Gender Quotas and Support for Women in Board Elections*

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Abstract

We study shareholder support for corporate board nominees around the 2018 enactment of California's gender quota. Using hand-collected data for close to 600 firms, we first show that support for female nominees was stronger than for male nominees before the quota. This is consistent with a higher bar for female board nominees pre-quota. Second, post-quota support for incumbent female directors remains higher than for incumbent men, whereas the support for new (mandated) female nominees decreases to the same level as the support for new men. This indicates that the quota led to a conversion in the bar for men and women to become board nominees but it did not lead to new female board nominees being of lower quality than male nominees. We also challenge the notion that the negative stock price reaction to the quota is reflecting value destruction due to an insufficient supply of female directors. Instead, we provide evidence of dysfunctional board dynamics being at play, in the sense that stock prices reacted negatively to entrenched boards who did not turn over the least supported directors when adjusting to comply with the new law.

Keywords: Board of directors, Gender quota, Regulation, Corporate Governance

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1 Introduction

In September 2018 a quota for corporate boards was passed in California (CA Senate Bill 826). It requires all publicly held firms headquartered in the state to have at least one appointed female director by the end of 2019, and two (three) female board members by the end of 2021 for boards with five (six or more) members. Following the lead of several European countries, this made California the first US state to impose a binding gender quota on boards. The stock market reacted negatively to the quota (as documented by Hwang, Shivdasani, and Simintzi, 2018; Von Meyerinck et al., 2019; Greene, Intintoli, and Kahle, 2020), a fact which has been interpreted as evidence that shareholders oppose the mandated addition of new female directors (e.g., because of scarcity of qualified female candidates leading to higher search costs, or to suboptimal trustees being appointed, see also Ahern and Dittmar, 2012) and prefer the current composition of the board.

We challenge this interpretation by providing new evidence using hand-collected data on shareholder voting results from annual shareholder meetings for close to 600 firms before and after the introduction of the CA quota. These data enable us to conduct a detailed investigation of shareholder support at the level of individual director nominees. We first show that female nominees receive higher support than male nominees in elections before the quota, and that this is true for both new and incumbent nominees. This is consistent with a higher quality bar for women than for men to become nominated for a board position. Second, we document that post-quota, as the number of female appointees strongly increase, the support for incumbent female nominees remains stronger than for male incumbents (for whom support decreases post quota). Second, we show that the support for new female nominees decreases after the quota and converges to the same level as the support for new male nominees.

Our second result does not support the argument that shareholders prefer existing board members to the new female nominees introduced by the quota. It is, however, consistent with the finding from previous research that there is a sufficient supply of suitable women to fill board seats, and that new female candidates, who are appointed to boards in response to a quota, are not less qualified than male appointees (Bertrand et al., 2019; Von Meyerinck et al., 2019; Giannetti and Wang, 2020). We contribute to this literature by providing the first direct evidence

that shareholders view the quota-mandated women drawn from this pool to be equally qualified candidates as new men.

But if shareholders view quota-mandated women as good candidates, what is the reason for the negative stock market reaction to the introduction of the quota? Our third result reconciles the negative stock price reaction with the evidence of there being enough qualified female candidates. We show that the negative share price reaction to the introduction of the quota announcement was restricted to firms that subsequently failed to replace the director with the lowest pre-quota support when adjusting the board to comply with the new law. This is in line with the observed decline in shareholder support for incumbent male nominees post quota. It therefore appears that correctly anticipated dysfunctional board dynamics in the form of sub-optimal turnover of directors, rather than a lack of qualified female board members, are behind the negative share price reaction.

We hand-collect our data directly from corporate SEC filings, and extract information on voting outcomes for firms that are headquartered in California before and after the quota (our data covers all board election outcomes from annual shareholder meetings from January 2016 until July 2020). This allows us to also include smaller firms that have publicly traded equity, but that are not part of a major index, and in total our sample covers 585 firms. Because shareholders vote for every board nominee separately, our approach allows us to not only consider aggregate measures (like stock price movements) but to also observe the support for every nominee standing for election at the annual shareholder meeting. We can thus provide more detailed answers to questions regarding shareholder reactions to gender quotas, and we introduce a new angle from which to study the open questions about effectiveness and viability of affirmative action policies in general (c.f. Leslie, 2019; Dover, Kaiser, and Major, 2020).

The work presented here contributes to the vibrant literature that seeks to understand the consequences of and reactions to board quotas for women. An extant literature has documented a positive association between higher female participation in the board room and firm performance (Adams and Ferreira, 2009; Gul, Srinidhi, and Ng, 2011; Adams and Funk, 2012; Kim and Starks, 2016). Board quotas have been suggested as one mechanism to increase female participation.

Norway was the first country in the world to introduce a gender quota when they, in 2003, enacted a law mandating a 40% share of women on the boards of publicly traded companies. In

one of the earliest studies on the effects of the Norwegian quota, Ahern and Dittmar, 2012 argue that its passage was followed by a negative stock market reaction and a subsequent decline in firm value and in accounting performance (Matsa and Miller, 2013 reach similar results regarding firm profits using a matched sample of Swedish firms as a control group, as do Yang et al., 2019 who use a similar empirical design). Furthermore, Ahern and Dittmar, 2012 document that the new women who joined the board post-quota were less experienced than incumbent male directors. Contrary to these results, Nygaard, 2011 find, however, that the stock market reaction to the quota was positive for firms with low information asymmetries between the board and the management. For firms with high information asymmetries there was no positive (but also no negative) effect. They argue that female directors, who more often represent outsiders, will have worse access to information in the latter type of firms and hence not be able to fulfill their monitoring role as well as a director who represents the insiders (and who are more likely to be male). Hence the effect of the quota was positive only for the former type of firms.

The fact that Nygaard, 2011 and Ahern and Dittmar, 2012 find opposing results point to an inherent challenge for those investigating the Norwegian quota. First, it is unclear what should constitute the event date; while Ahern and Dittmar, 2012 use 2002 as their event year, Nygaard, 2011 chooses 2005. [1] Second, Bøhren and Staubo, 2014 find that 50% of firms who would potentially be impacted by the Norwegian quota changed their organizational form in order to avoid being impacted. This, in turn, leads to the sample of Nygaard, 2011 and Ahern and Dittmar, 2012 being different. Finally a more recent study, Eckbo, Nygaard, and Thorburn, 2020, considers various event dates and fails to find any significant (positive or negative) effects on firm value and operating performance in response to the quota.[2]

The 2018 CA quota has a precise event date and firms were left with a shorter time to comply with the law after its passing. The enactment of the gender board quota in CA also represents a first opportunity to study shareholder attitudes to mandated quotas in a US context. Studies that provide first evidence on the impact of California's quota on stock prices include Hwang, Shivdasani, and Simintzi, 2018; Von Meyerinck et al., 2019 and Greene, Intintoli, and Kahle,

[1] The enactment of the quota followed long debates, which started in 1999, and firms had time to prepare between 2002 and 2005 for the implementation of the quota (Ferreira, 2015).

[2] In addition, they argue that the positive abnormal returns found in Nygaard, 2011 were unrelated to the passage of the quota as foreign firms not subject to the quota, but listed on the same exchange, experienced similar stock price increases around that period.

2020. Because the event was recent, the analyses are limited to the investigation of announcement returns and cross-sectional analysis whereby Californian firms are matched with a set of control firms in other states. All three studies provide evidence of significant negative announcement returns to the quota ranging from -1.2% to -2.2%, but the exact impact seems to depend on the extent of compliance, and for firms who comply with the quota already at enactment there is no adverse effect on returns. Of these three papers Greene, Intintoli, and Kahle, 2020 employ the largest sample and include all publicly traded firms headquartered in California. Hwang, Shivdasani, and Simintzi, 2018 instead focus on Russell 3000 firms and Von Meyerinck et al., 2019 use firms included in the BoardEx database.

With regards to the negative stock price reaction, Hwang, Shivdasani, and Simintzi, 2018 show that an insufficient supply of female directors imposes costs on firms and provide evidence that firms with weak corporate governance, low profitability, and a limited access to the local director pool experience negative announcement returns, worse earnings forecasts, and wider credit default spreads as a result of the quota. In a similar vein, Von Meyerinck et al., 2019 show how expected cost of compliance with the quota impacts the degree to which the firm experiences negative abnormal returns. However, their evidence does not suggest that limited supply of qualified female directors is key. Instead, their results point to the negative announcement returns stemming from shareholders' reacting to the government's attempt to regulate non-economic values, and an anticipation of more such policies in the future.

While these papers, which all use announcement returns, support the view that shareholders opposed the introduction of the CA quota, the analysis of characteristics of the women who join boards after the quota indicates that these women are sufficiently qualified. This makes it difficult to uphold the argument that an insufficient supply of qualified female board members are behind the negative stock price reactions. This calls for a more direct investigation of shareholders' attitudes towards female board nominees, which is what we can provide through the use of shareholder voting data in addition to stock market returns.

Our work is also related to an emerging literature that investigates the determinants of shareholder support for nominees in board election. These studies generally use the ISS Voting Analytics and the BoardEx databases, which results in a sample that intersects Russell 3000 and S&P1500 firms. To the best of our knowledge, the only studies that consider the relation between

director gender and shareholder support are Cai, Garner, and Walkling, 2009, Ertimur, Ferri, and Oesch, 2018, and Aggarwal, Dahiya, and Prabhala, 2019. Ertimur, Ferri, and Oesch, 2018 focuses on ISS recommendations (an advisory firm) and find no relationship between director gender and voting outcomes. Cai, Garner, and Walkling, 2009 cannot draw firm conclusions about the association between a director's gender and the amount of shareholder support she enjoys, whereas Aggarwal, Dahiya, and Prabhala, 2019 find that being male is associated with fewer future directorships. However, while these papers include a cursory exploration of the effect of gender on shareholder support, such analysis disguises important dynamics that are created with the imposition of a quota. We contribute to this literature through the fact that we can separately analyse how support for new and incumbent nominees of both genders change in response to the enactment of the quota.

In sum, our study is the first to connect the observed negative stock price reaction to a gender board quota with shareholder votes for individual board nominees. This enables us to derive detailed insights into shareholders' attitudes toward quota-mandated nominees, and our results challenge the dominant interpretation in the literature that a negative stock market reactions is indicative of shareholder disapproval to the addition of female nominees.

The paper is organised as follows. Section 2 provides background information on the CA gender quota and the director election process. Section 3 describes the data. Section 4 presents our empirical strategy and Section 5 discusses the results. Section 6 concludes.

2 Institutional Setting

2.1 The Quota: California Senate Bill No. 826

Our setting surrounds the enactment of the CA gender quota for corporate boards that was announced and came into effect on September 30, 2018. The regulation applies to all publicly held domestic and foreign firms headquartered (with a 'principal executive office' as identified in the firm's 10-K filing) in the state. In practice this implies that the CA quota impacts 12% of all US firms. The quota requires the firms to have at least one appointed female director by the end of 2019 and two (three) appointed female board members by the end of 2021 for boards with

five (six or more) members. In our sample, an average board consists of eight members, and was hence impacted by the regulation by being subject to a 12.5% quota at the end of 2019, and a 37.5% quota by the end of 2021. In comparison, the Norwegian quota is 40% for all firms. The CA quota marks the first binding board quota in the US, and noncompliance comes at a cost of a $100,000 for the first violation and $300,000 for subsequent violations. Firms comply with the law by filing a report through the website of the California Secretary of State.

