The Impact of a Principles-Based Approach to Director Gender Diversity

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Abstract

We study the impact of a principles-based (i.e., comply or explain) approach to female representation on corporate boards. Although not mandatory, firms subject to this director gender diversity regulation increase their fraction of female directors by 38% relative to control groups. In contrast to evidence on mandatory diversity regulation, firms most likely affected by the principles-based regulation exhibit positive abnormal returns around its announcement. Moreover, post-regulation, firms increasingly consider gender diversity in board nominations and are more likely to adopt female director target ratios. Non-compliance appears to be driven by economic frictions that impede access to qualified female directors.

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I. Introduction

A corporate governance issue that has recently drawn broad attention is the under-representation of females on corporate boards. Many attempts to address this issue follow a rules-based approach, in which mandated quotas for female representation in boards is imposed. For example, countries such as France, Italy, Belgium, the Netherlands, and Norway have mandated quotas for women on boards (Winters and Jacobs-Sharma, 2016), and California recently became the first state in the United States to have instituted such a mandate. Additionally, in June 2022, the European Union agreed to mandatory quotas of 40% females on corporate boards that will come into effect in mid-2026.[1]

Critics argue that such one-size-fits-all approaches to governance are not optimal, as the costs and benefits of compliance can differ across companies. Indeed, while gender mandates such as those in Norway and California have led to an increase in female board representation, some academic evidence finds that such approaches mandating female board representation are costly for shareholders, having had a negative effect on firm value (Ahern and Dittmar, 2012; Hwang, Shivdasani and Simintzi, 2020; Greene, Intintoli and Kahle, 2020). The existing evidence further suggests that the negative effect on firm value is due to a limited supply of qualified female directors. These issues have stoked opposition to policies mandating female board representation, and recent court decisions have called into question the legal validity of California-style gender mandates in the United States.[2]

An alternative to a prescriptive regulatory approach is a principles-based one, in which firms publicly disclose their compliance with suggested "best practice" guidelines, and, if their practices depart from the guidelines, firms must explain their non-compliance. The intent of a principles-based approach is to provide firms with flexibility to tailor their governance practices to their own circumstances while providing investors and other stakeholders with information relevant to evaluate the firm's choices. A principles-based approach is thus often referred to as "comply or explain", in which firms either comply with the regulation or explain why compliance is not best for them.

In the U.S., the SEC has recently approved a principles-based proposal submitted by

[1] See *The Guardian* (June 7, 2022) "EU agrees 'landmark' 40% quota for women on corporate boards."

[2] On May 16, 2022 a California court ruled that California's gender mandate violates the right of equal treatment under the California constitution. See Public Broadcasting Service (May 16, 2022) "Judge says California law requiring women on corporate boards is unconstitutional" (retrieved from pbs.org).

Nasdaq aimed at improving board diversity. To avoid forced delisting, a firm must "diversify or explain": either have the required number of diverse directors or explain why it does not. [3] Fried (2021) argues that Nasdaq's proposal will generate substantial risks for investors, as existing research has shown that increasing board diversity through mandates can lead to lower share prices and that, although the Nasdaq proposal allows firms to explain non-compliance, "many boards will feel that explaining their lack of diversity is not actually a feasible alternative to complying" (p. 7). There has been no empirical research on a "diversify or explain" regulation such as that proposed by Nasdaq, and the recent 2022 court decision invalidating California's gender mandate makes it increasingly timely and important to provide empirical evidence on alternative regulatory approaches to promote female board representation.

We fill this gap by studying the effects of a "diversify or explain" legislation that has been in place in Canada since 2014. Specifically, the Ontario Securities Commission (OSC) introduced female representation policy disclosure requirements which came into effect on December 2014.[4] Under the OSC policy, regarding board representation, firms are required to disclose the details of any policies concerning the identification and nomination of women directors, the board's consideration of the representation of women in the director identification and selection process, whether the firm has adopted targets for representation of women on the board, and whether the firm has director term limits. Like much of Canadian securities law, which adopts a principles-based approach, the amendment requires listed firms to disclose these policies or to provide an explanation for their absence. Using this regulatory amendment in Canada, we study the effects of principles-based regulation on board diversity. A key advantage of our setting is that this regulatory amendment allows us to isolate the impact of adopting female representation policies from that of other governance practices.

A priori, it is not clear what effect a "diversify or explain" regulatory approach would have on board diversity. On the one hand, by requiring firms to disclose their compliance and, where applicable, the reasons for non-compliance, a principles-based approach enables the capital markets to assess the effectiveness of a firm's policies regarding female representation.

[3] Specifically, firms are required to have at least one director who self-identifies as female and another who self-identifies as an underrepresented minority or LGBTQ+. If the firm has five or fewer board members, it needs only one diverse member to comply. See SEC (August 6, 2021), "Statement on Nasdaq's Diversity Proposals – A Positive First Step for Investors, *SEC Public Statement*.

[4] See the Amendment to the National Instrument 58-101 Disclosure of Corporate Governance Practices on the Ontario Securities Commission (OSC) website.

This increased transparency may also lead to increased pressure from stakeholders for firms to comply. On the other hand, a principles-based approach may be too weak to resolve the under-representation of females on corporate boards because it allows firms the option to not comply with articulated best practices. Ultimately, under this approach, the onus is on investors to determine the appropriateness of a firm's policies regarding social issues such as female board representation (see e.g., Hart and Zingales, 2017).

We take a three-pronged approach to study the effects of the OSC principles-based regulation on the diversity of boards of Canadian firms. First, to determine whether the regulation achieves the regulator's desired outcome, we conduct a difference-in-differences analysis of changes in female director representation following the regulation. Next, we conduct an event study around the regulation's announcement to shed light on its costs for shareholders. Finally, we read firms' proxy statements to gain insights into how firms explain diversity (or lack thereof) on their boards in the years following the regulation. It is important to note that, although we conduct an event study around the regulation's announcement, our study does not address the value impact of adding female directors to the board. Our goal is to shed light on the effectiveness of a principles-based approach to regulate director gender diversity. Our three-pronged approach provides insights in this regard.

It is not clear whether principles-based regulation will be effective at increasing board diversity. On the one hand, since such a policy only requires firms to *explain* their diversity or lack thereof, rather than mandating board diversity itself, firms may choose to continue the status quo rather than increase board diversity. On the other hand, given that the nature of disclosure regulation is to bring sunlight to an issue, requiring a firm to explicitly state its board diversity policy could lead to increased pressure to diversify the board and, ultimately, increased board diversity. Indeed, Fried (2021) argues that comply-or-explain regulations are designed to have a naming and shaming effect, such that boards could be pressured to increase diversity, as they would under a mandate.

We find that the OSC's principles-based diversity regulation has had a meaningful impact on the composition of the boards of Canadian firms. The fraction of firms that added a female director to their boards doubled in the years following the OSC's amendment (increasing from 20% in 2011-2013 to 40% of firms in 2015-2017). Estimates from difference-in-differences (DID) regressions indicate that, compared to U.S.-listed firms of similar size and in similar

industries, the average fraction of female directors on Canadian firms' boards increased by 3.8-4.3 percentage points more in the two years following the OSC amendment (2015-2017) than before (2011-2013). Prior to the amendment, female directors accounted for, on average, 10% of directors in Canadian firms, so our estimates imply that the amendment is associated with an increase of 38% to 43% in female director representation. This increase is of a similar magnitude to the 40% increase in female directors in California after the SB 826 diversity mandate as reported by Greene, Intinoli and Kahle (2020).

