HUMAN CAPITAL, SEARCH FRICTIONS, AND ALL-MALE CORPORATE BOARDROOMS

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Abstract

This study examines the role of search frictions and gendered differences in human capital in contributing to the prevalence of all-male corporate boardrooms. I use California's SB826, enacted in 2018 and requiring at least one female director on corporate boards by 2019, as a policy shock. Using a difference in differences design comparing listed California-based firms to listed non-California based firms, I find the quota increased the female share of boards by 11 percentage points while increasing the share of out-of-network and first-time female directors by 3 percentage points. Other human capital measures, corporate governance, and financial outcomes remained stable. The traditional shift-share instrumental variables approach used in related research dramatically over-states point-estimates, as pre-reform diversity is correlated with firm-size and growth trajectories. My results indicate SB826 reduced firms' reliance on existing networks, suggesting that search frictions, rather than a lack of qualified candidates, previously contributed to the persistence of all-male boards.

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1 Introduction

All-male corporate boardrooms have traditionally been persistent and prevalent, representing 30% of all listed companies in 2017. Scholars have proposed several explanations for this phenomenon, including gendered differences in human capital and access to relevant professional networks, often referred to as the "Old Boys' Club" (Cullen and Perez-Truglia 2023; Michelman, Price, and Zimmerman 2022; Essen and Smith 2022). Gender quotas on corporate boards have been an increasingly popular policy response aimed at increasing female representation in corporate leadership over the last 20 years (e.g., Ahern and Dittmar 2012; Bertrand et al. 2019; Allen and Wahid 2024; Greene, Intintoli, and Kahle 2020; Ferrari et al. 2022). Although prior research has examined the effects of gender quotas on financial performance and director qualifications, there is limited evidence on how they affect professional networks in the boardroom. Do gender quotas bring in directors with board-specific human capital who were previously excluded due to search frictions? Or have all-male boardrooms persisted because women lack traditional human capital measures such as relevant schooling and experience (Becker 1964; Mincer 1974)?

To distinguish between the human capital and search frictions hypotheses, this paper leverages detailed U.S. data to investigate how gender quotas affect board diversity, human capital measures, professional networks, corporate governance practices, and firm performance. If women are underrepresented because of search frictions, gender quotas may bring in first-time directors from outside existing networks without reducing measures of board quality. If women are excluded because they lack relevant human capital, gender quotas may compel firms to appoint less qualified candidates or to strategically evade complying with the quota's requirements (Ahern and Dittmar 2012). However, quota-appointed directors may also lack influence, in which case, quotas may not have much effect on organizational outcomes beyond their direct effects of placing women onto boardrooms (e.g., Bertrand et al. 2019).

To answer these questions, I study how firms responded to California's SB826, the first gender-based quota for corporate boards in the United States. Passed in late 2018, SB826 mandates that listed companies headquartered in California (CA) have at least one female director by the end of 2019, with additional requirements for larger boards by 2021. Companies failing to comply face annual fines ranging from $100,000 to $300,000. I examine corporate responses during the three years following enactment, until the law was ruled unconstitutional in 2022.[2]

Identifying the causal impact of gender quotas on long-run outcomes is challenging for several reasons. First, I show gender diversity exhibits mean reversion (Figure I) and that firms with limited diversity prior to the regulation are on faster growth trajectories, violating the identifying assumption of the shift-share instrument used in Ahern and Dittmar (2012) and Bertrand et al. (2019).[3] Second, difference-in-differences designs comparing CA to non-CA based companies may violate the Stable Unit Treatment Value Assumption (SUTVA) if CA's quota creates spillover effects, perhaps by signalling an emerging national trend (Von Meyerinck et al. 2018). Third, quota-adoption is endogenous, so under the social-change hypothesis, CA-based companies may increase diversity even absent the regulation (e.g., Donohue and Heckman 1991; McCrary 2007). I find these concerns to identification using difference-in-difference designs are not realized in practice.

I estimate the causal effects of the quota using several complementary approaches. In the baseline specification, I restrict the sample to listed companies with all-male boards in 2017, the year before the quota's introduction. I define CA-based firms with all-male boards in 2017 as the treated ("quota-affected") group and firms with all-male boards outside CA as the control

[2] The implementation of NASDAQ's rule requiring mandatory disclosure of board diversity in August 2021 complicates interpretation of point estimates past this date, so I choose to end my sample as of December 2021 (Fried 2021).

[3] This concern may apply to other contexts as well. Ahern and Dittmar (2012) acknowledge their first-stage point estimates may be due to reversion to the mean, Eckbo, Nygaard, and Thorburn (2022) show firms with lower baseline female diversity are smaller firms that were particularly negatively affected by the 2008 financial crisis, and Bertrand et al. (2019) find that growth trajectories for the share of women with kids and share women working part-time was smaller for firms that started with high female shares. As formalized in Goldsmith-Pinkham, Sorkin, and Swift (2020), these examples are all violations of the identifying assumption required of shift-share instruments.

group. Conceptually, CA-based firms with all-male boards in 2017 represent an "intend-to-treat" sample, analogous to firms that were ASA in 2003 in Bertrand et al. (2019). In this context, treated firms faced the greatest pressure to comply, as they had no female directors prior to SB826. They are also of independent interest, as this paper asks why they are prevalent.

As a related empirical strategy, I expand the sample to estimate a triple-difference specification that uses firms with gender-diverse boards in 2017 as a within-state control. This specification leverages variation before and after the quota, between all listed CA and non-CA based firms, and among firms with and without all-male boards prior to the quota. As a robustness check, I estimate difference-in-differences specifications that compare all listed CA firms to all listed non-CA firms, before and after the law's passage. The estimated effects of the quota on various outcomes are typically smaller in this broader sample, providing initial evidence against the social change hypothesis.[4]

By 2021, the share of all-male boards declines by 24 percentage points and the female share increases by 11 percentage points in the baseline specification. Triple-difference estimates yield nearly identical results, showing increased diversity after the quota is not driven by social change or mean reversion alone. If I restrict the control group in the baseline specification to be firms in Democratic states – where behavioral responses are most likely to occur – I observe similar point estimates, providing suggestive evidence against SUTVA violations. The first-stage effects using the standard shift-share instrument used by Ahern and Dittmar (2012) and Bertrand et al. (2019) would be upward biased by 14 percentage points due to mean reversion, representing more than a 50% overstatement. My empirical design reveals that compliance is driven by board expansion rather than male-replacement, as the quota increased the rate of board expansion by

[4]By 2021, multiple lawsuits challenged the constitutionality of CA's Senate Bill 826 and there was substantial non-compliance with the stricter requirements that, depending on board size, mandated up to 50% female board representation. Consistent with this reasoning, the effect of the gender quota on the female board share drops from 0.08 in the baseline specification to 0.04 in the difference-in-difference specification with all listed firms. The estimated effects of the quota on boardroom characteristics and financial outcomes are also typically smaller in this specification. As a further robustness check, I reassuringly observe similar trends in board diversity among private firms based inside and outside CA.

14 percentage points in 2019. There is no evidence that CA firms engaged in evasive actions such as delisting or changing headquarter location to avoid compliance.

Next, I turn to the primary question of how the quota shifted boardroom characteristics, including professional networks. In the full sample, I observe that 61 percent of incoming male directors have a prior employment connection to the board, compared to 39 percent of incoming female directors. The baseline specification indicates that the quota reduced the share of directors with prior professional networks to the board by 3 percentage points and increased the share of first-time directors by an identical magnitude. Point estimates are larger if I consider alternative measures of connectivity, such as whether two directors previously served on a board together or have a same-gender connection. By requiring gender diversity, the quota therefore created incentives for firms to search for candidates outside the traditional "Old Boys' Club."

Outside of professional networks and top-level experience, new women directors generally resemble men in terms of other observable qualification measures. The quota had no discernible impacts on the average age of the boardroom, the share of directors with an MBA or Ivy-League degree, the share of directors with prior sector experience, or a board-specific human capital measure. Treated firms hired distinct female directors to fill the quota's requirement and the ratio of female directorships to treated firms in 2017 exceeds twenty. These facts indicate that the supply of potentially qualified female director candidates prior to the quota exceeded the additional demand induced by the quota.

If concerns about a limited supply of qualified candidates to meet the quota's requirements are well-founded, I may potentially observe negative effects on financial performance measures, as in Ahern and Dittmar (2012). Instead, I find SB826 increases return on assets and cash flows by 4.5 percentage points, which are significant at the 5% level. Other firm value measures, such as Tobin's Q and the market-to-book ratio also show positive point estimates but statistically insignificant effects. However, I continue to observe positive point estimates when expanding the treatment and control groups to all listed CA and non-CA companies respectively, suggesting these changes may not be due to the law. Notably, the reduced-form effects using the traditional shift-share instrument yields implausibly large positive effects on ROA and negative effects on Tobin's Q, as firms with all-male boards are typically younger and on faster growth trajectories.[5] Interpreted conservatively, my results imply that the quota did not deteriorate financial performance measures within three years.

Relationship to the Literature: The primary contribution of this paper is to show that gender diversity mandates can break reliance on incumbent connections, highlighting that search frictions, not a lack of qualified women, are a barrier to women's representation in corporate leadership. Although networks are a central feature of board recruitment, they have received limited attention in the literature on gender diversity mandates. Prior research highlights the importance of connections in shaping access to corporate leadership roles. For example, Gormley et al. (2023) show that institutional investor pressure to increase board diversity led firms to identify candidates beyond managers' existing networks and to place less emphasis on executive experience. Using administrative data on Danish firms, Essen and Smith (2022) offer evidence that professional networks are a key determinant of board appointments, finding that connections are strongly correlated with becoming a first-time director.[6]

Outside the CA context, a large literature examines the effects of gender diversity mandates in Europe.[7] Early research on Norway's 2003 quota, which required 40% female board representation, found substantial non-compliance, less experienced boards, and declines in firm value within five years (Ahern and Dittmar 2012). In a follow-up paper, Bertrand et al. (2019)

[5] It is important to acknowledge that financial and corporate governance outcomes may respond to reasons tangentially related to the introduction of women onto boards, such as increases in board size, how male directors act in the boardroom, or differential responses to the Covid-19 pandemic. Therefore, I interpret this medium-run evidence as supplementary to the main analysis of boardroom characteristics to corroborate that search frictions contributed to the prevalence of all-male boards.

[6] See also Michelman, Price, and Zimmerman (2022) and Cullen and Perez-Truglia (2023), who discuss the importance of professional networks in shaping career outcomes outside the corporate board context. Hallock (1997) shows that CEOs embedded in interlocking boards, where CEOs sit on each other's boards, earn significantly higher compensation, underscoring the importance of professional networks for executives.

[7] The U.S. context offers additional insight, as U.S. corporate governance emphasizes shareholder primacy and flexible board structures, whereas many European markets operate under stakeholder-oriented frameworks and more centralized governance systems (Greene, Intintoli, and Kahle 2020; Jäger, Schoefer, and Heining 2021).

find that women appointed to corporate boards post-reform were observably more qualified than their female predecessors along many dimensions, but that the reform did not benefit the larger set of women employed in the companies subject to the quota. Similarly, Eckbo, Nygaard, and Thorburn (2022) find that the valuation effect of Norway's quota law was statistically insignificant, while Ferrari et al. (2022) find no significant effects of Italy's gender quota mandate on firm performance or share prices. Taken together, my findings show that the quota did not have substantial impacts besides its direct effect of placing out-of-network, first-time female directors onto corporate boards, consistent with the main conclusions in Bertrand et al. (2019). Secondarily, I demonstrate the traditional shift-share instrument used in related research is not appropriate (at least in the US context), as firms with all-male boards are on different trajectories, violating the requirements formalized in Goldsmith-Pinkham, Sorkin, and Swift (2020).

Existing research on SB826 in particular has emphasized short-term share price reactions to milestones associated with the law's passage or repeal, with mixed findings: some studies document negative announcement returns of 1–2% (e.g., Greene, Intintoli, and Kahle 2020; Hwang, Shivdasani, and Simintzi 2018; Klick 2025; Von Meyerinck et al. 2018), while others find non-negative or positive reactions (e.g., Allen and Wahid 2024). The most related paper in this context is Allen and Wahid (2024), who find similar first-stage point estimates but null effects on total network size. By showing that SB826 introduced women with less powerful connections, I clarify that search frictions rather than human capital differences previously contributed to the prevalence of all-male boards. This prevalence can be reconciled with models of statistical discrimination in which firms rely on group-based information when individual signals are noisy or costly to acquire (Phelps 1972). When board recruitment is mediated by incumbent professional networks, signals about candidates within those networks are more precise, allowing all-male boards to persist even when similarly qualified female candidates exist outside these networks.

The remainder of this paper is structured as follows. Section 2 outlines the quota's requirements, followed by a description of the data in Section 3. Section 4 examines firms' compliance with the legislation. In Section 5, I explore how the quota changed boardroom characteristics, including professional networks. Section 6 analyzes the quota's impact on corporate governance and financial performance measures. Finally, Section 7 concludes.

2 Legal Context

CA Governor Jerry Brown signed into law Senate Bill (SB) 826 on September 30, 2018, which requires publicly held corporations with a principal executive office in CA to have at least one female director on the Board of Directors by December 31, 2019.[8] By the end of 2021, companies with five directors are mandated to have at least two female directors, and companies with six or more directors are required to have at least three. I analyze responses to the gender quota from 2019 through 2021, covering the period before legal challenges invalidated the law and NASDAQ's implemented its mandatory diversity disclosure rule (Fried 2021). A potential limitation of this analysis window is that I may fail to detect effects on corporate governance and financial performance that materialize in the longer-run.

The legislation applies to companies headquartered in CA with shares listed on the New York Stock Exchange, NASDAQ, or NYSE American, but does not cover private companies or listed companies based outside CA. Companies that fail to comply with the quota are subject to fines: each director seat required to be held by a female that is not filled for any portion of the calendar year counts as a violation. A fine of $100,000 is imposed for the first violation and $300,000 for each subsequent violation.[9] CA-based firms affected by SB826 had several

[8] According to the CA Secretary of State, "A female is an individual who self-identifies her gender as a woman, without regard to the individual's designated sex at birth." Publicly held companies have shares listed on the New York Stock Exchange, NASDAQ, or NYSE American. Between 2015 and 2021, no other U.S. state passed a corporate board gender quota that enforces fines on non-compliant companies. On May 13, 2022, Los Angeles Superior Court Judge Maureen Duffy-Lewis found that SB826 violates the equal protection clause of CA's constitution, halting enforcement of the gender quota: https://corpgov.law.harvard.edu/2022/06/12/california-gender-board-diversity-law-is-held-unconstitutional/

[9] For example, a CA-based listed company that has no female board members between January 1, 2019, and

options to avoid fines. First, they could add a female board member by the end of 2019, either by replacing an existing male director or expanding the board. Second, firms could avoid the law's reach by going private or moving their headquarters out of CA. While the state agency responsible for enforcement never issued fines, companies swiftly added female directors, as I document in Section 4.[10]

The response to SB826 offers unique insight into how diversity mandates affect corporate boards in the U.S., where such policies had not previously been implemented. Although my study period overlaps with other diversity initiatives in the U.S., such as pressure from institutional investors to increase board gender diversity (Gormley et al. 2023), SB826 was the only mandate that required companies to appoint female directors. It thus provides a rare opportunity to study the effects of a gender quota in the U.S., where legal, regulatory, and cultural environments differ from European countries that have adopted similar quotas.

3 Data Sources and Sample Description

I link data from BoardEx, Compustat, and CRSP to study how CA's SB826 affected professional networks, human capital measures, corporate governance, and firm performance.[11] To assess how firms complied with SB826, I use BoardEx, which provides annual data on board gender composition for approximately 4,000 domestic and publicly listed firms from 2010 to 2021, covering nearly the universe of U.S. listed companies (Table I). These data allow me to construct

December 31, 2020, would owe $400,000. Failure to file timely board gender information with CA's Secretary of State also incurs a $100,000 fine.

[10]It is interesting to observe that 37% of CA-based companies were in non-compliance with the stricter requirements as of 2021 (Table A1), but there was near universal compliance with the more lenient 2019 requirement. Several theories may explain this behavior. The first legal challenge filed in state court was on August 6, 2019, so firms may have previously operated under the presumption the law would be enforced and shifted expectations thereafter (Allen and Wahid 2024). Second, the median monetary cost of adding a non-executive director is approximately $100,000, which typically represents less than 0.2% of a company's market value (Greene, Intintoli, and Kahle 2020). Third, there may be costs from market participants such as institutional investors from maintaining all-male boards (Gormley et al. 2023).