The CA quota offers an advantageous setting for an event study as its passage, unlike the European mandates, was relatively unexpected and therefore less likely subject to anticipation effects. The Bill (826) was proposed to the California Senate on January 3, 2018 and passed the House with a 22-11 vote on May 31, 2018. On August 29, 2018, it was presented to the Assembly where it passed with a 41-26 voting outcome. At this point, it was however not clear whether the bill would become law as Governor Jerry Brown, the responsible for signing the bill into law, did not make any public statements on his position regarding the law before signing it on September 30 (Sunday), 2018 (Jorge L. Ortiz, 2018). After the passing of the law, firms had 15 months to prepare for how to comply with the law. In sum, this set up ensures both a more specific event time, and a shorter preparation time, than for example the well studied Norwegian gender quota for corporate boards.

2.2 Director Elections

We analyze shareholder attitudes towards mandated female board nominees by studying voting behavior of shareholders at annual elections of the board of directors. The board represents the shareholders, and as their trustees, the directors are responsible for the oversight of the firm. The current board selects the nominees for the board of directors for an upcoming fiscal year. It is mandated that shareholders subsequently vote on these nominees in the yearly shareholder meeting.

Every shareholder is entitled to vote, and they are informed about the upcoming election by the firm sending them information about the date and place of the annual meeting, instructions on how to vote, and a list of the items that will be put to a vote ('proxy material'). For the vote on the board of directors, information on every nominee (name, age, tenure, bio) is provided. The

shareholders also receive a proxy card which they can use to vote until the day of the meeting, which is when the votes will be counted. The vote can be submitted electronically, via mail or in person at the shareholder meeting.

Within the context of our study is essential to clarify why shareholder votes are meaningful and what motivates shareholders to vote. First, it is important to note that director elections in the vast majority of cases are uncontested and that nominees are generally elected unopposed (Bebchuk, 2007). This is due to the nature of the voting rules, which favor management nominees and make it highly unlikely for shareholders to vote them out of the board at an election.[3] Furthermore, shareholder votes are not binding and the management of a firm can decide to go against the shareholders' recommendation. As a result, a nominee who stands for election will most likely indeed be elected (c.f. also Cai, Garner, and Walkling, 2009 and Fischer et al., 2009). This is important, as it alleviates a potential concern of using shareholder votes as a measure of support for nominees after a quota; namely that shareholders may be more prone to vote for women simply because they want the firm to comply with the quota. As all nominees are all but guaranteed to be elected, quota compliance needs not to be a concern of the shareholders, as long as enough women are nominated.

While shareholders in practice cannot influence whether or not an individual nominee is elected or not, their votes are consequential in other ways. This is a second point that is important to make, as it ensures that shareholders take the voting process seriously, and that their voting decisions are meaningful as a measure of director support. Bolton et al., 2020 show that disapproving votes in director elections are one of the main forms in which institutional shareholders express their disagreement with corporate governance, and argue that the votes are reflective of shareholder preferences. Shareholder disapproval can have negative consequences for the directors and the firm and are unlikely to be ignored, and Iliev et al., 2015 shows that lower support in an election is associated with a higher probability that the director is not nominated again in the following year. Similarly, Aggarwal, Dahiya, and Prabhala, 2019 show that shareholder dissent can lead directors to be moved to a less favorable board position. Also, Grundfest,

[3]The voting rules can be broadly divided into plurality and majority voting rules (but companies can formulate corporate bylaws to the rules which introduce modifications). Under the plurality voting rule, the nominees with the most votes win the election, but since the number of board seats generally equals the number of nominees, one vote is enough for the nominee to be elected. Under the majority rule, a nominee needs 50% of the votes, and in practice, it is extremely rare that this threshold is not met.

2003 argues that poor election results can induce negative press for the firm (see also Bach and Metzger, 2015 and Fos, Li, and Tsoutsoura, 2018).

To conclude, the voting setting provides shareholders with the incentive to reveal their honest opinion about board nominees. A shareholder can voice their dissent without having to worry about an immediate disruption through their vote, but their votes are not inconsequential. In our context, this means that a shareholder who considers a female mandated board candidate unsuitable can express this through voting behavior without putting the company at immediate risk of violating the quota. With that said, if a substantial amount of other shareholders share this opinion this is likely to have other consequences.

3 Data

To construct our sample, we rely on the original filings submitted by companies to the US Securities and Exchange Commission (SEC), which are available through the SEC's Electronic Data Gathering, Analysis, and Retrieval system (EDGAR). All companies with publicly traded securities, that are subject to Section 12 or Section 15(d), are required to file with the SEC. This sample is referred to in the CA Senate Bill 826 text as "publicly held domestic or foreign corporation whose principal executive offices, according to the corporation's SEC 10-K form, are located in California" (Secretary of State California, 2018).[4]

For board election outcomes, we hand-collect information from Form 8-K. Unlike the ISS Voting Analytics Database, which updates data once a year, our approach allows us to collect data up until the most recent voting event and cover two main voting seasons after the enactment of the quota (May and June of 2019 and 2020). If there was a vote on the board of directors, the results are reported in the 8-K under Item 5.07, which states the name of each director elected at the meeting, the number of votes cast for, against and withheld, as well as the number of abstentions and broker non-votes. This form must be filed by firms within 4 business days of the election. On EDGAR, we search for firms headquartered in California both before and after the

[4]The bill further refers to a public corporation as a corporation with outstanding shares listed on major US stock exchanges without specifying the exchanges. In our sample, we include all firms with public equity outstanding. If any firm that is not mandated to comply is included, this should bias our results towards zero. In addition, we observe that firms who are not part of large stock indices adjust their board compositions to comply with the quota.

passage of the quota, and which have direction election results (item 5.07) both pre- and post-quota. We let the data start in 2016 to make sure that we have sufficient coverage of elections before the passage of the quota. As in Hwang, Shivdasani, and Simintzi, 2018; Von Meyerinck et al., 2019 and Greene, Intintoli, and Kahle, 2020, we define September 30, 2018 (a Sunday) as the date of enactment. This is when Governor Brown signed the quota law and when its adoption was publicly announced. We exclude firms that are subsidiaries of other companies or that were acquired or delisted during the sample period. Furthermore, we exclude nine elections that were proxy contests as these elections are likely to have different dynamics. An important implication of our sampling approach is that it requires firms to remain in business for at least one year in order to have director election results available in both the pre- and post-quota period. This means that it diverges from the sample used in Hwang, Shivdasani, and Simintzi, 2018; Von Meyerinck et al., 2019 and Greene, Intintoli, and Kahle, 2020.[5]

Our final sample consists of 585 firms which is larger than the samples used in Hwang, Shivdasani, and Simintzi, 2018 and Von Meyerinck et al., 2019, and comparable to the sample size in Greene, Intintoli, and Kahle, 2020. Our sample is larger because we hand-collect data and include firms with publicly traded equity that are not part of the Russell 3000 or the S&P 1500.

For every election, we search for the matching Form DEF14A (Definitive Proxy Statement), which contains information on the voting procedure and the backgrounds of the directors who are nominated to serve on the board for the next fiscal year. This form must be filed in advance of the shareholder meeting if shareholder votes are solicited. For every election, we collect information on gender, age, tenure, and independence as reported in the form.[6] Nominee gender is identified from the nominee biographies in the DEF14A filings which use gendered pronouns.

Our data set comprise the set of directors who are suggested by the firm for the upcoming fiscal year, which represents exactly the board composition shareholders vote for at the shareholder meeting. We exclude directors who are listed as nominees in the DEF14A but drop out before the

[5] While our sample may contain healthier firms, on average, the results of Hwang, Shivdasani, and Simintzi, 2018; Von Meyerinck et al., 2019 and Greene, Intintoli, and Kahle, 2020 may be partially driven by firms with financial difficulties around the time of the introduction of the quota and went out of business or were acquired after its passage.

[6] We encountered typos in reported director age. For consistency and because this is the information shareholders receive, we abstain from correcting these errors in the data. However, correcting the errors would not does affect any of our results.

election takes place.[7] There is a distinction between classified (or staggered) and non-classified boards. For the purpose of our analysis, this is important because in some firms, not all directors that will be on the board in the upcoming year stand for election. Form DEF14 provides director information for the nominees as well as the continuing directors. In our analysis on overall board composition we hence take the full slate of directors into account, but the main analysis focuses on the nominees who are subject to a vote in a given election. Lastly, we also obtain announcements of director appointments and departures from 8-K filings (Item 5.02). This allows us to track changes in board composition that happen between the last pre-quota election and the first post-quota election. Thus, we can infer the exact board composition at the time of the quota announcement and subsequent changes to it.

3.1 Shareholder Support for Nominees

We define our main variable of interest, *Support*, as the share of shareholder support that is received by a nominee who stands for election for the board of directors at a firm's annual shareholder meeting. We differentiate between the supporting voting category "for" (which is the same across all firms) and the non-supporting categories (where nomenclature varies across firms and includes "against," "withhold," "abstain," "withhold/against," "abstain/against"). *Support*, is measured as the ratio of supporting votes to the sum of all votes. This is in line with the definition used in the literature on director elections (Cai, Garner, and Walkling, 2009; Fischer et al., 2009; Iliev et al., 2015; Aggarwal, Dahiya, and Prabhala, 2019) and with the approach adopted by ISS.[8] We also follow the standard of this literature and exclude broker non-votes.[9] Typically, these votes are not considered "votes cast" under the state law.[10]

Not every shareholder who is entitled to a vote participates in the election (non-votes): the

[7] We also drop one male nominee from our sample despite standing for election at the annual meeting because he passed away before the election took place.

[8] Cai, Garner, and Walkling, 2009 measure support as the number of "for" votes divided by the sum of "for" and "withhold" votes. They ignore other voting categories because the ISS Voting Analytics database only reports these two categories. They also construct a measure called "excess votes" which is the difference between "for" votes for the focal nominee and the average votes for all nominees up for election at the same shareholder meeting. We use election fixed-effects throughout our analysis which capture the control measure in Cai, Garner, and Walkling, 2009.

[9] These are votes held by beneficiaries through brokers or other third parties and for which the beneficiaries did not provide any instructions on how to vote.

[10] Furthermore, Cai, Garner, and Walkling, 2009 show that broker non-votes have no impact on director election outcomes.

voting participation rate in US corporate elections is on average 73%.[11] Importantly, we use election fixed-effects throughout our analysis, which controls for omitted variables at the election level, such as differences in voting policies, voting participation, or firm performance at the time of the election.[12]

3.2 Descriptive Statistics

Our sample consists of 585 distinct firms which held 2,616 elections over the 55 month-year periods from January 2016 until July 2020. Table 1 shows descriptive statistics and provides an overview of the overall board characteristics associated with an election, which is our level of analysis. The total number of observations is larger (20,262) than our nominee sample (14,527) as it also covers continuing directors at classified boards (which stagger director elections; 43.5 percent of the boards in our sample are classified) who are not standing for election but who will serve on the board in the upcoming fiscal year.[13] In our nominee sample each observation represents a nominee who will be voted on at a given election. The average (median) support is 94.1% (97.8%).[14]

Table 2 splits our nominee sample by gender. Here we see that 17.3% of nominees are female, and on average, they get 1.9% more support from shareholders than male nominees. Also, female nominees receive higher median support than male nominees and their voting results have a lower standard deviation. Female candidates are on average 2.9 years younger and served 3.5 years less on the board than their male counterparts. This observation is in line with the fact that the fraction of new nominees is more than twice as high for women as for men.