To ensure our results are not an artifact of our choice of using matched U.S.-based firms as a control group, we examine year-on-year changes in female director ratios within Canada in the years surrounding the OSC amendment. We find a statistically significant increase in the year-on-year change in female director ratios for Canadian firms after 2014, confirming the existence of a kink in the trajectory of female director ratios following the amendment. Moreover, we find that firms with all-male boards before the amendment – those most likely to be impacted by the OSC's announcement – exhibited a significantly larger increase. These findings are further evidence that the pronounced increase in female director ratios is a result of the OSC amendment.

Next, we examine the market's response to the regulation with the goal of shedding light on the relative costs of this principles-based regulation for shareholders. We conduct an event study around the OSC's first announcement that the OSC would be introducing comply-or-explain requirements for board diversity, which stated that it would require listed firms to disclose their board gender diversity policies or to provide an explanation for their absence. We find that firms most likely to be affected by the amendment – those without a disclosed voluntary female representation policy and those with an all-male board – exhibit positive and statistically significant cumulative abnormal returns around the announcement. For firms without a voluntary female director policy, the two-day abnormal announcement return was 1.4%, while firms with all-male boards had an abnormal announcement return of 2.0%. We find similar results in multivariate regressions: firms without a disclosed voluntary female representation policy or with an all-male board exhibit two-day abnormal announcement returns that are 1.2% higher than for firms with a female representation policy in place or those with at least one female director. We also find that announcement returns are increasing in the proportion of male directors on firms' boards.

Our results contrast with the negative abnormal announcement returns observed around the announcement of mandatory gender diversity regulation, such as those passed in Norway (Ahern and Dittmar, 2012) and California (Hwang, Shivdasani, and Simintzi, 2020; Greene, Intintoli and Kahle, 2020). For California's mandatory regulation, announcement returns were more negative for firms for which the quota is more binding (e.g., those with no female directors), which are precisely the firms for which we observe significantly positive returns. Given this prior evidence, the positive returns we observe may be due to a prior expectation before the OSC announcement that the regulation would be mandatory, rather than principles-based. In this case, the market's positive reaction may have been in response to learning that firms would not be forced to add female directors. Alternatively, the market may have inferred that the principles-based regulation is likely to lead to increased board gender diversity but without the constraints imposed by mandatory regulation. Under each of these scenarios, our findings suggest that a principles-based approach is relatively less costly for shareholders than mandatory regulation. Thus, a principles-based approach to director gender diversity may mitigate some costs associated with rules-based approaches, while still achieving the broad objective of increased female representation on boards.

Although we observe significant increases in board diversity following the OSC amendment, it is important to reiterate that the amendment did not explicitly require boards to diversify. Rather, the OSC rule only requires firms to explicitly disclose and discuss their board diversity policies, or lack thereof, annually in their proxy statements. Thus, we read firms' proxy statements in the years surrounding the OSC ruling to ascertain how diversity policies evolve. We find that, in the years after the OSC amendment, firms increasingly indicate that they consider gender diversity in their director nomination process, and they increasingly employ target female quotas for their boards. This increase in compliance is higher for firms with all-male boards prior to the regulation, suggesting that firms which may have been less inclined to include women on the board before the regulation improved their board gender diversity policies the most afterwards. Moreover, we find that, more generally, language incorporated within firms' proxy statements becomes increasingly favorable towards gender diversity between 2014 and 2018.

Finally, we examine cross-sectional differences in gender diversity policies after the OSC amendment, allowing us to shed light on the effectiveness of principles-based governance for

board gender diversity. This analysis allows us to distinguish between the two contrasting views on principles-based governance. On the one hand, if firms opportunistically avoid compliance, we expect to find a negative relation between the optional lack of compliance and measures of strong corporate governance. On the other hand, if firms optimally choose between complying and explaining, we expect a positive relation between the optional lack of compliance and economic frictions that affect firm's cost of compliance. For example, the cost of access to qualified female directors might vary across firms due to both different geographic proximity to eligible female directors and different levels of connections with qualified female directors within director networks.

We find evidence consistent with firms optimally choosing to comply or explain based on the presence of economic frictions. First, firms located in areas with fewer female directors are less likely to consider gender diversity when nominating directors. Second, firms that are more connected within the director network to female directors in other firms, or to firms with female director target quotas, are more likely to implement female director target quotas. Third, conditional on not having a female director target quota, firms that are geographically further from eligible female directors and those that are less connected to female directors within director networks are more likely to indicate that they nominate directors based solely on skills, experience and/or merit, rather than also considering gender as a factor in the nomination decision. Fourth, firms with less geographic proximity to eligible female directors and lower levels of connections with qualified female directors within the director networks employ language that is less favorable towards gender diversity in their proxy statements.

While the majority of our evidence suggests that many firms optimally choose to comply or explain based on economic frictions, we do find evidence consistent with some firms opportunistically avoiding compliance: controlled firms (i.e., closely held firms or firms with dual class voting shares) are less likely to indicate that they employ a target quota for female directors. In their diversity statements, these firms are also more likely to use language less favorable towards board diversity (for example, they are more likely to indicate that quotas are unnecessary or that they appoint directors based solely on merit).

In sum, the main determinants of compliance appears to be economic frictions related to access to qualified female directors. That is, firms are more likely to explain their lack of compliance when they face higher costs to increasing female representation in their boardroom.

This evidence, which generally suggests that how firms comply with the regulation is chosen optimally, is consistent with the positive announcement returns we observe following the OSC's amendment. Our results suggest that principles-based governance provides a viable alternative to rules-based governance when one prescription does not fit all. In the next section, we discuss how our study fits into the existing literature.

II. Related Literature

Existing studies in psychology, economics, and management highlight important gender differences in overconfidence, risk aversion, long-term orientation, and personal values (Beyer 1990; Silverman 2003; Schwartz and Rubel 2005, Croson and Gneezy, 2009). In the boardroom, Hillman, Cannella and Harris (2002) find differences in the background (education, occupation etc.) of female directors relative to their male counterparts. Such differences may help explain why a burgeoning literature has found that female representation on boards and in management is linked to corporate outcomes such as innovation (Griffin, Li and Xu, 2019), risk-taking (Bernile, Bhagwat and Yonker (2018)), employment (Matsa and Miller, 2013), monitoring and sensitivity of executive turnover to performance (Adams and Ferreira, 2009). Moreover, there is inconclusive evidence on the impact of gender diversity in the boardroom and top management on firm performance: Dezso and Ross (2012) and Liu, Wei and Xie (2014)) find a positive impact while Adams and Ferreira (2009)) and Matsa and Miller (2013) find a negative impact. Consequently, studies have hypothesized that regulation aimed at increasing female board representation can have both positive and negative effects on shareholder value.

Existing event study-based evidence on the introduction of prescriptive regulation enforcing director gender quotas in Norway (Ahern and Dittmar, 2012) and California (Hwang, Shivdasani and Simintzi, 2020; Greene, Intintoli and Kahle, 2020) points to a negative impact on shareholder value. Furthermore, Matsa and Miller (2013) report that the rules introduced in Norway are associated with a reduction in firm profitability. In contrast, Eckbo, Nygaard and Thorburn (2018) finds that the valuation effect of the Norwegian director gender law was statistically insignificant. Overall, the evidence points to a negative value effect, or a non-positive effect at best, associated with the prescriptive regulatory approach to gender diversity that has been linked to costs associated with supply constraints in the market for female

directors.[5] Our study indicates that the flexibility afforded to firms under a principles-based approach can potentially mitigate some of the compliance costs associated with mandatory regulation.

