) |
| Share with Sector Experience | -0.005 | -0.011 | -0.006 | -0.008 | -0.002 | -0.005 | 0.023 |
| | (0.006) | (0.010) | (0.006) | (0.007) | (0.008) | (0.010) | (0.027) |
| Observations | 19044 | 6231 | 18028 | 12954 | 11080 | 9519 | 19044 |
| CEO Turnover | 0.004 | -0.006 | 0.005 | 0.007 | 0.023 | -0.018 | 0.003 |
| | (0.013) | (0.019) | (0.013) | (0.014) | (0.018) | (0.018) | (0.013) |
| Observations | 12192 | 5298 | 12165 | 9591 | 5531 | 6216 | 12192 |
| Log CEO Compensation | 0.007 | 0.057 | -0.011 | -0.010 | 0.065 | 0.094* | 0.165 |
| | (0.040) | (0.047) | (0.040) | (0.047) | (0.041) | (0.052) | (0.327) |
| Observations | 12114 | 5309 | 12086 | 9560 | 5509 | 6189 | 12114 |

*Clustered (Firm) standard errors in parentheses. Significance:* $^{*}$ $p < 0.1$, $^{**}$ $p < 0.05$, $^{***}$ $p < 0.01$

The sample restricts to an unbalanced panel of firms that were domestic and listed covering 2017–2023. The table presents the coefficients and standard errors from the difference-in-differences model, unless otherwise specified. Standard errors are clustered at the firm level. The reported rows are restricted to outcome variables that showed significance in the baseline difference-in-difference model. Treated firms are listed in NASDAQ. Control firms are listed in NYSE. Male share of board members is derived from BoardEx's organizational summary files, which provide the director roster as of the company's annual report date. Industries are categorized into 11 divisions using the 4-digit GICS code. GICS codes are obtained from Compustat. Financial variables are derived from Compustat's annual fundamental files and are either log transformed or winsorized at the 1st and 99th percentiles. The percentiles are calculated relative to all domestic and listed companies observed in the annual distribution. The index of financial outcomes averages the z-score across several financial outcomes, following Kling, Liebman, and Katz (2007). For each financial outcome, the z-score subtracts the mean of the control group, then divides by the standard deviation of the control group. Column 2 subsets to companies with above-median MSCI industry-adjusted ESG ratings. Column 3 adds a control for firm size, which is proxied by Log(Revenues). Column 4 subsets to companies that had more than 8 directors (the median board size) in 2020. Column 5 subsets to firms in industries with below-average female board representation. Industry classification and averages are calculated using the 2020 cross-section. Column 6 makes no additional restrictions. The NASDAQ board diversity rule was approved on August 6, 2021, mandating companies to have at least two diverse directors on board (at least one for companies with five or fewer directors by December 31, 2026) or explain why they do not comply. Note:

Table 5: Abnormal Returns on August 6, 2021

**Panel A: All Firms**

| | Day relative to event | No. of firms | Mean | Tests of mean = 0 | | | |
|---|---|---|---|---|---|---|---|
| | | | | Std Cross Sectional t-test | Patell's Z test | Gen. Sign test | Wilcoxon Rank test |
| NASDAQ | | | | | | | |
| | 0 | 1885 | 0.247% | *** | *** | *** | *** |
| | 1 | | 0.501% | *** | *** | *** | *** |
| NYSE | | | | | | | |
| | 0 | 1132 | 0.057% | | | | |
| | 1 | | -0.051% | | * | *** | *** |

**Panel B: All Male Board Firms**

| | Day relative to event | No. of firms | Mean | Tests of mean = 0 | | | |
|---|---|---|---|---|---|---|---|
| | | | | Std Cross Sectional t-test | Patell's Z tests | Gen. Sign test | Wilcoxon Signed test |
| NASDAQ | | | | | | | |
| | 0 | 279 | 0.372% | | ** | *** | * |
| | 1 | | 1.111% | *** | *** | *** | *** |
| NYSE | | | | | | | |
| | 0 | 42 | -0.338% | | * | | |
| | 1 | | 1.557% | ** | ** | ** | ** |

$^{*}$ $p < 0.1$, $^{**}$ $p < 0.05$, $^{***}$ $p < 0.01$

Note: The mean on day 0 represents the average abnormal returns on the event date, while the mean on day 1 reflects the average abnormal returns on one day following the event date. CAR [0,1] represents the cumulative abnormal returns over a two-day window, calculated as the sum of the abnormal returns on the event date (day 0) and the following day (day 1). For the abnormal returns, we employed an estimation window of 252 days, included a gap of 30 days between the end of the estimation window and the event date (Aug 06, 2021), and only considered firms with at least 100 stock return observations in the estimation window.

Table 6: Abnormal Returns on December 11, 2024

**Panel A: All Firms**

| | Day relative to event | No. of firms | Mean | Tests of mean = 0 | | | |
|---|---|---|---|---|---|---|---|
| | | | | Std Cross Sectional t-test | Patell's Z test | Gen. Sign test | Wilcoxon Rank test |
| NASDAQ | | | | | | | |
| | 0 | 2116 | -0.727% | *** | *** | *** | *** |
| | 1 | | -0.580% | *** | *** | ** | *** |
| NYSE | | | | | | | |
| | 0 | 1193 | -0.202% | *** | *** | *** | *** |
| | 1 | | 0.027% | | | | |

**Panel B: All Male Board Firms**

| | Day relative to event | No. of firms | Mean | Tests of mean = 0 | | | |
|---|---|---|---|---|---|---|---|
| | | | | Std Cross Sectional t-test | Patell's Z test | Gen. Sign test | Wilcoxon Rank test |
| NASDAQ | | | | | | | |
| | 0 | 185 | -1.117% | * | *** | *** | *** |
| | 1 | | -1.216% | *** | | | *** |
| NYSE | | | | | | | |
| | 0 | 28 | -0.003% | | | | |
| | 1 | | 0.063% | | | | |

$^{*}$ $p < 0.1$, $^{**}$ $p < 0.05$, $^{***}$ $p < 0.01$

Note: The mean on day 0 represents the average abnormal returns on the event date, while the mean on day 1 reflects the average abnormal returns on one day following the event date. CAR [0,1] represents the cumulative abnormal returns over a two-day window, calculated as the sum of the abnormal returns on the event date (day 0) and the following day (day 1). For the abnormal returns, we employed an estimation window of 252 days, included a gap of 30 days between the end of the estimation window and the event date (Dec 11, 2024), and only considered firms with at least 100 stock return observations in the estimation window.

Table 7: OLS Regressions on Abnormal Announcement Returns (%) for the Event Date Aug 06, 2021

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| 1 (NASDAQ) | 0.536*** | 0.440** | -0.084 | 0.471** | 0.553 |
| | (0.187) | (0.189) | (0.764) | (0.190) | (0.396) |
| Women directors $> 0$ | | -0.870*** | -1.344* | | |
| | | (0.273) | (0.723) | | |
| Nasdaq x Women directors $> 0$ | | | 0.552 | | |
| | | | (0.780) | | |
| Percentage women directors | | | | -0.014** | -0.011 |
| | | | | (0.007) | (0.013) |
| Nasdaq x percentage women directors | | | | | -0.004 |
| | | | | | (0.015) |
| R-squared | 0.019 | 0.022 | 0.022 | 0.020 | 0.020 |
| Observations | 2,994 | 2,994 | 2,994 | 2,994 | 2,994 |
| Industry Fixed Effects | Yes | Yes | Yes | Yes | Yes |

***, **, * indicates statistical significance at the 1% 5%, and 10% levels respectively.

The sample consists of firms listed on the NASDAQ and NYSE. The dependent variable is the two-day CAR (Cumulative Abnormal Return) expressed in percentage, with day 0 corresponding to Aug 06, 2021. The NASDAQ variable is a dummy variable equal to 1 if the firm is listed on NASDAQ. The women directors $> 0$ variable is a dummy variable equal to 1 if the firm has at least one female director. The percentage of women directors variable represents the percentage of women on the firm's board. The women director measures (women directors $> 0$ and percentage of women) are expressed as deviations from their means. Standard errors are heteroskedasticity-robust.

Table 8: OLS Regressions on Abnormal Announcement Returns (%) for the Event Date Dec 11, 2024

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| 1 (NASDAQ) | -1.131*** | -0.450* | -1.230 | -0.491* | -0.773 |
| | (0.248) | (0.267) | (1.379) | (0.268) | (0.657) |
| Women directors $> 0$ | | 1.030** | 0.337 | | |
| | | (0.484) | (1.296) | | |
| Nasdaq x Women directors $> 0$ | | | 0.805 | | |
| | | | (1.397) | | |
| Percentage women directors | | | | 0.006 | -0.001 |
| | | | | (0.009) | (0.018) |
| Nasdaq x percentage women directors | | | | | 0.010 |
| | | | | | (0.021) |
| R-squared | 0.006 | 0.044 | 0.044 | 0.043 | 0.043 |
| Observations | 3,309 | 3,307 | 3,307 | 3,307 | 3,307 |
| Industry Fixed Effects | Yes | Yes | Yes | Yes | Yes |

***, **, * indicates statistical significance at the 1% 5%, and 10% levels respectively.

The sample consists of firms listed on the NASDAQ and NYSE. The dependent variable is the two-day CAR (Cumulative Abnormal Return) expressed in percentage, with day 0 corresponding to Dec 11, 2024. The NASDAQ variable is a dummy variable equal to 1 if the firm is listed on NASDAQ. The women directors $> 0$ variable is a dummy variable equal to 1 if the firm has at least one female director. The percentage of women directors variable represents the percentage of women on the firm's board. The women director measures (women directors $> 0$ and percentage of women) are expressed as deviations from their means. Standard errors are heteroskedasticity-robust.