[11]I use the crosswalk provided by WRDS and employ a conservative approach that requires matched companies to have identical SEC identifiers (CIKs) and security-level identifiers (CUSIPs) across BoardEx, Compustat, and CRSP.

compliance measures, including (i) the share of women on the board, (ii) an indicator for all-male boards, (iii) whether firms expanded board size to comply, and (iv) whether a male director was replaced to add a female director.[12]

To understand how SB826 affected professional networks, I analyze connections between new directors and existing board members or senior management using BoardEx's employment connection dataset. For each incoming director, I observe whether they previously worked with any member of the incumbent board or C-suite (which includes the CEO, CFO, and other top executives). The dataset also identifies the type of connection – whether two individuals previously served together on a board, as senior executives at the same firm, in other leadership roles, or have a same-gender connection. Data limitations include the fact that I only observe connection patterns for individuals who were directors at least once over the sample period, and that my access to data precludes me from analyzing connection patterns beyond Dec 31, 2020.

From BoardEx, I gather data on age, education, and prior board, executive, and sector experience at the time of onboarding to evaluate observable director qualifications. Experience variables are over all positions (which may exceed 52 weeks in a calendar year), so I focus on indicator variables rather than the level. I also analyze whether new directors were non-executive members, a proxy for director independence (Adams, Hermalin, and Weisbach 2010). In the flavor of Bertrand et al. (2019), I construct a board-specific human capital index as a function of the variables described above. In the first step, I regress director compensation on the age, schooling, and experience variables. For each director, the human capital index is the predicted compensation using the fitted values from the first-step, where the independent variables are measured upon onboarding. Unlike Bertrand et al. (2019), I avoid using the predicted probability of board membership, as my dataset conditions on board members.

From BoardEx, I also examine whether newly appointed female directors joined monitoring-

[12]The annual characteristics of the board are measured as of the company's annual report date. If there are multiple annual reports in a single calendar year, I select the last annual report. BoardEx does not impute gender. Instead, gender is based on self-identification or pronouns used in official reports. For the robustness check in Figure A1, I use a non-random sample of private companies available in BoardEx.

intensive committees, including the audit, compensation, and nominating committees. I complement these governance outcomes with data from the Stanford Securities Class Action Clearinghouse, which tracks securities class action filings in federal courts. The director level BoardEx data allows me to construct variables for CEO turnover and whether the CEO is chairman of the board. From CRSP, I analyze firm-level outcomes typically influenced by the board, including delistings, mergers and acquisitions (M&A), dividend issuance, share repurchases, and changes in shares outstanding. Firms are coded as delisted if none of their securities remain listed in the following year. M&A, dividends, and repurchases are coded as occurring if any security was involved in such transactions during the calendar year. I further use daily CRSP share prices to calculate abnormal returns on October 1, 2018. I obtain headquarter location from Compustat Snapshot, cross-verifying missing cases with WRDS SEC Analytics Suite and BoardEx's Company Profile files, to examine whether firms avoided the quota by changing headquarter location.

To examine the effects of SB826 on financial performance, I link BoardEx to Compustat. From Compustat, I construct standard measures of operating performance such as return on assets (ROA) and cash flows. I consider, but do not focus, on firm value measures such as Tobin's Q because of the limitations discussed in Bartlett and Partnoy (2020). ROA is calculated as net income before extraordinary items divided by book assets. Cash flows are income before extraordinary items plus depreciation and amortization divided by total assets. Tobin's Q is computed as the ratio of the firm's market value to book value of assets, where market value equals book assets plus market equity minus book equity. Observations with non-positive total or book assets are excluded. I also construct a composite z-score index of financial outcomes combining seven indicators: ROA, return on equity, Log(Tobin's Q), Log(market-to-book), cash flows, Log(employment), and capital intensity.[13] After merging BoardEx, Compustat,

[13]The z-scores are calculated by subtracting the control group mean and dividing by the control group standard deviation, ensuring that each variable has mean 0 and a standard deviation 1 within the control group. Aggregating multiple outcome variables within a given domain can improve statistical precision by lowering standard errors (Kling, Liebman, and Katz 2007; Hoynes, Schanzenbach, and Almond 2016).

and CRSP, approximately 4,000 U.S.-based, publicly listed companies remain in my sample annually between 2015 and 2021, covering nearly the full universe of listed firms (Table A2). CA-based firms account for 16 to 20 percent of the sample each year, and in the three years prior to SB826's passage, 31 to 39 percent of CA firms had all-male boards (Table I).

Several interesting facts about firms with all-male boards are notable. First, I observe that 88% of companies with all-male boards maintain all-male boards the following year (Figure A2). It is rare for firms with gender-diverse boards to transition to all-male boards. Descriptively, firms with all-male boards are typically younger, smaller, and less profitable than firms with gender-diverse boards (Table A3), consistent with the observations in Eckbo, Nygaard, and Thorburn (2022). More formally, I find that companies that transition from all-male boards to gender-diverse boards are on faster growth trajectories. Using the difference-in-difference estimator of Sun and Abraham (2021) suitable for staggered treatment adoption, I see that in the pre-quota period, firms with all-male boards are on faster asset growth and employment growth trajectories relative to companies that maintained gender-diverse boards (Table A4). These patterns caution against the traditional shift-share instruments used to evaluate the longer-term effects of gender quotas, which relies on the exogeneity of the pre-quota female share with respect to trends in potential outcomes (Goldsmith-Pinkham, Sorkin, and Swift 2020).[14]

Motivated by the primary research question of whether all-male boards are common due to limited female human capital or search frictions, but also by the facts above, I define quota-affected firms (the "treated" group) as CA-based companies with all-male boards in 2017, the year before the law passed. Analogously, I define the control group as companies with all-male boards in 2017 but headquartered outside CA. Although SB826 applies to all publicly listed

[14]The IV specification in Ahern and Dittmar (2012) and Bertrand et al. (2019) is a special case of the shift-share instrument described by Goldsmith-Pinkham, Sorkin, and Swift (2020). While a general Bartik instrument for firm f is defined as $B_f = \sum_{k=1}^{K} z_{fk} g_k$ for K shocks, the standard approach used in the quota literature represents the case where $K = 1$. In this setting, the instrument collapses to $B_f = z_f \cdot g$, where z_f is the pre-quota female share (the "share") and g is the post-quota indicator (the "shift"). As Goldsmith-Pinkham, Sorkin, and Swift (2020) demonstrate, the identifying variation in this $K = 1$ case is derived entirely from the cross-sectional exogeneity of the initial shares z_f.

firms headquartered in CA, not all firms were equally likely to be directly affected. Companies with at least one female director prior to the quota faced no immediate pressure to change board composition to comply with the 2019 requirement, though may have needed to adjust to meet the stricter 2021 thresholds depending on board size. In theory, the quota could deter already compliant firms from transitioning to all-male boards. However, transitions from gender-diverse boards to all-male boards are rare as previously discussed. In later sections, I implement a triple-difference specification that uses firms with gender-diverse boards as an additional within-state control group. If SB826 affects those firms, triple-difference estimates will be smaller than difference-in-differences (DD) estimates, providing a test of the social change hypothesis. As an additional check, I estimate a difference in difference specification using all listed CA firms as the treatment group and all listed non-CA firms as the control group. If compliance is driven by firms with all-male boards prior to the regulation, then the first-stage point estimate should fall in this specification.

There are notable cross-sectional differences between the 204 treated firms and 942 control firms, as reported in Table II. In 2017, treated firms have smaller boards, are younger, and employ fewer workers than control firms. They also have higher Tobin's Q and are less likely to pay dividends, suggesting that CA-based firms subject to the quota are more likely to be growth-oriented companies. Despite these differences, many boardroom human capital and professional network measures – the focus of this paper – are similar between treated and control firms. Directors in both groups have comparable ages and similar rates of prior connections to board members and C-suite executives. Directors joining treated firms are somewhat more likely to hold MBAs and have prior board and C-suite experience. Committee participation is also broadly similar, though treated firms have a slightly higher share of directors on nominating committees. These cross-sectional differences do not pose a concern for my identification strategy, which relies on the parallel trends assumption rather than identical baseline characteristics.

4 Compliance with the Quota

Unlike evidence from other countries, I find no indication that firms systematically evaded CA's SB826 quota through delisting or changing headquarters. For example, studies of Norway's 2003 gender quota document substantial evasion: only one-third of quota-affected companies ("ASA" companies in Norway) remained listed within five years of the quota's announcement (Bertrand et al. 2019). By contrast, SB826 imposed relatively mild penalties compared to the threat of forced dissolution in Norway. CA firms faced monetary fines that were comparable to the typical annual compensation of a non-executive director — around \$100,000 per year, similar to SB826's \$100,000 to \$300,000 fines for non-compliance. Given these moderate penalties, adding a female director represented a far less costly adjustment than delisting or relocating. Consistent with this reasoning, the rates of delisting and headquarter relocation following SB826's passage were similar between treated and control firms, suggesting little evidence of evasion (Tables A5, A6).[15]

I next examine how CA firms adjusted board composition in response to SB826. Among CA companies with all-male boards in 2017, fewer than a dozen remained all-male by 2021 — a sharp decline from 204 to just 12 companies. However, gender diversity on corporate boards was rising across the U.S. during this period (Figure II), suggesting that part of the shift toward more gender-diverse boards reflects broader national trends in attitudes about women in leadership. Formally, I estimate the parameters of the following event-study model using ordinary least squares:

$$Y_{fti} = \gamma_0 + \sum_{t \neq 2017} \beta^t \Big(1[Year = t] \times CA\ HQ_{2017} \Big) + \delta_f + \delta_{ti} + \epsilon_{fti}, \tag{1}$$

where Y_{fti} is a board composition outcome for firm f in year t and industry i, δ_f are firm

[15] Since I do not observe differential attrition between treatment and control groups, I am not motivated to further condition treatment and control groups based on realized 2021 status or modify the treatment group to be CA-based firms in a given year, analogous to Bertrand et al. (2019) Table 4, Panel A.

fixed effects, δ_{ti} are industry-by-year fixed effects, and γ_0 is a constant. All regressions use an unbalanced panel of firms from 2015 to 2021, 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, I observe treated firms are concentrated in manufacturing and services (Table II); using the more granular 43 FTSE industry classification, I see treated firms are more heavily represented in biotechnology and software (Table A7). For the parameter estimates to identify the causal effect of SB826, it is necessary that outcomes would have followed parallel trends between treated and control firms within industry, absent the law. If the parallel trends assumption holds, estimates of β^t for $t < 2019$ should be close to zero. In line with this assumption, I find that pre-treatment trends are flat and statistically indistinguishable from zero across a range of board composition outcomes, supporting the credibility of the identification strategy.

Table III presents the event-study estimates. SB826 substantially increased the representation of women on boards and reduced the prevalence of all-male boards. The male share of directors fell by 6 percentage points within a year of the law's passage, and the share of all-male boards fell by 30 percentage points, aligning with point estimates in Allen and Wahid (2024). These changes occurred primarily through board expansion rather than replacement of existing male directors: the probability that a firm expanded its board rose by 14 percentage points (relative to a baseline of 23 percent) in 2019, while the likelihood of dropping a male director did not significantly change. Board size increased by about 0.22 seats on average in 2019, consistent with firms meeting the quota by adding women rather than displacing men. This pattern of board expansion is consistent with Greene, Intintoli, and Kahle (2020) but differs from findings in Hwang, Shivdasani, and Simintzi (2018), who focus on a sample of Russell 3000 firms. To contextualize these effects, the 11 percentage point increase in female board share induced by SB826 between 2019 and 2021 is greater than the entire gain in female board representation among all listed companies between 2010 and 2017. Moreover, this effect is comparable in magnitude to the impact of a one standard deviation increase in “Big 3” institutional ownership — BlackRock, Vanguard, and State Street — as estimated by Gormley et al. (2023).

4.1 Robustness Checks

Several factors may bias the estimated effects of gender quotas on board gender composition which have not been previously emphasized. If SB826 created social pressure for firms outside CA to appoint more women to their boards — for instance, by signaling an emerging national standard — then the event study coefficients may underestimate the law’s true effect. Such spillovers would be consistent with the discussion in Von Meyerinck et al. (2018) that CA often sets corporate governance trends that are later adopted elsewhere, especially among Democratic states that have a high propensity to follow CA’s lead. In this case, the difference-in-difference estimates featured in Allen and Wahid (2024) and Hwang, Shivdasani, and Simintzi (2018) would be biased due to SUTVA violations. Conversely, if SB826 coincided with broader shifts in attitudes about women in leadership specific to CA, the estimates may overstate the quota’s impact. Under this “social change” hypothesis (Donohue and Heckman 1991; McCrary 2007), CA firms might have increased female board representation even without the mandate. I do not find evidence that these biases meaningfully affect the baseline estimates.

To address the concern that firms outside CA may have increased board diversity in response to SB826 — biasing the estimated effect downward — I restrict the control group to firms headquartered in Democratic-leaning states. If spillovers occurred, they would likely be concentrated in these states, which share similar political and social attitudes. If so, using this control group should reduce the estimated effect of SB826, as firms headquartered in these states may have increased board gender diversity in response to CA's quota. However, when I re-estimate the baseline specification with firms headquartered in Democratic states as the control group, the point estimates are slightly larger, not smaller.[16]

Next, to address the concern that broader social changes particular to CA may explain the baseline results, I examine whether firms that already had gender-diverse boards prior to SB826 also increased female representation, as would be expected if shifts in attitudes or business culture were driving the baseline results. As a first test of this "social change" theory, I expand the treatment group to include all CA-based firms and the control group to include all non-CA-based firms. If shifting social norms rather than SB826 drove the increase in board diversity, this comparison should reveal similar gains among all CA firms. When I estimate this specification, the point estimate for 2019 falls by two-thirds — from a 30 percentage point reduction in all-male boards in the baseline estimate to just 9 percentage points, consistent with minimal changes among already gender-diverse firms (Table A8, Column 7). The decline in the male share also drops by half from 8 percentage points to 4 percentage points (Table IV).

To further assess whether shifts in attitudes unique to CA contribute to the baseline estimates, I implement a triple-difference specification using the same full sample of listed CA and non-CA firms. If broader cultural shifts rather than the quota were driving the baseline results, the triple-difference estimate should be significantly smaller than the baseline estimates, as firms already in compliance would have experienced similar changes. The specification is as follows:

$$Y_{fti} = \gamma_0 + \theta_f + \delta_{CA,t} + \psi_{AMB,t} + \beta\Big(1[Year \geq 2019] \times CA\ AMB_{2017}\Big) + \epsilon_{fti} \tag{2}$$

where Y_{fti} measures board gender composition, θ_f are firm fixed effects, $\delta_{CA,t}$ are CA-specific time effects, and $\psi_{AMB,t}$ are time effects for firms with all-male boards in 2017. The coefficient β captures the estimated effect of SB826 under this specification. The triple-

[16]The reduction in all-male boards reaches 33 percentage points by 2020 when using only Democratic states as controls (Table A8, Col 2), compared to a 30 percentage point reduction in the baseline estimate. Democratic states are defined as those that voted for Clinton in the 2016 presidential election.

difference estimate of the quota on board gender diversity is similar to the baseline result, suggesting that the observed effects in the baseline specification are driven by firm responses to the quota rather than by shifting attitudes about diversity particular to CA (Table A8, Column 6). I obtain similar point estimates on the male share and indicator for all-male board if I restrict the within-state control group to be companies compliant with the more restrictive 2021 requirements as of 2017 (Table A9).