Hwang, Shivdasani, and Simintzi, 2018; Von Meyerinck et al., 2019 and Greene, Intintoli, and Kahle, 2020 show consistent evidence of a negative stock market reaction to the announcement of the CA quota. In Table 3 we verify that this holds for our sample. For most firms we obtain

[11] Cvijanovic, Groen-Xu, and Zachariadis, 2019 report that institutional shareholder with an obligation to vote comprise 20% of all shareholders.

[12] Cai, Garner, and Walkling, 2009 identify voting recommendations issued by ISS for institutional shareholder as an important factor driving voting outcomes. We do not include these in our analysis as they are only provided by the ISS for the S&P 1500 firms and are available only until year end 2019. Nevertheless, in Table A1 in the Appendix we verify that our main results hold when controlling for ISS recommendations on the sub-period for which these are available (2016 to 2019).

[13] Our results remain robust when we exclude the sub-sample of classified boards from our analysis. The results are reported in Table A2 in the Appendix.

[14] Overall, in our sample there are 61 cases where a nominee received less than 50% support. Only 6 of those cases involved female nominees.

raw and excess returns from CRSP, but as our sample also contains small firms whose equity trades on Over-the-Counter (OTC) exchanges, we collect stock returns for 31 firms from Yahoo Finance.[15] Each firm must have at least 30 days of returns for the estimation and there are 31 firms in our sample which do not satisfy this requirement. We use October 1, 2018 as our event date (as September 30, 2018 is a Sunday), and our estimation window spans over 255 trading days prior to the event and ends 6 days after it. We exclude 30 firms that have other material events at the time of the quota announcement that could affect how shareholders react to the quota announcement.[16] As a result, the average return is based on a sample of 524 firms.[17] We estimate daily abnormal returns by subtracting the predicted returns from the raw returns and employ the market model to estimate the predicted returns using a value-weighted market index consisting of all sample firms. Our average abnormal return is -1.06% on the event date, and -1.12% if we exclude the 30 firms that are traded on OTC exchanges.[18] Our results are hence similar to those in previous studies finding average abnormal returns ranging from -1.17% to -2.2% (Hwang, Shivdasani, and Simintzi, 2018; Von Meyerinck et al., 2019 and Greene, Intintoli, and Kahle, 2020).

4 Empirical Strategy

4.1 Conceptual Framework

A quota imposes a constraint on board composition in terms of the number of female directors. Assuming that nominees are selected according to their quality, such a constraint implies that firms have to dip further down in the quality distribution of female nominees. Thus, as firms are mandated to increase the number of women on boards, there will be a decline in the average quality of female relative to male nominees. Assuming that shareholders value quality, our first prediction is hence that shareholder support for new (mandated) female nominees should decrease after the introduction of the quota.

[15] The returns for these firms are on average higher. We verify that these firms are not driving our results.
[16] Based on 8-K filings, we consider material events as earnings announcements, announcements of de-listings form exchanges and mergers. We exclude these events if they take place within (+/-) three days of October 1, 2018.
[17] These firms cover 89.5% of our observations in the nominee sample. We verify that our main results are robust to the exclusion of the firms for which no stock price information is available, see Table A3 in the Appendix.
[18] One firm traded on an OTC exchange was excluded due to a material event at the time of the quota announcement.

The effect of the quota for the resulting overall quality composition of the board of directors post-quota, and relatedly the interpretation of the stock market reaction will depend on the relative average quality of female and male directors on the board before the quota. The standard narrative used to explain the negative stock price reaction to gender quotas is that, as a result of the quota, male directors will be replaced by females that are of worse quality than those (male directors) they replace. This is, however, only the case, if the quality of female and male directors on boards is the same before the quota. Then the quality of the marginal (mandated) female nominee will be below the marginal quality of a male nominee after the quota. In this situation, the quota has value-destroying properties which could be reflected in a negative stock price reaction.

If director selection is however biased against women before the implementation of the quota in the sense that it imposes a higher bar for female nominees than for males, female directors will be of higher quality than males pre-quota. If this is the case, a quota that mandates firms to move down the quality distribution of female directors in order to put more women on boards would not necessarily lead to new female nominees being of lower quality than males. Under such circumstances, the quota does not represent a value-destroying constraint for firms, and if negative stock price reactions are observed, other explanations than low quality female nominees must be sought.

There are two possible cases to consider. First, if we observe that female nominees receive equal shareholder support as male nominees pre-quota this is an indication that the average quality of the marginal female nominee is the same as that of a male nominee before the quota. In that case, we would expect that a post-quota move down the quality distribution for female nominees would lead new (mandated) female nominees being of lower quality than new male nominees after the quota. Thus, new female nominees should receive less shareholder support than new male nominees after the quota. In such a situation, the negative stock price reactions to the quota could reflect concerns about an insufficient supply of female directors and a scenario where male nominees are substituted by new female nominees of lower quality.

A second possibility is that we observe female nominees receiving more shareholder support than male nominees before the quota. This would imply that the average quality of the marginal female nominee was higher than the average quality of the marginal male nominee pre-quota, i.e.,

an indication that there was a higher bar for women to become nominees pre-quota. If the quota is set too high, and the post-quota support for new female nominees fall below that of new male nominees, the negative stock price reaction could reflect a concern about more qualified male nominees being substituted by less qualified females. If, however, the support for new women remains higher than, or converge to the same level as, that of new men, a negative stock price reaction to the quota is unlikely to be related to the perceived quality of female nominees.

4.2 Estimation

We analyse the effect of the 2018 CA quota on female board member (nominee) support by utilizing a difference-in-difference analysis in event time. The aim is to estimate the effect of the quota on shareholder support for female nominees relative to male nominee before and after the quota. We specifically differentiate between new and incumbent nominees, and between female and male nominees. We use the following main specification:

$$\begin{aligned} Support_{ict} = \alpha_c + \beta_1 Female_{ict} + \beta_2 Post_{ict} \times Female_{ict} + \beta_3 New_{ict} \times Female_{ict} \\ + \beta_4 Post_{ict} \times New_{ict} \times Female_{ict} + \epsilon_{ict} \end{aligned} \tag{1}$$

where i indicates a specific nominee in election c in year t. The nominee can be either a new candidate or not (in which case they are an incumbent) and they can either be female or male. We define a nominee as new if they stand for election for the first time and were appointed to the board within one year of the meeting where the election took place.[19] α_c are election fixed effects and $Post_{ict}$ is an indicator of the observation being pre versus post the 2018 quota which takes on a value of one if the shareholder meeting where the election takes place is after September 30, 2018 and zero otherwise. We use election fixed-effects throughout our analysis to control for any observable characteristics on election level such as differences is voting rules, firm performance, or in degree of shareholder participation.

All shareholders can support (vote 'for') both male and female incumbent and new board nominees before and after the 2018 quota. An underlying assumption in our analysis is that any differences in shareholders' behaviors after the quota is attributable to changes in the new set

[19] Directors can be appointed by firms throughout the year.

of regulations. We verify in Figures 3 and 4a that the parallel trends assumption holds in event time and provide an additional discussion of those figures below.

5 Results

5.1 Support for Female Nominees in Elections for the Board of Directors

Figure 1 shows the average share of female board directors in CA for firms impacted by the quota. It shows the share of women on boards increasing over the course of our sample period, and that there is a clear structural break after the quota was introduced in 2018. While the average share of women on boards is 12.9% in 2016, it is 15.8% in 2018, and 19.1% (23.2%) in 2019 (2020). In Figure 2, we also see a strong increase in newly-appointed female directors. Together, these figures indicate that the quota had the intended effect and resulted in more female nominees and more female appointed directors.

Table 4 shows our first key results: that female nominees generally enjoy more support than male nominees before the quota. The marginal effects from this regression are illustrated in Figure 3.[20] The fact that female nominees enjoy more support than male nominees before the quota is consistent with what we would expect if female nominees were, on average, more qualified than male nominees, i.e. with their being a higher bar for women to become a board nominee pre-quota. Table 4 also demonstrates that female nominee support is stronger post-quota relative to pre-quota. The interaction between the post and female dummy in column (1) shows that female nominees receive more support than male nominees after the passage of the quota relative to before. As demonstrated in column (2), these results are robust to accounting for potential anticipation of the regulation and exclude one year before its passage (October 2017 until October 2018). Columns (3) and (4) show regression results for the pre- and post-quota period separately. It is clear that female nominees – on average – enjoy more support after the introduction of the quota. Instead it appears that the gap in support between female and male nominees widens after the quota in favor of female nominees as illustrated in Figure 3.

[20] In order to identify the point estimates for the marginal effects, we use company and year-month fixed-effects in place of election fixed-effects in Figure 3.

Another way to compare shareholder approval for male and female nominees is to look at the support for the same nominee within the same firm before and after the quota. We only consider nominees for which voting results are available for both periods (this is the case for 70.37% of male and 55.07% of female nominees), i.e., incumbent nominees. Furthermore, to account for election-level effects, we subtract the average support for the nominees in an election from the focal nominee's support in that election (i.e., we consider *excess support*). Table 5 shows that the incumbent female nominees do not receive more support than incumbent male nominees before the quota and their support remains stable after the quota. Incumbent men, on the other hand, lose a substantial amount of support in the post period. This results in a statistically significant difference between the support for incumbent female and male nominees in favour of women after the passage of the quota. It also suggest that the increasing gap in support between male and female nominees post-quota is driven by lower support for the male nominees.

Next, we separately analyse support for new and incumbent nominees before and after the quota. We expect that if the negative stock announcement returns reflect shareholder concern that new (mandated) female nominees of worse quality will replace better qualified male nominees, we should expect post-quota support for new female nominees to be below the pre-quota support of female nominees. Figure 4a shows the raw data averages for the support of new and incumbent female nominees and new and incumbent male nominees. In the raw data averages, we see that shareholder support for new female nominees decreases after the quota and approaches the level of support of new male nominees. These two groups jointly receive the highest level of support before and after the quota. There is a slight upward trend for new male nominees suggesting a higher bar for this group.

Figure 4b shows the number of the new versus incumbent female and male nominees who stand for election every year. The graph uncovers important changes in the composition of the nominees. The proportion of new female nominees increases from 3.0% in 2018 to 4.9% (6.6%) in 2019 (2020). In turn, the group of new male nominees shrinks from 9.9% in 2018 to 7.0% (5.6%) in 2019 (2020). The proportion of incumbent male nominees remains sticky at first but decreases from 73.7% in 2019 to 70.4% in 2020. From our data we also learn that the median board size remains constant at eight until 2019, and increase by one in 2020. We do not observe increases

in the number of directorships (busyness) among directors.[21]

Table 6 analyzes post-quota support for new versus incumbent nominees in a multivariate setting and constitutes the second set of our key results. Figure 5 illustrates the marginal effects for the regression.[22] We note that new nominees generally enjoy stronger support (column (1) of Table 6).[23] However, in column (2), we also see that the coefficient on the interaction of being a new female nominee post-quota is negative, and we conclude that shareholder support for new female nominees fell more than for their male counterparts after the introduction of the quota. This evidence is consistent with shareholders attributing lower quality to new female nominees that are potentially mandated by the quota. In combination with the higher pre-quota support for female nominees, this is consistent with a decreasing quality threshold for women to become a board nominee and a correction of a previous bias in the director candidate selection process which imposed a higher bar for women than for men.