Table 9: Market Reaction Analysis Using Portfolio Approach: Evidence from August 6, 2021

| | NYSE AMB | NYSE | NASDAQ AMB | NASDAQ |
|---|---|---|---|---|
| Intercept | 0.002*** | 0.000 | 0.001* | 0.000 |
| | (0.001) | (0.000) | (0.001) | (0.000) |
| MKT | 0.865*** | 1.015*** | 0.716*** | 0.849*** |
| | (0.062) | (0.016) | (0.067) | (0.032) |
| SMB | 1.004*** | 0.506*** | 1.155*** | 0.950*** |
| | (0.074) | (0.020) | (0.081) | (0.039) |
| HML | 0.257*** | 0.453*** | -0.137** | -0.026 |
| | (0.063) | (0.017) | (0.069) | (0.032) |
| UMD | -0.087* | -0.093*** | 0.039 | -0.058** |
| | (0.049) | (0.013) | (0.053) | (0.025) |
| AR | 0.007 | -0.001 | 0.010 | 0.004 |
| | (0.006) | (0.002) | (0.007) | (0.003) |
| Observations | 254 | 254 | 254 | 254 |
| Adjusted R-squared | 0.711 | 0.968 | 0.668 | 0.885 |

Standard errors in parentheses

$^{*}$ $p < 0.1$, $^{**}$ $p < 0.05$, $^{***}$ $p < 0.01$

Note: The table presents an analysis of stock returns based on daily portfolios, following the methodology of Eckbo, Nygaard, and Thorburn (2022). The dependent variable is the daily equally weighted average returns in excess of the daily risk free rate returns. AR is the dummy variable for the event window (0,1). MKT represents market risk premium, while SMB (Small Minus Big) captures the return difference between small-cap and large-cap stocks. HML (High Minus Low) is a value factor and captures the difference between high book-to-market (value) stocks and low book-to-value (growth) stocks. UMD is a momentum factor that reflects the return difference between stocks with high past returns and those with low past returns. The estimation period begins 365 days before the event date (Aug 06, 2021). Column 1 provides excess returns for NYSE firms with all-male boards, while Column 2 provides excess returns for all firms listed on NYSE. Similarly, column 3 provides excess returns for NASDAQ firms with all-male board members (based on 2020 classification), and column 4 provides excess returns for all firms listed on NASDAQ. Standard errors are heteroskedasticity-robust.

Table 10: Market Reaction Analysis Using Portfolio Approach: Evidence from December 11, 2024

| | NYSE AMB | NYSE | NASDAQ AMB | NASDAQ |
|---|---|---|---|---|
| Intercept | 0.000 | 0.000* | -0.000 | 0.000 |
| | (0.001) | (0.000) | (0.001) | (0.000) |
| MKT | 1.145*** | 0.919*** | 0.674*** | 0.893*** |
| | (0.178) | (0.021) | (0.092) | (0.036) |
| SMB | 0.582*** | 0.531*** | 0.558*** | 0.918*** |
| | (0.180) | (0.022) | (0.093) | (0.035) |
| HML | 0.343** | 0.426*** | -0.043 | 0.128*** |
| | (0.174) | (0.021) | (0.090) | (0.035) |
| UMD | -0.559*** | -0.171*** | -0.197** | -0.162*** |
| | (0.182) | (0.022) | (0.094) | (0.036) |
| AR | -0.001 | -0.002 | -0.013* | -0.006** |
| | (0.013) | (0.002) | (0.007) | (0.003) |
| Observations | 253 | 253 | 253 | 253 |
| Adjusted R-squared | 0.327 | 0.958 | 0.449 | 0.92 |

Standard errors in parentheses

$^{*}$ $p < 0.1$, $^{**}$ $p < 0.05$, $^{***}$ $p < 0.01$

Note: The table presents an analysis of stock returns based on daily portfolios, following the methodology of Eckbo, Nygaard, and Thorburn (2022). The dependent variable is the daily equally weighted average returns in excess of the daily risk free rate returns. AR is the dummy variable for the event window (0,1). MKT represents market risk premium, while SMB (Small Minus Big) captures the return difference between small-cap and large-cap stocks. HML (High Minus Low) is a value factor and captures the difference between high book-to-market (value) stocks and low book-to-value (growth) stocks. UMD is a momentum factor that reflects the return difference between stocks with high past returns and those with low past returns. The estimation period begins 365 days before the event date (December 11, 2024). Column 1 provides excess returns for NYSE firms with all-male boards, while Column 2 provides excess returns for all firms listed on the NYSE. Similarly, column 3 provides excess returns for NASDAQ firms with all-male board members (based on 2023 classification), and column 4 provides excess returns for all firms listed on NASDAQ. Standard errors are heteroskedasticity-robust.