I find that the standard shift-share instrument used by Ahern and Dittmar (2012) and Bertrand et al. (2019) would over-state the first-stage point estimate on female share by 14 percentage points (Table V).[17] As previously discussed, firms with all-male boards are on faster asset growth trajectories and Figure A3 further supports the idea that CA-based companies with varying levels of diversity prior to the quota are not on parallel trends: CA companies with all-male boards in 2017 are becoming less diverse prior to the regulation, while CA companies with gender-diverse boards in 2017 are becoming more diverse prior to the regulation. To investigate whether the baseline effects are due to differential-mean reversion as opposed to the quota's effects, I run the baseline specification but using all-male board cohorts prior to 2017 as a falsification test (Figure A4).[18] Point estimates for earlier cohorts are typically indistinguishable from zero, indicating that CA-based companies with all-male boards are not inherently more likely to transition to gender-diverse boards. I also run the baseline specification but restrict the treatment and control to companies that maintained all-male boards from 2015 through 2017 – companies that may be more likely to maintain all-male boards in future years (Table A8). I again find similar point estimates, suggesting that treatment effects from the baseline specification are due to the quota and not mean reversion. The descriptive survival probabilities

[17] The estimated effect on female share for CA-AMB companies is .38 - .62 = -.24, representing a combination of the treatment effect and mean reversion effect. The estimated effect on female share for non-CA-AMB companies is .23 - .37 = -.14, representing purely a mean reversion effect. The baseline point estimate is approximately -.10 = -.24 + .14, which nets out the mean reversion effect for CA-AMB companies.

[18] As an additional falsification test, I repeat the baseline analysis among the subset of private companies available in BoardEx. Reassuringly, Figure A1 shows similar trends in the male share among CA and non-CA based private companies.

shown in Figure A2 also show similar mean reversion rates between CA and non-CA companies from 2010-2017, suggesting treated companies do not have higher tendencies to switch to gender-diverse boards absent quota pressures. Overall, although all-male boards are persistent, the presence of mean reversion indicates that the standard shift-share instrument will over-state the quota's effects on board composition and bias instrumental variables estimates down, all else equal.

5 Effects of the Quota on Boardroom Characteristics

To distinguish between the search frictions and human capital hypotheses, I analyze how the quota shifted the characteristics of the boardroom, focusing on relevant educational qualifications, experience, and professional networks. I again estimate the parameters from Equation 1, using the characteristics of the entire boardroom at the firm and year level as the dependent variable. Examining the entire boardroom is important because, in theory, the quota could have changed the characteristics of the men in the boardroom, so this analysis captures those effects. There are also limitations to solely comparing the qualifications of incoming women in treated and control firms, as in the baseline specification, both sets of companies had no women on boards in the year prior to the quota by construction.

Table VI presents the event-study results. As in the first-stage analysis, treated and control firms follow similar trends before the quota, supporting the validity of the identification strategy. Within two years, SB826 reduced the share of the board with top-level experience, consistent with firm reactions to other corporate board gender quotas. Specifically, the quota lowered the share of the board with prior board and C-suite experience by three percentage points (Table VI, Cols 4-5). Most interestingly, I find a 3 percentage point reduction in the proportion of directors with a prior employment connection to the board. Alternative measures of connectivity to the incumbent board yield, such as whether two directors previously served on a board together or had a same-gender employment connection, yield larger point estimates. Although the quota may not have reduced the total number of connections (Allen and Wahid 2024), it did increase the share of the board not previously connected to corporate leadership.

To assess the impact of having at least one female director on boardroom characteristics (as opposed to the reduced form effects of the quota), I estimate two-stage least squares (2SLS) effects, which scale the reduced-form estimates by the first-stage effect.[19] The 2SLS estimates indicate that firms shifting to a gender-diverse board experience approximately three times the impact seen in the reduced-form results, which is not surprising given the first-stage estimate of approximately 0.30. Notably, I observe a statistically significant decline of 8, 10, and 16 percentage points in the share of prior connections, prior connections from a previous directorship, and prior same-gender connection respectively. SB826 did not change the average age of the board or the share of directors with prior same-sector experience, in contrast to findings in other contexts (i.e., Ferrari et al. 2022). It also did not affect the share of the board with an MBA degree, a certification held by 38% of directors among all listed companies over the sample period, or the share of non-executive directors. Reassuringly, point estimates decrease when estimating the baseline specification but expanding the treatment and control groups to be all-CA and non-CA firms respectively (Table IV). These patterns hint that the quota did not deteriorate the observable characteristics of the board, but the negative effects on prior board experience prompts me to further investigate this claim. If top-level experience weights heavily in contributing to board members' wage profiles, then we should see declines in predicted compensation upon onboarding, my measure of board-specific human capital. But when using this index as the outcome variable, I also find null effects. As in Gormley et al. (2023), I interpret these results to indicate firms responded to the quota by placing less emphasis on executive

[19]The first and second stage equations are as follows:

$$1\left(\text{GenderDiverseBoard}_{fti}\right) = \gamma_0 + \sum_{t \neq 2017} \beta^t \left(1[\text{Year} = t] \times \text{CA HQ}_{2017}\right) + \delta_f + \delta_{ti} + \epsilon_{fti},$$

$$Y_{fti} = \lambda_0 + \lambda_1\, 1\left(\widehat{\text{GenderDiverseBoard}}_{fti}\right) + \delta_f + \delta_{ti} + \nu_{fti}\,.$$

experience, and broadening their search to consider out-of-network female candidates who had relevant sector and educational qualifications.

To understand mechanisms behind boardroom-level changes, I look at the characteristics of incoming, outgoing, and retained directors by gender in the treatment and control groups (Table VII). Several notable facts stand out. First, 214 female directorship were filled by 210 distinct female directors in treated firms, indicating the same women were not filling multiple positions (e.g., Seierstad and Opsahl 2011) and suggesting a large supply of qualified candidates to meet the quota's requirement. Second, incoming women to treated firms generally resemble incoming women to control firms, as none of the differences are significant at the 5% level. Nevertheless, in both treatment and control groups, incoming women have fewer connections, less prior board experience, less sector experience, sit on fewer committees, and are more likely to be non-executive directors than incoming male directors. Therefore, the overall effects of the quota on boardroom characteristics is driven by treated firms recruiting a greater share of incoming directors from the female versus male candidate pool. Relatedly, there are more companies in treated firms recruiting female directors than male directors (147 to 105), while in the control group more firms recruit male than female directors (502 to 443). This pattern hints at the theory that the quota caused treated firms to substitute incoming female for incoming male directors, but future research could investigate this point further. Third, 93% of incoming female directors to treated firms are non-executive directors. That the quota did not raise the overall independence of the boardroom is because baseline rates of independence are high to begin with – approximately 80% in 2017. Fourth, retained male directors appear to hold more important responsibilities on the board, as evidence by participation on a greater number of committees and the audit committee.

The changes in boardroom characteristics introduced by the quota generally align with differences in individual characteristics between male and female directors, measured at the time of onboarding (Table VIII). Across all US listed companies from 2015-2020, women directors have similar educational backgrounds to their male counterparts but are, on average, one year younger (Table VIII). More pronounced disparities appear in prior board experience and ties to company leadership. The share of male directors with prior board experience is 83%, compared to 72% for female directors, a difference of 11 percentage points. A gap of 21 percentage points exists for prior employment connections to a sitting member on the board, and a 22 percentage point difference for prior connections to the C-suite.

6 Effects of the Quota on Corporate Governance and Financial Performance

In theory, first-time female directors from outside established networks may be tougher monitors (e.g., Adams and Ferreira 2009). I probe this hypothesis by examining the quota's effects on CEO turnover, whether CEO is chairman of the board, board-influenced outcomes such as delistings, dividend issuance, M&A activity, share repurchases, and assignments to monitoring-intensive committees. These committees include the audit, compensation, and nominating committees, where board members contribute to ensuring the integrity of financial statements, setting executive compensation, and recruiting directors. I also consider how the quota affected the share of non-executive directors, a proxy for board independence (Adams, Hermalin, and Weisbach 2010). I generally find null effects on monitoring capacity, though I observe a precisely estimated negative effect of 2.4 percentage points on audit committee participation in the size-control and triple-difference specifications. Interestingly, in male-dominated industries, there is a more sizable 3.5 percentage point decline in audit committee participation. The audit committee is regarded as a critical committee within corporate boards since its members monitor financial reporting and disclosure (Ferris, Jagannathan, and Pritchard 2003), suggesting firms may have been less willing to integrate newly appointed female directors into the most important roles. The changes in board composition do not result in greater litigation risk, as measured using records from the Stanford Securities Class Action Clearinghouse.

I conclude by examining the impact of SB826 on financial outcomes, though this is the weakest and least novel part of my analysis. If the constraint imposed by the quota is costly, I may see negative effects as in Greene, Intintoli, and Kahle (2020) and Hwang, Shivdasani, and Simintzi (2018). Existing studies on SB826 primarily focus on short-run share price reactions, with conflicting results. A key challenge in these studies is determining when the market anticipated SB826—whether during its introduction, Senate passage, or Governor Brown's signing. Some studies document negative stock market responses of 1-2% to milestones related to the quota's passage (Greene, Intintoli, and Kahle 2020; Hwang, Shivdasani, and Simintzi 2018), while others find non-negative to positive effects, with point estimates up to approximately 1% (Allen and Wahid 2024). Recent research using the unexpected repeal of the legislation finds positive abnormal returns of approximately 1% (Klick 2025). To add one more data point, using the standard market model (e.g., MacKinlay 1997), I replicate prior results in finding negative abnormal returns in the magnitude of 0.7% to 1.2% on October, 2018 – the first trading day after Governor Brown's signing (Table A11).

Given informational uncertainty surrounding the passage and enforcement of the legislation, I focus on the quota's effects on various financial outcomes in the medium run. While Table IV presents results for many financial metrics, I highlight results for ROA, a profitability metric commonly used to represent operating performance (Adams and Ferreira 2009). In the baseline specification, I observe a precisely estimated 4.5 percentage point increase in ROA, representing a 13% improvement relative to 2017 baseline levels (Table IV). The point estimates on the other financial outcome variables are positive but not significant at conventional levels, with the exception of cash flows and capital intensity. Treated companies experience greater increases in employment after the quota, suggestive of the idea that gender-diverse boards undertake fewer workforce reductions (e.g., Matsa and Miller 2013). However, not all point estimates substantially decline when expanding the treatment and control group to be all CA and non-CA firms respectively, indicating these changes may not be due to the law. Furthermore, the reduced form results using the standard shift-share instrument yields an implausibly large point estimates on ROA and cash flows (.21), which is reconciled by my finding that all-male boards are on faster growth trajectories.

7 Conclusion

If the cycle of all-male boards could be broken without negative consequences on observable corporate governance and financial performance metrics, why were they prevalent prior to the mandate? I show that board recruitment has traditionally operated within established professional networks, where the costs of identifying and vetting candidates are low. Expanding the search beyond these familiar circles requires incentives, such as pressure from institutional investors or, as studied here, a legislative requirement.

Theoretically, when board appointments are mediated by incumbent professional networks, all-male boards can remain an equilibrium even when comparable alternative allocations exist. These results can be reconciled under models of statistical discrimination where the precision of signals is higher for candidates within established professional networks, even if group level means for male and female candidates are similar (e.g., Phelps 1972). If firms are risk-averse, then firms would prefer male to female candidates conditional on the same performance signal (Aigner and Cain 1977). If firms are risk-neutral but only select candidates with the highest expected productivity, qualified female candidates may be excluded as firms will more heavily weight the group level mean as opposed to the individual performance signal (Coate and Loury 1993).

SB826 acted as a regulatory catalyst that compelled firms to pay additional search and monitoring costs. Viewed through this lens, the negative short-run announcement effects documented in previous literature may represent the market's pricing of these search costs, rather than an anticipation of diminished board quality.

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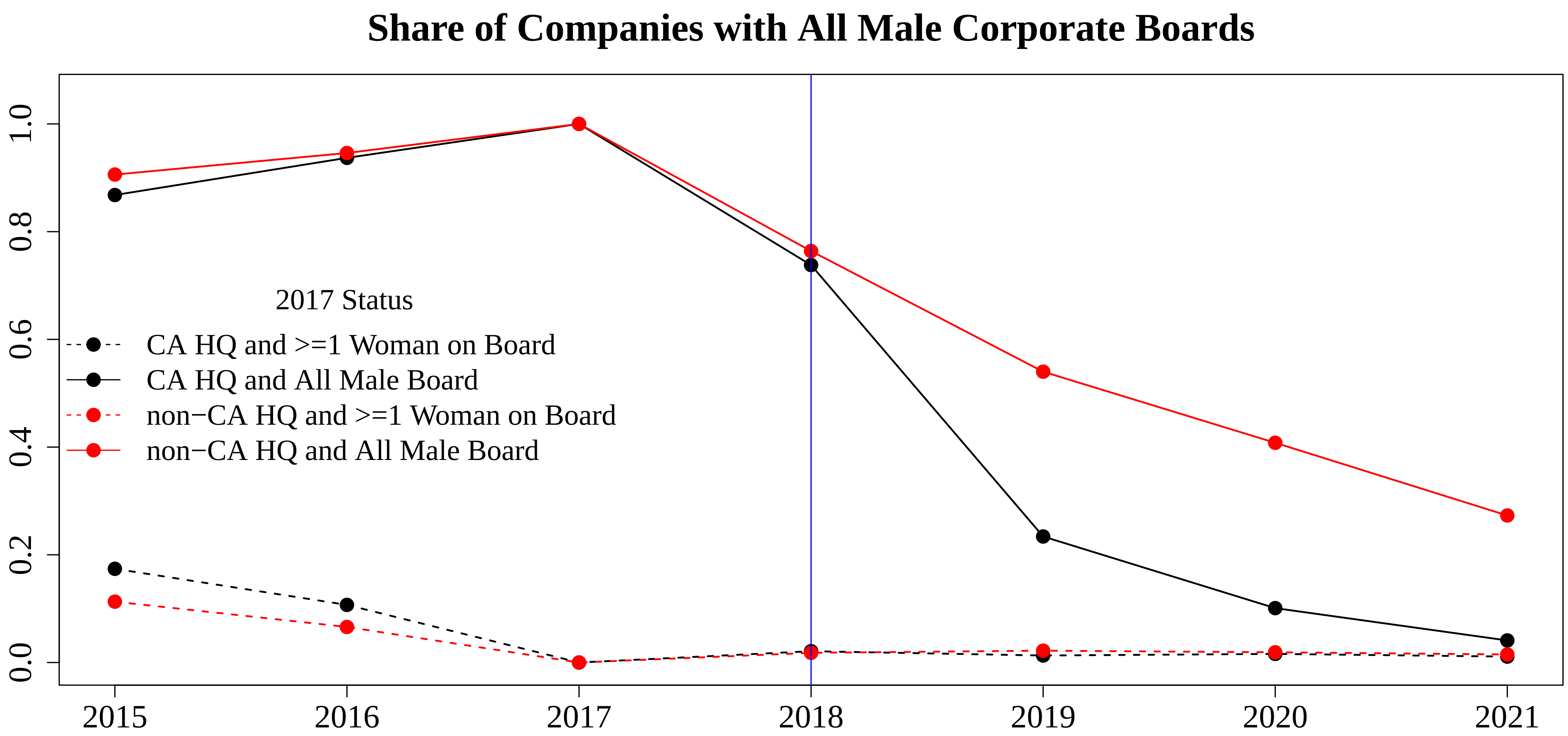
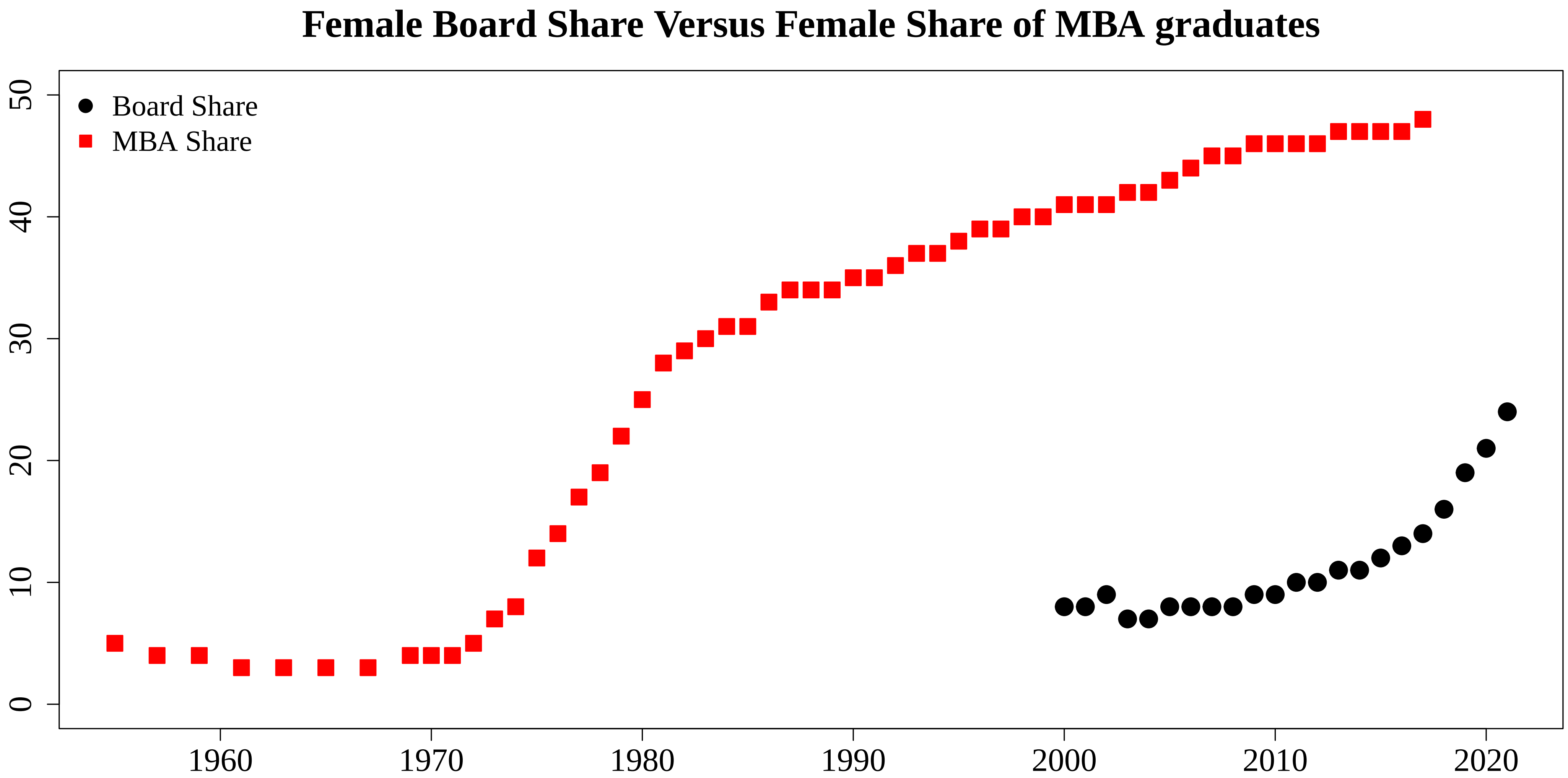
Figure I