Our paper is broadly related to studies that contrast an agency cost view of governance reform (e.g. Bebchuk and Fried, 2003; Schoar and Washington, 2011), which contends that regulatory initiatives are needed to override the influence of powerful managers and implement optimal governance practices, with a private ordering view (e.g., Demsetz and Lehn, 1985; Hermalin and Weisbach, 1998; Larcker, Ormazabal and Taylor, 2011), which purports that governance choices are best left to individual firms and that observed governance practices are an equilibrium outcome of firms' optimizations. Our findings suggest that a principles-based approach, which may be viewed as a hybrid between prescriptive regulation and private ordering, retains benefits of both approaches, such as broad compliance and flexibility, while mitigating many of their costs. We also relate to Gormley, Gupta, Matsa, Mortal, and Yang (2021), who show institutional investors' public campaigns were highly successful at getting firms to increase gender diversity on their boards. Although they focus on an alternative channel to regulation, similar to our finding, they show that access to an eligible pool of female candidates through connections within the director network plays a key role in increasing board gender diversity.

Our paper contributes to the literature on the impact of a principles-based approach to governance reform more generally (see Ford, 2008; Broshko and Li, 2006; and Arcot and Bruno, 2018). Studying principles-based governance in the UK in the form of the Combined Code of Corporate Governance, Arcot, Bruno and Faure-Grimaud (2010) document an increasing trend of compliance with the Combined Code with frequent usage of standard explanations in the case of non-compliance. Consistent with their results, we find an increasing trend of compliance following the adoption of principles-based regulation for director gender diversity in Canada. In addition, like Arcot, Bruno and Faure-Grimaud (2010), we find that ownership structure is associated with the degree of compliance, as we find controlled corporations are less likely to

[5] Broad rules-based mandates related to gender diversity could also affect the equilibrium outcome in the director labor market. Due to supply constraints, qualified female directors are likely to serve on more boards which can make them busier as well as more connected within the network of directors. This could have a negative (Fich and Shivdasani, 2006 and Falato, Kadyrzhanova and Lel, 2014) or positive (Larcker, So, and Wang, 2013 and Fogel, Ma, and Morck, 2014) effect on shareholder value.

implement a target for female directors, and they use less favorable language regarding diversity in their proxy statements. However, unlike previous studies on principles-based regulation, we find that economic frictions that vary across firms (e.g., the cost of access to a qualified pool of female directors) are the main determinants of firms' degree of compliance.

Finally, our study contributes to the literature on mandatory enhanced disclosure. In mandating disclosure of compliance with suggested best practices, principles-based regulation is, effectively, enhanced disclosure regulation. Some studies document benefits associated with mandatory enhanced disclosure (Dye, 1990; Healy and Palepu, 2001; Leuz and Wysocki, 2008; Khurana, Pereira, and Martin, 2006; and Hope and Thomas, 2008). Other studies document costs such as compliance costs (Bushee and Leuz, 2005), sharing private information with competitors (Harris, 1998), as well as a failure to mitigate value destroying practices (see Perry and Zenner, 2001; Faulkender and Yang, 2013; and Bakke, Mahmudi and Newton, 2020). We contribute to this literature, as we find evidence that the principles-based approach to gender diversity disclosure in Canada has led to an increase in female directorships. In the next section, we discuss the specifics of the OSC gender diversity policy that we study.

III. The Ontario Securities Commission's Gender Diversity Policy

In its annual budget released in May 2013, the Ontario Government included the following statement, "the government strongly supports gender diversity on boards… the government will consider the best way for firms to disclose their approaches to gender diversity, with a view to increasing the participation of women on boards and in senior management." Although not publicly disclosed at the time, on June 14, 2013 the Minister of Finance and the Minister responsible for Women's issues requested that the Ontario Securities Commission (OSC) undertake a consultation process regarding disclosure requirements for gender diversity.

In response, the Ontario Securities Commission (OSC) released a consultation paper for comment on July 30, 2013, to amend Form 58-101 of National Instrument 58-101 (Disclosure of Governance Practices) to include the disclosure of gender diversity. The amended "comply or explain" disclosure regime would require issuers listed on the Toronto Stock Exchange to annual disclose details about policies (or lack of policies) relating to the representation of women on boards and in executive officer positions. The OSC indicated that the proposed amendment was intended to improve the effectiveness of boards, as well as corporate decision making, by

requiring greater transparency for investors and other stakeholders regarding the representation of women on boards and in senior management positions of firms listed on the Toronto Stock Exchange (TSX-listed issuers). Notably, rather than mandating that firms diversify their boards and executive suites, the proposed OSC amendment would rely entirely on the disclosure of firm diversity practices to improve diversity outcomes in corporate leadership. After the initial comment period ended, a modified proposal was released on January 16, 2014, including the addition of required disclosure of director term limits, which was not included in the original proposal. The amendment was approved on November 28, and on December 11, 2014, the OSC announced that the final amendment would take effect on December 31, 2014.

The final amendment, which has been in place since December 31, 2014, requires TSX-listed and certain other non-venture issuers in Ontario to include the following disclosure annually in their proxy circulars or annual information forms, as applicable:

1) whether there are any director term limits or an explanation for the absence of such limits;
2) the details of any policies regarding the identification and nomination of women directors or an explanation for the absence of such policies;
3) the board's or nominating committee's consideration of the representation of women in the director identification and selection process or an explanation for the absence of such consideration;
4) the consideration given to the representation of women in executive officer positions when making executive officer appointments or an explanation for the absence of such consideration;
5) targets (number or percentage) adopted regarding the representation of women on the board and in executive officer positions or an explanation for the absence of such targets; and
6) the number and proportion of women on the board and in executive officer positions.

Although the OSC amendment requires disclosure of term limits, diversity policies regarding the identification and nomination of women directors and executives, the consideration of women directors and executives in the search process, and whether the firm has adopted targets for women representation on the board or in executive officer positions, the amendment is notable in that it does not require – or even recommend – a gender target quota. In fact, the

amendment only requires firms to disclose *whether* they have adopted representation targets for women on the board or in executive officer positions. This is in sharp contrast to the quota mandates increasingly implemented in other jurisdictions, such as Norway, France, Belgium, the Netherlands, and California. Even Nasdaq's Board Diversity Rule, which also takes a comply-or-explain approach, requires firms to have at least two diverse directors, or explain why they do not. The OSC amendment takes a more hands-off approach, in that it does not recommend a gender target nor does it require firms to implement a target. Instead of mandating diversity targets, the amendment relies on disclosure of diversity practices to inform investors and other stakeholders to achieve its objective.

Unlike mandates, which by definition increase diversity, it is unclear whether this principles-based approach will have a meaningful effect on diversity in the board or executive suite. On the one hand, by requiring firms to disclose their compliance or the reasons for non-compliance, the OSC amendment enables the capital markets to assess the effectiveness of a firm's diversity policies. The increased transparency may lead to increased pressure from stakeholders for firms to increase diversity in the board and corporate leadership. On the other hand, the OSC amendment may be too weak to resolve the underrepresentation of females on corporate boards and executive leadership because it allows firms the option to comply with articulated best practices. Ultimately, the onus is on investors to determine the appropriateness of a firm's policies regarding social issues such as female representation in the boardroom and in executive leadership (see e.g., Hart and Zingales, 2017). Thus, in the next section, to determine whether the OSC amendment has had any impact on diversity, we examine the composition of boards and executive officer positions of these firms in the years surrounding the OSC amendment.