Figure 1: Female Board Share

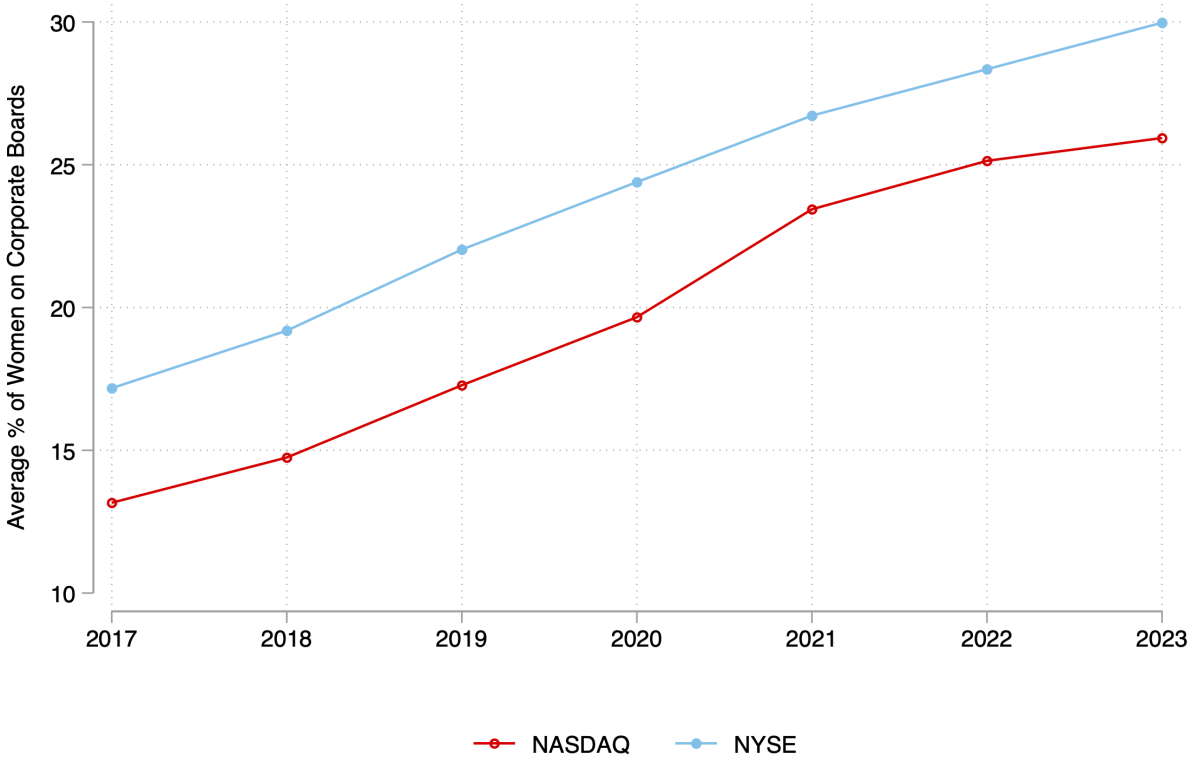


Figure 2: Textual Analysis of Explanations

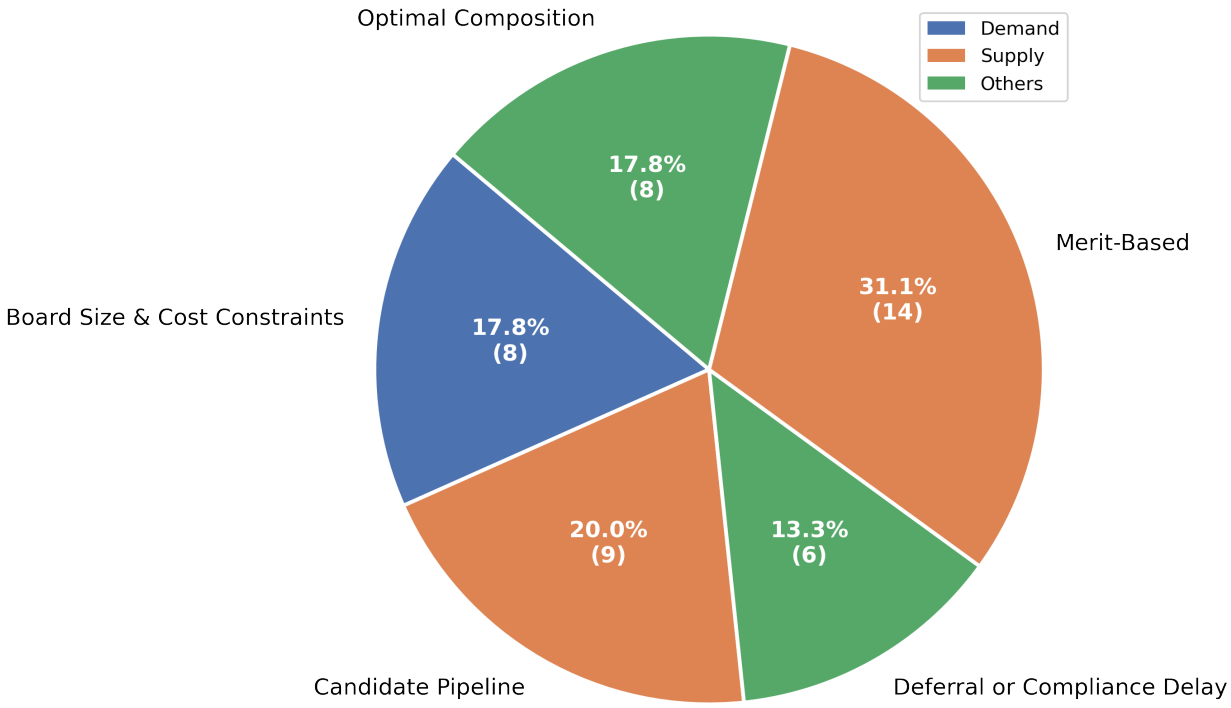
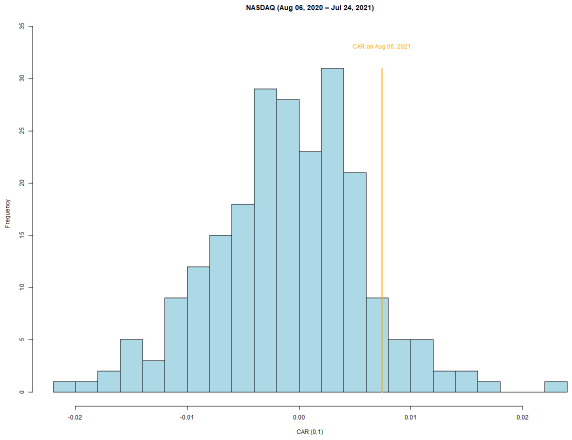
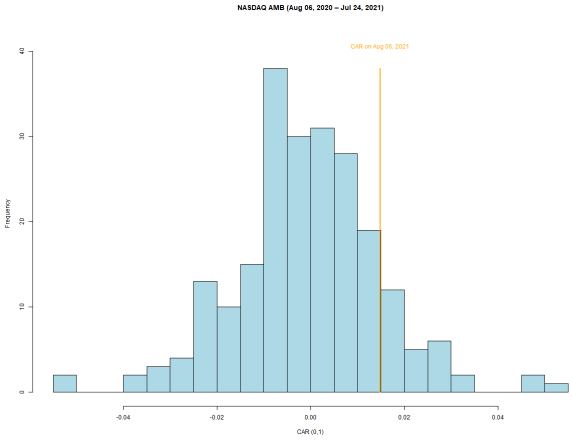


Figure 3: Distribution of Placebo CARs Around the Approval and Repeal Dates

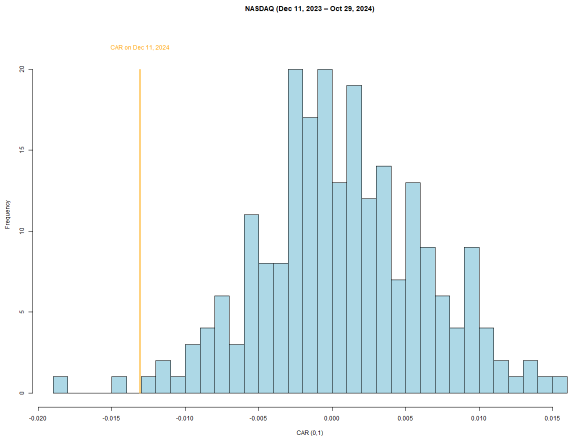
(a) Placebo CARs for NASDAQ firms around the approval date



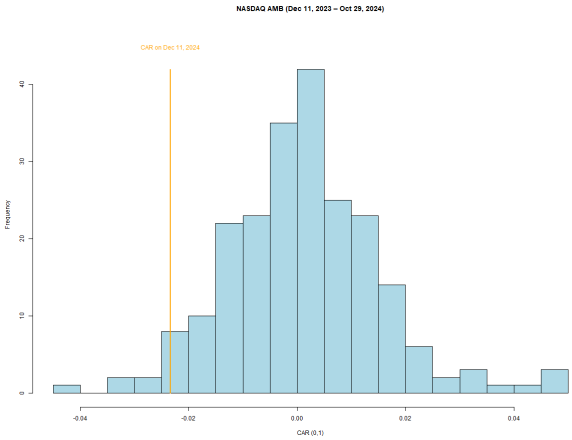

(b) Placebo CARs for NASDAQ AMB firms around the approval date




(c) Placebo CARs for NASDAQ firms around the repeal date



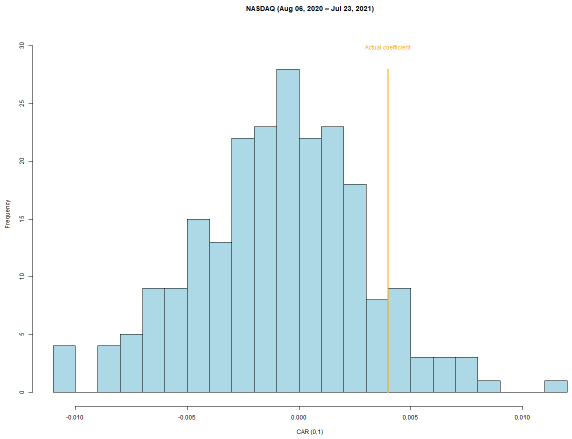

(d) Placebo CARs for NASDAQ AMB firms around the repeal date



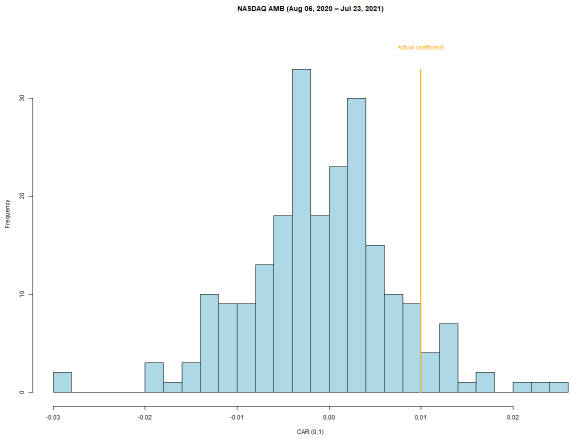

This figure presents the distribution of placebo cumulative average returns (CARs) over the (0,+1) event window around the approval (Aug 06, 2021) and repeal (Dec 11, 2024) dates. CARs are calculated using the standard event-study methodology with a 4-factor return model (Fama and French, 1993; Carhart, 1997), employing a 252 trading-day estimation window that ends 30 trading days prior to the event and requiring a minimum of 100 observations. Placebo event dates encompass all trading days between –252 and –30 trading days relative to each focal event date (i.e., August 06, 2021, and December 11, 2024). The yellow line represents the CAR on the approval and repeal dates. AMB refers to an All-Male Board firm.