Notes: CA SB 826, approved on 9/30/2018, mandated at least 1 woman be on the corporate board of any listed company with HQ in CA by 12/31/2019. Listed companies have shares listed on the NASDAQ, NYSE, or NYSE American. The sample tracks an unbalanced panel of firms that were domestic and listed in 2017, the year before SB 826 was signed.

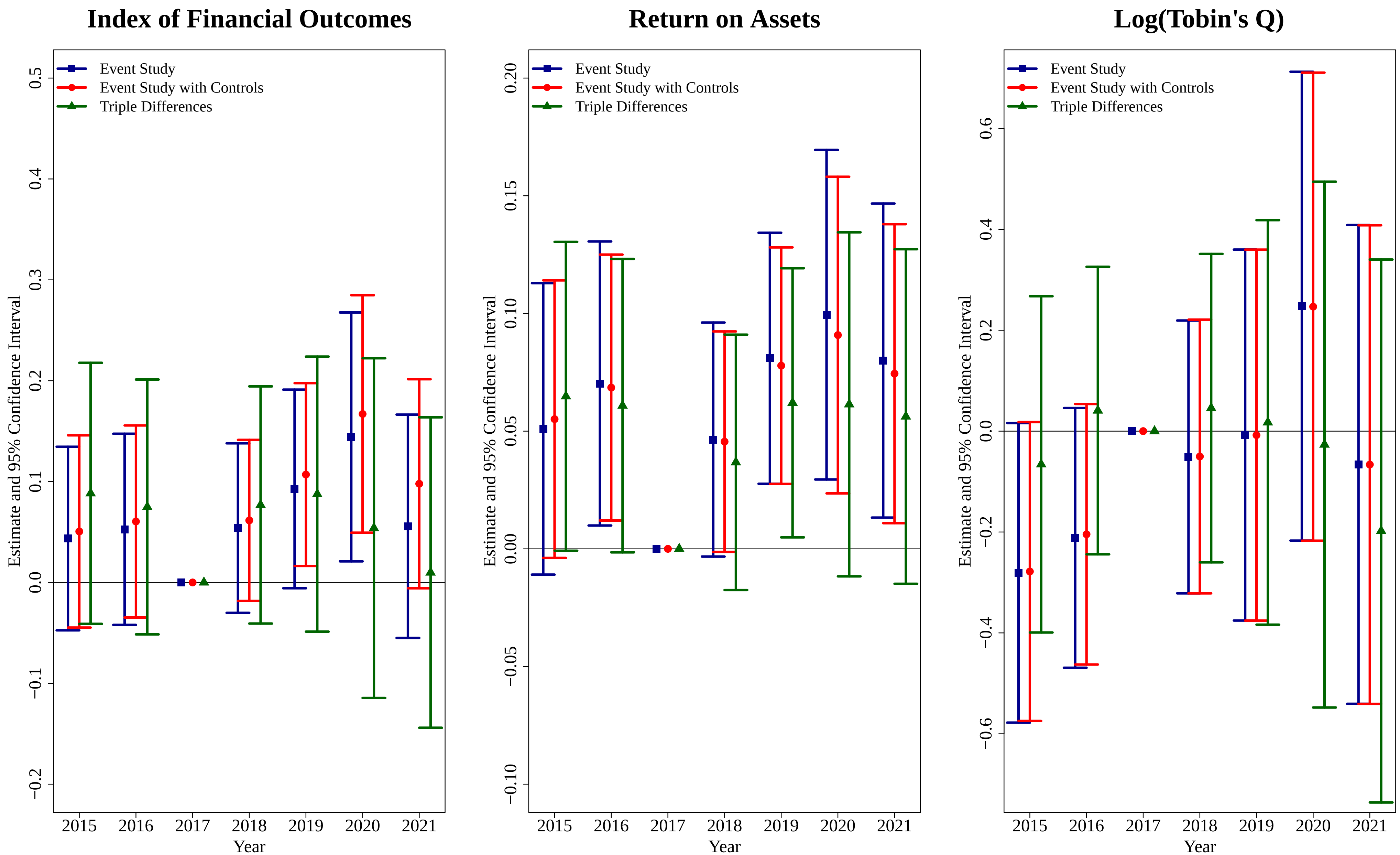
Figure II



Note: The female share of MBA graduates is taken from NCES Table 325.25, which tracks postsecondary institutions participating in Title IV federal financial aid programs. The annual female board share of domestic and listed companies is derived from BoardEx's Organizational Summary files.

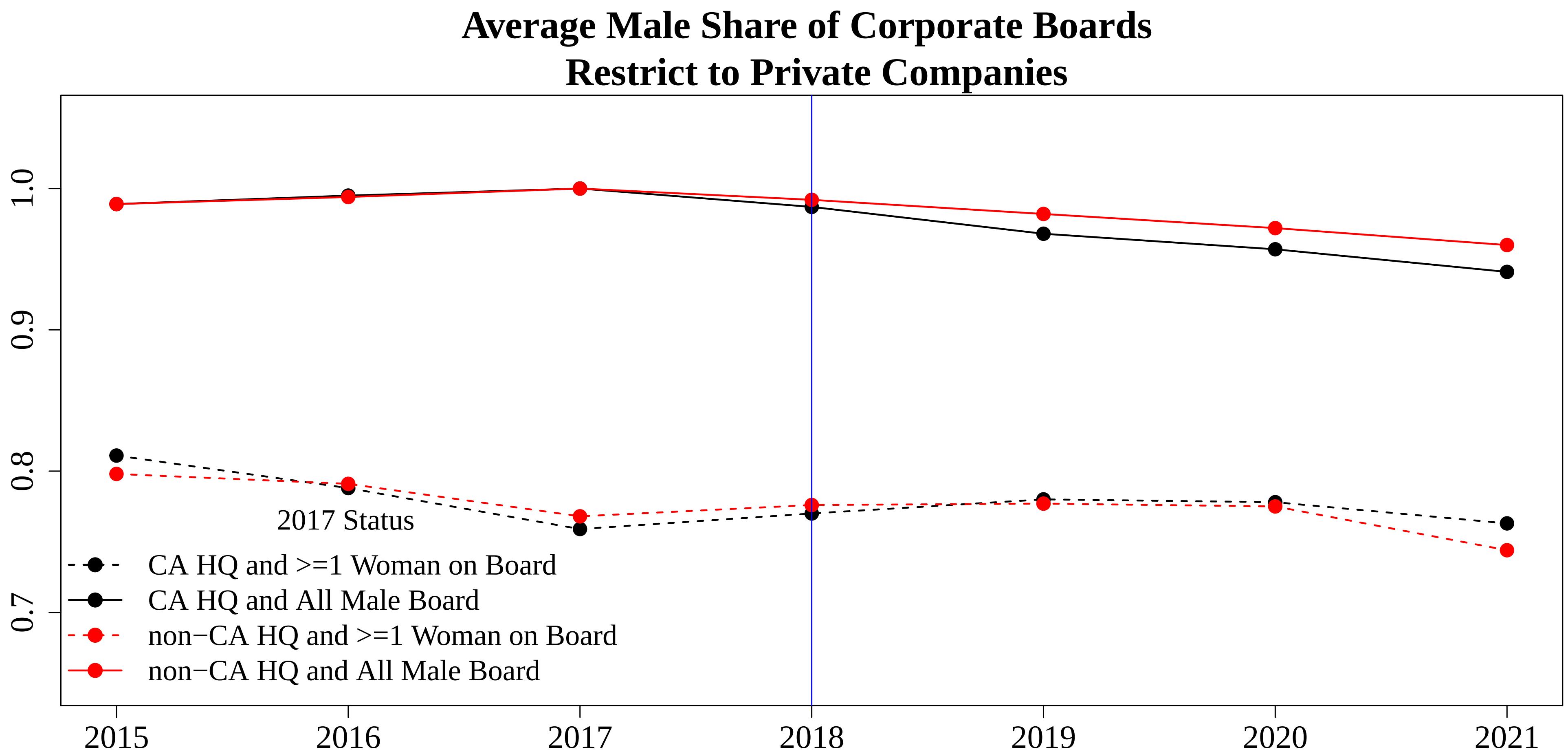
Figure III

Effects of the Gender Quota on Financial Outcomes



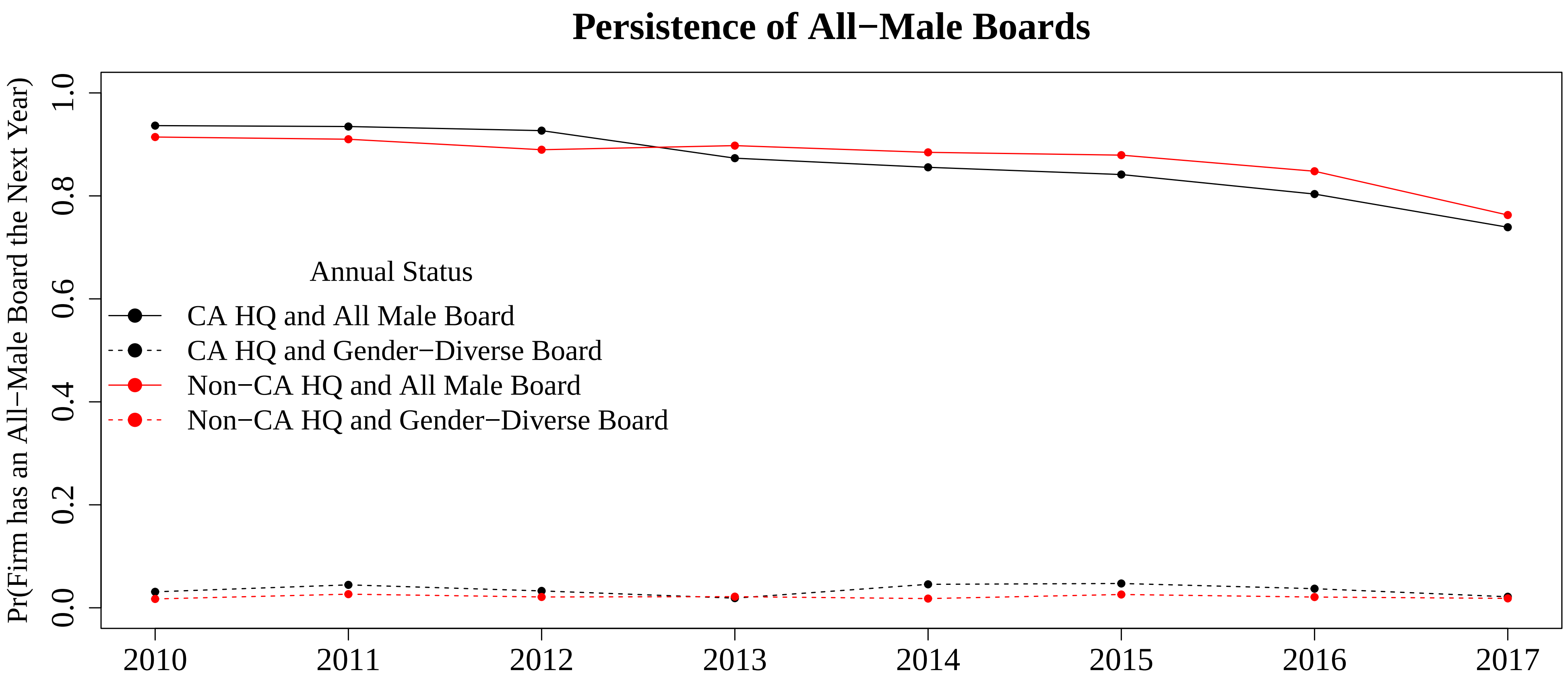
Note: The sample restricts to an unbalanced panel of firms that were domestic and listed in 2017. The time period covered is 2015 − 2021. The table presents the coefficients and standard errors from the event−study and triple differences models. Standard errors are clustered at the firm level. Treated firms have CA headquarters and all−male boards as of 2017. In the event−study specification, control firms have non−CA headquarters and have all−male boards in 2017. Financial variables are derived from Compustat's annual fundamental files, are reported in millions, 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 all 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 SIC code, following OSHA's crosswalk. SIC codes are derived from CRSP's Names files. Company policy variables are derived from the CRSP Events files. Controls are included for firm size, which is proxied by Log(Revenues). CA SB 826, approved on 9/30/2018, mandated at least 1 woman be on the corporate board of any listed with HQ in CA by 12/31/2019. See data appendix for variable definitions and text for regression specifications.

Figure A1



Notes: CA SB 826, approved on 9/30/2018, mandated at least 1 woman be on the corporate board of any listed company with HQ in CA by 12/31/2019. Listed companies have shares listed on the NASDAQ, NYSE, or NYSE American. The sample tracks an unbalanced panel of firms that were domestic and listed in 2017, the year before SB 826 was signed.