It is important to note, however, that even though new female nominee support falls after the quota, it does not fall below the average support for male nominees after the quota. Columns (3) and (4) of Table 6 show results for incumbent and new nominees separately. First, the coefficient estimates in column (3) illustrate that female incumbent nominees receive more support than male incumbent nominees after the quota than before (but this is driven by the overall decrease in support for incumbent male nominees in the post period as illustrated in Figure 5). Second, Column (4) considers the sub-sample of new nominees, the group with the overall highest support. The results show that after the passage of the quota, female nominees are almost indistinguishable from male nominees in terms of support. Thus, despite a fall in support for new female nominees after the quota relative to before, their support still remains at a high level and they are not less supported than any group (new or incumbent) of male nominees. This suggests that the quota had the effect of bringing the quality of the marginal new female nominee to the quality of the marginal new male nominee closer together. All of our results are robust when the ISS voting recommendations are controlled for and the sub-sample of elections in non-classified boards only

[21] Both male and female directors slightly decrease the number of seats on different boards after the quota. There a larger decrease in busyness for female directors. The median number of board seats is one per director.

[22] In order to identify the point estimates for the marginal effects, we use company and year-month fixed-effects in place of election fixed-effects in Figure 5.

[23] This is consistent with the idea that new directors are more likely to be independent and, thus, better monitors. For instance, Ertimur, Ferri, and Oesch, 2018 show that ISS is likely to issue "withhold" recommendations for new directors.

(see Appendix, Tables A1 and A2 respectively).

Previous research shows that stock announcement returns are worst for firms who are violating the quota requirements before its passage (Hwang, Shivdasani, and Simintzi, 2018; Von Meyerinck et al., 2019; Greene, Intintoli, and Kahle, 2020) – in order to comply with the quota, they need to add at least one women to their boards. The current narrative explaining the negative stock price reaction is that it is particularly costly for these firms to accomplish this due to the limited supply of qualified women and because of the costs associated with recruiting them. We investigate to what extent data is supporting this narrative in Table 7. Here we conduct the same analysis as in Table 6, but restrict the regression to only include the sub-sample of firms who had no women on their board in the last election before the passage of the quota ('violators') and who do not expand their board size from the last pre-quota to the first post-quota election. This implies that we are only considering the firms where the current board composition is modified by substituting a male director for a female director (we also only consider the first election in the post period to capture the first addition of a female nominee after the quota).

About 30.8% (180) of our sample firms have no female directors by the time of the quota announcement (September 30, 2018). As soon as the quota was in effect (December 2019) only 11.5% (67) of firms violate it by having no single female director on their boards. In the regressions in Table 7 7, we control for new male nominees given the evidence that shareholders appear to prefer new nominees over incumbents. We do not control for new female nominees because, by design, it will be entirely new female candidates who violators add to their boards to comply with the quota.[24] The results show evidence of high support for female nominees relative to (both new and incumbent) male nominees after the passage of the quota. This, in turn, challenges the notion that shareholders perceive the current board compositions as value maximizing and that there is a lack of qualified female board candidates.

Overall, our results show that female nominees enjoy higher support than male nominees both before and after the passage of the quota. In fact, the gap in support becomes larger after the quota as incumbent male nominees lose shareholder support in the post-quota period. At the same time, we observe that female new nominees receive less shareholder support after the quota

[24] Theoretically, it might be the case that a female nominee who stands for election at a firm after the quota is already known and had a connection to the company. The SEC filings suggest that the occurrence of these cases, if any, is rare.

relative to before. Despite this drop in approval, the group of new female nominees remains at least as supported by shareholders as male new nominees and remains more supported than male incumbent nominees.

5.2 Stock Price Reactions and Board Turnover Decisions

In the preceding analysis we showed that new female and male nominees receive the same level of support from shareholders in board elections after the introduction of the quota. This suggests that the post-quota quality of the marginal new male nominee is equal to the quality of the marginal new female nominee. At the same time, we do observe a negative stock market reaction to the announcement of the quota, as have also been documented in previous research.

Current explanations for this negative stock market reaction point to the limited depth of the labour pool for potential female directors (Matsa and Miller, 2013; Hwang, Shivdasani, and Simintzi, 2018; Greene, Intintoli, and Kahle, 2020). Our results are, however, inconsistent with this narrative as the shareholder level of support for female directors at the time they actually stand as nominees for election is the same as for men. This finding is, on the other hand, in line with the research documenting that a pool of qualified female candidates exists (Bertrand et al., 2019; Von Meyerinck et al., 2019; Eckbo, Nygaard, and Thorburn, 2020 and Giannetti and Wang, 2020.

We next provide a potential explanation for the apparent disparity between the negative share price reaction and the relatively high support for new female nominees. It is important to keep in mind that it is the board itself that is in charge of selecting director nominee and the board has significant power over board composition. The shareholders' reaction might reflect their anticipation of how the boards and/or firm management will respond to the quota and what actions they will take to comply with it. Figure 5 shows that support for male incumbent directors falls after the quota announcement and thus suggests that the board does not replace the worst male directors with the relatively better female directors. Thus, we propose that the negative share price reaction reflects the concern that the board will sub-optimally replace high quality male directors with new female directors.

In order to test this conjecture, we examine returns based on how the board actually replaces

board members. First, we want to understand which group of boards drives the abnormal negative stock price reaction. Therefore, we regress the firm's abnormal announcement returns on a dummy (*Violation19*) that is equal to one if a firm violates the first quota requirement which stipulates to have one female director by the end of 2019 based on the composition of the board at the time of the quota announcement (September 30, 2018).[25] We also consider a violation dummy (*Violation21*) that is equal to one for firms who at the time of the quota introduction would not be compliant with the quota requirements that come into effect by the end of 2021 (two female directors for board sizes of five; and three female directors for board sizes larger than five). Lastly, we also consider a discrete variable (*Shortfall21*) that can take integer values from zero to three and that represents the number of female directors a board is missing in order to be compliant with the 2021 requirement. We control for board characteristics associated with corporate governance quality including board size, the average tenure of directors, the share of independent directors, and whether it is a classified (staggered) board. These are based on the board composition at the time of the quota announcement. All regressions include industry fixed-effects based on two-digit SIC codes.[26] Table 8 shows summary statistics for our sample by violator group.

We would expect shareholders to be most concerned if firms are not compliant with the approaching 2019 quota requirement at the time of the announcement. Therefore, we should see the largest announcement effects for firms in the group *Violation19* and the group *Shortfall21* who miss three female directors to be compliant with the 2021 requirement. The latter group is a sub-group of *Violation19* representing large all-male boards. Firms in both groups have no female directors on their boards at the time of the announcement and are thus not compliant with the upcoming 2019 quota requirement. Firms in the *Shortfall21* group who miss one or two female directors to be compliant with the 2021 requirement may or may not comply with the 2019 quota requirement at the time of the announcement. If they are already compliant with the 2019 quota requirement they need a maximum of two women to meet the 2021 quota requirement. However, the fairly long horizon of over three years to reach compliance should cause less concern among

[25] The sample for this analysis is based on the sample in Table 3. These are firms for which a sufficiently time series of stock prices was available to calculate abnormal quota announcement returns.

[26] The five most frequently represented industries in our sample are: Chemicals and Allied Products (21%), Business Services (17%), Electronic & Other Electrical Equipment (11%), Holding and Other Investment Offices (10%), Measuring, Photographic, Medical, Optical Goods, & Clocks (9%).

shareholders.

Table 9 presents the regression results and shows evidence of negative returns for each group of violators. The weakest reaction is associated with the *Violation19* group (column (1)) where there is a small difference in returns between boards who comply and those who do not comply with the 2019 requirement.[27] This might reflect the anticipation of shareholder regarding how firms will adjust their boards in order to meet the 2019 quota requirement. The group that shows the strongest negative reaction in terms of announcement returns are boards that miss three directors in order to comply with the 2021 requirement at the time of the quota announcement (column (3)). This makes intuitive sense since these firms face the largest restructuring efforts to be compliant. Overall, these results are broadly consistent with the findings in Hwang, Shivdasani, and Simintzi, 2018; Von Meyerinck et al., 2019 and Greene, Intintoli, and Kahle, 2020 who examine slightly different samples.

Our results imply that shareholders have an expectation on how violating boards will adjust board structure to satisfy the quota requirement. Therefore, we now analyse whether there is a difference in how shareholders react depending on how firms change their board composition to comply with the quota requirement. In particular, we test whether shareholders react differently when male directors depart from the board as female directors are added as opposed to when no such turnover takes place.[28] We do not consider instances where a female director departs because the concern in the literature relates to the replacement of male directors with less qualified female directors. We also do not consider CEO or lead director (chair) turnovers and turnovers due to changes of control, restrictions on age limits, and the passing of a director. Such types of turnovers are unlikely the result of adjustment efforts to meet the quota requirement. We re-run the regression specification in Table 9 for each group separately conditional on a firm being a violator in their respective group.[29] We create a variable that identifies firms that turn over at least one male director in the time period after the quota announcement up until the

[27] In this group, the results are driven by firms traded on OTC exchanges. The negative stock price reaction is not statistically significant if we remove this group of firms from the regression.

[28] One could consider analyzing how shareholders react depending on whether a board is expanded versus contracted upon the addition of a female director. However, boards make adjustments to composition on a continuous basis and do not clearly indicate substitutions. Therefore, a point in time when board composition is fixed is difficult to unambiguously determine. Most importantly, director substitutions cannot be accurately identified.

[29] We exclude industry fixed effects in these regressions due to the small sample sizes.

first post-quota election (*Turnover male director*). Furthermore, the variable *Add female director* indicates whether a firm added a female director during the same period of time (and thus became compliant with 2019 quota requirement).

The results of the regressions are presented in Table 10 and show a negative and statistically significant coefficient on the interaction term between *Turnover male director* and *Add female director* for the violator groups for which the addition of female directors is most crucial to satisfy the immediate 2019 requirement and where the turnover is thus most likely related to the quota requirement: firms who violate the 2019 requirement irrespective of the number of female directors needed to satisfy the 2021 requirement (column (1)) and the group consisting of firms who violate the 2019 requirement and need three female directors to comply with the 2021 requirement (column (4)) at the time of the quota announcements. The effect is weaker for the groups of firms who miss one or two female directors to comply with the 2021 quota requirement (columns (2) and (3)). As mentioned above, this is plausible as some of these firms may still have more than three years to reach compliance and current substitutions might be unrelated to the quota requirement.

Overall, these results suggests that the stock market reacts more negatively when the addition of a new female director is accompanied by the departure of a male director for non-compliant firm. This lends direct support to the conjecture that shareholders react negatively to an anticipated sub-optimal replacement of (high-quality) male directors with new female directors.[30]

Next, we connect the stock price reaction to shareholders' support for individual nominees in elections for the board of directors. In particular, we relate returns to how the board actually replaces directors when they adjust the board structure to comply with the quota requirement. In order to determine whether firms restructure boards in way that would maximize shareholder value, we determine the least supported director based on shareholder votes in the firm's election before the quota announcement.

[30] Also, note an interesting ambiguity for firms that miss one or two female directors to be compliant with the 2021 requirement. Imagine a firm with an all-male board of five members that adds one female director. It will now have a size of six members which requires them to have three female directors. Despite adding an additional female director their shortfall to reach compliance with the 2021 requirement remains two female directors. Similarly, a six-member board consisting of two women and four men (and thus has a shortfall of one female director) could reduce its board size to five (by eliminating one male director) to reach compliance with the 2021 requirement. These considerations might have implications for how shareholders react to the quota announcement depending on the current board composition.