Figure 4: Distribution of Placebo Event Coefficients in Portfolio Return Regressions Around the Approval and Repeal Dates

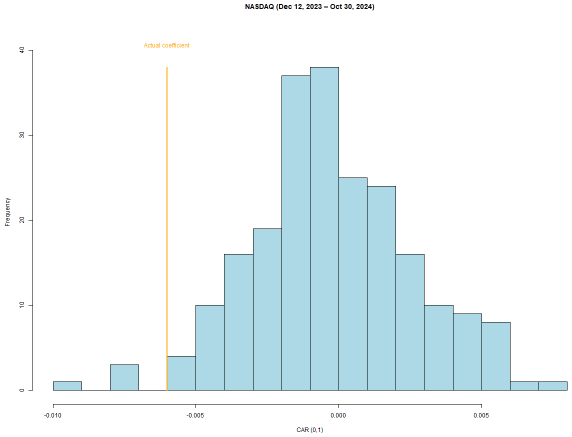
(a) Placebo indicator variable coefficients for portfolio returns of NASDAQ-listed firms around the approval date



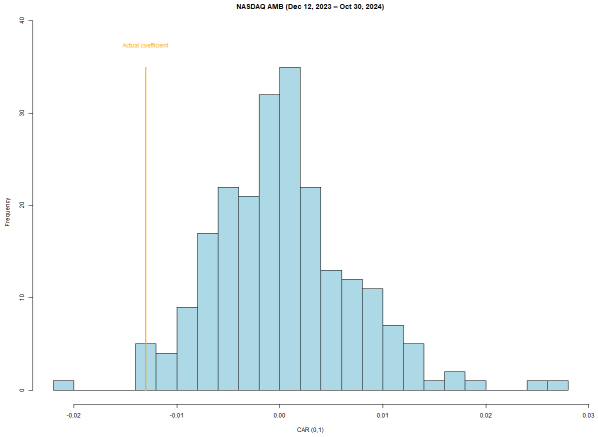

(b) Placebo indicator variable coefficients for portfolio returns of NASDAQ-listed AMB firms around the approval date




(c) Placebo indicator variable coefficients for portfolio returns of NASDAQ-listed firms around the repeal date

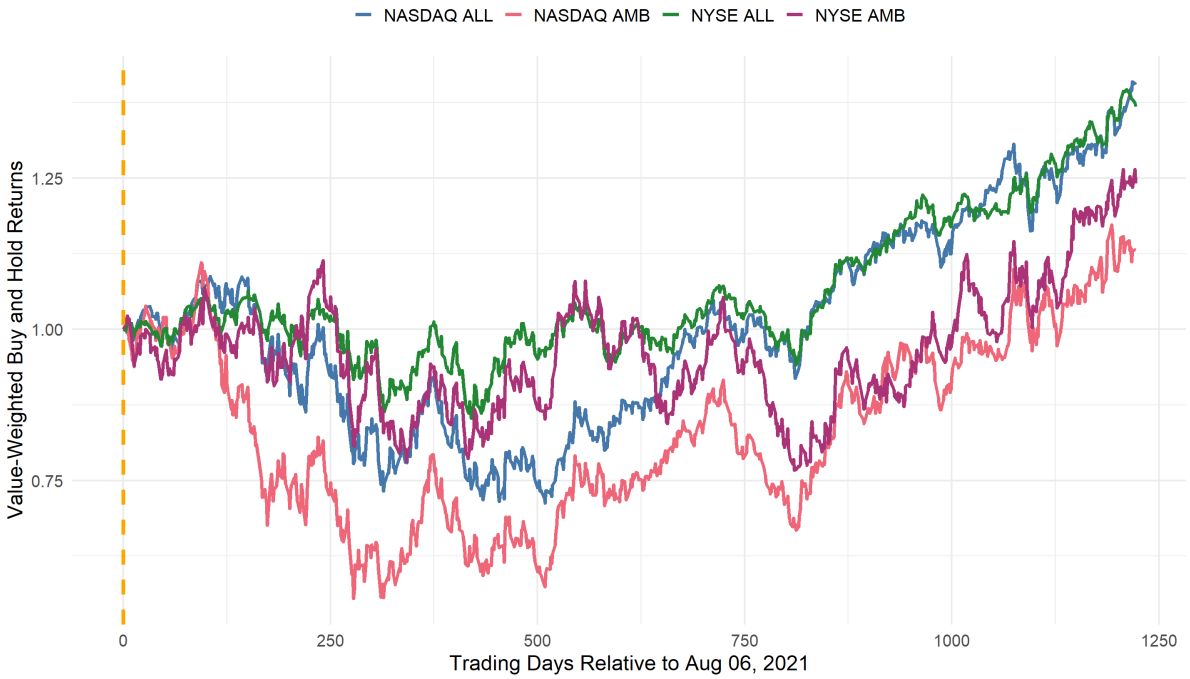



(d) Placebo indicator variable coefficients for portfolio returns of NASDAQ-listed AMB firms around the repeal date




This figure presents the distribution of placebo indicator variable coefficients for portfolio excess returns of NASDAQ-listed firms around the approval date (Aug 06, 2021) and repeal date (Dec 11, 2024). The regression specification includes an indicator variable that takes the value one on the event day and the following trading day, and zero otherwise. The dependent variable is the daily excess return of an equally weighted portfolio composed of all NASDAQ firms and NASDAQ firms with all-male boards. The explanatory variables comprise the factors from the Fama-French three-factor model, the Carhart momentum factor, and the aforementioned event indicator. The estimation period spans 365 calendar days prior to the event through one day after the event. Placebo event dates encompass all trading days between –252 and –30 trading days relative to each focal event date (i.e., August 06, 2021, and December 11, 2024). The yellow line represents the indicator variable value on the approval and repeal dates. AMB refers to an All-Male Board firm.

Figure 5: Value Weighted Buy and Hold Returns




The sample evaluates the performance of value-weighted portfolios of firms listed on NASDAQ and the NYSE. For firms delisted during the sample period, the returns on the day of delisting are computed as $(1+R_t)\times(1+DLRET_t)-1$, where $R_t$ denotes the standard return on the day of delisting and $DLRET_t$ denotes the delisting return (Beaver, McNichols, and Price 2007). For these firms, post-delisting returns are set to zero. Firms with missing return data at any point between August 06, 2021, and December 10, 2024, are excluded from the analysis. Potfolios' weights are constructed using firms' market capitalization as of August 06, 2021. AMB refers to an All-Male Board firm.

Table A1: Timeline of NASDAQ's Board Diversity Rule

| # | Event | Date | Description |
|---|---|---|---|
| 1 | Nasdaq proposed Board Diversity Rule | 1-Dec-2020 | Nasdaq submitted a rule proposal to the SEC requiring companies listed on its exchange to have one or two diverse directors—depending on the size of their board, or to publicly explain why they do not meet this criterion. The proposal also requires disclosure of board diversity statistics. |
| 2 | SEC approval (Final Rule Adopted) | 6-Aug-2021 | SEC approved the NASDAQ board diversity rule. |
| 3 | Petition filed for review in the Fifth Circuit challenging the SEC's approval of the rule | 10-Aug-2021 | The Alliance for Fair Board Recruitment challenged the SEC's approval of Nasdaq's diversity rule in the Fifth Circuit, arguing it exceeded the SEC's authority and violated constitutional and administrative law. |
| 4 | The Fifth Circuit upheld the rule | 18-Oct-2023 | A three-judge panel of the Fifth Circuit initially upheld the SEC's approval of the rule. |
| 5 | Deadline for at least one diverse director (or explain) | 31-Dec-2023 | Nasdaq-listed firms were required either to appoint at least one diverse director to their board or to publicly explain their inability to do so. |
| 6 | The Fifth Circuit granted a rehearing en banc | 19-Feb-2024 | The Fifth Circuit granted a rehearing en banc. |
| 7 | The Fifth Circuit (En Banc) Court struck down the rule | 11-Dec-2024 | The Fifth Circuit (en banc) issued a 9–8 decision vacating (invalidating) Nasdaq's board diversity rule. |

Table A2: AMB Summary Statistics in 2020

| | NASDAQ | NYSE | Diff | P-Value | N:NASDAQ | N:NYSE |
|---|---|---|---|---|---|---|
| *Board Characteristics* | | | | | | |
| Board Size | 5.94 | 6.16 | -0.22 | 0.380 | 349 | 44 |
| % Directors with MBA | 0.30 | 0.29 | 0.02 | 0.706 | 273 | 36 |
| % Directors with Doctoral Degree | 0.11 | 0.05 | 0.06* | 0.070 | 273 | 36 |
| % Directors with Ivy League Degree | 0.21 | 0.25 | -0.04 | 0.369 | 273 | 36 |
| Average Director Tenure | 0.05 | 0.05 | -0.00 | 0.972 | 273 | 36 |
| % Directors with Board Exp | 0.82 | 0.84 | -0.02 | 0.623 | 273 | 36 |
| % Directors with C-Suite Exp | 0.67 | 0.61 | 0.06 | 0.213 | 273 | 36 |
| % Directors with Sector Exp | 0.64 | 0.52 | 0.12* | 0.055 | 273 | 36 |
| 1(AMB) | 1.00 | 1.00 | 0.00 | . | 349 | 44 |
| 1(Expand) | 0.10 | 0.16 | -0.06 | 0.264 | 349 | 44 |
| Age | 12.60 | 16.84 | -4.23 | 0.139 | 170 | 17 |
| Number of Employees (thousands) | 0.72 | 2.37 | -1.65*** | 0.000 | 304 | 36 |
| Business-to-Business | 0.72 | 0.72 | -0.00 | 0.961 | 253 | 25 |
| Business-to-Consumer | 0.28 | 0.28 | 0.00 | 0.961 | 253 | 25 |