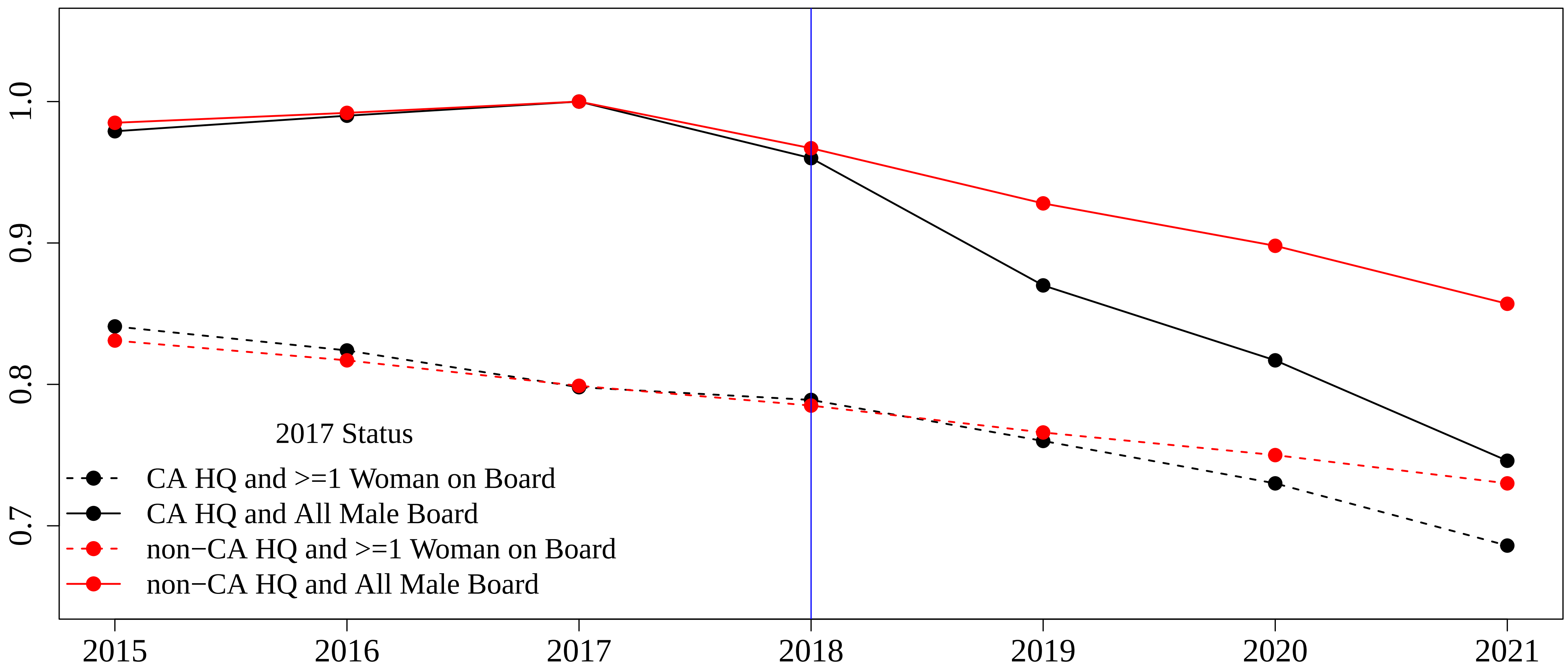
Figure A2



Note: The sample restricts to domestic and listed companies where annual board gender information is available. The annual board composition is provided by BoardEx. The universe of listed companies is provided by CRSP. Annual headquarter information is triangulated from Compustat, SEC reports, and BoardEx.

Figure A3

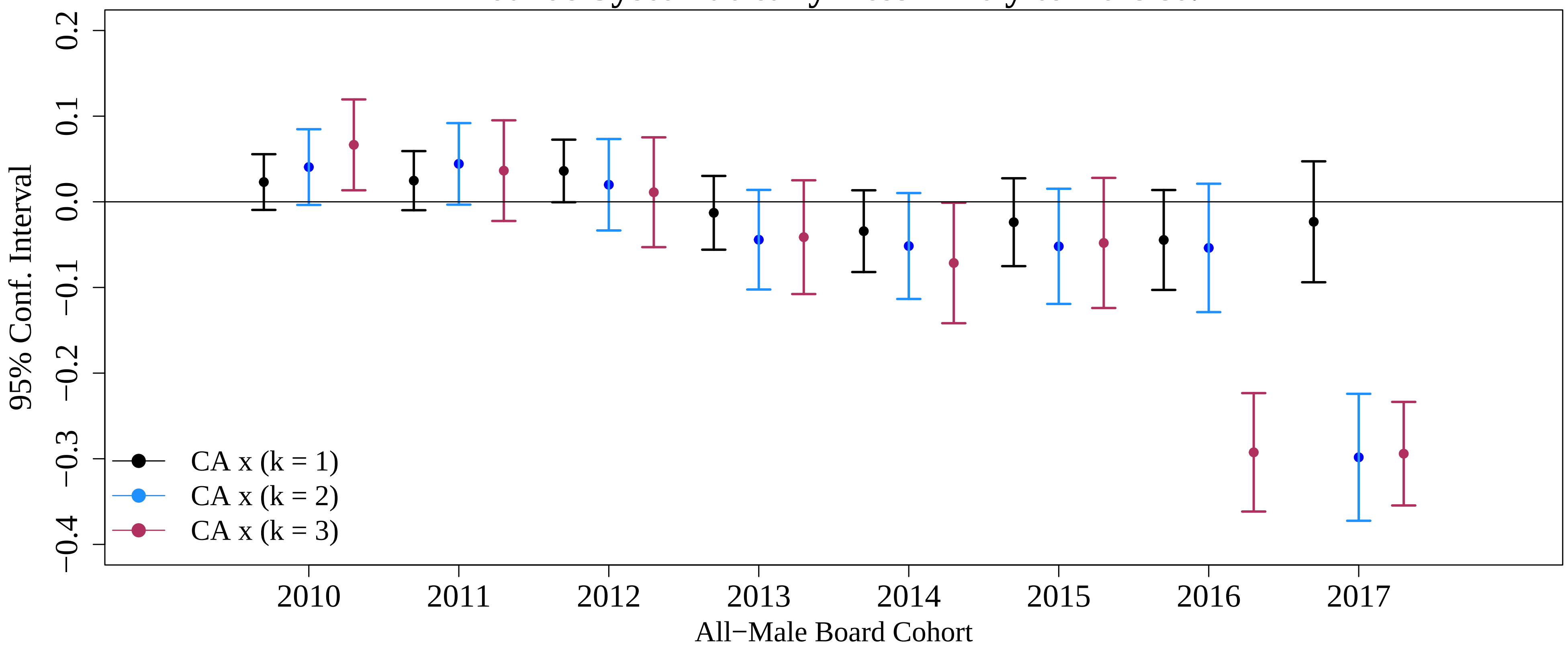
Average Male Share of Corporate Boards



Notes: CA SB 826, approved on 9/30/2018, mandated at least 1 woman be on the corporate board of any listed company with HQ in CA by 12/31/2019. Listed companies have shares listed on the NASDAQ, NYSE, or NYSE American. The sample tracks an unbalanced panel of firms that were domestic and listed in 2017, the year before SB 826 was signed.

Figure A4

Differential Mean Reversion: Are California−Based Companies with All−Male Boards Systematically Less Likely to Persist?



Note: Point estimates for each cohort represent

$$\beta_{tk} := \Pr\left(AMB_{t+k} \middle| AMB_t,\ \text{CA HQ}\right) - \Pr\left(AMB_{t+k} \middle| AMB_t,\ \text{non−CA HQ}\right)$$

CA SB 826, approved on 9/30/2018, mandated at least 1 woman be on the corporate board of listed firms with HQ in CA by 12/31/2019.

Table I: Sample Size

Year	N: All Firms	HQ in CA			HQ outside of CA		
		N	N: AMB	Pr(AMB)	N	N: AMB	Pr(AMB)
2015	4013	664	266	0.40	3349	1134	0.34
2016	3872	647	242	0.37	3225	1021	0.32
2017	3845	644	204	0.32	3201	942	0.29
2018	3817	658	166	0.25	3159	760	0.24
2019	3795	671	59	0.09	3124	582	0.19
2020	3861	702	24	0.03	3159	475	0.15
2021	3977	772	12	0.02	3205	314	0.10

Note:
The sample restricts to domestic and listed companies that report board gender and headquarter location. 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. Headquarter location is triangulated from Compustat Snapshot, BoardEx, and SEC filings. The universe of listed companies is derived from CRSP. "AMB" refers to companies with All-Male Boards. CA's SB826, approved on 9/30/2018, mandated at least 1 woman be on the corporate board of any listed with HQ in CA by 12/31/2019.

Table II: Firm Characteristics in 2017

	CA-HQ	Outside CA-HQ	Diff	P-Value	N: CA-HQ	N: Outside CA-HQ
Boardroom Characteristics						
Board Size	6.38	6.75	-0.37	0.00	204	942
Expand Board	0.19	0.16	0.03	0.29	204	942
Drop Male	0.43	0.39	0.04	0.35	204	941
Incoming Male	0.33	0.29	0.04	0.34	204	940
Prior Board Experience	0.81	0.77	0.04	0.03	204	941
Prior C-Suite Experience	0.69	0.61	0.08	0.00	204	941
Prior Same-Sector Experience	0.51	0.44	0.07	0.01	204	941
Non-Executive Director	0.78	0.80	-0.02	0.03	204	940
Prior Conx w/Board	0.57	0.54	0.03	0.24	204	940
Prior Board Conx w/Board	0.41	0.38	0.03	0.26	204	939
Prior Conx w/ C-Suite	0.49	0.44	0.05	0.03	204	940
Prior Same-Gender Conx w/Board	0.56	0.54	0.03	0.22	204	942
MBA Degree	0.39	0.34	0.05	0.01	204	940
Ivy League Degree	0.25	0.24	0.00	0.81	191	852
Log(Predicted Compensation)	5.54	5.52	0.02	0.26	191	852
Dual CEO/Chairman Role	0.38	0.37	0.00	0.94	194	887
Director Age	61.00	61.66	-0.66	0.14	204	940
Governance Outcomes						
CEO Turnover	0.13	0.13	-0.01	0.86	175	765
1(Lawsuit Filed)	0.06	0.04	0.02	0.18	204	942
1(Delist)	0.02	0.01	0.01	0.23	202	941
1(Merger or Reorg)	0.00	0.00	0.00	0.90	193	876
1(Dividend)	0.14	0.36	-0.22	0.00	194	896
1(Incr in Shares Outstanding geq 5 percent)	0.04	0.04	-0.01	0.72	175	825
1(Decr in Shares Outstanding geq 5 percent)	0.06	0.07	-0.01	0.74	170	806
Audit Share	0.73	0.73	0.00	0.77	170	806
Compensation Share	0.69	0.66	0.03	0.07	188	856
Nominating Share	0.63	0.58	0.06	0.01	194	895
Other Share	0.03	0.05	-0.02	0.00	204	942
Avg Committee Load	2.90	2.72	0.17	0.02	189	875
Firm Characteristics						

Table II: Firm Characteristics in 2017 *(continued)*

	CA-HQ	Outside CA-HQ	Diff	P-Value	N: CA-HQ	N: Outside CA-HQ
Return on Assets	-0.30	-0.12	-0.18	0.00	204	942
Return on Equity	-0.63	-0.23	-0.40	0.00	204	942
Log(Tobin's Q)	0.79	0.50	0.30	0.00	204	942
Log(Market to Book)	1.16	0.83	0.33	0.00	204	942
Cash Flows	-0.27	-0.09	-0.18	0.00	204	942
Log(Employees in 1000s)	0.41	0.58	-0.17	0.00	203	938
Capital Intensity	0.03	0.04	-0.01	0.07	203	938
Index of Financial Outcomes	-0.13	0.00	-0.13	0.01	203	938
Age	16.07	19.32	-3.25	0.00	203	938
Log(Market Value)	5.37	5.54	-0.16	0.22	203	938
Industry Composition						
Agriculture, Forestry and Fishing	0.00	0.00	0.00	0.59	204	942
Construction	0.00	0.01	-0.01	0.26	204	942
Finance, Insurance and Real Estate	0.08	0.18	-0.10	0.00	204	942
Manufacturing	0.34	0.26	0.08	0.03	204	942
Mining	0.01	0.09	-0.08	0.00	204	942
Non-Classified	0.34	0.23	0.12	0.00	204	942
Public Administration	0.00	0.00	0.00	NaN	204	942
Retail Trade	0.01	0.03	-0.02	0.06	204	942
Services	0.16	0.12	0.04	0.14	204	942
Transportation, Communications, Electric, Gas and Sanitary service	0.02	0.06	-0.03	0.01	204	942

Table II: Firm Characteristics in 2017 *(continued)*

	CA-HQ	Outside CA-HQ	Diff	P-Value	N: CA-HQ	N: Outside CA-HQ
Wholesale Trade	0.02	0.03	-0.01	0.53	204	942

Note:
The sample restricts to firm-year observations in 2017 and selects companies that were domestic, listed, and had an all-male board. Sample sizes differ across rows due to missing values. Raw means and p-values from a two sided t-test reported. Boardroom characteristics are derived from BoardEx and represent mean values in 2017. 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 2017. Tobin's Q is the ratio of the firm's market value to its book value of assets. Market value is book assets plus book equity minus market value of equity. ROA is net income before extraordinary items and discontinued operations divided by book assets. Capital intensity is capital expenditures divided by total assets. Predicted compensation is derived from a regression of boardroom compensation on director characteristics (age, MBA degree, prior board experience, prior C-suite experience, and non-executive director status). Securities class action lawsuit data is provided by the Stanford Securities Class Action Clearinghouse. All company policy variables are derived from CRSP's events files. A company delists if none of the company's securities are listed the subsequent year. All other company policies indicate if the event occurred for some security during the calendar year, and are derived from CRSP's Events files. Committee membership is derived from Boardex's Committee files. The first row represents the average (over all companies) of the mean number of committees each director serves. The remaining rows in the section represent the average (over all companies) share of directors that serve on a given committee. Industries are categorized into 11 divisions using the 4 digit SIC code, following OSHA's crosswalk. SIC codes are derived from CRSP's Names files. Agriculture and Public Administration are excluded, as no firms are in those industries.

Table III: Effects of the Gender Quota 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)
Variables					
CA_{2017} × Year = 2015	-0.007	-0.043	0.114	-0.036	0.046
	(0.005)	(0.029)	(0.108)	(0.050)	(0.056)
CA_{2017} × Year = 2016	-0.0007	-0.005	0.050	-0.043	-0.009
	(0.003)	(0.021)	(0.084)	(0.045)	(0.053)
CA_{2017} × Year = 2018	-0.006	-0.028	0.060	0.037	0.025
	(0.006)	(0.036)	(0.087)	(0.055)	(0.055)
CA_{2017} × Year = 2019	-0.056***	-0.300***	0.223**	0.135***	-0.004
	(0.008)	(0.038)	(0.112)	(0.052)	(0.056)
CA_{2017} × Year = 2020	-0.078***	-0.298***	0.172	-0.024	0.055
	(0.008)	(0.032)	(0.124)	(0.051)	(0.060)
CA_{2017} × Year = 2021	-0.106***	-0.239***	0.311**	0.064	-0.018
	(0.010)	(0.025)	(0.135)	(0.054)	(0.060)
Fixed-effects					
Firm	Yes	Yes	Yes	Yes	Yes
Year-SIC	Yes	Yes	Yes	Yes	Yes
Fit statistics					
Observations	6,910	6,910	6,910	6,670	6,670
Dependent variable mean	0.945	0.692	6.90	0.228	0.414
Number of Firms	1,146	1,146	1,146	1,139	1,139

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

The sample restricts to an unbalanced panel of firms that were domestic, listed, and had all-male boards in 2017. The time period covered is 2015 - 2021, with reported effects relative to the 2017 baseline. Standard errors are clustered at the firm level. Treated firms have CA headquarters and all-male boards as of 2017. 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 provides the director roster as of the company's annual report date. Industries are categorized into 11 divisions using the 4 digit SIC code, following OSHA's crosswalk. SIC codes are derived from CRSP's Names files. Sample sizes vary due to missing values of the outcome variable. CA SB 826, approved on 9/30/2018, mandated at least 1 woman be on the corporate board of any listed with HQ in CA by 12/31/2019.