We re-run the regression specification in Table 9 for the sub-sample of firms who turn over at least one male director and who have at least one female director by the time of the first post-quota election and are thus compliant with the 2019 requirement. This requires the addition of a female director by firms who are not compliant with the requirement at the time of the quota announcement. We consider turnovers and additions of female directors made by firms by the time of the end of the first post-quota election to make sure that turnovers are related to the quota requirement and to more closely connect turned over directors with their pre-quota shareholder support. Interestingly, we observe that 95% of firms with zero female directors pre-quota add their first female director by April 2019 and thus become compliant with the 2019 quota requirement. This coincides with the voting season for the majority of firms.[31] As a robustness check, we repeat the analysis using May 2019 as a cut-off point until which we consider turnover of male directors and additions of female directors. This way, we use the same time period as a benchmark for all firms. The results remain qualitatively unchanged and are reported in Tables A5 and A6 (for the sub-sample non-classified boards) in the Appendix. As in the analysis above (Table 10), we exclude turnover of female directors, lead directors, CEOs, turnovers due to changes of control, restrictions on age limits, and the passing of a director. We also exclude cases where there is no variation in support either because only one director stood for election or because all directors had the same level of support in the last pre-quota election.[32]

In order to determine whether announcement returns are related to the firms' turnover decisions, we introduce an interaction term between our violation variables (*Violation19* and *Shortfall21*) and a dummy variable (*Least supported replaced*) that is equal to one if the turned over director is the director with the lowest shareholder support in the last election before the quota announcement. We also create a dummy that is equal to one if the turned over director is the director with the lowest or second-lowest shareholder support in the last election before the quota announcement (*Least or second-least supported replaced*).[33,34] The expectation here is that not

[31] As mentioned above, most firms conduct their shareholder meetings in May. The proxy material that must contain information on the candidates who will be standing for election is typically sent out one months ahead of the meeting (April).

[32] Overall, this results in a sample of 126 firms who turn over a male director and have a female director on their boards after the quota is in place. Out of the 27 (108) firms who violate the 2019 (2021) quota requirement based on their board composition in the last election before the quota announcement, 48.1% (50.9%) firms turn over the lowest or second-lowest-support director.

[33] When there were only two directors up for election, we categorized it as *Least or second-least supported replaced* only if the least-supported director was turned over.

[34] When a director was not standing for election in the immediate pre-quota election, their ranking is calculated

turning over either of the two least supported directors is associated with a worse stock market reaction than not turning over the least supported directors when adding a female director. Summary statistics for turned over directors are reported in Table 11.

The results of the regressions are presented in Table 12, and the coefficients reported in column (1). These show that if the board turnover decision by a firm is not accounted for, there is a negative return for firms with any level of shortfall. However, the turnover decision reconciles the negative stock price reaction. Firms that replace the lowest-support (or second-lowest-support) director with a female director have returns that do not differ from those firms that already had a female director in place. Firms that replace a higher-support director with a female director have returns that are significantly lower than firms that already had a female director in place. This is the case for both firms that violate the immediate 2019 quota requirement and firms that have the largest gap (three female directors) to fill in order to comply with the upcoming 2021 requirement.

Overall, consistent with the suggestive evidence in Table 10, we see differences in the actions boards take to achieve compliance with the quota. It appears that what is driving the negative stock price reaction of violating firms is the shareholders' anticipation that these firms will restructure their boards in a non-value maximizing way by not replacing the least supported male director with a female director. A caveat of this analysis is that there is only a small sample of firms that violates the quota (before its announcement) and adjusts board structure to comply by turning over the lowest-support directors. At the same time, we would not observe average negative announcement returns in response to the quota if the average firm would respond in a value maximizing way and replace the right (here least supported) directors.

6 Conclusion

We use hand-collected longitudinal data to analyze how shareholder support for female board nominees has been affected by the 2018 California quota. To the best of our knowledge, this is the first study to analyze shareholder attitudes towards quota-mandated female board nominees

using the last election where they were a nominee during the pre-quota sample period. This can typically occur in classified boards. We verify that our results are not driven by the sub-sample of classified boards and report results for the sub-sample of firms with non-classified boards only (see Table A4 in the Appendix).

using direct evidence from voting behavior.

Our results show that shareholder support for female nominees is higher than for male nominees before the quota. This continues to be the case, on average, after the quota. We also distinguish between incumbent and new nominees and document revealing dynamics. While support for female incumbent nominees remains flat after the quota, the support for new female nominees falls. This happens as a large number of new female nominees are recruited to boards around the time of the quota. Even though the support for new female nominees falls after the quota, they still receive as much support as new male nominees. Taken together, these observations are consistent with the presence of a higher bar for female board candidates before the quota, and evidence that the quota corrects this so that the bars for men and women converge. The higher support for incumbent female nominees in the post period is driven by a decrease in support for incumbent male nominees.

Furthermore, we reconcile the negative stock price announcement returns associated with the quota with our and the existing evidence that firms can access a large enough pool of qualified female nominees for boards. We show that the firms experiencing a negative stock price reaction are those who do not make value-maximizing decisions when restructuring the board: when complying, they do not replace the lowest-support director with a female director. This result provides first evidence that the opposition towards female board directors is driven by entrenched board dynamics rather than shareholders disliking the new female nominees.

Our evidence challenges the existing narrative that interprets the negative announcement returns associated with the quota as shareholder opposition towards women on boards, and as a preference for the existing board structure due to an insufficient supply of qualified potential female directors. Hence we provide important input for future research on the effects of affirmative action initiatives. Our findings suggest that adverse effects of such policies might be driven (at least partly) by internal organizational opposition and entrenched dynamics as opposed to a lack of supply of qualified minority candidates.

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Figures and Tables

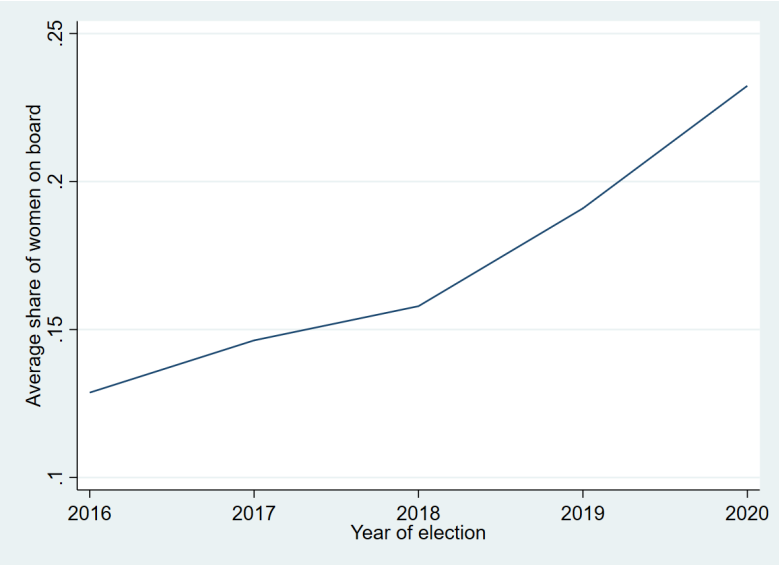


Figure 1: The share of female board nominees/members over time. Based on the full board sample (N=20,262) that includes directors who never stand for election.

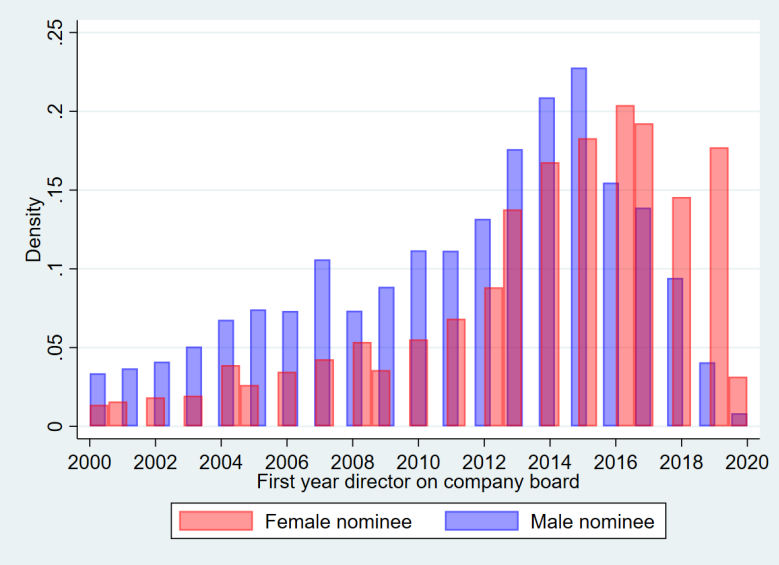


Figure 2: Additions of female and male board nominees/members over time. Based on the nominee sample (N=14,527) that only includes nominees at elections.