*Continued on next page*

*(Table A2 continued)*

| | NASDAQ | NYSE | Diff | P-Value | N:NASDAQ | N:NYSE |
|---|---|---|---|---|---|---|
| *Firm Characteristics* | | | | | | |
| Return on Assets | -0.10 | -0.05 | -0.06 | 0.390 | 317 | 38 |
| Log(Tobin's Q) | 0.53 | 0.13 | 0.40** | 0.049 | 301 | 35 |
| Total Assets ($ mill) | 439.39 | 1447.15 | -1007.76*** | 0.000 | 318 | 38 |
| Sales ($ mill) | 45.04 | 232.09 | -187.05*** | 0.000 | 317 | 38 |
| Leverage | 0.21 | 0.30 | -0.09 | 0.191 | 309 | 38 |
| Cash to Assets | 0.41 | 0.21 | 0.20*** | 0.000 | 318 | 38 |
| *Company Policy* | | | | | | |
| 1(Merger) | 0.00 | 0.02 | -0.02*** | 0.005 | 349 | 44 |
| 1(Dividend) | 0.15 | 0.36 | -0.22*** | 0.000 | 349 | 44 |
| 1(Dec in Shares Outstanding $\geq$ 5%) | 0.13 | 0.16 | -0.03 | 0.619 | 349 | 44 |
| 1(Incr in Shares Outstanding $\geq$ 5%) | 0.08 | 0.05 | 0.04 | 0.384 | 349 | 44 |
| *ESG* | | | | | | |
| Sustainalytics ESG Score | 31.50 | 31.42 | 0.08 | 0.971 | 79 | 22 |

*Continued on next page*

*(Table A2 continued)*

| | NASDAQ | NYSE | Diff | P-Value | N:NASDAQ | N:NYSE |
|---|---|---|---|---|---|---|
| MSCI ESG Score | 4.20 | 3.88 | 0.32 | 0.318 | 38 | 11 |
| *Industry* | | | | | | |
| Energy | 0.03 | 0.16 | -0.13*** | 0.000 | 349 | 44 |
| Materials | 0.01 | 0.05 | -0.03 | 0.142 | 349 | 44 |
| Industrials | 0.10 | 0.18 | -0.08 | 0.103 | 349 | 44 |
| Consumer Discretionary | 0.09 | 0.14 | -0.04 | 0.383 | 349 | 44 |
| Consumer Staples | 0.03 | 0.02 | 0.01 | 0.823 | 349 | 44 |
| Health Care | 0.34 | 0.02 | 0.32*** | 0.000 | 349 | 44 |
| Financials | 0.13 | 0.05 | 0.09* | 0.092 | 349 | 44 |
| Information Technology | 0.16 | 0.11 | 0.05 | 0.420 | 349 | 44 |
| Communication Services | 0.05 | 0.07 | -0.02 | 0.516 | 349 | 44 |
| Utilities | 0.00 | 0.02 | -0.02* | 0.081 | 349 | 44 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Real Estate | 0.01 | 0.14 | -0.12*** | 0.000 | 349 | 44 |

Notes: The sample restricts to all-male boards. The table comes from a cross section of the data, representing 2020 values. Raw means and p-values from a two-sided t-test are reported. Boardroom characteristics are derived from BoardEx and represent mean values in 2020. Firm characteristics are derived from Compustat and represent mean values in 2020. Return on Assets is net income before extraordinary items and discontinued operations divided by book assets. Tobin's Q is the ratio of the firm's market value to its book value of assets. Total Assets refers to Compustat item AT. Sales refers to Compustat item SALE. Leverage refers to book value of long- and short-term debt divided by total assets. Cash to Assets refers to cash and short-term investments divided by total assets. All company policies indicate if the event occurred for some security during the calendar year, and are derived from CRSP's Events files. Codes for industry classification are also derived from Compustat.

Table A3: Attrition and IPO Rates

| **Attrition Rate** | | | | | | |
|---|---|---|---|---|---|---|
| Year | NASDAQ | NYSE | Diff | P-Value | N:NASDAQ | N:NYSE |
| 2017 | 0.078 | 0.045 | 0.033*** | 0.000 | 1996 | 1209 |
| 2018 | 0.067 | 0.053 | 0.015* | 0.095 | 2019 | 1196 |
| 2019 | 0.047 | 0.048 | -0.001 | 0.941 | 2044 | 1178 |
| 2020 | 0.053 | 0.035 | 0.018** | 0.022 | 2157 | 1162 |
| 2021 | 0.099 | 0.080 | 0.020** | 0.042 | 2638 | 1333 |
| 2022 | 0.126 | 0.068 | 0.058*** | 0.000 | 2554 | 1290 |
| **IPO Rate** | | | | | | |
| Year | NASDAQ | NYSE | Diff | P-Value | N:NASDAQ | N:NYSE |
| 2017 | 0.067 | 0.059 | 0.008 | 0.538 | 1241 | 590 |
| 2018 | 0.078 | 0.037 | 0.041*** | 0.001 | 1264 | 589 |
| 2019 | 0.074 | 0.031 | 0.043*** | 0.000 | 1275 | 578 |
| 2020 | 0.098 | 0.050 | 0.048*** | 0.001 | 1333 | 565 |
| 2021 | 0.169 | 0.118 | 0.051*** | 0.003 | 1583 | 650 |
| 2022 | 0.037 | 0.006 | 0.031*** | 0.000 | 1556 | 643 |
| 2023 | 0.025 | 0.013 | 0.012* | 0.082 | 1444 | 621 |

Note: Attrition rate is calculated between 2017 and 2022, and is done so separately for firms listed on the NASDAQ and NYSE. The attrition rate is equal to 1 if it is the last year that a firm is included in the dataset, and 0 otherwise. We omit 2023 from the attrition rate calculation because that is the last year of data availability for some variables. IPO rate is calculated between 2017 and 2023, and is done so separately for firms listed on the NASDAQ and NYSE. The IPO rate is equal to 1 if the IPO data for the firm is in that year, and 0 otherwise.

Table A4: Effect of Mandatory Disclosure on Board Composition

| Dependent Variables: | Male Share of Board | 1(All-Male Board) | Board Size | 1(Expand Board) | 1(Male Dropped) |
|---|---|---|---|---|---|
| Model: | (1) | (2) | (3) | (4) | (5) |
| Panel A: Synthetic Difference-in-Differences (on Balanced Panels) | | | | | |
| *Variables* | | | | | |
| NASDAQ $\times \mathbb{I}(\text{Year} > 2020)$ | -0.008*** | -0.045*** | 0.023 | 0.016 | 0.004 |
| | (0.003) | (0.007) | (0.041) | (0.012) | (0.008) |
| Panel B: Difference-in-Differences (on Balanced Panels) | | | | | |
| *Variables* | | | | | |
| NASDAQ $\times \mathbb{I}(\text{Year} > 2020)$ | -0.009*** | -0.089*** | -0.064 | 0.031** | 0.007 |
| | (0.003) | (0.010) | (0.049) | (0.013) | (0.009) |
| *Fixed-effects* | | | | | |
| Firm | Yes | Yes | Yes | Yes | Yes |
| Year | Yes | Yes | Yes | Yes | Yes |
| *Fit statistics* | | | | | |
| Observations | 18410 | 18410 | 18410 | 17381 | 17381 |
| Dependent variable mean | 0.779 | 0.118 | 8.949 | 0.262 | 0.065 |
| Number of Firms | 2630 | 2630 | 2630 | 2428 | 2428 |

*Jackknife standard-errors in parentheses. Signif. Codes:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: The samples restrict to balanced panels (required for synthetic difference-in-difference) of firms that were domestic and listed covering 2017–2023. Panel A shows results from a synthetic difference-in-difference specification following Arkhangelsky et al., (2021). Panel B shows comparison of conventional difference-in-difference results on the same balanced panels. Treated firms are listed in NASDAQ. Control firms are listed in NYSE. The outcome variables are derived from BoardEx's organizational summary files, which provide the director roster as of the company's annual report date. The 'Expand Board' indicator equals one if board size increases relative to the prior year. 'Male Dropped' equals 1 if board size is unchanged relative to the prior year while the proportion of male directors fall. Industries are categorized into 11 divisions using the 4-digit GICS code. GICS codes are obtained from Compustat. The NASDAQ board diversity rule was approved on August 6, 2021, mandating companies to have at least two diverse directors on board (at least one for companies with five or fewer directors by December 31, 2026) or explain why they do not comply.