Table IV: Effects of the Gender Quota: Heterogeneity and Robustness

	Baseline	CA Treated	Size Control	Dem. Subsample	Male Industry	Triple Diff	Ahern-Dittmar
Compliance							
1(All-Male Board)	-0.262 (0.027)	-0.091 (0.018)	-0.269 (0.028)	-0.279 (0.031)	-0.272 (0.032)	-0.271 (0.027)	-2.002 (0.122)
Male Share	-0.075 (0.007)	-0.040 (0.004)	-0.078 (0.007)	-0.074 (0.008)	-0.077 (0.008)	-0.079 (0.007)	-0.382 (0.024)
Board Size	0.180 (0.095)	0.257 (0.051)	0.236 (0.090)	0.199 (0.100)	0.167 (0.105)	0.215 (0.094)	0.599 (0.370)
Expand Board	0.067 (0.029)	0.052 (0.015)	0.068 (0.030)	0.045 (0.031)	0.073 (0.035)	0.068 (0.029)	0.205 (0.169)
Drop Male	-0.004 (0.035)	0.018 (0.019)	-0.005 (0.035)	-0.011 (0.037)	-0.031 (0.043)	-0.002 (0.035)	0.493 (0.184)
Incoming Male	-0.052 (0.030)	-0.017 (0.018)	-0.050 (0.031)	-0.058 (0.033)	-0.080 (0.036)	-0.053 (0.029)	-0.354 (0.179)
Boardroom Characteristics							
Board Experience	-0.031 (0.011)	-0.013 (0.005)	-0.035 (0.011)	-0.028 (0.012)	-0.020 (0.012)	-0.039 (0.011)	-0.092 (0.037)
C-Suite Experience	-0.025 (0.011)	-0.012 (0.005)	-0.027 (0.011)	-0.033 (0.012)	-0.017 (0.013)	-0.024 (0.011)	-0.098 (0.038)
Sector Experience	-0.001 (0.012)	-0.000 (0.005)	-0.002 (0.011)	-0.001 (0.012)	0.017 (0.015)	-0.002 (0.011)	0.004 (0.036)
Non-Exec Dir	0.003 (0.006)	0.004 (0.003)	0.004 (0.006)	0.004 (0.006)	0.001 (0.007)	0.006 (0.006)	0.058 (0.020)
Prior Brd-Conx	-0.021 (0.013)	-0.013 (0.006)	-0.020 (0.013)	-0.019 (0.014)	-0.022 (0.015)	-0.034 (0.013)	-0.117 (0.047)
Prior Brd-Brd Conx	-0.028 (0.012)	-0.020 (0.006)	-0.029 (0.012)	-0.025 (0.013)	-0.031 (0.015)	-0.044 (0.013)	-0.102 (0.043)
Prior C-Suite Conx	-0.012 (0.013)	-0.013 (0.006)	-0.008 (0.013)	-0.005 (0.014)	-0.006 (0.016)	-0.028 (0.013)	-0.123 (0.048)
Prior Same-Gender Conx	-0.044 (0.012)	-0.027 (0.006)	-0.042 (0.012)	-0.042 (0.013)	-0.052 (0.014)	-0.057 (0.012)	-0.230 (0.043)
MBA Degree	-0.018 (0.011)	-0.013 (0.005)	-0.015 (0.011)	-0.021 (0.012)	-0.019 (0.014)	-0.023 (0.011)	0.010 (0.049)
Ivy League Degree	-0.010 (0.009)	0.001 (0.005)	-0.008 (0.009)	-0.009 (0.010)	-0.002 (0.012)	-0.014 (0.009)	-0.080 (0.032)
Log(Predicted Compensation)	-0.019 (0.015)	-0.011 (0.007)	-0.023 (0.015)	-0.016 (0.016)	-0.004 (0.017)	-0.024 (0.014)	-0.182 (0.058)
Governance Outcomes							
CEO-Chairman	0.021 (0.023)	-0.003 (0.015)	0.021 (0.022)	0.025 (0.026)	0.032 (0.032)	0.014 (0.023)	0.026 (0.090)
CEO Turnover	0.026 (0.027)	0.007 (0.014)	0.010 (0.027)	0.023 (0.029)	0.014 (0.035)	0.024 (0.027)	0.164 (0.142)
1(Lawsuit Filed)	0.003 (0.012)	0.002 (0.007)	0.006 (0.012)	0.003 (0.012)	-0.004 (0.016)	0.003 (0.012)	-0.058 (0.077)
1(Delist)	0.001 (0.002)	-0.002 (0.001)	-0.001 (0.001)	-0.001 (0.002)	-0.002 (0.001)	0.001 (0.014)	0.126 (0.050)
1(Merger or Reorg)	-0.001 (0.001)	-0.001 (0.001)	-0.000 (0.000)	-0.001 (0.001)	-0.001 (0.001)	0.003 (0.010)	0.024 (0.040)
1(Dividend Issued)	0.011 (0.016)	-0.002 (0.008)	0.005 (0.016)	0.026 (0.017)	0.011 (0.017)	0.017 (0.015)	0.046 (0.055)
1(Shares Outstanding Dcr by $\geq$ 5%)	0.029 (0.016)	0.009 (0.007)	0.029 (0.017)	0.018 (0.018)	0.025 (0.021)	0.020 (0.014)	0.141 (0.086)
1(Shares Outstanding Inr by $\geq$ 5%)	0.007 (0.018)	0.005 (0.009)	0.003 (0.018)	-0.000 (0.019)	0.000 (0.023)	-0.004 (0.016)	0.137 (0.102)
Committee Composition							
Audit Share	-0.019 (0.012)	-0.011 (0.006)	-0.024 (0.012)	-0.013 (0.013)	-0.035 (0.015)	-0.024 (0.012)	-0.080 (0.042)
Compensation Share	-0.001 (0.012)	-0.004 (0.006)	-0.002 (0.012)	0.005 (0.013)	-0.013 (0.014)	-0.004 (0.012)	-0.037 (0.041)
Nominating Share	-0.007 (0.014)	-0.009 (0.006)	-0.009 (0.014)	0.000 (0.015)	-0.010 (0.017)	-0.007 (0.014)	-0.018 (0.048)
Other Share	-0.008 (0.006)	0.003 (0.003)	-0.008 (0.006)	-0.011 (0.006)	0.000 (0.006)	-0.006 (0.005)	0.007 (0.020)

Table IV: Effects of the Gender Quota: Heterogeneity and Robustness *(continued)*

	Baseline	CA Treated	Size Control	Dem. Subsample	Male Industry	Triple Diff	Ahern-Dittmar
Avg. Committee Load	-0.062 (0.054)	-0.050 (0.026)	-0.085 (0.052)	-0.051 (0.057)	-0.028 (0.070)	-0.071 (0.055)	0.050 (0.259)
Financial Outcomes							
ROA	0.046 (0.022)	0.035 (0.009)	0.040 (0.021)	0.038 (0.024)	0.040 (0.028)	0.055 (0.022)	0.214 (0.085)
ROE	0.072 (0.074)	0.090 (0.032)	0.067 (0.073)	0.051 (0.078)	0.083 (0.097)	0.083 (0.073)	0.442 (0.318)
Log(Q)	0.071 (0.041)	0.044 (0.019)	0.070 (0.041)	0.057 (0.042)	0.074 (0.051)	0.065 (0.041)	-0.311 (0.164)
Log(Market to Book)	0.099 (0.065)	0.086 (0.032)	0.097 (0.065)	0.085 (0.068)	0.118 (0.083)	0.102 (0.066)	-0.640 (0.264)
Cash Flow	0.045 (0.022)	0.034 (0.009)	0.040 (0.021)	0.038 (0.024)	0.038 (0.028)	0.054 (0.022)	0.216 (0.088)
Log(Employment)	0.023 (0.015)	0.056 (0.011)	0.017 (0.014)	0.021 (0.017)	0.034 (0.017)	0.029 (0.015)	-0.059 (0.065)
Capital Intensity	0.004 (0.002)	0.002 (0.001)	0.004 (0.002)	0.002 (0.002)	0.004 (0.003)	0.006 (0.002)	0.013 (0.010)

Note:
The sample restricts to an unbalanced panel of firms that were domestic, listed, and had all-male boards in 2017. The time period covered is 2015 - 2021. 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. Treated firms have CA headquarters and all-male boards as of 2017. An exception is Column 2, where treated firms are defined to have California headquarters in 2017 (and not necessarily have all-male boards). Financial variables are derived from Compustat's annual fundamental files, are reported in millions, 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. Industries are categorized into 11 divisions using the 4 digit SIC code, following OSHA's crosswalk. SIC codes are derived from CRSP's Names files. Company policy variables are derived from the CRSP Events files. Column 3 adds a control for firm size, which is proxied by Log(Revenues). Column 4 subsets to firms headquartered in Democratic states in 2017 – states that voted for Hillary Clinton in the 2016 presidential election. Column 5 subsets to firms in industries with below-average female board representation. Industry classification and averages are calculated using the 2017 cross-section. Column 6 makes no additional restrictions. Column 7 restricts to California-based firms and estimates a specification with firm and year fixed effects, where the coefficient reported is the interaction between male share in 2017 and an indicator for Year >= 2018. CA SB 826, approved on 9/30/2018, mandated at least 1 woman be on the corporate board of any listed with HQ in CA by 12/31/2019. See data appendix for variable definitions.

Table V: Ahern-Dittmar First-Stage Specification

	All listed Non-CA Companies	All listed CA Companies
Dependent Variable:	Male Share of Board	
Model:	(1)	(2)
Variables		
Male Share in 2017 × Year = 2018	-0.098***	-0.131***
	(0.009)	(0.022)
Male Share in 2017 × Year = 2019	-0.196***	-0.366***
	(0.013)	(0.031)
Male Share in 2017 × Year = 2020	-0.286***	-0.474***
	(0.015)	(0.034)
Male Share in 2017 × Year = 2021	-0.373***	-0.623***
	(0.017)	(0.040)
Year = 2018	0.064***	0.094***
	(0.008)	(0.019)
Year = 2019	0.124***	0.248***
	(0.011)	(0.026)
Year = 2020	0.181***	0.307***
	(0.013)	(0.030)
Year = 2021	0.231***	0.383***
	(0.015)	(0.034)
Fixed Effects		
Firm	Yes	Yes
Fit Statistics		
Observations	14,177	2,857
Dependent variable mean	0.816	0.796
F-test	2,354.9	413.3
Number of Firms	3,201	644

Notes: The sample consists of an unbalanced panel of firms that were domestic and publicly listed in 2017 and observed from 2017–2021. Column (2) restricts to California-headquartered firms; Column (1) includes firms headquartered outside California. Standard errors are clustered at the firm level. All specifications include firm and year fixed effects. The specification interacts year indicators with the firm's 2017 male board-share. Board composition data are from BoardEx organizational summary files, which record director rosters as of the firm's annual report date. California SB 826, approved on September 30, 2018, required at least one female director on the boards of publicly listed firms headquartered in California by December 31, 2019.

Table VI: Effects of the Gender Quota on Boardroom Characteristics

	Demographics			Experience			Connections				
Dependent Variables:	Age	Male	MBA	Brd Exp	C-Suite Exp	Sector Exp	Brd Conx	Brd-Brd Conx	C-Suite Conx	Same Gender Brd Conx	Non-Exec Dir.
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Variables											
CA_{2017} × Year = 2015	0.231	-0.007	-0.005	0.013	-0.002	0.007	0.004	0.013	-0.004	0.001	0.013^{*}
	(0.285)	(0.005)	(0.012)	(0.010)	(0.011)	(0.012)	(0.013)	(0.013)	(0.013)	(0.013)	(0.007)
CA_{2017} × Year = 2016	-0.039	-0.0007	0.003	0.006	0.003	0.005	-0.006	-0.004	-0.007	-0.005	0.003
	(0.196)	(0.003)	(0.009)	(0.006)	(0.008)	(0.008)	(0.009)	(0.009)	(0.009)	(0.009)	(0.006)
CA_{2017} × Year = 2018	0.035	-0.007	-0.011	-0.004	-0.006	0.016^{*}	-0.015	-0.002	-0.014	-0.022^{*}	0.010^{*}
	(0.179)	(0.006)	(0.009)	(0.008)	(0.009)	(0.009)	(0.012)	(0.010)	(0.010)	(0.011)	(0.006)
CA_{2017} × Year = 2019	-0.175	-0.056^{***}	-0.015	-0.025^{**}	-0.023^{*}	0.003	-0.028^{*}	-0.024^{*}	-0.023	-0.049^{***}	0.013^{*}
	(0.249)	(0.008)	(0.012)	(0.012)	(0.012)	(0.012)	(0.014)	(0.013)	(0.014)	(0.013)	(0.007)
CA_{2017} × Year = 2020	-0.111	-0.078^{***}	-0.022	-0.033^{**}	-0.029^{**}	0.010	-0.026	-0.033^{**}	-0.014	-0.053^{***}	0.006
	(0.309)	(0.008)	(0.013)	(0.014)	(0.014)	(0.015)	(0.016)	(0.016)	(0.017)	(0.015)	(0.008)
2SLS											
$1(Gender\widehat{Diverse}Board)$	-0.610	-0.224^{***}	-0.056	-0.111^{***}	-0.089^{**}	0.000	-0.078^{*}	-0.102^{**}	-0.045	-0.156^{***}	0.015
	(0.855)	(0.015)	(0.039)	(0.041)	(0.041)	(0.041)	(0.046)	(0.044)	(0.046)	(0.041)	(0.020)
Fixed-effects											
Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-SIC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fit statistics											
F-test (1st stage)	238.8	241.1	207.8	237.2	237.2	237.2	231.1	231.1	216.0	231.1	241.1
Observations	40,969	41,567	37,161	41,029	41,029	41,029	39,978	39,978	38,801	39,978	41,567
Dependent variable mean	61.9	0.956	0.354	0.759	0.618	0.454	0.529	0.354	0.429	0.512	0.808
Number of Firms	1,146	1,146	1,145	1,146	1,146	1,146	1,145	1,145	1,145	1,145	1,146

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

The sample restricts to all directors within firms that were domestic, listed, and had all-male boards as of 2017. The time period covered is 2015 - 2020, with reported effects relative to the 2017 baseline. Standard errors clustered at the firm level. Treated firms have CA headquarters and all-male boards as of 2017. Two directors have a prior connection if they overlapped at a previous company. Regression is weighted by the inverse of annual board size. Director-level characteristics measured upon year of onboarding. Sectoral classification used to code sectoral experience is provided by BoardEx; see Table A10 for the full list of sectors. Experience and connections gained through work spells in non-listed companies are counted. Industry variable used in the fixed effects are derived from 4 digit SIC codes provided by CRSP. Sample sizes vary due to missing values of director characteristics.

Table VII: Characteristics of Incoming, Exiting, and Retained Directors by Treatment Status

	California HQ				Non-California HQ			
	Entering F	Entering M	Exiting M	Retained M	Entering F	Entering M	Exiting M	Retained M
Age & Education								
Age	56.79	56.34	62.37	60.73*	55.90	56.18	62.80	61.56
MBA Degree	0.33	0.33	0.39	0.39*	0.32	0.35	0.34	0.35
Experience								
Prior Board Experience	0.56	0.69	0.81	0.80	0.58	0.67	0.77	0.77
Prior C-Suite Experience	0.63	0.64	0.67*	0.70*	0.62	0.64	0.58	0.61
Prior Same Sector Experience	0.48	0.59	0.54*	0.52*	0.42	0.53	0.46	0.44
Log(Predicted Compensation)	4.82	5.11	5.26	5.27	4.82	5.06	5.31	5.30
Connections								
Prior Conx w/Board	0.31	0.37*	0.55	0.58	0.29	0.49	0.56	0.55
Prior Board Conx w/Board	0.08	0.13*	0.39	0.41	0.09	0.20	0.38	0.38
Prior Conx w/ C-Suite	0.20	0.30	0.46	0.50*	0.17	0.33	0.44	0.45
Prior Same Gender Conx w/Board	0.03	0.35*	0.54	0.58	0.03	0.47	0.55	0.54
Non-Executive Director	0.93	0.80	0.83	0.78	0.95	0.80	0.83	0.80
Committee Composition								
Number of Committees	1.87	2.44	2.77	2.81*	1.90	2.15	2.66	2.66
Audit Committee	0.53	0.62	0.63	0.69	0.57	0.62	0.65	0.68
Compensation Committee	0.51	0.60	0.66	0.64	0.47	0.51	0.63	0.62
Nominating Committee	0.54	0.54*	0.62*	0.60	0.50	0.41	0.55	0.56
Other Committee	0.04	0.03*	0.04*	0.05*	0.06	0.08	0.07	0.07
Sample Size								
Number of Positions	210	221	422	925	558	1040	1740	4777
Number of Directors	206	219	411	904	541	1023	1692	4528
Number of Companies	145	103	151	195	437	488	653	902

Note:
The sample considers firms that were domestic, listed, and had all-male boards as of 2017. Entering (Exiting) directors join (leave) sometime between 2018 - 2020. Retained directors remain with the company between 2017 - 2020. These variables are derived from BoardEx's organizational summary files, which provides the complete director roster as of the annual report date. Two directors have a prior connection if they overlapped at a previous company. Director-level characteristics measured upon year of onboarding. Sectoral classification used to code sectoral experience is provided by BoardEx; see Table A10 for the full list of sectors. Directors may hold multiple positions. Some directors have missing characteristics. Predicted Compensation is derived from a two-step procedure. Step 1: Using an annual unbalanced panel from 2015 - 2020 that contains all firms that were domestic and listed in 2017, regress average boardroom compensation (from BoardEx) on average director age, share with MBA degree, share with prior board experience, share with prior C-suite experience, and share who are non-executive directors. Step 2: Using the estimated coefficients from Step 1, predict annual boardroom compensation for each director and year in the sample, then take the natural logarithm. An asterisk (*) indicates that the difference between the treatment and control groups is statistically significant at the 5% level, based on two-sided t-tests. Tests are performed separately for incoming women (comparing California HQ vs Non-California HQ), incoming men, exiting men, and retained men.