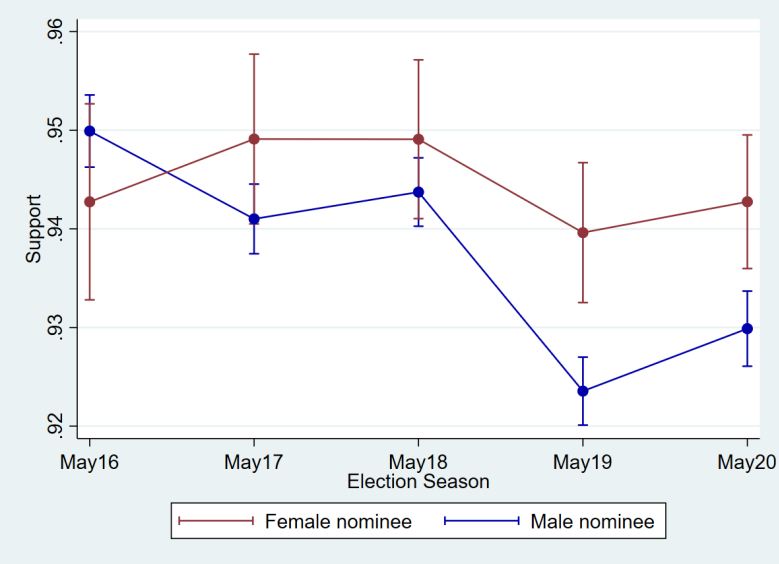
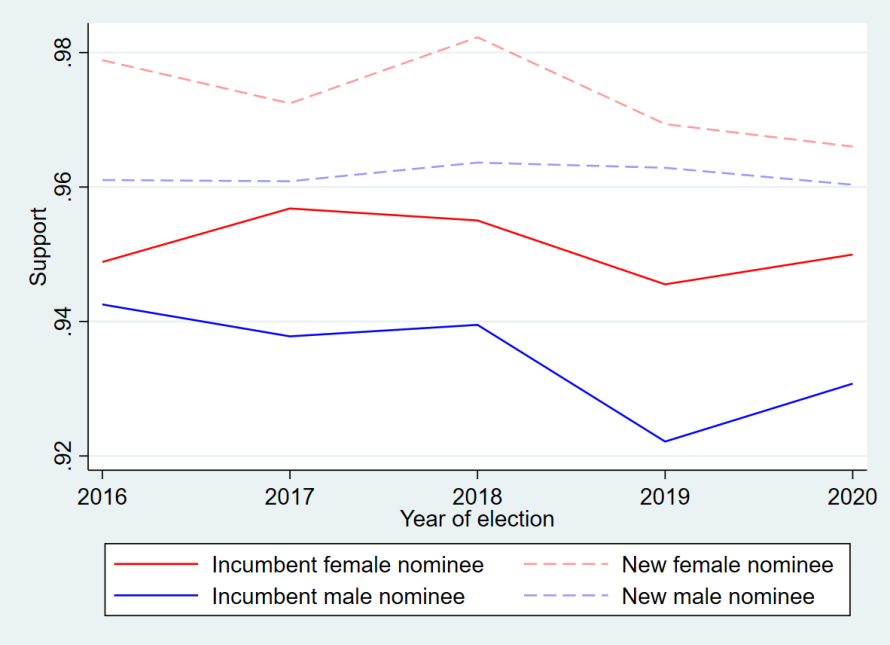
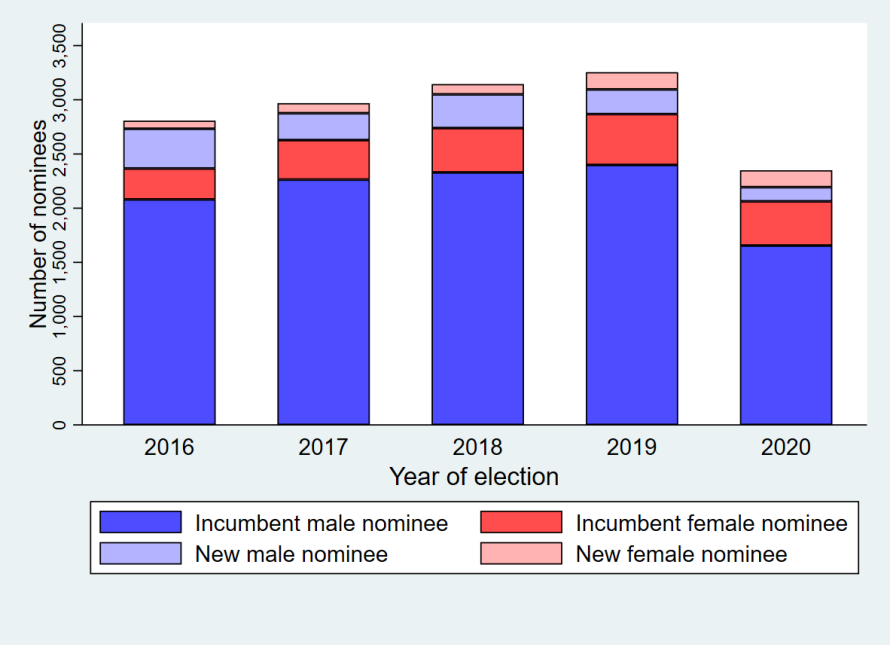


Figure 3: Support for female and male nominees over time. *Support* is defined as the number of "for" votes divided by the sum of "for", "abstain", "against", and "withhold" votes. Marginal effects with 95% confidence intervals from an OLS regression of *Support* on *Female nominee* with an interaction between *Post* and *Female nominee* and time dummies (for the main voting seasons May and June of every year). Includes company fixed effects.



(a) Support for new and incumbent female and male nominees



(b) Number of new and incumbent female and male nominees over time

Figure 4: (a) Average yearly support for incumbent and new, male and female nominees standing for election. Support is defined as the ratio of "for" votes to the sum of "for", "abstain", "against", and "withhold" votes. New nominees are nominees who stand for election for the first time and were appointed to board within one year of the meeting where the election took place. (b) Number of incumbent and new, male and female nominees standing for election. In 2020, votes are only available until July.

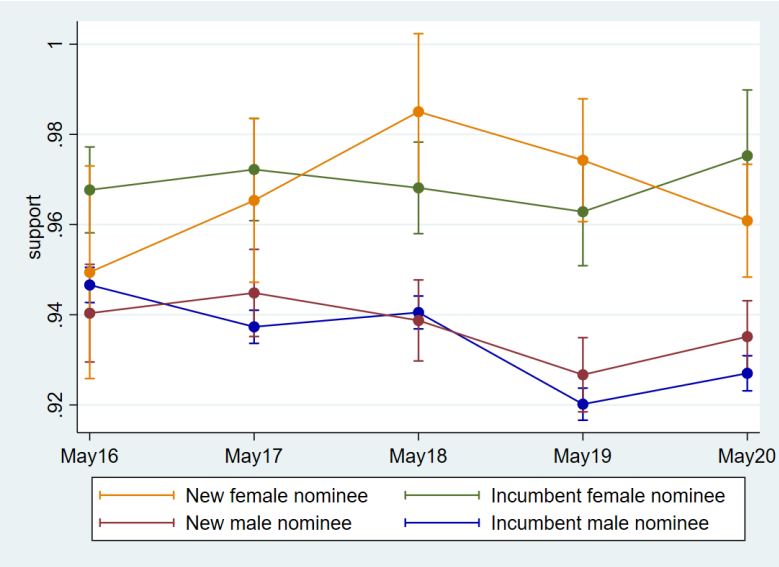


Figure 5: Support for incumbent and new, female and male nominees over time. *Support* is defined as the number of "for" votes divided by the sum of "for", "abstain", "against", and "withhold" votes. Marginal effects with 95% confidence intervals from an OLS regression of *Support* on *Female nominee* with an interaction between *Post*, *Female nominee* and *New nominee* and time dummies (for the main voting seasons May and June of every year). Includes company fixed effects.

Table 1: Descriptive Statistics of Main Variables - Full board

Variable	N	mean	sd	p25	p50	p75
Support	14,527	0.941	0.09	0.935	0.978	0.992
Share of female board members	20,262	0.169	0.122	0.1	0.167	0.250
Number of female board members	20,262	1.471	1.144	1	1	2
Director age	20,262	61.102	9.591	55	61	68
Director tenure	20,262	7.929	7.478	2	6	11
Board size	20,262	8.274	2.039	7	8	9
Independent	20,262	0.753	0.431	1	1	1
Classified board	20,262	0.435	0.496	0	0	1

This table reports descriptive statistics for the full board of directors as well as the nominee sample that is used for our main analysis. The full board sample is larger because in classified (staggered) boards not all board members are up for election every year.

Table 2: Descriptive Statistics of Main Variables - Nominees

Panel A: Female Nominees						
Variables	N	mean	sd	p25	p50	p75
Support	2,513	0.956	0.078	0.959	0.986	0.994
Director age	2,513	59.082	8.048	54	59	64
Director tenure	2,513	5.215	5.809	1	3	7
New nominee	2,513	0.230	0.421	0	0	0
Independent	2,513	0.850	0.358	1	1	1
Panel B: Male Nominees						
Variables	N	mean	sd	p25	p50	p75
Support	12,014	0.937	0.093	0.927	0.976	0.991
Director age	12,014	61.987	9.745	56	62	69
Director tenure	12,014	8.736	7.928	3	6	13
New nominee	12,014	0.107	0.309	0	0	0
Independent	12,014	0.729	0.445	0	1	1

This table reports descriptive statistics for the nominee sample that is used for our main analysis split by nominee gender. The full board sample is larger because in classified (staggered) boards not all board members are up for election every year.

Table 3: Average raw and abnormal returns for sample firms on quota announcement day

	Number of firms	Mean	Median	t-test
Abnormal return	524	-1.06%	-1.05%	***
Abnormal return (excluding 30 firms traded on OTC)	494	-1.12%	-1.09%	***
Raw return	524	-0.84%	-0.83%	***
Raw return (excluding 30 firms traded on OTC)	494	-0.99%	-0.87%	***

This table reports the mean and median raw and abnormal returns on the quota announcement day (October 1, 2018) for the sample firms. Of the 524 firms, 30 are traded on OTC exchanges. It excludes 31 firms for which no time series of stock prices was available and 30 firms who had material events at the time of the quota announcement. The abnormal return is calculated based on predicted returns from a market model using a 255 day event window prior to the event and weights firms by their market values. The estimation window ends 6 days before the event. The t-test indicates whether the mean raw and abnormal return is different from zero. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4: Support for female nominees: pre versus post quota

Variables	(1) Main	(2) Pre-period clean	(3) Pre-period	(4) Post-period
Female nominee	0.005***	0.006**	0.005***	0.013***
	(0.002)	(0.003)	(0.002)	(0.002)
Post x Female nominee	0.008***	0.007**		
	(0.003)	(0.003)		
Election FEs	Yes	Yes	Yes	Yes
R-squared	0.666	0.665	0.656	0.675
Observations	14,527	11,388	8,482	6,045

The dependent variable (*Support*) in all OLS regressions is defined as the number of "for" votes divided by the sum of "for", "abstain", "against", and "withhold" votes. *Female nominee* takes the value of one if the focal nominee standing for election is a woman. *Post* is a dummy equal to one if the election takes place in October 2018 or later and zero otherwise. Specification (2) excludes the time period between October 2017 and October 2018. The unit of analysis is an election. We use election fixed effects in all regressions. Standard errors in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 5: Support for female nominees: pre versus post quota - within nominee comparison

Excess support	N	Pre	Post	Difference (Post-Pre)
Female Nominee	1,132	0.005	0.001	-0.004
Male Nominee	5,925	0.002	-0.007	-0.009***
Difference (Female-Male)		0.002	0.008***	

This table provides average excess support within nominee before (pre) and after (post) the quota for incumbent female and male nominees. *Excess Support* is defined as the focal nominee's support in an election minus the average for all other nominees in that election. Includes only nominees who stand for election in the pre- and post period. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 6: Support for female nominees: pre versus post quota for new and incumbent nominees

	(1)	(2)	(3)	(4)
Variables	Main	New-Interaction	Incumbent	New
Female nominee	0.003	0.002	0.002	0.011**
	(0.002)	(0.002)	(0.002)	(0.005)
Post x Female nominee	0.005*	0.007**	0.006*	-0.006
	(0.003)	(0.003)	(0.003)	(0.008)
New nominee	0.027***	0.022***		
	(0.002)	(0.002)		
Post x Female nominee x New nominee		-0.016**		
		(0.007)		
Election FEs	Yes	Yes	Yes	Yes
R-squared	0.673	0.674	0.705	0.842
Observations	14,527	14,527	12,664	1,863

The dependent variable (*Support*) in all OLS regressions is defined as the number of "for" votes divided by the sum of "for", "abstain", "against", and "withhold" votes. *Female nominee* takes the value of one if the focal nominee standing for election is a woman. *Post* is a dummy equal to one if the election takes place in October 2018 or later and zero otherwise. *New nominee* is equal to one if a nominees stands for election for the first time and was appointed to board within one year of meeting where the election took place. The unit of analysis is an election. We use election fixed effects in all regressions. Standard errors in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 7: Support for female nominees: pre versus post quota for violating firms who do not expand board size

Variables	
Female nominee	-0.043
	(0.034)
Post x Female nominee	0.161***
	(0.041)
New male nominee	0.029***
	(0.009)
Post x New male nominee	0.030
	(0.028)
Election FEs	Yes
R-squared	0.674
Observations	1,100