IV. Analysis and Results

A. The Effects of the Policy: Did Canadian Firms Add Women to Their Boards?

In this section, we investigate the impact of the OSC's principles-based approach to female representation by examining the evolution of board and executive officer composition of Canadian firms in the years surrounding the OSC amendment. Our sample consists of Canadian-listed firms in S&P TSX Composite Index at any point between 2010 and 2016, with directorship data in BoardEx and financial data in Compustat – resulting in 296 unique firms. Section A.1 below examines changes in board composition, while A.2 examines changes in the composition

of top executive teams.

A.1. Changes in Board Composition

Panel A of Figure 1 shows that, in the three years before the OSC amendment (2011-2013), only 20% of firms added a female to their boards, while double that amount (40%) added a female to their board in the years following the announcement (2015-2017). This is consistent with the amendment having had the effect of increasing board gender diversity. However, another possibility is that firms with all-male boards simply added a token female director to appease regulators, without any serious commitment to the spirit of board diversity. In this case, we would expect a disproportionate increase in female directorships for firms with all-male boards. Thus, in Panel B we examine the proportion of firms adding female directors, separately for firms which had female directors in 2013 versus those that did not. The figure shows that equal proportions (i.e., about 40%) of firms in both groups added a female director following the 2014 amendment. The fact that the addition of female directors is not concentrated amongst firms with all-male boards in 2013 suggests that firms were less likely to have added female directors merely to window-dress their board composition.[6]

Figure 2 plots the trajectory of the annual average fraction of female directors on firms' boards from 2011 to 2018. The graph in Panel A shows a kink – an increase in the slope – in the graph after 2013 for Canadian-listed firms, which is consistent with firms responding to the amendment by adding female directors at a higher rate on average. Moreover, the increased rate persists for the remainder of our sample period. For comparison, Panel A also plots the trajectory for U.S. firms that were included in the S&P 500 at any point between 2010 and 2016. The U.S. firms, which are not subject to any such regulation during our sample period, do not exhibit the same trend after 2014, reassuring us that this phenomenon is unique to Canadian firms and is thus plausibly a consequence of the OSC's amendment. These patterns persist in Panel B when we compare Canadian firms to U.S. firms matched on total assets and one-digit SIC industry (only Canadian firms with an available match are included). The patterns also persist in Panel C where we compare Canadian firms cross-listed on a U.S. stock exchange (and are thus subject to both Canadian and U.S. exchange regulations) to matched U.S. firms (subject only to U.S. regulations). This is important, as Canadian firms cross-listed in the U.S. are also subject to

[6] In untabulated tests, we examine how firms accommodated the increase in female directors after the OSC amendment, whether by replacement or increasing board size. We find that firms adding female directors after the amendment were more likely to replace current directors, rather than expand the board size.

governance regulations by the SEC. These patterns further strengthen our confidence that the kink in the trajectory for Canadian firms is driven by the change in Canadian listing regulations made by the OSC.

The regression analysis reported in Table 1 confirms the statistical significance of the patterns shown graphically in Figure 2. The unit of observation is firm-year, and the dependent variable in these specifications is the fraction of a firm's board consisting of female directors. The sample period is 2011-2017, so as to include three years on either side of the year of the policy change in 2014. Control variables include total assets, market-to-book assets, return-on-assets, and debt/assets. All specifications include firm fixed effects. In model 1, which includes only Canadian-listed firms, the coefficient on the post-2014 indicator is significantly positive. This result implies that the representation of female directors following the OSC amendment in 2014 increased by about 7 percentage points, on average, relative to before the amendment. This finding comes with a caveat, as it is consistent with a positive time trend in female director representation in the boardroom over the sample period. Thus, in the next specifications, we use a DiD approach with the goal of better isolating the effect of the OSC requirement regarding gender diversity policy on female director representation.

In model 2, we include a comparison group of all U.S.-listed firms in the S&P 500 at any point between 2010 and 2016, similar to Panel A of Figure 2. The coefficient on the variable "Canadian Firm×Post-2014" implies that following the amendment, Canadian firms increased representation of female directors by about 3 percentage points more, on average, than U.S. firms during the same period relative to before the amendment. Similar to Figure 2, we include U.S. firms matched to the Canadian firms on total assets and one-digit SIC industry in model 3, and in model 4 we include only Canadian firms cross-listed on a U.S. exchange against matched firms listed only in the U.S. In both cases, we find a relative increase in representation of female directors of a similar magnitude in Canadian firms (4.3 and 3.8 percentage points, respectively). Given that female directors accounted for, on average, 10% of directors across Canadian firms prior to 2014, the regression coefficients imply that the OSC amendment is associated with an increase in female director representation of between 38% and 43%.

To ensure that the results in Table 1 are not an artifact of our choice to use U.S. firms as a control group, we next examine changes in the female director ratio within Canada alone. We focus on the trajectory of female director ratios of Canadian firms as shown in Figure 2, where

there is a visible kink in 2014 when the new OSC rules were passed, indicating an increased rate of change in female director ratios post-regulation. To verify the statistical significance of this kink, we examine the year-on-year change in the female director ratios of Canadian firms over the 2011-2018 sample period by estimating the following regression specification:

$$\Delta\, Female\ Director\ Ratio_{i,t} = \alpha + \sum_{j=2012}^{2018} \theta_j \cdot\times \mathbb{1}[Year = j] + \varphi_{i,t} \cdot Controls + \gamma_i + \varepsilon_{i,t}\,.$$

The observations are at the firm-year level, with *i* indexing firms and *t* indexing calendar years. The dependent variable is the percentage point change in the fraction of a firm's board consisting of female directors between the current year, *t*, and the previous year, *t-1*. Control variables include Log(Assets), Market-to-Book Assets, ROA and Debt/Assets. Firm fixed effects (γ_i) are included, and $\varepsilon_{i,t}$ is an error term. The variables of interest are year indicator variables, with the omitted year being 2011 (the benchmark year). The results are presented in Panel A of Figure 3 which plots the coefficient estimates θ_j of the percentage point change in the female director ratio in each year, relative to 2011, with error bars that indicate 95% confidence intervals for the coefficient estimates.

Panel A of Figure 4 indicates that in the pre-regulation period (2012 and 2013), the changes in Canadian firms' female director ratios are not statistically different from the change in the benchmark year, 2011. In 2014, there is a distinct and statistically significant increase of about 2 percentage points in the annual change in the female director ratios relative to 2011. The increased annual change in female director ratios persists at a similar magnitude of between 1.5 to 2 percentage points and remains statistically significant through 2018. These results indicate a statistically significant increase in the rate of change of female director ratios of Canadian firms in 2014 after the OSC rule was passed and thus confirm the existence of a kink in the trajectory of female director ratios of Canadian firms observed in Figure 2.