Table VIII: Characteristics of Incoming Directors by Gender

	Male	Female	Difference	P Value
Age & Education				
Age	57.03	56.07	0.96	0.00
MBA Degree	0.38	0.38	0.00	0.83
Ivy League Degree	0.27	0.27	0.00	0.91
Law Degree	0.10	0.12	-0.02	0.00
Experience				
Prior Board Experience	0.83	0.72	0.11	0.00
Prior C-Suite Experience	0.70	0.67	0.03	0.00
Prior Same Sector Experience	0.55	0.43	0.12	0.00
Connections				
Prior Connection to Incumbent Board	0.61	0.39	0.21	0.00
Prior Board Connection with Incumbent Board	0.41	0.19	0.22	0.00
Prior Connections to the C-Suite	0.50	0.28	0.22	0.00
Prior Same Gender Connection to Incumbent Board	0.59	0.14	0.45	0.00
Non-Executive Director	0.82	0.95	-0.13	0.00
Sample Size				
Number of Positions	20412	6492		
Number of Directors	16434	4896		
Number of Companies	4516	3581		

Note:

The sample restricts to all incoming directors within domestic and listed companies. The time period considered is 2015 - 2020. Raw means and p-values from a two sided t-test reported. Observable characteristics of incoming directors at the time the boardship begins are derived from BoardEx. Age and education derived from director profile files, experience via employment history files, and connections through the network files. Two directors have a prior connection if they overlapped at a previous company. Sectoral classification following the FTSE International standard is provided by BoardEx; see Table A10 for the full list of sectors. Experience and connections gained through work spells in non-listed companies are counted.

Table A1: Compliance with SB826's 2021 Requirements by Year and Headquarter Location

Headquarter Location	Shortfall	N: 2017	N: 2021	Share of Companies in 2017	Share of Companies in 2021
California	0	76	488	0.118	0.626
California	1	176	209	0.273	0.268
California	2	252	78	0.391	0.100
California	3	140	5	0.217	0.006
Outside California	0	524	1127	0.164	0.346
Outside California	1	845	1131	0.264	0.348
Outside California	2	1139	819	0.356	0.252
Outside California	3	693	176	0.216	0.054

Note:
The sample considers domestic and listed companies as of 2017 and 2021. 'Shortfall' equals the number of female directors a company would need to add to be compliant with SB826's 2021 requirements. The SB826's 2021 requirements stipulate that companies with 6 or more directors must have at least 3 female directors by the end of 2021. Companies with 5 (4) directors are required to have at least 2 (1) female directors by the end of 2021. 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. Headquarter location is triangulated from Compustat Snapshot, BoardEx, and SEC filings. The universe of listed companies is derived from CRSP.

Table A2: Share of BoardEx Companies Matched with the Following:

(1) Year	(2) BoardEx N	(3) CRSP/ Compustat	(4) Annual Financials	(5) Listing Exchange	(6) Geographic Identifiers	(7) All of (2-6)
2015	4188	0.967	0.950	0.962	0.960	0.941
2016	4030	0.969	0.953	0.965	0.963	0.944
2017	4000	0.970	0.956	0.966	0.963	0.947
2018	3980	0.967	0.955	0.963	0.960	0.948
2019	3971	0.960	0.952	0.956	0.958	0.948
2020	4149	0.933	0.926	0.929	0.933	0.921
2021	4546	0.874	0.866	0.874	0.874	0.866

Note:

Note: Column (2) restricts to BoardEx's 'Quoted' and US based companies that report annual board gender ratios. BoardEx-CRSP-Compustat crosswalk provided by WRDS. Annual Financials derived from the Compustat Annual Fundamental files. Listing exchange pulled from CRSP Names file. Geographic identifiers include both the state of the company's principal executive offices and the country of incorporation. These values are taken from Compustat Snapshot. If missing, geographic identifiers taken from the WRDS SEC Analytics Suite (item regstatehdq). If still missing and the year is past 2019, the value is taken from BoardEx's header level information provided in the Company Profile files.

Table A3: Firm Characteristics in 2017

	All-Male Board	Gender-Diverse Board	Diff	P-Value	N: AMB	N: Gender-Diverse
Boardroom Characteristics						
Board Size	6.69	9.13	-2.45	0.00	1146	2699
Expand Board	0.17	0.26	-0.09	0.00	1146	2699
Drop Male	0.40	0.47	-0.07	0.00	1145	2699
Incoming Male	0.30	0.34	-0.04	0.02	1144	2699
Prior Board Experience	0.78	0.78	0.00	0.93	1145	2699
Prior C-Suite Experience	0.63	0.65	-0.03	0.00	1145	2699
Prior Same-Sector Experience	0.45	0.42	0.04	0.00	1145	2699
Non-Executive Director	0.79	0.85	-0.06	0.00	1144	2699
Prior Conx w/Board	0.55	0.48	0.06	0.00	1144	2699
Prior Board Conx w/Board	0.38	0.29	0.09	0.00	1143	2697
Prior Conx w/ C-Suite	0.44	0.38	0.07	0.00	1144	2699
Prior Same-Gender Conx w/Board	0.54	0.41	0.13	0.00	1146	2699
MBA Degree	0.35	0.38	-0.03	0.00	1144	2699
Ivy League Degree	0.24	0.27	-0.03	0.00	1043	2581
Log(Predicted Compensation)	5.53	5.45	0.08	0.00	1043	2581
Dual CEO/Chairman Role	0.38	0.34	0.04	0.04	1081	2604
Director Age	61.54	61.97	-0.42	0.03	1144	2699
Governance Outcomes						
CEO Turnover	0.13	0.12	0.01	0.27	940	2396
1(Lawsuit Filed)	0.04	0.03	0.01	0.05	1146	2699
1(Delist)	0.01	0.00	0.01	0.01	1143	2698
1(Merger or Reorg)	0.00	0.00	0.00	0.07	1069	2565
1(Dividend)	0.32	0.55	-0.23	0.00	1090	2586
1(Incr in Shares Outstanding geq 5 percent)	0.04	0.02	0.02	0.00	1000	2455
1(Decr in Shares Outstanding geq 5 percent)	0.07	0.05	0.02	0.03	976	2370
Audit Share	0.73	0.57	0.15	0.00	976	2370
Compensation Share	0.67	0.52	0.14	0.00	1044	2436
Nominating Share	0.59	0.48	0.10	0.00	1089	2577
Other Share	0.05	0.09	-0.04	0.00	1146	2699
Avg Committee Load	2.75	2.53	0.22	0.00	1064	2499
Firm Characteristics						
Return on Assets	-0.15	-0.03	-0.12	0.00	1146	2699

Table A3: Firm Characteristics in 2017 *(continued)*

	All-Male Board	Gender-Diverse Board	Diff	P-Value	N: AMB	N: Gender-Diverse
Return on Equity	-0.30	-0.04	-0.26	0.00	1146	2699
Log(Tobin's Q)	0.55	0.57	-0.02	0.44	1146	2699
Log(Market to Book)	0.89	1.01	-0.13	0.00	1146	2699
Cash Flows	-0.12	0.00	-0.12	0.00	1146	2699
Log(Employees in 1000s)	0.55	1.46	-0.91	0.00	1141	2696
Capital Intensity	0.03	0.03	0.00	0.08	1141	2696
Index of Financial Outcomes	-0.27	0.00	-0.27	0.00	1141	2696
Age	18.74	26.32	-7.58	0.00	1141	2696
Log(Market Value)	5.51	7.35	-1.84	0.00	1141	2696
Industry Composition						
Agriculture, Forestry and Fishing	0.00	0.00	0.00	0.50	1146	2699
Construction	0.01	0.01	0.00	0.98	1146	2699
Finance, Insurance and Real Estate	0.16	0.26	-0.09	0.00	1146	2699
Manufacturing	0.27	0.27	0.00	0.82	1146	2699
Mining	0.07	0.03	0.04	0.00	1146	2699
Non-Classified	0.25	0.14	0.11	0.00	1146	2699
Public Administration	0.00	0.00	0.00	0.16	1146	2699
Retail Trade	0.03	0.06	-0.03	0.00	1146	2699
Services	0.12	0.13	-0.01	0.43	1146	2699
Transportation, Communications, Electric, Gas and Sanitary service	0.05	0.07	-0.02	0.01	1146	2699

Table A3: Firm Characteristics in 2017 *(continued)*

	All-Male Board	Gender-Diverse Board	Diff	P-Value	N: AMB	N: Gender-Diverse
Wholesale Trade	0.03	0.03	0.00	0.71	1146	2699

Note:
The sample restricts to firm-year observations in 2017 and selects companies that were domestic and listed. Sample sizes differ across rows due to missing values. Raw means and p-values from a two sided t-test reported. Boardroom characteristics are derived from BoardEx and represent mean values in 2017. 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 2017. Tobin's Q is the ratio of the firm's market value to its book value of assets. Market value is book assets plus book equity minus market value of equity. ROA is net income before extraordinary items and discontinued operations divided by book assets. Capital intensity is capital expenditures divided by total assets. Predicted compensation is derived from a regression of boardroom compensation on director characteristics (age, MBA degree, prior board experience, prior C-suite experience, and non-executive director status). Securities class action lawsuit data is provided by the Stanford Securities Class Action Clearinghouse. All company policy variables are derived from CRSP's events files. A company delists if none of the company's securities are listed the subsequent year. All other company policies indicate if the event occurred for some security during the calendar year, and are derived from CRSP's Events files. Committee membership is derived from Boardex's Committee files. The first row represents the average (over all companies) of the mean number of committees each director serves. The remaining rows in the section represent the average (over all companies) share of directors that serve on a given committee. Industries are categorized into 11 divisions using the 4 digit SIC code, following OSHA's crosswalk. SIC codes are derived from CRSP's Names files. Agriculture and Public Administration are excluded, as no firms are in those industries.

Table A4: Growing Firms Adopt Gender Diverse Boards: Sun and Abraham Estimates

Dependent Variables:	Log(Assets)	Log(Revenues)	Log(Employees)
Model:	(1)	(2)	(3)
Variables			
Year relative to Diverse adoption = -4	-0.025	0.003	0.0005
	(0.030)	(0.031)	(0.013)
Year relative to Diverse adoption = -3	-0.050**	-0.035	-0.026***
	(0.025)	(0.025)	(0.009)
Year relative to Diverse adoption = -2	-0.022	-0.014	-0.016***
	(0.014)	(0.016)	(0.005)
Year relative to Diverse adoption = 0	0.044***	0.048***	0.020***
	(0.013)	(0.018)	(0.006)
Year relative to Diverse adoption = 1	0.065***	0.068**	0.022***
	(0.020)	(0.027)	(0.008)
Year relative to Diverse adoption = 2	0.073**	0.082**	0.040***
	(0.029)	(0.036)	(0.012)
Year relative to Diverse adoption = 3	0.073*	0.082*	0.058***
	(0.038)	(0.046)	(0.017)
Fixed-effects			
Firm	Yes	Yes	Yes
Year-SIC	Yes	Yes	Yes
Fit statistics			
Observations	15,639	15,611	15,400
Dependent variable mean	6.05	5.16	0.776
F-test	600.2	552.6	941.2
Number of Firms	2,881	2,875	2,850

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

Notes: The sample restricts to an unbalanced panel of all domestic and listed firms between 2010–2017. Effects are relative to one year prior to the adoption of gender diverse boards. Relative periods are binned at four years prior to adoption and three years after adoption. Diverse firms transition away from all-male boards sometime between 2010–2017. Firm-year observations among companies that always have gender diverse boards when observed are dropped. Observations with negative revenues and cost of goods sold are dropped. Standard errors are clustered at the firm level. All columns are derived from Compustat's annual fundamental files. Industries are categorized into 11 divisions using the 4 digit SIC code, following OSHA's crosswalk. SIC codes are derived from CRSP's Names files.

Table A5: Non-Compliance, Evasion, and Attrition

Firm Status	Year	N: AMB	N: Diverse	N	Change in N	N: Delist	N: Change HQ
Treated	2015	151	23	174	NA	0	2
Treated	2016	179	12	191	17	0	5
Treated	2017	204	0	204	13	4	2
Treated	2018	135	48	183	-21	8	3
Treated	2019	40	131	171	-12	14	4
Treated	2020	16	143	159	-12	12	3
Treated	2021	6	140	146	-13	10	4
Control	2015	722	75	797	NA	0	19
Control	2016	804	46	850	53	0	16
Control	2017	942	0	942	92	7	30
Control	2018	654	202	856	-86	42	23
Control	2019	431	367	798	-58	77	18
Control	2020	300	436	736	-62	46	25
Control	2021	186	495	681	-55	39	11

Note:
Treated firms have CA headquarters and are listed as of 2017, while control firms are listed and headquartered in another US state as of 2017. Cols 3-6 are derived from BoardEx's organizational summary files, which indicates a company's annual gender ratio. Companies may fail to appear in BoardEx if the company goes private, ceases to exist, or if BoardEx doesn't collect the company's gender composition as of the annual report date. Col 7 is derived from CRSP's Delisting file; a company is defined to delist if none of the company's securities are listed the subsequent year. The last column uses headquarter location data triangulated from Compustat Snapshot, BoardEx, and SEC filings.

Table A6: Differential Attrition?
Annual Board Gender Reporting Rates

Year	California HQ	Outside CA HQ	Diff	P-Val	N: California HQ	N: Outside CA HQ
2015	0.85	0.85	0.01	0.80	174	797
2016	0.94	0.90	0.03	0.09	191	850
2017	1.00	1.00	0.00	1.00	204	942
2018	0.90	0.91	-0.01	0.62	183	856
2019	0.84	0.85	-0.01	0.75	171	798
2020	0.78	0.78	0.00	0.95	159	736
2021	0.72	0.72	-0.01	0.84	146	681

Note:
The sample restricts to companies that i) had all-male boards in 2017 and ii) were listed and domestic in 2017. Raw means and p-values from a two sided t-test reported. Annual board gender composition is provided by BoardEx's Organizational Summary files. Attrition may occur if the company goes private, ceases to exist, or if BoardEx doesn't collect the company's gender composition as of the annual report date.

Table A7: Industry Composition by FTSE International Classification

Sector	CA share	N: CA	Outside CA share	N: Outside CA
Pharmaceuticals and Biotechnology	0.23	47	0.12	111
Software and Computer Services	0.11	22	0.06	54
Health	0.10	20	0.05	46
Information Technology Hardware	0.10	20	0.02	19
Electronic and Electrical Equipment	0.07	14	0.07	64
Real Estate	0.04	9	0.07	64
Business Services	0.04	8	0.03	33
Telecommunication Services	0.04	8	0.02	16
Banks	0.03	6	0.06	60
Engineering and Machinery	0.02	5	0.04	37
Food Producers and Processors	0.02	5	0.02	15
Media and Entertainment	0.02	5	0.02	19
Renewable Energy	0.02	5	0.01	9
Speciality and Other Finance	0.02	4	0.05	45
Beverages	0.01	3	0.00	2
Clothing and Personal Products	0.01	3	0.00	4
General Retailers	0.01	3	0.02	16
Containers and Packaging	0.01	2	0.00	1
Insurance	0.01	2	0.02	15
Automobiles and Parts	0.00	1	0.01	9
Blank Check / Shell Companies	0.00	1	0.00	2
Construction and Building Materials	0.00	1	0.03	32
Education	0.00	1	0.00	1
Electricity	0.00	1	0.00	4
Household Products	0.00	1	0.01	7
Investment Companies	0.00	1	0.02	19
Leisure and Hotels	0.00	1	0.03	24
Leisure Goods	0.00	1	0.01	5
Oil and Gas	0.00	1	0.12	109
Private Equity	0.00	1	0.01	5
Steel and Other Metals	0.00	1	0.01	8
Utilities - Other	0.00	1	0.00	3
Aerospace and Defence	0.00	0	0.01	5
Chemicals	0.00	0	0.01	13
Consumer Services	0.00	0	0.00	4
Diversified Industrials	0.00	0	0.01	6
Food and Drug Retailers	0.00	0	0.00	2
Forestry and Paper	0.00	0	0.00	2
Life Assurance	0.00	0	0.00	3
Mining	0.00	0	0.02	21
Publishing	0.00	0	0.00	2
Tobacco	0.00	0	0.00	1
Transport	0.00	0	0.03	25

Note: Industries are categorized based on the FTSE classification from BoardEx and ordered based on descending CA share. There are 43 industries. Sample sizes show the number of companies in treated and control groups in the baseline specification.