The dependent variable (*Support*) in all OLS regressions is defined as the number of "for" votes divided by the sum of "for", "abstain", "against", and "withhold" votes. *Female nominee* takes the value of one if the focal nominee standing for election is a woman. *Post* is a dummy equal to one if the election takes place in October 2018 or later and zero otherwise. *New male nominee* is equal to one if a nominees is male and stands for election for the first time and was appointed to board within one year of meeting where the election took place. The sub-sample includes firms who had no women on the board in the period before the passage of quota ('violators'), who did not expand board size in the post period and where a male director departed from the board in the post period. Note that, by design, it will be entirely new female candidates who violators add to their boards to comply with the quota. Includes only the first election in the post period, i.e., we are only considering the firms where the current board composition is modified by substituting a male director for a female director. The unit of analysis is an election. We use election fixed effects in all regressions. Standard errors in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 8: Descriptive statistics at the firm level by violation type- pre-quota board characteristics

Panel A: Violation19

	Violation19=0			Violation19=1		
Variable	N	mean	sd	N	mean	sd
Abnormal return	360	-0.01	0.031	164	-0.012	0.041
Board size	360	8.317	1.86	164	6.165	1.544
Independent	360	0.766	0.169	164	0.704	0.173
Director tenure	360	7.651	4.03	164	7.446	5.043
Classified board	360	0.478	0.5	164	0.409	0.493

Panel B: Violation21

	Violation21=0			Violation21=1		
Variable	N	mean	sd	N	mean	sd
Abnormal return	67	-0.001	0.041	457	-0.012	0.033
Board size	67	9.03	2.263	457	7.44	1.912
Independent	67	0.795	0.187	457	0.74	0.169
Director tenure	67	6.739	3.321	457	7.711	4.491
Classified board	67	0.388	0.491	457	0.466	0.499

Panel C: Shortfall21

	Shortfall21=1			Shortfall21=2			Shortfall21=3		
Variable	N	mean	sd	N	mean	sd	N	mean	sd
Abnormal return	160	-0.007	0.034	190	-0.011	0.03	107	-0.02	0.035
Board size	160	7.719	2.364	190	7.432	1.818	107	7.037	1.081
Independent	160	0.776	0.149	190	0.727	0.17	107	0.708	0.187
Director tenure	160	8.328	4.986	190	7.398	4.178	107	7.345	4.178
Classified board	160	0.412	0.494	190	0.511	0.501	107	0.467	0.501

This table reports descriptive statistics for board characteristics by violation type at the firm level at the time of the announcement of the quota (September 30, 2018) based on the sub-sample of firms in Table 3). *Abnormal Return*, is the market model adjusted stock return on October 1, 2018. *Violation19* is a dummy that takes a value of one if a board has zero female directors in the last pre-announcement election. *Violation21*is a dummy that takes a value of one if a board would not comply with the 2021 quota requirement (which is based on board size) based on its gender composition at the time of the announcement of the quota. *Shortfall21* is equal to the board's number of female directors missing to comply with the 2021 quota requirement based on its gender composition at the time of the announcement of the quota and can range from zero to three. *Shortfall21*=0 is omitted in Panel C as it is equivalent to *Violation21*=0 in Panel B.

Table 9: Abnormal returns and quota violations

Variables	(1) Violation19	(2) Violation21	(3) Shortfall21
Violation19	-0.008*		
	(0.005)		
Violation21		-0.016**	
		(0.007)	
Shortfall21: 1 Female director			-0.012*
			(0.007)
Shortfall21: 2 Female directors			-0.016**
			(0.007)
Shortfall21: 3 Female directors			-0.026***
			(0.008)
Board size	-0.002**	-0.002*	-0.002**
	(0.001)	(0.001)	(0.001)
Independent	-0.014	-0.014	-0.017
	(0.011)	(0.011)	(0.011)
Tenure	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)
Classified board	-0.008**	-0.007**	-0.006**
	(0.003)	(0.003)	(0.003)
Constant	0.058	0.064*	0.075*
	(0.038)	(0.038)	(0.040)
Industry FEs	Yes	Yes	Yes
Observations	524	524	524
R-squared	0.118	0.128	0.147

The dependent variable is *Abnormal Return*, which is the market model adjusted stock return on October 1, 2018. *Violation19* is a dummy that takes a value of one if a board has zero female directors in the last pre-announcement election. *Violation21* is a dummy that takes a value of one if a board would not comply with the 2021 quota requirement (which is based on board size) based on its gender composition in the last pre-announcement election. *Shortfall21* is equal to the board's number of female directors missing to comply with the 2021 quota requirement based on its gender composition at the time of the announcement of the quota and can range from zero to three. The remaining control variables are equivalent to those in Table 8 defined at the firm level at the time of the announcement of the quota. Regressions include industry (two-digit SIC code) fixed effects. Robust standard errors in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 10: Abnormal returns and quota violations

Variables	(1) Violation19	(2) Shortfall21 1 Female director	(3) Shortfall21: 2 Female directors	(4) Shortfall21: 3 Female directors
Turnover male director	0.032**	-0.005	-0.001	0.038***
	(0.012)	(0.006)	(0.006)	(0.013)
Add female director	-0.001	0.018	-0.002	0.011
	(0.006)	(0.017)	(0.006)	(0.007)
Turnover male director x Add female director	-0.041**	-0.030	-0.006	-0.055***
	(0.016)	(0.020)	(0.009)	(0.018)
Board size	-0.003	0.000	-0.003**	0.004
	(0.002)	(0.002)	(0.001)	(0.004)
Independent	-0.001	-0.036	-0.003	0.010
	(0.016)	(0.024)	(0.012)	(0.014)
Tenure	0.001**	0.001*	0.000	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Classified board	-0.006	-0.008***	-0.008**	-0.005
	(0.006)	(0.003)	(0.004)	(0.007)
Constant	0.001	0.013	0.016	-0.062**
	(0.017)	(0.018)	(0.015)	(0.031)
Observations	164	160	190	107
R-squared	0.117	0.111	0.077	0.137

The dependent variable is *Abnormal Return*, which is the market model adjusted stock return on October 1, 2018. *Violation19* is a dummy that takes a value of one if a board has zero female directors at the time of the announcement of the quota. *Shortfall21* is equal to the board's number of female directors missing to comply with the 2021 quota requirement based on its gender composition at the time of the announcement of the quota and can range from zero to three. *Turnover male director* identifies firms that turn over at least one male director in the time period after the quota announcement up until the first post-quota election. *Add female director* indicates whether a firm added a female director during the same period of time (and thus became compliant with the 2019 quota requirement). The remaining control variables are equivalent to those in Table 8 defined at the firm level at the time of the time of the announcement of the quota. Robust standard errors in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 11: Summary statistics for turned over directors

Panel A: Least supported												
	Least-supported						Least or second-least supported					
Variables	N	mean	sd	p25	p50	p75	N	mean	sd	p25	p50	p75
Support	53	0.883	0.12	0.853	0.913	0.967	72	0.897	0.11	0.864	0.928	0.981
Excess Support	53	-0.068	0.096	-0.083	-0.028	-0.006	72	-0.055	0.087	-0.072	-0.02	-0.004
Independent	53	0.868	0.342	1	1	1	72	0.875	0.333	1	1	1
Director age	53	64.604	10.943	57	66	73	72	65.042	10.534	57	66	74
Director tenure	53	11.358	8.458	5	9	15	72	11.236	8.503	5	9.5	15
Panel B: Other than least or second-least supported												
	Other than least-supported						Other than least or second-least supported					
Variables	N	mean	sd	p25	p50	p75	N	mean	sd	p25	p50	p75
Support	88	0.954	0.055	0.939	0.977	0.989	69	0.96	0.052	0.948	0.979	0.991
Excess Support	88	0.012	0.045	-0.001	0.003	0.026	69	0.021	0.043	0.001	0.008	0.032
Independent	88	0.875	0.333	1	1	1	69	0.87	0.339	1	1	1
Director age	88	63.216	11.09	56.5	65	71.5	69	62.377	11.416	56	64	71
Director tenure	88	8.875	6.475	4	8	13	69	8.319	5.609	4	7	13

This table reports descriptive statistics for male directors who were turned over by the time of the first post-quota election split by the level of shareholder support in the last pre-quota election. The sample consists of director departures in firms (N=126) that have at least one female director in the first election after the quota (complying with the 2019 quota requirement) and where a male incumbent director departs from the board. This sample excludes female directors, CEO and board chairs that were turned over by time of the first pre-quota election. It also excludes turnovers that are unlikely related to the quota (as a result of mergers and restructurings, director deaths, health reason, requirements on retirement age). Panel A shows descriptive statistics for turned over directors who had lowest support (and lowest or second-lowest support) in the last pre-quota election. Panel B shows descriptive statistics for turned over directors who were not the least-supported (and not the least or second-least supported) in the last pre-quota election. When a director did not stand for election in the last pre-quota election, their ranking is calculated based on the last election where they were a nominee. A robustness check for the sub-sample of only non-classified boards (where each director stands for election every year) is reported in Table A4.

Table 12: Abnormal returns, quota violations, and board turnover

		Least supported replaced		Least or second-least supported replaced	
	Base	No	Yes	No	Yes
Violation19	-0.016 *	-0.023 **	0.001	-0.028 **	0.004
	(0.011)	(0.013)	(0.014)	(0.009)	(0.010)
Shortfall21: 1 Female director	-0.013 **	-0.013	-0.005	-0.010	-0.011
	(0.006)	(0.008)	(0.008)	(0.011)	(0.007)
Shortfall21: 2 Female directors	-0.016 ***	-0.015 *	-0.006	-0.011	-0.012
	(0.006)	(0.009)	(0.008)	(0.011)	(0.008)
Shortfall21: 3 Female directors	-0.028 ***	-0.037 ***	-0.005	-0.040 ***	-0.006
	(0.010)	(0.012)	(0.017)	(0.014)	(0.016)
Observations	126				

The dependent variable is *Abnormal Return*, which is the market model adjusted stock return on October 1, 2018. The sample consists of firms that have at least one female director by the first election after the quota (complying with the 2019 quota requirement) and where a male incumbent director departs from the board by the first post-quota election. This sample excludes female directors, CEO and board chairs that were turned over by the first pre-quota election. It also excludes turnovers that are unlikely related to the quota (as a result of mergers and restructurings, director deaths, health reason, requirements on retirement age). The coefficients reported in column *Base* are based on a regression where *Violation19* (*Shortfall21*) is regressed on *Abnormal Return*. The coefficients in the remaining columns include an interaction term between *Violation19* (*Shortfall21*) and *Least supported replaced* or (*Least or second-lest supported replaced*). *Violation19* is a dummy that takes a value of one if a board has zero female directors at the time of the quota announcement (September 30, 2018). *Shortfall21* is equal to the board's number of female directors missing to comply with the 2021 quota requirement based on its gender composition in the last pre-announcement election and can range from zero to three. *Least supported replaced* is a dummy that takes a value of one if the departing director is the least supported one based on shareholder votes (*Support*) in the last election before the quota announcement. *Least or second-lest supported replaced* is a dummy that takes a value of one if the departing director is the least or second-least supported one based on shareholder votes (*Support*) in the last election before the quota announcement. All specifications include the control variables listed in Table 8 defined at the firm level at the time of the quota announcement. A robustness check for the sub-sample of only non-classified boards (where each director stands for election every year) is reported in Table A4. Robust standard errors in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Appendix

Table A1: Support for female nominees: pre versus post quota for new and incumbent nominees – ISS recommendations