We next investigate whether there is a differential increase in the rate of change in female director ratios for firms with all-male boards. We augment the regression from Panel A with an interaction between the year indicator and an indicator for firms with all-male boards as of 2013 as follows:

$$\Delta\, Female\ Director\ Ratio_{i,t} = \alpha + \sum_{j=2012}^{2018} \beta_j \cdot All\ Male\ Board_{i,2013} \times \mathbb{1}[Year = j] + \sum_{j=2012}^{2018} \theta_j \cdot\times \mathbb{1}[Year = j] + \varphi_{i,t} \cdot Controls + \gamma_i + \varepsilon_{i,t}\,.$$

Panel B of Figure 4 displays the coefficient estimates, β_j, of the difference between the change in the female director ratio for firms with all-male boards and firms with female directors, relative to 2011.[7] The figure indicates that, in 2012 and 2013, firms with female directors increased their female director ratios by a greater amount than firms with all-male boards relative to 2011, though the difference is not statistically significant. In 2014, the pattern reverses, whereby firms with all-male boards increase their female director ratios by about 1.5 percentage points more than firms with female directors relative to 2011, though the difference is statistically significant only at the 10%-level. The increase persists with similar magnitudes (of between 1 to 3 percentage points) through 2018 and is statistically significant (at the 5% level) in all subsequent years except 2016. The results indicate that firms with all-male boards exhibited a larger increase in the rate of change in female director ratios than firms with female directors between the pre- and post-regulation periods. This result, which is akin to examining how a difference-in-differences coefficient changes dynamically over time, helps address concerns that our findings are driven by any Canada specific event that also affects female ratios. In sum, the results shown in Figure 4 make it less likely that the results in Table 1 are an artifact of the choice of using U.S. firms as a control group.

A.2. Changes in Executive Team Composition

In addition to the board diversity disclosure policy, the OSC amendment also requires listed firms to disclose policies regarding the representation of females on the top executive team. Therefore, we also examine changes in the composition of the top named executives in the years following the OSC amendment. We first study the trajectory of the annual average fraction of female top executives from 2011 to 2017 (untabulated). Although there is a positive trend in female executive ratios, the trend is much smaller than the positive trend we observe for female director ratios among both Canadian and U.S. firms. For example, among Canadian firms, the female executive ratio (female director ratio) increases from 6% to 8.9% (10% to 20%) from 2011 to 2017.

Next, in Panel A of Table 2 we run regressions similar to those shown in Table 1, but

[7] This methodology is similar to the dynamic leads-and-lags model – also utilized in studies such as Autor (2003), Atanasov and Black (2016), Jeffers (2019) and Xu and Kim (2021) – that allows for inference in regard to whether differences in the dependent variable between the treatment and control firms each year are statistically different relative to the difference in the omitted benchmark year in the pre-shock period (2011 in our analysis).

with the female *executive* ratio as the dependent variable. The sample period and the control variables are similar to those in Table 1.[8] In model 1, which includes only Canadian-listed firms, the coefficient on the post-2014 indicator is significantly positive. This finding implies that the representation of female named executives following the OSC amendment increased by 2.7%, which is a 39% increase relative to the mean executive ratio of 6.7% in 2013. However, the results in models 2, 3, and 4, in which we use a DiD approach to better isolate the effect of the OSC amendment on female executive representation, suggest that this positive coefficient is due to a positive time trend in female executive representation over the sample period. The coefficient on the variable *Canadian Firm×Post-2014,* although positive, is not statistically significant in specifications 2 and 4, and is significant only at the 10% level in model 3, where we use a matched U.S. control sample. Overall, this suggests that the increase in the female executive ratio among Canadian firms is similar to that for most control U.S. firms, indicating that the OSC amendment does not significantly impact gender diversity of executives during our sample period.

One potential caveat with the test in Panel A is that the top five named executive officers disclosed in proxy statements are determined according to their compensation in any given year. Thus, female executives may in some years drop out of the top five named executive officers disclosed in the proxy circular, which affects the number of female executives counted, even if female executives have not left the firm. To mitigate this measurement issue, in Panel B we repeat the tests in Panel A, but replace the dependent variable with an indicator variable for firms with a female CEO. Studying changes in female CEOs does not suffer from this reporting issue, as the CEO is always disclosed. Consistent with the results in Panel A, we do not find any statistically significant change in female CEO appointments surrounding the OSC regulation.[9]

A.3. Discussion

Why do we find that the OSC regulation affected board gender diversity but not executive gender diversity? We posit that this may be due to the higher economic costs

[8] The sample size used in Tables 1 and 2 are slightly different, as we use calendar years in Table 1 and fiscal years in Table 2. The director data from BoardEx are provided by annual report dates which line up with calendar years (>80% are in December). The named executive data are hand-collected from proxy circulars which are reported for fiscal years. This results in a small difference in the two samples (e.g., 1904 vs. 1866 firm-year observations for the sample of Canadian firms used in model 1).

[9] Panel B reports OLS estimations. In untabulated tests, we also run logistic regressions without firm fixed effects and find similar results.

associated with replacing top executives relative to directors. Directors are elected annually, which allows a firm to change its board composition at a lower cost compared to changing executives. Moreover, while directors can be added to the board, executives need to be replaced, as introducing a new top position is not usually a viable option.

To summarize, in this section we demonstrate that after the OSC amendment, Canadian firms increased the representation of women directors by 38% to 43% relative to similar U.S. firms over the same period. This is notable given that the OSC amendment did not require firms to increase the gender diversity of their boards, but rather, it required firms to disclose their policies regarding board representation. In the next section, we assess the cost of the regulation to the shareholders by investigating the market's response to the regulation.

B. How Did the Market React to the Policy Announcement?

In this section, we study the market's reaction to the OSC's policy, with the goal of shedding light on the relative impact of the principles-based policy on shareholders.

B.1. Identification of the Event Date

In studying the market reaction to the policy, we primarily focus on the July 30, 2013, OSC announcement, although we provide evidence on the market reaction of other potentially relevant dates in Section B.5 below. There are several reasons we focus primarily on the July 30, 2013 date. First, the matter was first brought to the attention of the public by the Ontario Government in May 2013, indicating that it "will consider the best way for firms to disclose their approaches to the gender diversity" on boards and in senior management. No details regarding the government's support for gender diversity on boards and in senior management was released by the Ontario Government at that time. As a consequence, although the language in the government's announcement was suggestive of a potential principles-based regulation, there remained uncertainty as to how exactly the regulation would be implemented. Issues such as the prescriptiveness of the regulation, what would constitute compliance and whether it would require targets for female representation remained unresolved.

Second, although many past governance reforms in Canada have had the form of "comply or explain", shortly before the release of the proposed ruling, on June 27, 2013, the OSC announced its intention to implement a mandatory majority voting policy for the election of directors of TSX-listed firms in its Statement of Priorities for the fiscal year of 2013. Prior to this

and since October 2012, the majority voting policy for the election of directors had the form of comply or explain, where issuers had to either adopt a majority voting policy or explain why they have not done so. The announcement on June 27 regarding majority voting for director elections contributed to the uncertainty as to whether the boardroom gender diversity regulation would be principles-based or rules-based. Therefore, significant uncertainty about the form of this governance reform was resolved on July 30, 2013, when the Consultation Paper revealed the regulation would use a "comply or explain" disclosure regime allowing issuers to either develop and disclose gender diversity policies and practices, or explain why they have not implemented such policies and practices. Third, the final amendment on December 31, 2014 (detailed above) contained largely the same policies as the July 30th consultation paper. Specifically, items (2)-(6) were included in the initial July 2013 proposal – the only new language was related to director term limits.[10] Lastly, the July 30th announcement was covered by the *Globe and Mail* (a prominent Canadian news outlet) highlighting the importance and interest in the proposed policy.[11]

To investigate the market's reaction to the OSC's policy, we conduct an event study around the first news release associated with the director gender diversity policy on July 30, 2013. We compute abnormal returns following standard event study methodology (see e.g., Campbell, Lo and Mackinlay, 2012) and examine cumulative abnormal returns (CARs) around the announcement. The data requirements for computing the CARs result in a sample of 274 firms.[12]

B.2. Identification of Firms Most Affected by the OSC Amendment

We posit that firms with all-male boards and those that do not disclose gender diversity policies prior to the OSC announcement in July 2013 are most likely to be impacted by the OSC amendment. In contrast, firms which disclose an existing gender diversity policy or have at least one female director may be viewed as already being in compliance with the amendment, and therefore relatively less impacted by it. The BoardEx data allow us to identify firms that have all-male boards in 2013. To identify firms with a voluntary gender diversity policy at the

[10] Disclosure of director term limits was added to the modified proposal released on January 16, 2014, for further comments and to the final document released on October 15, 2014 (i.e., the amendments to the National Instrument 58-101 Disclosure of Corporate Governance Practices) in order to facilitate inclusion of female directors on boards.