Table A5: Effect of Mandatory Disclosure on Board Composition

| Dependent Variables: | Male Share of Board | 1(All-Male Board) | Board Size | 1(Expand Board) | 1(Male Dropped) |
|---|---|---|---|---|---|
| Model: | (1) | (2) | (3) | (4) | (5) |
| **Panel A: Synthetic DiD Event Studies Estimates** | | | | | |
| NASDAQ × Year = 2017 | -0.000 | 0.011*** | 0.001 | -0.004 | 0.000 |
| | (0.000) | (0.003) | (0.006) | (0.004) | (0.002) |
| NASDAQ × Year = 2018 | 0.002*** | 0.015*** | 0.003 | 0.002 | -0.006** |
| | (0.001) | (0.003) | (0.008) | (0.004) | (0.003) |
| NASDAQ × Year = 2019 | 0.002** | 0.006 | 0.008 | 0.006 | -0.002 |
| | (0.001) | (0.004) | (0.008) | (0.005) | (0.003) |
| NASDAQ × Year = 2021 | -0.009*** | -0.032*** | -0.025 | 0.003 | 0.005 |
| | (0.003) | (0.006) | (0.041) | (0.021) | (0.012) |
| NASDAQ × Year = 2022 | -0.009*** | -0.046*** | 0.050 | 0.049** | 0.008 |
| | (0.003) | (0.008) | (0.048) | (0.020) | (0.011) |
| NASDAQ × Year = 2023 | -0.007* | -0.056*** | 0.045 | -0.005 | -0.000 |
| | (0.004) | (0.009) | (0.053) | (0.018) | (0.010) |
| **Panel B: Synthetic DiD Estimates (ATT)** | | | | | |
| NASDAQ × $\mathbb{I}$(Year > 2020) | -0.008*** | -0.045*** | 0.023 | 0.016 | 0.004 |
| | (0.003) | (0.007) | (0.040) | (0.013) | (0.008) |
| *Fixed-effects* | | | | | |
| Firm | Yes | Yes | Yes | Yes | Yes |
| Year-SIC | Yes | Yes | Yes | Yes | Yes |
| *Fit statistics* | | | | | |
| Observations | 18410 | 18410 | 18410 | 17381 | 17381 |
| Dependent variable mean | 0.779 | 0.118 | 8.949 | 0.262 | 0.065 |
| Number of Firms | 2630 | 2630 | 2630 | 2428 | 2428 |

*Clustered (Firm) standard-errors in parentheses. Signif. Codes:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: The samples restrict to balanced panels (required for synthetic difference-in-difference) of firms that were domestic and listed covering 2017–2023. Panel A reports event studies estimates relative to the synthetic control trend constructed to match pre-treatment outcomes. Panel B shows estimates of synthetic difference-in-difference average treatment effect for comparison. Standard errors are bootstrapped based on 999 simulations and clustered at the firm level. Treated firms are listed in NASDAQ. Control firms are listed in NYSE. The outcome variables are derived from BoardEx's organizational summary files, which provide the director roster as of the company's annual report date. The 'Expand Board' indicator equals one if board size increases relative to the prior year. 'Male Dropped' equals 1 if board size is unchanged relative to the prior year while the proportion of male directors fall. Industries are categorized into 11 divisions using the 4-digit GICS code. GICS codes are obtained from Compustat. The NASDAQ board diversity rule was approved on August 6, 2021, mandating companies to have at least two diverse directors on board (at least one for companies with five or fewer directors by December 31, 2026) or explain why they do not comply.

Table A6: Effect of Mandatory Disclosure on Board Composition for Already-Diverse Firms

| Dependent Variables: | Male Share of Board | 1(All-Male Board) | Board Size | 1(Expand Board) | 1(Male Dropped) |
|---|---|---|---|---|---|
| Model: | (1) | (2) | (3) | (4) | (5) |
| NASDAQ X Year = 2017 | 0.012*** | 0.141*** | 0.069 | -0.013 | -0.021 |
| | (0.004) | (0.016) | (0.065) | (0.028) | (0.016) |
| NASDAQ X Year = 2018 | 0.012*** | 0.102*** | 0.093 | 0.021 | -0.026 |
| | (0.004) | (0.014) | (0.059) | (0.029) | (0.016) |
| NASDAQ X Year = 2019 | 0.008*** | 0.040*** | 0.073 | 0.027 | -0.023 |
| | (0.003) | (0.009) | (0.049) | (0.031) | (0.017) |
| NASDAQ X Year = 2021 | -0.004 | 0.002 | -0.036 | 0.005 | -0.022 |
| | (0.003) | (0.004) | (0.048) | (0.030) | (0.017) |
| NASDAQ X Year = 2022 | -0.006 | 0.001 | -0.006 | 0.047* | -0.018 |
| | (0.004) | (0.004) | (0.059) | (0.028) | (0.017) |
| NASDAQ X Year = 2023 | -0.002 | 0.003 | -0.067 | 0.016 | -0.036** |
| | (0.004) | (0.004) | (0.064) | (0.028) | (0.017) |
| *Fixed-effects* | | | | | |
| Firm | Yes | Yes | Yes | Yes | Yes |
| Year-SIC | Yes | Yes | Yes | Yes | Yes |
| *Fit statistics* | | | | | |
| Observations | 19823 | 19823 | 19823 | 18257 | 18257 |
| Dependent variable mean | 0.767 | 0.07 | 8.935 | 0.272 | 0.069 |
| Number of Firms | 3623 | 3623 | 3623 | 3368 | 3368 |

*Clustered (Firm) standard-errors in parentheses. Signif. Codes:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: The sample restricts to an unbalanced panel of firms that were domestic, listed, and did not have an all-male-board in 2020 (already-diverse). The time period covered is 2017-2023 and the reported effects are relative to the 2020 baseline. Standard errors are clustered at the firm level. Treated firms are listed in NASDAQ. Control firms are listed in NYSE. The outcome variables are derived from BoardEx's organizational summary files, which provide the director roster as of the company's annual report date. The 'Expand Board' indicator equals one if board size increases relative to the prior year. 'Male Dropped' equals 1 if board size is unchanged relative to the prior year while the proportion of male directors fall. Industries are categorized into 11 divisions using the 4-digit GICS code. GICS codes are obtained from Compustat. The NASDAQ board diversity rule was approved on August 6, 2021, mandating companies to have at least two diverse directors on board (at least one for companies with five or fewer directors by December 31, 2026) or explain why they do not comply.

Table A7: Effect of Mandatory Disclosure on Financial Variables

| Dependent Variables: | RoA | RoE | Tobin's Q | Log(Market to Book) | Cash Flow to Asset | Index of Financial Outcomes |
|---|---|---|---|---|---|---|
| Model: | (1) | (2) | (3) | (4) | (5) | (6) |
| Panel A: Intent to Treat Effect Estimates | | | | | | |
| NASDAQ $\times \mathbb{I}(\text{Year} > 2020)$ | -0.001 | -0.018 | -0.217*** | -0.103*** | -0.002 | -0.027** |
| | (0.004) | (0.019) | (0.0143 | (0.024) | (0.004) | (0.012) |
| Panel B: DiD Event Studies Estimates | | | | | | |
| NASDAQ × Year = 2017 | -0.022*** | -0.016 | -0.139* | -0.023 | -0.019** | -0.022 |
| | (0.007) | (0.028) | (0.071) | (0.030) | (0.008) | (0.019) |
| NASDAQ × Year = 2018 | -0.029*** | -0.054** | -0.246*** | -0.050* | -0.027*** | -0.067** |
| | (0.008) | (0.027) | (0.070) | (0.028) | (0.008) | (0.034) |
| NASDAQ × Year = 2019 | -0.025*** | -0.065** | -0.203*** | -0.064*** | -0.022*** | -0.049** |
| | (0.007) | (0.026) | (0.062) | (0.024) | (0.007) | (0.020) |
| NASDAQ × Year = 2021 | 0.012* | 0.037 | -0.253*** | -0.083*** | 0.012* | 0.001 |
| | (0.007) | (0.025) | (0.068) | (0.026) | (0.007) | (0.014) |
| NASDAQ × Year = 2022 | -0.025*** | -0.083** | -0.427*** | -0.164*** | -0.024*** | -0.073*** |
| | (0.008) | (0.035) | (0.079) | (0.032) | (0.009) | (0.019) |
| NASDAQ × Year = 2023 | -0.048*** | -0.117*** | -0.413*** | -0.168*** | -0.046*** | -0.115*** |
| | (0.009) | (0.035) | (0.080) | (0.034) | (0.009) | (0.022) |
| *Fixed-effects* | | | | | | |
| Firm | Yes | Yes | Yes | Yes | Yes | Yes |
| Year-SIC | Yes | Yes | Yes | Yes | Yes | Yes |
| *Fit statistics* | | | | | | |
| Observations | 25453 | 23975 | 22725 | 22726 | 24122 | 25475 |
| Dependent variable mean | 0.783 | 0.133 | 2.178 | 0.266 | 0.066 | -0.071 |
| Number of Firms | 4546 | 4382 | 4307 | 4307 | 4347 | 4548 |

*Clustered (Firm) standard-errors in parentheses. Signif. Codes:* $^{*}\ p < 0.1$, $^{**}\ p < 0.05$, $^{***}\ p < 0.01$

Note: The sample restricts to an unbalanced panel of firms that were domestic and listed covering 2017–2023. Panel A shows estimates of difference-in-difference average treatment effect. Panel B reports event studies estimates relative to the 2020 baseline. Standard errors are clustered at the firm level. Treated firms are listed in NASDAQ. Control firms are listed in NYSE. Financial variables are derived from Compustat's quarterly fundamental files and are either log transformed or winsorized at the 1st and 99th percentiles. The percentiles are calculated relative to all domestic and listed companies observed in the annual distribution. The index of financial outcomes averages the z-score across several financial outcomes, following Kling, Liebman, and Katz (2007). For each financial outcome, the z-score subtracts the mean of the control group, then divides by the standard deviation of the control group. Industries are categorized into 11 divisions using the 4-digit GICS code. GICS codes are obtained from Compustat. The NASDAQ board diversity rule was approved on August 6, 2021, mandating companies to have at least two diverse directors on board (at least one for companies with five or fewer directors by December 31, 2026) or explain why they do not comply.