Table A8: Effects of the Gender Quota on Board Composition: Robustness Checks

Dependent Variables:	1(All-Male Board)							1(Expand Board)						
	Size Control	Dem. Subsample	AMB 2015-2017	Small Brd	Male Industry	Triple Diff	CA Treated	Size Control	Dem. Subsample	AMB 2015-2017	Small Brd	Male Industry	Triple Diff	CA Treated
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Variables														
Treated × Year = 2015	-0.022	-0.040	0.0009	-0.030	-0.045	-0.107***	0.017	0.007	-0.054	0.004	0.036	-0.063	-0.041	-0.005
	(0.029)	(0.031)	(0.002)	(0.042)	(0.036)	(0.035)	(0.018)	(0.053)	(0.054)	(0.055)	(0.061)	(0.066)	(0.061)	(0.030)
Treated × Year = 2016	-0.005	-0.004	0.002	0.022	-0.007	-0.055**	0.021	-0.017	-0.063	-0.080*	-0.102**	-0.082	-0.034	-0.026
	(0.021)	(0.022)	(0.002)	(0.029)	(0.026)	(0.025)	(0.014)	(0.047)	(0.049)	(0.047)	(0.047)	(0.058)	(0.058)	(0.029)
Treated × Year = 2018	-0.042	-0.049	-0.008	-0.055	-0.024	-0.032	-0.009	0.051	0.039	0.046	0.040	0.030	0.054	-0.007
	(0.039)	(0.039)	(0.041)	(0.049)	(0.044)	(0.037)	(0.013)	(0.056)	(0.058)	(0.063)	(0.069)	(0.069)	(0.065)	(0.030)
Treated × Year = 2019	-0.281***	-0.331***	-0.303***	-0.364***	-0.322***	-0.301***	-0.094***	0.160***	0.102*	0.151***	0.197***	0.142**	0.079	0.073**
	(0.041)	(0.043)	(0.045)	(0.056)	(0.047)	(0.038)	(0.020)	(0.055)	(0.056)	(0.058)	(0.063)	(0.066)	(0.062)	(0.029)
Treated × Year = 2020	-0.299***	-0.334***	-0.329***	-0.389***	-0.283***	-0.306***	-0.088***	0.040	-0.031	-0.037	-0.028	-0.066	0.006	-0.021
	(0.033)	(0.037)	(0.034)	(0.048)	(0.039)	(0.032)	(0.021)	(0.054)	(0.054)	(0.058)	(0.066)	(0.063)	(0.061)	(0.029)
Treated × Year = 2021	-0.236***	-0.223***	-0.210***	-0.308***	-0.240***	-0.239***	-0.068***	0.109**	0.032	0.068	-0.027	0.083	-0.026	0.077**
	(0.027)	(0.031)	(0.030)	(0.040)	(0.029)	(0.025)	(0.021)	(0.054)	(0.059)	(0.060)	(0.068)	(0.069)	(0.065)	(0.031)
Log(Revenues)	-0.031***							0.004						
	(0.010)							(0.010)						
Fixed-effects														
Firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-SIC	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes		Yes
1(CA HQ)-Year						Yes							Yes	
1(AMB)-Year						Yes							Yes	
Fit statistics														
Observations	6,233	4,013	5,426	3,237	4,094	24,038	24,016	6,056	3,865	5,366	3,116	3,899	23,464	23,448
Dependent variable mean	0.690	0.683	0.729	0.725	0.689	0.226	0.226	0.227	0.234	0.217	0.203	0.235	0.257	0.257
Number of Firms	1,096	685	866	536	692	3,845	3,845	1,090	675	866	532	686	3,830	3,830

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

The sample considers an unbalanced panel of domestic and listed firms observed between 2015 - 2021, with reported effects relative to the 2017 baseline. Standard errors are clustered at the firm level. Treated firms are defined to have CA headquarters and all-male boards as of 2017. Column 1 subsets to companies that had all-male boards in 2017. Log(Revenues) is used as a proxy for firm size. Col 2 further subsets to firms headquartered in Democratic states – states that voted for Hillary Clinton in the 2016 presidential election. Col 3 only considers companies that had all-male boards from 2015-2017. Col 4 subsets to companies that had fewer than 7 directors (the median board size) in 2017. Col 5 subsets to firms in industries with below-average female board representation. Industry classification and averages calculated using the 2017 cross-section. Col 6 makes no additional restrictions. Col 7 makes no additional restrictions, and redefines treated firms to have CA headquarters as of 2017. The 'Expand Board' indicator equals one if board size increases relative to the prior year. Cols 8-14 make the analogous sample restrictions. All outcome variables are derived from BoardEx's organizational summary files, which provides the director roster as of the company's annual report date. Industries are categorized into 11 divisions using the 4 digit SIC code, following OSHA's crosswalk. SIC codes are derived from CRSP's Names files. CA SB 826, approved on 9/30/2018, mandated at least 1 woman be on the corporate board of any listed with HQ in CA by 12/31/2019.

Table A9: Triple Differences: Within-State Control is Compliant with 2021 Requirements in 2017

Dependent Variables:	Male Share of Board	1(All-Male Board)	Board Size	1(Expand Board)	1(Male Dropped)
Model:	(1)	(2)	(3)	(4)	(5)
Variables					
Treated × Year = 2015	-0.032**	-0.070**	0.346	-0.023	0.012
	(0.014)	(0.035)	(0.211)	(0.105)	(0.108)
Treated × Year = 2016	-0.014	-0.004	0.223	0.005	0.098
	(0.011)	(0.020)	(0.162)	(0.088)	(0.104)
Treated × Year = 2018	-0.017*	-0.039	0.080	0.127	0.083
	(0.010)	(0.038)	(0.160)	(0.102)	(0.102)
Treated × Year = 2019	-0.072***	-0.316***	0.076	0.087	0.137
	(0.012)	(0.040)	(0.204)	(0.092)	(0.097)
Treated × Year = 2020	-0.087***	-0.332***	0.003	0.0002	0.023
	(0.014)	(0.037)	(0.223)	(0.099)	(0.099)
Treated × Year = 2021	-0.113***	-0.281***	0.136	0.055	0.043
	(0.016)	(0.032)	(0.242)	(0.095)	(0.103)
Fixed effects					
Firm	Yes	Yes	Yes	Yes	Yes
1(CA HQ)-Year	Yes	Yes	Yes	Yes	Yes
1(AMB)-Year	Yes	Yes	Yes	Yes	Yes
Fit statistics					
Observations	10,821	10,821	10,821	10,543	10,543
Dependent variable mean	0.850	0.445	8.22	0.249	0.446
Number of Firms	1,746	1,746	1,746	1,739	1,739

Notes. The sample restricts to an unbalanced panel of firms that were domestic and listed in 2017. Among these firms, I restrict to those that either had all-male boards in 2017 or were compliant with the 2021 requirements in 2017. There are 76 CA based companies compliant with 2021 requirements in 2017. The time period covered is 2015 - 2021, with reported effects relative to the 2017 baseline. Standard errors are clustered at the firm level. 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. All outcome variables are derived from BoardEx's organizational summary files, which provides the director roster as of the company's annual report date. CA SB 826, approved on 9/30/2018, mandated at least 1 woman be on the corporate board of any listed with HQ in CA by 12/31/2019.
*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Table A10: Pipeline: Number of Women with Top-Level Experience in 2017

Sector	Any Position	Board Position	C-Suite Position	N: Treated Firms
Pharmaceuticals and Biotechnology	746	310	182	47
Software and Computer Services	710	243	117	22
Health	360	206	75	20
Information Technology Hardware	248	87	45	20
Electronic and Electrical Equipment	360	226	46	14
Real Estate	351	251	47	9
Business Services	364	186	58	8
Telecommunication Services	212	76	31	8
Banks	1043	649	138	6
Engineering and Machinery	243	140	42	5
Food Producers and Processors	205	127	31	5
Media and Entertainment	171	85	33	5
Renewable Energy	46	32	6	5
Speciality and Other Finance	472	213	76	4
Beverages	71	24	18	3
Clothing and Personal Products	191	108	30	3
General Retailers	421	219	93	3
Containers and Packaging	40	28	5	2
Insurance	323	157	71	2
Automobiles and Parts	127	65	20	1
Blank Check / Shell Companies	2	1	0	1
Construction and Building Materials	134	101	13	1
Education	36	21	7	1
Electricity	64	23	11	1
Household Products	123	80	17	1
Investment Companies	110	89	9	1
Leisure and Hotels	375	205	76	1
Leisure Goods	46	30	6	1
Oil and Gas	238	146	32	1
Private Equity	41	12	4	1
Steel and Other Metals	56	40	8	1
Utilities - Other	274	168	46	1

Note:
The sample restricts to women working in domestic and listed companies as of 2017, the year prior to the passage of SB826. Since BoardEx tracks the employment histories of board members, the women considered have sat on a board sometime between 1950 and 2020 (the years of BoardEx coverage). The variables are derived from BoardEx's employment history files, which tracks the work histories of board members. Sector classification following FTSE is provided by BoardEx. The data is sorted on the industries that contain the most number of treated firms – the firms that are listed and have CA headquarters as of 2017.

Table A11: Abnormal Returns on October 1st, 2018

	Abnormal Return	N Firms	Parametric Tests		Non-Parametric Tests	
			T-Test	Patell (1976) T-Test	Cowan (1992) Sign-Test	Wilcoxon (1945) Signed Rank Test
Shortfall 0	-0.006	76	***	***	***	***
Shortfall 1	-0.010	169	***	***	***	***
Shortfall 2	-0.012	243	***	***	***	***
Shortfall 3	-0.009	135		***	***	***

Note: The sample shows the mean abnormal return on Monday, October 1st of 2018 for companies that were domestic, listed, and had headquarters in California as of 2017. SB826 was announced on Sunday September 30th, and Monday October 1st was the first trading day after the legislation's announcement. For each firm, the abnormal return is defined as observed returns minus the expected return. The expected return is derived using the parameters from a market model regression, which is fit using the 252 trading days from Sep 15th, 2017 - Sep 15th, 2018. The CRSP value weighted index is used as a proxy for the market return. The sample excludes firms with fewer than 100 observations in the estimation window, and firms with missing returns on October 1st, 2018. The first (second) row corresponds to CA-based domestic and listed companies that had all-male (gender-diverse) boards in 2017. 'Shortfall' corresponds to the number of additional female directors companies would need to hire (using 2017 board gender composition as a baseline) to be compliant with all stages of SB826. Daily security returns are provided by CRSP. Among companies with multiple securities, I choose the security with the highest average trading volume between Jan 2nd, 2015 and March 31st, 2022. Annual board gender composition and size is provided by BoardEx's Organizational Summary files.

Table A12: Variable Definitions, Data Sources, and Summary Statistics

Variable	Description	Source	Mean	SD	Min	Max	Median
Boardroom Characteristics							
Board Size	Number of directors on the board	BoardEx	6.686	1.798	1.000	15.000	7.000
Expand Board	Indicator for board size increase relative to prior year	BoardEx	0.167	0.373	0.000	1.000	0.000
Drop Male	Indicator for male director dropped from board relative to prior year	BoardEx	0.399	0.490	0.000	1.000	0.000
Incoming Male	Indicator for male director added to board relative to prior year	BoardEx	0.301	0.459	0.000	1.000	0.000
Prior Board Experience	Share of directors with prior board experience	BoardEx	0.780	0.230	0.000	1.000	0.833
Prior C-Suite Experience	Share of directors with prior C-suite experience	BoardEx	0.626	0.234	0.000	1.000	0.667
Prior Same-Sector Experience	Share of directors with prior same-sector experience	BoardEx	0.454	0.315	0.000	1.000	0.400
Non-Executive Director	Share of non-executive directors	BoardEx	0.795	0.110	0.000	1.000	0.833
Prior Conx w/Board	Share of directors with prior professional connections to board	BoardEx	0.546	0.299	0.000	1.000	0.571
Prior Board Conx w/Board	Share of directors with prior board connections to board	BoardEx	0.382	0.335	0.000	1.000	0.333
Prior Conx w/ C-Suite	Share of directors with prior professional connections to C-suite	BoardEx	0.444	0.308	0.000	1.000	0.400
Prior Same-Gender Conx w/Board	Share of directors with prior same-gender professional connections to board	BoardEx	0.542	0.302	0.000	1.000	0.571
MBA Degree	Share of directors with MBA degree	BoardEx	0.348	0.229	0.000	1.000	0.333
Ivy League Degree	Share of directors with Ivy League degree	BoardEx	0.244	0.224	0.000	1.000	0.200

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Table A12: Variable Definitions, Data Sources, and Summary Statistics *(continued)*

Variable	Description	Source	Mean	SD	Min	Max	Median
Log(Predicted Compensation)	Natural log of predicted boardroom compensation	Constructed from BoardEx variables	5.528	0.226	4.257	6.348	5.542
Dual CEO/Chairman Role	Indicator for CEO also serving as chairman	BoardEx	0.375	0.484	0.000	1.000	0.000
Director Age	Average age of directors	BoardEx	61.541	5.931	37.667	80.500	61.750
Governance Outcomes							
CEO Turnover	Indicator for CEO turnover	BoardEx	0.130	0.336	0.000	1.000	0.000
1(Lawsuit Filed)	Indicator for securities class action lawsuit filed	Stanford Securities Class Action Clearinghouse	0.044	0.204	0.000	1.000	0.000
1(Delist)	Indicator for firm delisting	CRSP	0.010	0.098	0.000	1.000	0.000
1(Merger or Reorg)	Indicator for merger or reorganization	CRSP	0.004	0.066	0.000	1.000	0.000
1(Dividend)	Indicator for dividend payment	CRSP	0.320	0.467	0.000	1.000	0.000
1(Incr in Shares Outstanding ≥ 5							
1(Decr in Shares Outstanding ≥ 5							
Audit Share	Share of directors on audit committee	BoardEx	0.729	0.208	0.000	1.000	0.714
Compensation Share	Share of directors on compensation committee	BoardEx	0.665	0.256	0.000	1.000	0.667
Nominating Share	Share of directors on nominating committee	BoardEx	0.588	0.324	0.000	1.000	0.600
Other Share	Share of directors on other committees	BoardEx	0.048	0.107	0.000	0.556	0.000
Avg Committee Load	Average number of committees per director	BoardEx	2.752	0.928	1.000	6.500	2.600
Firm Characteristics							
Return on Assets	Net income divided by total assets (winsorized)	Compustat	-0.151	0.391	-1.741	0.307	0.001

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Table A12: Variable Definitions, Data Sources, and Summary Statistics *(continued)*

Variable	Description	Source	Mean	SD	Min	Max	Median
Return on Equity	Net income divided by total equity (winsorized)	Compustat	-0.301	1.056	-5.789	1.449	0.014
Log(Tobin's Q)	Natural log of Tobin's Q ratio	Compustat	0.549	0.714	-0.699	9.103	0.359
Log(Market to Book)	Natural log of market to book ratio	Compustat	0.886	1.087	-1.620	9.674	0.717
Cash Flow	Cash flow measure (winsorized)	Compustat	-0.123	0.403	-1.766	0.348	0.015
Log(Employees in 1000s)	Natural log of number of employees in thousands	Compustat	0.546	0.744	0.000	4.830	0.200
Capital Intensity	Capital expenditures divided by total assets (winsorized)	Compustat	0.035	0.055	0.000	0.271	0.015
Index of Financial Outcomes	Standardized index of financial outcomes (mean 0 and sd 1 in control group)	Constructed from Compustat variables	-0.023	0.566	-2.497	4.912	0.000
Age	Firm age since IPO	Compustat	18.742	14.739	0.000	93.000	15.000
Log(Market Value)	Natural log of market value	Compustat	5.509	1.744	1.155	10.510	5.517

Note: Summary statistics are calculated from the 2017 cross-section and comprise only firms in the treated and control groups (California all-male board companies and non-California all-male board companies). Windsorized variables use the 1st and 99th percentiles of the sample distribution.