[11] *The Global and Mail*, Janet McFarland (July 30, 2013), "OSC proposes gender equity policy for boards."

[12] We use a 4-factor return model (Fama and French, 1993, Carhart, 1997) and a 250-day estimation window ending on day -30, with at least 60 observations. We obtain stock return data from Datastream.

announcement, we read through proxy circulars filed between January 2012 and June 2013 (i.e. fiscal year 2012). We flag filings which describe a gender diversity policy by searching for the following four keywords: gender, diversity and female, woman/women. We read through each filing containing any of these keywords to verify that the firm indeed has a director gender diversity policy.

The details of voluntary director gender diversity policies in place in 2012 vary in their terms, such as including a target female director quota as a percentage of board size, etc. Three examples of excerpts from firms' proxy filings that describe director gender diversity policies are as follows:

> Excerpt 1: *"Bank of Montreal's commitment to gender diversity starts with the Board of Directors. In 2012, BMO's Board of Directors adopted a Diversity Policy which included the goal of board composition in which each gender comprises no less than one-third of the independent directors."*
>
> Excerpt 2: *"To ensure that there are a significant number of women on the Emera's Board of Directors, the Company recruits Board members under a long-standing Corporate Governance Practice which requires that no fewer than 25 percent of the members of the Board of Directors are female. The list of director nominees for the annual Shareholders' meeting on May 8, 2013, includes four women out of 11 director nominees, or 36 percent."*
>
> Excerpt 3: *"The Maple Leaf Foods' Corporate Governance Committee takes into account the desirability of maintaining a reasonable diversity of personal characteristics such as age, gender, geographic residence and origin."*

The first and second disclosures above specifically state that the firms have a board gender diversity policy and gender director targets in place. The third disclosure does not specifically state that the firm has a gender diversity policy nor does the firm have a gender diversity target for its board, but the firm does disclose a desire to achieve and maintain diversity with regards to gender and other criteria such as age and background. Given the absence of guidelines regarding gender diversity policy disclosure prior to the rule amendment, we also classify firms with statements like Excerpt 3 as having a gender diversity policy prior to the amendment.

As of 2013, 61 firms disclose that they either have a gender diversity policy in place or

that they consider gender diversity in director nominations. The remaining 213 firms either explicitly declare that they do not have a gender diversity policy or do not disclose that they have a gender diversity policy. We assume that firms that do not disclose having a gender diversity policy do not have one in place.

B.3. Announcement Return Results

Table 3 reports the average CARs in the (0,0), (0,+1) and (-1,+1) announcement windows, as well as the t-statistics and p-values, computed following Kolari and Pynnonen (2010) to test whether the average CARs are statistically different from zero.[13] Although the average CAR during these windows is positive but not statistically significant, we find that the two groups of firms most likely to be impacted by the amendment – those without a disclosed voluntary female representation policy and those with an all-male board – exhibit positive and mostly statistically significant announcement CARs (at the 5% and 1% level, respectively). For firms without a voluntary female director policy, the two-day (0,+1) abnormal announcement return is 1.4%, while firms with all-male boards have an abnormal announcement return of 2.0%.[14] Firms that are less likely to be impacted by the amendment, as they were already voluntarily compliant or partially compliant – firms that disclose having a female representation policy prior to the regulation and those with at least one female director – do not exhibit statistically significant announcement CARs.

Examining the abnormal returns in a univariate setting allows us to test the significance of the CARs around the OSC's announcement and account for issues such as cross-correlation and event-induced variance. However, the univariate analysis may not fully account for cross-sectional relationships between firm characteristics and abnormal returns. Therefore, in Table 4 we report results of OLS regressions of the CARs on an indicator for firms without a disclosed voluntary female representation policy (in models 1 and 2), an indicator for firms with an all-male board (models 3 and 4), and for the proportion of male directors on the board (models 5 and

[13] As pointed out by Kolari and Pynnonen (2010), when all firms are subject to the same event date, as is the case in our study, cross-sectional correlation between firm returns can lead to over-rejection of the hypothesis that the average abnormal returns around the event date are zero. A related concern raised by Boehmer, Musumeci and Poulsen (1991), is that increases in return variance induced by events such as the SEC announcement can also result in over-rejection of the hypothesis of zero-average abnormal event returns. The test-statistic proposed by Kolari and Pynnonen (2010) addresses both issues.

[14] Note that although the mean (0,+1) CAR for firms with at least one female director is positive, the reported t-statistic is negative. This is because our t-statistics are computed using scaled abnormal returns following Kolari and Pynnönen (2010), and the scaled CAR for this window (not reported) is negative while the unscaled CAR (reported) is positive.

6). We focus on the (0,+1) window following MacKinlay (1997).[15] All specifications include total assets and one-digit SIC industry indicators as control variables and models 2, 4 and 6 also include market-to-book assets, return-on-assets and debt/assets. The coefficients on our explanatory variables of interest are consistent with the univariate analysis in Table 3. As shown in models 1 and 2, firms without a disclosed voluntary female representation policy exhibit CARs that are 1.2% higher than for firms that disclose having a female representation policy. Similarly, models 3 and 4 demonstrate that firms with an all-male board exhibit CARs that are 1.2% higher than for firms with at least one female director. Furthermore, models 5 and 6 show that announcement CARs are increasing in the proportion of male directors on firms' boards.[16]

The results in Tables 1 and 2 are in sharp contrast to the negative abnormal returns observed for firms subject to California's SB-826 law mandating gender diversity for firms headquartered there (Hwang, Shivdasani, and Simintzi, 2020; Greene, Intintoli and Kahle, 2019). Thus, the positive returns we observe could be due to a sense of relief that the regulation would not mandate board diversity. If this were the case, we would expect the positive abnormal returns to be concentrated among firms with all-male boards that did not diversify in the years following the regulation. Therefore, in models 7 and 8, we re-estimate models 3 and 4 (which include an indicator for firms with all-male boards in 2013) with an additional indicator for firms that had all-male boards in 2013 and had not added female directors as of 2017. The coefficient on this indicator variable is negative (and not statistically significant), while the coefficient on the indicator for an all-male board in 2013 is statistically significant with a similar magnitude to models 3 and 4. To the extent that markets were able to anticipate which firms would not add any female directors, this result indicates that positive CARs for firms with all-male boards are not driven by firms that would not subsequently add any female directors. Moreover, to the extent that in the absence of a mandate firms would not comply, we would expect the regulation to have no real effect on board composition. However, as we show in the Section IV, the regulation led to an increase in female director representation. Together with the results discussed above in models 7 and 8 of Table 2, this suggests that it is unlikely that the positive

[15] We find similar results using the (-1,+1) window and weaker results using the (0,0) window. We also find similar results using the market model or the 3-factor model to compute CARs.