Table A8: Effect of Mandatory Disclosure on Financial Variables

| Dependent Variables: | RoA | RoE | Log(Q) | Log(Market to Book) | Cash Flow to Asset | Index of Financial Outcomes |
|---|---|---|---|---|---|---|
| Model: | (1) | (2) | (3) | (4) | (5) | (6) |
| Panel A: Synthetic Difference-in-Difference | | | | | | |
| *Variables* | | | | | | |
| NASDAQ $\times \mathbb{I}(\text{Year} > 2020)$ | -0.004 | -0.022 | -0.107*** | -0.134*** | -0.007 | -0.043*** |
| | (0.012) | (0.021) | (0.015) | (0.023) | (0.011) | (0.015) |
| Panel B: Difference-in-Difference (Balanced Panels) | | | | | | |
| *Variables* | | | | | | |
| NASDAQ $\times \mathbb{I}(\text{Year} > 2020)$ | 0.002 | -0.007 | -0.043*** | -0.058** | 0.001 | -0.019* |
| | (0.005) | (0.018) | (0.015) | (0.026) | (0.005) | (0.011) |
| *Fixed-effects* | | | | | | |
| Firm | Yes | Yes | Yes | Yes | Yes | Yes |
| Year | Yes | Yes | Yes | Yes | Yes | Yes |
| *Fit statistics* | | | | | | |
| Observations | 17850 | 15799 | 13755 | 13755 | 16660 | 17871 |
| Dependent variable mean | -0.037 | -0.006 | 0.507 | 0.843 | -0.01 | 0.034 |
| Number of Firms | 2550 | 2257 | 1965 | 1965 | 2380 | 2553 |

*Jackknife standard-errors in parentheses. Signif. Codes:* * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: The samples restrict to balanced panels (required for synthetic difference-in-difference) of firms that were domestic and listed covering 2017–2023. Panel A shows results from a synthetic difference-in-difference specification following Arkhangelsky et al., (2021). Panel B shows comparison of conventional difference-in-difference results on the same balanced panels. Treated firms are listed in NASDAQ. Control firms are listed in NYSE. Financial variables are derived from Compustat's annual fundamental files and are either log transformed or winsorized at the 1st and 99th percentiles. The percentiles are calculated relative to all domestic and listed companies observed in the annual distribution. The index of financial outcomes averages the z-score across several financial outcomes, following Kling, Liebman, and Katz (2007). For each financial outcome, the z-score subtracts the mean of the control group, then divides by the standard deviation of the control group.Industries are categorized into 11 divisions using the 4-digit GICS code. GICS codes are obtained from Compustat. The NASDAQ board diversity rule was approved on August 6, 2021, mandating companies to have at least two diverse directors on board (at least one for companies with five or fewer directors by December 31, 2026) or explain why they do not comply.

Table A9: Effect of Mandatory Disclosure on Financial Variables

| Dependent Variables: | RoA | RoE | Log(Q) | Log(Market to Book) | Cash Flow to Asset | Index of Financial Outcomes |
|---|---|---|---|---|---|---|
| Model: | (1) | (2) | (3) | (4) | (5) | (6) |
| Panel A: Synthetic DiD Event Studies Estimates | | | | | | |
| NASDAQ × Year = 2017 | 0.001 | 0.016 | -0.003 | -0.003 | 0.001 | 0.004 |
| | (0.003) | (0.010) | (0.005) | (0.006) | (0.003) | (0.007) |
| NASDAQ × Year = 2018 | -0.006*** | -0.010 | -0.019*** | -0.006 | -0.007*** | -0.013 |
| | (0.002) | (0.006) | (0.006) | (0.007) | (0.002) | (0.009) |
| NASDAQ × Year = 2019 | -0.002 | -0.012 | -0.020*** | -0.005 | -0.001 | -0.002 |
| | (0.003) | (0.010) | (0.006) | (0.006) | (0.003) | (0.006) |
| NASDAQ × Year = 2021 | 0.026*** | 0.047*** | -0.062*** | -0.087*** | 0.024** | 0.014 |
| | (0.009) | (0.017) | (0.013) | (0.021) | (0.010) | (0.014) |
| NASDAQ × Year = 2022 | -0.007 | -0.037 | -0.134*** | -0.161*** | -0.014 | -0.045*** |
| | (0.013) | (0.026) | (0.017) | (0.029) | (0.013) | (0.015) |
| NASDAQ × Year = 2023 | -0.031** | -0.075** | -0.126*** | -0.154*** | -0.032*** | -0.097*** |
| | (0.012) | (0.032) | (0.019) | (0.032) | (0.012) | (0.021) |
| Panel B: Synthetic DiD Estimates (ATT) | | | | | | |
| NASDAQ × $\mathbb{I}$(Year > 2020) | -0.004 | -0.022 | -0.107*** | -0.134*** | -0.007 | -0.043*** |
| | (0.010) | (0.019) | (0.014) | (0.024) | (0.010) | (0.013) |
| *Fixed-effects* | | | | | | |
| Firm | Yes | Yes | Yes | Yes | Yes | Yes |
| Year-SIC | Yes | Yes | Yes | Yes | Yes | Yes |
| *Fit statistics* | | | | | | |
| Observations | 17850 | 15799 | 13755 | 13755 | 16660 | 17871 |
| Dependent variable mean | -0.037 | -0.006 | 0.507 | 0.843 | -0.01 | 0.034 |
| Number of Firms | 2550 | 2257 | 1965 | 1965 | 2380 | 2553 |

*Clustered (Firm) standard-errors in parentheses. Signif. Codes:* $^{*}$ $p < 0.1$, $^{**}$ $p < 0.05$, $^{***}$ $p < 0.01$

Note: The samples restrict to balanced panels (required for synthetic difference-in-difference) of firms that were domestic and listed covering 2017–2023. Panel A reports event studies estimates relative to the synthetic control trend constructed to match pre-treatment outcomes. Panel B shows estimates of synthetic difference-in-difference average treatment effect for comparison. Standard errors are bootstrapped based on 999 simulations and clustered at the firm level. Treated firms are listed in NASDAQ. Control firms are listed in NYSE. Financial variables are derived from Compustat's quarterly fundamental files and are either log transformed or winsorized at the 1st and 99th percentiles. The percentiles are calculated relative to all domestic and listed companies observed in the annual distribution. The index of financial outcomes averages the z-score across several financial outcomes, following Kling, Liebman, and Katz (2007). For each financial outcome, the z-score subtracts the mean of the control group, then divides by the standard deviation of the control group. Industries are categorized into 11 divisions using the 4-digit GICS code. GICS codes are obtained from Compustat. The NASDAQ board diversity rule was approved on August 6, 2021, mandating companies to have at least two diverse directors on board (at least one for companies with five or fewer directors by December 31, 2026) or explain why they do not comply.

Table A10: Effect of Board Member Composition on Tobin's Q

| | (1) NASDAQ | (2) NYSE |
|---|---|---|
| Panel A. Instrumental Variable regressions: dependent var = financial variables | | |
| | industry-adjusted Q | |
| Percent women directors | -1.313 | -2.578 |
| | (2.410) | (2.389) |
| | industry-adjusted RoA | |
| Percent women directors | -0.177 | 0.154 |
| | (0.335) | (0.206) |
| | industry-adjusted RoE | |
| Percent women directors | -1.133*** | 2.113* |
| | (0.393) | (1.140) |
| | Log of industry-adjusted Market to Book | |
| Percent women directors | 0.343 | 0.736 |
| | (1.354) | (2.259) |
| | Industry-adjusted Cash flow to Asset | |
| Percent women directors | 0.002 | 0.124 |
| | (0.326) | (0.206) |
| Year fixed effects | Yes | Yes |
| Firm fixed effects | Yes | Yes |
| Panel B. Reduced-form regressions: dependent var = industry-adjusted Q | | |
| 2021 dummy X percent of women in 2020 | 0.616 | 0.325 |
| | (0.773) | (0.569) |
| 2022 dummy X percent of women in 2020 | 0.335 | 0.308 |
| | (0.845) | (0.693) |
| 2023 dummy X percent of women in 2020 | 0.583 | 0.970 |
| | (0.845) | (0.761) |
| Year fixed effects | Yes | Yes |
| Firm fixed effects | Yes | Yes |
| F-statistic | 0.86 | 1.40 |
| Observations | 6740 | 4092 |
| Panel C. First-stage regressions: dependent var = percent women directors$_t$ | | |
| 2021 dummy | 0.069*** | 0.063*** |
| | (0.004) | (0.005) |
| 2022 dummy | 0.110*** | 0.103*** |
| | (0.005) | (0.007) |
| 2023 dummy | 0.135*** | 0.136*** |
| | (0.005) | (0.007) |
| 2021 dummy X percent of women in 2020 | -0.163*** | -0.157*** |
| | (0.015) | (0.019) |
| 2022 dummy X percent of women in 2020 | -0.288*** | -0.252*** |
| | (0.020) | (0.024) |
| 2023 dummy X percent of women in 2020 | -0.355*** | -0.327*** |
| | (0.023) | (0.027) |
| Firm FE | Yes | Yes |
| F-statistic | 169.23 | 102.55 |
| Observations | 6918 | 4270 |

Clustered (Firm) standard-errors in parentheses. Signif. Codes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: Data are yearly observations from 2020 to 2023. Percent women directors$_t$ is a predicted variable estimated in the first-stage regressions. Percent of women in 2020 records the percentage of shareholder-elected directors that were women as reported in the firm's 2020 annual report. Year-2020 variables are omitted. Standard errors are clustered by firm. Financial variables in Panel A are industry-adjusted by subtracting the median for the same four-digit GICS industry among firms pooled across NASDAQ & NYSE. If fewer than five firms exist at the four-digit level, the three-digit industry-group median is used; if still fewer than five, the two-digit sector median is used.