	(1)	(2)	(3)	(4)
Variables	Main	New-Interaction	Incumbent	New
Female nominee	0.002	0.000	0.001	0.008
	(0.002)	(0.002)	(0.002)	(0.005)
Post x Female nominee	0.009***	0.009***	0.008**	-0.001
	(0.003)	(0.003)	(0.003)	(0.008)
New nominee		0.007***		
		(0.002)		
Post x Female nominee x New nominee		-0.013*		
		(0.007)		
ISS Against Recommendation	-0.136***	-0.134***	-0.137***	-0.114***
	(0.002)	(0.002)	(0.002)	(0.008)
Election FEs	Yes	Yes	Yes	Yes
R-squared	0.767	0.769	0.789	0.872
Observations	11,657	11,657	10,141	1,516

Corresponds to specification in Table 6 for the sub-sample of elections for which an ISS recommendation is available. It excludes all elections that took place 2020 as for these no ISS recommendations were available at the time of the analysis. The dependent variable (*Support*) in all OLS regressions is defined as the number of "for" votes divided by the sum of "for", "abstain", "against", and "withhold" votes. *ISS Against Recommendation* takes the value of one if ISS issued an "against" recommendation for the nominee in the focal election. Female nominee takes the value of one if the focal nominee standing for election is a woman. *Post* is a dummy equal to one if the election takes place in October 2018 or later and zero otherwise. *New nominee* is equal to one if a nominees stands for election for the first time and was appointed to board within one year of meeting where the election took place. The unit of analysis is an election. We use election fixed effects in all regressions. Standard errors in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A2: Support for female nominees: pre versus post quota for new and incumbent nominees – Non-classified boards

	(1)	(2)	(3)	(4)
Variables	Main	New-Interaction	Incumbent	New
Female nominee	0.007***	0.004	0.004	0.014**
	(0.002)	(0.002)	(0.002)	(0.006)
Post x Female nominee	0.006*	0.007**	0.006*	-0.007
	(0.003)	(0.003)	(0.003)	(0.009)
New nominee		0.018***		
		(0.003)		
Post x Female nominee x New nominee		-0.022***		
		(0.008)		
Election FEs	Yes	Yes	Yes	Yes
R-squared	0.614	0.620	0.647	0.759
Observations	11,441	11,441	10,093	1,348

Corresponds to specification in Table 6 for the sub-sample of non-classified boards only. The dependent variable (*Support*) in all OLS regressions is defined as the number of "for" votes divided by the sum of "for", "abstain", "against", and "withhold" votes. *Female nominee* takes the value of one if the focal nominee standing for election is a woman. *Post* is a dummy equal to one if the election takes place in October 2018 or later and zero otherwise. *New nominee* is equal to one if a nominees stands for election for the first time and was appointed to board within one year of meeting where the election took place. The unit of analysis is an election. We use election fixed effects in all regressions. Standard errors in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A3: Support for female nominees: pre versus post quota for new and incumbent nominees – Firms with stock returns

	(1)	(2)	(3)	(4)
Variables	Main	New-Interaction	Incumbent	New
Female nominee	0.006***	0.003	0.004	0.012**
	(0.002)	(0.002)	(0.002)	(0.006)
Post x Female nominee	0.007**	0.006*	0.005	-0.008
	(0.003)	(0.003)	(0.003)	(0.009)
New nominee		0.023***		
		(0.003)		
Post x Female nominee x New nominee		-0.014*		
		(0.008)		
Election FEs	Yes	Yes	Yes	Yes
R-squared	0.661	0.669	0.698	0.832
Observations	13,006	13,006	11,332	1,674

Corresponds to specification in Table 6 for the sub-sample of 524 firms for which sufficient stock price information was available to calculate abnormal returns and who did not have any other material events at the time of the quota announcement (corresponding to sample in Table 8). The dependent variable (*Support*) in all OLS regressions is defined as the number of "for" votes divided by the sum of "for", "abstain", "against", and "withhold" votes. *Female nominee* takes the value of one if the focal nominee standing for election is a woman. *Post* is a dummy equal to one if the election takes place in October 2018 or later and zero otherwise. *New nominee* is equal to one if a nominees stands for election for the first time and was appointed to board within one year of meeting where the election took place. The unit of analysis is an election. We use election fixed effects in all regressions. Standard errors in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A4: Abnormal returns, quota violations and board turnover – Non-classified boards

		Least supported replaced		Least or second-least supported replaced	
	Base	No	Yes	No	Yes
Violation19	-0.022 **	-0.027 *	-0.007	-0.029 **	0.007
	(0.010)	(0.014)	(0.007)	(0.014)	(0.007)
Shortfall21: 1 Female director	-0.001	0.005	-0.002	0.011	-0.005
	(0.007)	(0.010)	(0.006)	(0.016)	(0.017)
Shortfall21: 2 Female directors	-0.013	-0.006	-0.008	0.004	-0.017
	(0.008)	(0.014)	(0.008)	(0.019)	(0.010)
Shortfall21: 3 Female directors	-0.028 **	-0.032 *	0.001	-0.027	-0.004
	(0.013)	(0.017)	(0.008)	(0.021)	(0.010)
Observations	59				

Corresponds to specification in Table 12 for the sub-sample of non-classified boards only where every director stands for election every year. The dependent variable is *Abnormal Return*, which is the market model adjusted stock return on October 1, 2018. The sample consists of firms that have at least one female director by time of the first election after the quota (complying with the 2019 quota requirement) and where a male incumbent director departs from the board by the time of the first post-quota election. This sample excludes female directors, CEO and board chairs that were turned over by time of the first pre-quota election. It also excludes turnovers that are unlikely related to the quota (as a result of mergers and restructurings, director deaths, health reason, requirements on retirement age). The coefficients reported in column *Base* are based on a regression where *Violation19* (*Shortfall21*) is regressed on *Abnormal Return*. The coefficients in the remaining columns include an interaction term between *Violation19* (*Shortfall21*) and *Least supported replaced* or *Least or second-lest supported replaced*. *Violation19* is a dummy that takes a value of one if a board has zero female directors at the time of the quota announcement (September 30, 2018). *Shortfall21* is equal to the board's number of female directors missing to comply with the 2021 quota requirement based on its gender composition in the last pre-announcement election and can range from zero to three. *Least supported replaced* is a dummy that takes a value of one if the departing director is the least supported one based on shareholder votes (*Support*) in the last election before the quota announcement. *Least or second-lest supported replaced* is a dummy that takes a value of one if the departing director is the least or second-least supported one based on shareholder votes (*Support*) in the last election before the quota announcement. All specifications include control variables listed in Table 8 defined at the firm level at the time of the quota announcement. Robust standard errors in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A5: Abnormal returns, quota violations and board turnover (alternative specification)

		Least supported replaced		Least or second-least supported replaced	
	Base	No	Yes	No	Yes
Violation19	-0.016 *	-0.027 **	0.004	-0.033 **	0.006
	(0.009)	(0.013)	(0.014)	(0.011)	(0.010)
Shortfall21: 1 Female director	-0.013 **	-0.014 *	-0.004	-0.012	-0.010
	(0.006)	(0.008)	(0.008)	(0.010)	(0.008)
Shortfall21: 2 Female directors	-0.018 **	-0.016 *	-0.010	-0.011	-0.014*
	(0.006)	(0.009)	(0.010)	(0.011)	(0.008)
Shortfall21: 3 Female directors	-0.029 ***	-0.042 ***	-0.004	-0.045 ***	-0.005
	(0.011)	(0.012)	(0.017)	(0.014)	(0.016)
Observations	124				

Corresponds to specification in Table 12. Instead of the time of the first post-quota election turnovers of male directors and additions of new female directors are considered up until and including May 2019 for all firms. The dependent variable is *Abnormal Return*, which is the market model adjusted stock return on October 1, 2018. The sample consists of firms that have at least one female director by May 2019 (complying with the 2019 quota requirement) and where a male incumbent director departs from the board by May 2019. This sample excludes female directors, CEO and board chairs that were turned over by time of the first pre-quota election. It also excludes turnovers that are unlikely related to the quota (as a result of mergers and restructurings, director deaths, health reason, requirements on retirement age). The coefficients reported in column *Base* are based on a regression where *Violation19* (*Shortfall21*) is regressed on *Abnormal Return*. The coefficients in the remaining columns include an interaction term between *Violation19* (*Shortfall21*) and *Least supported replaced* or *Least or second-lest supported replaced*. *Violation19* is a dummy that takes a value of one if a board has zero female directors at the time of the quota announcement (September 30, 2018). *Shortfall21* is equal to the board's number of female directors missing to comply with the 2021 quota requirement based on its gender composition in the last pre-announcement election and can range from zero to three. *Least supported replaced* is a dummy that takes a value of one if the departing director is the least supported one based on shareholder votes (*Support*) in the last election before the quota announcement. *Least or second-lest supported replaced* is a dummy that takes a value of one if the departing director is the least or second-least supported one based on shareholder votes (*Support*) in the last election before the quota announcement. All specifications include control variables listed in Table 8 defined at the firm level at the time of the quota announcement. A robustness check for the sub-sample of only non-classified boards (where each director stands for election every year) is reported in Table A6. Robust standard errors in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A6: Abnormal returns, quota violations and board turnover (alternative specification) – Non-classified boards

		Least supported replaced		Least or second-least supported replaced	
	Base	No	Yes	No	Yes
Violation19	-0.024 **	-0.034 **	0.006	-0.037 **	0.006
	(0.011)	(0.014)	(0.006)	(0.015)	(0.006)
Shortfall21: 1 Female director	0.000	0.003	-0.000	0.003	0.000
	(0.007)	(0.010)	(0.005)	(0.014)	(0.005)
Shortfall21: 2 Female directors	-0.016 **	-0.016	-0.008	-0.013	-0.012
	(0.007)	(0.013)	(0.007)	(0.016)	(0.008)
Shortfall21: 3 Female directors	-0.030 **	-0.045 **	-0.001	-0.045 **	-0.001
	(0.014)	(0.017)	(0.007)	(0.019)	(0.008)
Observations	55				

Corresponds to specification in Table A5 for the sub-sample of non-classified boards. The dependent variable is *Abnormal Return*, which is the market model adjusted stock return on October 1, 2018. The sample consists of firms that have at least one female director by May 2019 (complying with the 2019 quota requirement) and where a male incumbent director departs from the board by May 2019. This sample excludes female directors, CEO and board chairs that were turned over by time of the first pre-quota election. It also excludes turnovers that are unlikely related to the quota (as a result of mergers and restructurings, director deaths, health reason, requirements on retirement age). The coefficients reported in column *Base* are based on a regression where *Violation19* (*Shortfall21*) is regressed on *Abnormal Return*. The coefficients in the remaining columns include an interaction term between *Violation19* (*Shortfall21*) and *Least supported replaced* or *Least or second-lest supported replaced*. *Violation19* is a dummy that takes a value of one if a board has zero female directors at the time of the quota announcement (September 30, 2018). *Shortfall21* is equal to the board's number of female directors missing to comply with the 2021 quota requirement based on its gender composition in the last pre-announcement election and can range from zero to three. *Least supported replaced* is a dummy that takes a value of one if the departing director is the least supported one based on shareholder votes (*Support*) in the last election before the quota announcement. *Least or second-lest supported replaced* is a dummy that takes a value of one if the departing director is the least or second-least supported one based on shareholder votes (*Support*) in the last election before the quota announcement. All specifications include control variables listed in Table 8 defined at the firm level at the time of the quota announcement. Robust standard errors in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.