[16] Karafiath (1994) shows that cross-sectional correlation in residuals is not a concern in cross-sectional OLS regressions with CARs as the dependent variable as long as one has a sufficiently large sample (>75). Nevertheless, in untabulated tests we also employ the methodology proposed by Sefcik and Thompson (1986) that accounts for the potential bias introduced by cross-correlation and obtain similar results. We thank Jared Stanfield for sharing the code that we used to implement this methodology.

returns we observe are due to the news that the regulation was to be principles-based, rather than mandatory, and would therefore not require any real change.

There are other plausible explanations for the positive returns we observe. One potential explanation is that our results reflect an expectation that the regulation would result in an increase in director gender diversity, and to the extent that this increase in diversity is perceived to be valuable for firms, we expect to observe positive returns. Another plausible explanation is that the market may have reacted positively to learning that compliance with the amendment would not be prescriptive (e.g. by specifying director diversity targets), and that instead, firms could define and implement their own diversity policies as they see fit. Under each of these two plausible scenarios, our event study results can be interpreted as being indicative of principles-based diversity regulation having lower costs for shareholders *relative* to mandatory regulation, within Canada. Furthermore, taken together with the negative returns associated with rules-based mandates documented by some studies (Ahern and Dittmar, 2012; Hwang, Shivdasani and Simintzi, 2020; Greene, Intintoli and Kahle, 2020) our results suggest that a principles-based approach may potentially have a less negative impact on firm value more generally.

Next, we provide evidence on the robustness of our announcement return results. In section B.4, we present evidence on the internal validity of our quasi-natural experiment, and in section B.5, we investigate how the market reacts to the release of other potentially relevant information.

B.4. Non-Random Assignment and Placebo Tests

As is the case in many other quasi-natural experiments created by regulatory interventions, the non-random assignment of firms to treated and control groups is a potential concern. This is relevant in our setting, with firms that have existing gender diversity policies or all-male boards prior to the regulation comprising the treated groups. One could argue that if the decision to disclose a gender diversity policy (or to have at least one female director on board) is correlated with unobserved determinants of abnormal returns around the event, this issue could imperil the internal validity of the experiment. However, to the extent that the decision to adopt a voluntary gender diversity policy was made well in advance of the OSCs amendment, this concern would be less applicable. For instance, about 81% of firms with voluntary gender diversity policies in 2013 disclosed these policies at least two years before the OSC announcement. Nonetheless, to mitigate concerns that our findings are an artifact of either such

differences between firms in our sample or due to pure chance, we conduct two different analyses suggested by Roberts and Whited (2013).

First, we compare firm characteristics of the 127 firms with all-male boards in 2013 with those 147 firms whose boards have at least one female director prior to the OSC announcement on July 30, 2013. Similarity in observable firm characteristics prior to the OSC's regulation makes it less likely that differences between the groups drive our results. Of particular concern is the fact that the OSC announcement included disclosure of policies regarding the representation on female senior executives, in addition to directors. If there are differences in the two groups in the representation of women executives, it would be difficult to ascertain whether the announcement returns are due to the policies regarding female executives or directors. However, as shown in Panel A of Table 5, we find that the two subsamples (those with all-male boards versus boards with at least one female) have almost identical female executive ratios (defined as the ratio of female executives among the top five named executive officers), at 6.6% versus 6.8%. This makes it more likely that the abnormal returns we observe are due to the changes in female director policy rather than changes in female executive policy. Turning to firm characteristics, we find the two subsamples are similar in terms of market-to-book ratio, return-on-assets, and the use of director term limits, but there are some differences: firms with all-male boards are smaller, have less debt, and are less likely to be a controlled corporation (have dual class voting shares or are closely held).

Next, in Panel B of Table 5, we compare firm characteristics of the 213 firms without, and the 61 with, a voluntary director gender diversity policy in 2013. Again, we find that these firms are nearly identical in terms of the fraction of female top executives (6.7% versus 6.8%), which makes it more likely that the abnormal returns are due to the gender board policy, rather than the female executive policy prescription. Turning to firm characteristics, we find that the two groups are similar in terms of the fraction of female top executives, market-to-book ratio and return-on-assets, but firms with a gender diversity policy are larger, have more debt, and are more likely to have director term limits in 2013. Notably, disclosure of director term limits was not included in the original OSC's announcement on July 30, 2013 (the date of our event study), so the positive market reaction to OSC's announcement on July 30, 2013, among firms without a voluntary director gender diversity policy is unlikely due to the future disclosure requirement for director term limits.

Note that in order for the non-random assignment to treated and control groups to undermine the validity of our experiment, there must exist a firm characteristic that determines the voluntary adoption and disclosure of gender diversity policies (or the inclusion of at least one female director on board) that is also correlated with abnormal returns around the event window. Our short event window makes it less likely that our results are an artifact of endogeneity biases such as those produced by firms' voluntary gender diversity policy disclosures or the other pre-shock differences between treated and control firms noted above. Our next test further mitigates this concern.

In our next test, we conduct a placebo exercise to better assess whether our results are unique to the announcement of the OSC's amendment. Specifically, we consider each day in the -300 to +300 day period, excluding the days surrounding the actual event (-50 to +50), as a placebo announcement date (i.e., 500 announcement dates in total). For each placebo announcement date, we compute CARs using the same methodology and estimation window relative to the placebo announcement date (e.g., for the placebo announcement on day -300, the estimation window used is -580 to -331). We rerun the regressions from Table 4 using the CARs for each placebo event as the dependent variable, where the dependent variable is the CAR(0,+1) for each placebo date. Panels A, B, and C of Figure 4 plot histograms of the 500 coefficients obtained from this exercise for models 1, 3, and 5 of Table 4.[17] The figures also indicate the actual coefficients obtained from these models for the actual event (from models 1, 3, and 5 of Table 4). The figures show that the actual coefficients are among the largest values obtained during the placebo period, lying very far in the right tail of the placebo coefficient distributions.

Table 6 reports summary statistics for the 500 placebo coefficients. The mean (median) placebo coefficients for models 1, 3, and 5 are 0.000 (0.001), 0.000 (0.000), and -0.001 (0.000). The actual coefficients are 2 to 2.75 times larger than the standard deviation of the placebos. Only 1 to 4% of the placebo coefficients are positive and statistically significant at the 5% level. Finally, less than 1% of the placebo coefficients are greater than the actual coefficient and statistically significant at the 5% level.

The results from this placebo exercise indicate that the differences in CARs that we observe around OSC's announcement between: (a) firms with and without a disclosed voluntary female representation policy, (b) firms with all-male boards and firms with at least one female

[17] We obtain similar results for models 2, 4, and 6 from Table 4, which we do not tabulate for brevity.

director, and (c) firms with different proportions of male directors, are not persistent across other dates and are unlikely to have occurred by pure chance. This strengthens our confidence that the difference in CARs can be attributed to the OSC's announcement.

B.5. Market Reactions to Other Relevant Announcements

In this section, we study the market reactions to other announcements related to the OSC's diversity regulation. First, we investigate how the market reacted to the news of the release of the Ontario budget statement on May 2, 2013, which first reported its support for gender diversity on boards and in senior management of corporations. We also investigate the market reaction to the June 14, 2013, request by the Minister of Finance, Charles Sousa, and the then Minister Responsible for Women's Issues, Laurel Broten, that the OSC undertake a public consultation process regarding disclosure requirements for gender diversity. These two events preceded the release of the proposed amendments to Form 58-101 of National Instrument 58-101 Disclosure of Corporate Governance Practices by the OSC on July 30, 2013.