Table A11: BoardEx Matching Rates

| | BoardEx N | CRSP | Compustat | All of (2-3) |
|---|---|---|---|---|
| 2017 | 4351 | 0.945 | 0.963 | 0.924 |
| 2018 | 4337 | 0.942 | 0.963 | 0.923 |
| 2019 | 4317 | 0.942 | 0.965 | 0.924 |
| 2020 | 4507 | 0.935 | 0.955 | 0.911 |
| 2021 | 5270 | 0.951 | 0.890 | 0.862 |
| 2022 | 5009 | 0.966 | 0.925 | 0.902 |
| 2023 | 4569 | 0.971 | 0.959 | 0.940 |
| 2024 | 3717 | 0.978 | 0.976 | 0.961 |

Column (2) restricts to CRSP Company Policy and BoardEx matches,

Column (3) restricts to Compustat Fundamentals and Boardex, and Column (4) restricts to both.

Table A12: Effects of Mandatory Disclosure on Board Composition of Firms with All Male Boards

| | Male Share of Board | 1(All-Male Board) | Board Size | 1(Expand Board) | 1(Male Dropped) |
|---|---|---|---|---|---|
| NASDAQ X Year = 2017 | 0.006 | -0.041 | -0.364 | -0.061 | 0.004 |
| | (0.012) | (0.057) | (0.363) | (0.115) | (0.010) |
| NASDAQ X Year = 2018 | 0.004 | -0.054 | -0.483 | 0.012 | 0.009 |
| | (0.014) | (0.062) | (0.350) | (0.095) | (0.009) |
| NASDAQ X Year = 2019 | 0.011 | 0.005 | -0.255 | 0.065 | 0.008 |
| | (0.013) | (0.055) | (0.275) | (0.099) | (0.009) |
| NASDAQ X Year = 2021 | 0.028 | 0.165* | -0.653** | -0.172 | 0.013 |
| | (0.019) | (0.094) | (0.298) | (0.109) | (0.048) |
| NASDAQ X Year = 2022 | 0.016 | 0.010 | -0.443 | 0.178** | 0.039 |
| | (0.022) | (0.093) | (0.281) | (0.081) | (0.034) |
| NASDAQ X Year = 2023 | 0.033 | -0.009 | -0.272 | -0.032 | 0.005 |
| | (0.024) | (0.090) | (0.321) | (0.110) | (0.039) |
| Firm FE | Yes | Yes | Yes | Yes | Yes |
| Year-SIC FE | Yes | Yes | Yes | Yes | Yes |
| Observations | 1856 | 1856 | 1856 | 1720 | 1720 |
| Dependent variable mean | 0.949 | 0.730 | 6.379 | 0.214 | 0.035 |
| Number of Firms | 313 | 313 | 313 | 310 | 310 |

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: The sample restricts to an unbalanced panel of firms that were domestic, listed, and had all-male boards in 2020. The time period covered is 2017 - 2023, with reported effects relative to the 2020 baseline. Standard errors are clustered at the firm level. Treated firms are listed in NASDAQ and have all-male boards as of 2020. Control firms are listed in NYSE and have all-male boards as of 2020. The 'Expand Board' indicator equals one if board size increases relative to the prior year. 'Male Dropped' equals 1 if some male director present in the previous year is not present in the current year. Outcome variables related to board composition are derived from BoardEx's organizational summary files, which provide the director roster as of the company's annual report date. Industries are categorized into 11 divisions using the 4 digit GICS code. GICS codes are obtained from Compustat. Sample sizes vary due to missing values of the outcome variable. The NASDAQ board diversity rule was approved on August 6, 2021, mandating companies to have at least two diverse directors on board (at least one for companies with five or fewer directors by December 31, 2026) or explain why they do not comply.

Table A13: Abnormal Returns on December 11, 2024 for NASDAQ's Explaining and Non-Explaining Firms

| | Day relative to event | No. of firms | Mean | Tests of mean = 0 | | | |
|---|---|---|---|---|---|---|---|
| | | | | Std Cross Sectional t-test | Patell's Z test | Gen. Sign test | Wilcoxon Rank test |
| Non-Explaining | | | | | | | |
| | 0 | 2075 | -0.743% | *** | *** | *** | *** |
| | 1 | | -0.577% | *** | *** | ** | *** |
| Explaining | | | | | | | |
| | 0 | 41 | 0.079% | | | | * |
| | 1 | | -0.719% | | | | |

$^{*}$ $p < 0.1$, $^{**}$ $p < 0.05$, $^{***}$ $p < 0.01$

Note: The mean on day 0 represents the average abnormal returns on the event date, while the mean on day 1 reflects the average abnormal returns on the day following the event date. CAR [0,1] represents the cumulative abnormal returns over a two-day window, calculated as the sum of the abnormal returns on the event date (day 0) and the following day (day 1). For the abnormal returns, we employed an estimation window of 252 days, included a gap of 30 days between the end of the estimation window and the event date (Dec 11, 2024), and only considered firms with at least 100 stock return observations in the estimation window. Explaining firms are those that offered an explanation for their lack of diversity.

Table A14: Market Reaction Analysis Using Portfolio Approach For NASDAQ Rule-Related Events

| | Dec 01, 2020 | Aug 10, 2021 | Oct 18, 2023 | Feb 19, 2024 |
|---|---|---|---|---|
| Intercept | 0.001*** | 0.000 | 0.000 | 0.000 |
| | (0.000) | (0.000) | ( 0.000) | (0.000) |
| MKT | 0.918*** | 0.848*** | 0.775*** | 0.867*** |
| | (0.014) | (0.032) | (0.030) | (0.033) |
| SMB | 0.891*** | 0.944*** | 0.853*** | 0.817*** |
| | (0.035) | (0.039) | (0.050) | (0.042) |
| HML | 0.157*** | -0.021 | 0.175*** | 0.165*** |
| | (0.038) | (0.032) | (0.035) | (0.036) |
| UMD | -0.015 | -0.054** | -0.145*** | -0.183*** |
| | (0.028) | (0.025) | (0.030) | (0.035) |
| AR | -0.001 | -0.002 | -0.005 | 0.004 |
| | (0.003) | (0.003) | (0.003) | (0.004) |
| Observations | 253 | 253 | 252 | 251 |
| Adjusted R-squared | 0.964 | 0.884 | 0.898 | 0.904 |

Standard errors in parentheses

$^{*}$ $p < 0.1$, $^{**}$ $p < 0.05$, $^{***}$ $p < 0.01$

Note: The table presents an analysis of stock returns based on daily portfolios constructed from all NASDAQ firms. The analysis follows the methodology of Eckbo, Nygaard, and Thorburn (2022) for NASDAQ rule-related events, excluding approval and repeal dates. The variables and methodology are identical to those described in Table 9. Detailed descriptions of the underlying events are reported in Table A1.

Table A15: Variable Definitions and Data Sources

| Variable | Description | Source |
|---|---|---|
| 1(AMB) | Indicator for all male board | BoardEx |
| 1(Expand) | Indicator for increase in board size relative to previous year | BoardEx |
| Board Size | Board size | BoardEx |
| Female Directors | Number of female directors | BoardEx |
| MBA | Percent of board with an MBA degree | BoardEx |
| Female Directors | Number of female directors | BoardEx |
| Age | Time since IPO date | Compustat |
| Number of Employees | Number of employees at firm in thousands | Compustat |
| Tobin's Q | (CSHO*PRCC + DLTT + DLC)/AT | Compustat |
| Total Assets | Compustat item AT | Compustat |
| Sales | Compustat item SALE | Compustat |
| ROA | Compustat item NI/AT | Compustat |
| Leverage | Compustat item (DLC+DLTT)/AT | Compustat |
| Cash to Assets | Compustat item CHE/AT | Compustat |

*Continued on next page*

Variable Definitions and Data Sources (continued)

| **Variable** | **Description** | **Source** |
|---|---|---|
| Market Value | CRSP item shrout*prc | CRSP |
| 1(Merger) | Indicator for merger | CRSP |
| 1(NASDAQ) | Indicator for NASDAQ-listed firms | CRSP |
| 1(Dividend) | Indicator for dividend | CRSP |
| 1(Dec in Shares Outstanding $\geq 5\%$) | Indicator for decrease in shares outstanding | CRSP |
| 1(Inc in Shares Outstanding $\geq 5\%$) | Indicator for increase in shares outstanding | CRSP |
| Abnormal Returns | Abnormal returns are computed as the difference between firms' returns obtained from CRSP and their expected returns. Expected returns are estimated using the Carhart (1997) model. The Fama–French and momentum factors are obtained from WRDS | CRSP, WRDS |
| Sustainalytics ESG Score | Sustainalytics ESG Risk Score | Sustainalytics |
| MSCI ESG Score | MSCI ESG Weighted Average Score | MSCI |