In the two-day (0,+1) abnormal announcement returns around these two events, we do not find statistically significant abnormal returns (Panel A of Table 7). Similarly, we fail to find statistically significant market reactions either for firms without a disclosed voluntary female representation policy in 2013 (Panel B) or for firms with all-male boards in 2013 (Panel C). Therefore, there is little evidence that either the Ontario budget statement or the Minister of Finance's request from the OSC resolved a significant amount of uncertainty regarding the OSC's subsequent diversity regulation.

Next, we investigate the market reaction to the January 16, 2014, release of the Proposed Amendment to Form 58-101 by which the OSC included the addition of required disclosure related to director term limits, an item that was missing in the original consultation paper released on July 30, 2013. As reported in Table 7, we do not find a statistically significant market reaction to this news among firms in our sample, including subsamples of firms without a disclosed voluntary female representation policy in 2013 (Panel B), firms with all-male boards in 2013 (Panel C), or firms without a disclosed director term limit policy in 2013 (Panel D). Finally, we do not find statistically significant abnormal returns around the release of the Notice of Implementation of Amendments to Form 58-101 by the OSC on October 15, 2014. These findings suggest that: (1) there was no additional value-relevant information in the announcements following the original OSC's announcement on July 30, 2013, (2) the required

comply or explain disclosure of director term limits does not seem to have had shareholder value implications.

In addition to the policies on board gender diversity, the OSC amendment on July 30, 2013, also included an executive gender diversity policy (see Section III for details). This executive gender diversity policy was not only included in the final amendment (the Notice of Implementation of the Amendment) on October 15, 2014, but also in the OSC's original announcement on July 30, 2013. Thus, in untabulated tests, we investigate the market reaction to these events for the subsample of firms with all-male top named executives, defined as the top five named executive officers disclosed in the proxy statements (i.e., the CEO and the next four executives ranked according to their compensation). We do not find statistically significant abnormal returns around any of the release dates mentioned above.[18] These results are consistent with the required disclosure of the top executive gender diversity policy not having shareholder value implications – i.e., the market reaction around the July 30th proposed amendment is driven by the board gender diversity provisions, rather than the executive gender diversity provisions.

C. Evolution of compliance: How does disclosure change over time?

In this section, we study the evolution of firms' *disclosure* of board gender diversity after the OSC's amendment, and we also examine cross-sectional differences in firms' usage of gender diversity policies. We first explain how we record firms' responses to the policy change. Next, we provide univariate statistics showing how implementation of various board gender diversity policies vary over our sample period. Finally, we conduct multivariate regression analyses to investigate cross-sectional differences in firms' usage of formal diversity policies, their consideration of gender diversity in director nominations, their usage of target quotas, and the extent to which the language in the proxy statement favors director gender diversity. This allows us to better understand why firms adapt in different ways following the comply-or-explain OSC gender diversity amendment.

C.1. How Firms Respond to the Policy Change

For each firm in our sample, we read proxy statements for five years following the OSC amendment, from 2014-2018 and manually collect data on their disclosed policies regarding

[18] In untabulated tests, we also run multivariate regressions similar to those in Table 4 but with an indicator for firms with an all-male top executives. Consistent with the univariate results, we do not find a statistically significant coefficient on this explanatory variable.

female representation on boards and management as follows. For each firm, we record whether the firm has adopted a diversity policy and whether the firm has implemented a target for the fraction of women directors on the board. For firms that do not implement a target, we record the reasons given for not utilizing a target quota. Common reasons given for not implementing a target are that the company does not believe that quotas result in identifying or selecting the best candidate, that quotas are not necessary or advisable, that targets are not an appropriate method to increase diversity, or that the company does not feel a formal diversity policy is necessary.

Next, we record comments provided in the proxy statement regarding the company's stance on board diversity, regardless of whether the firm utilizes a target ratio for female directors. Common statements provided in the proxy statement include those stating that the company respects and values differences, that the firm considers gender diversity in the selection of directors (whether they have an explicit target or not), that the firm is committed to diversity, or that the board generally supports the principal of diversity, with gender being just one aspect of diversity. Some firms note that they have an inclusive culture that respects or encourages diversity, while others explicitly state that skills and experience are most important in board appointments, and that appointments are made based on merit and not based on gender or race.

Firms also discuss the role of the corporate governance committee in board diversity and recruiting. Some firms mention that the search is directed to include a diverse set of candidates, and some explicitly discuss the extent to which the corporate governance committee considers gender diversity. Examples of comments regarding the extent to which the governance committee considers gender diversity include: the corporate governance committee considers gender diversity when nominating directors; the corporate governance committee oversees and evaluates the diversity policy; the corporate governance committee annually reviews the diversity policy; and the corporate governance committee is committed to identifying a diverse candidate pool.

To provide a quantifiable measure of the firm's support of board gender diversity, we create a diversity sentiment index using six common statements found in proxy statements that express support for director gender diversity. This index is intended to capture how favorable the language in the proxy statement is towards board gender diversity. We use the sum of six indicator variables in our index, where each indicator variable equals one if the proxy statement includes the specific statement and zero otherwise. The phrases we track from the proxy

statements are as follows: (1) the firm has an inclusive culture and respects and encourages diversity, (2) the corporate governance committee considers gender diversity in director nomination process, (3) the corporate governance committee reviews the diversity policy annually, (4) the corporate governance committee oversees and evaluates the diversity policy, (5) the corporate governance committee identifies a diverse pool of candidates, and (6) the board directs the search to include a diverse set of board candidates. These phrases capture the sentiment of the firm towards gender diversity, as each indicates a favorable sentiment towards gender diversity (note that the statements are not mutually exclusive). In Table 8 we report the annual values for the index and the percent of firms indicating each of the six statements for proxy statements issued between 2014 and 2018. As shown in the table, firms increasingly express support for directory gender diversity over time, as use of each component of the diversity sentiment index increases substantially over the period. In the next section, we provide more detailed evidence on changes in firms' diversity policies over time.

C.2. Univariate Changes Over Time

Panel A of Figure 5 plots the trajectory of the annual average fraction of firms with a gender diversity policy from 2014 to 2018. This number increased dramatically over the period following the OSC's amendment, from 50% in 2014 to 78% in 2018. Although nearly 80% of firms have a gender policy by 2018, it is important to note that gender diversity policies do not necessarily translate into greater female representation on the board. Indeed, some firms have a gender diversity policy which specifically states they do not consider the level of representation of women on the board. For example, consider the following excerpt from the 2016 proxy statement for Fortuna Silver Mines, Inc.[19]

> *"The Board adopted in early 2015 a Diversity Policy which promotes diversity in the workplace by respecting and appreciating differences in gender, age, ethnic origin, religion, education, sexual orientation, political belief or disability. At Fortuna, we respect and value the perspectives, experiences, cultures and essential differences that our Board, management and employees possess… The Company does not support the adoption of quotas to support its Diversity Policy and therefore does not generally consider the level of representation of women on the Board…. For the same reason, the Company has not adopted a target number or percentage of women for representation on the Board…. The Board and management, however, actively consider all qualified female and diverse candidates in the selection criteria for all positions throughout the Company. The Company does not currently have any directors or executive officers who are women."*

[19] See page 36 of Fortuna Silver Mines, Inc. 2016 proxy circular (retrieved from https://www.sedar.com/).

Other firms are slow to adopt a Diversity Policy. For example, as late as 2017, Osisko Mining Corporation states that it does not have a Diversity Policy, and, in fact, specifically notes in the 2017 proxy statement that it does not consider the level of representation of women on the board:[20]

> *"While the Board and the CG&N Committee recognize the potential benefits from new perspectives that could manifest through greater gender diversity and recognizes that diversity can enhance culture and create value for the Corporation and its stakeholders, the Corporation has not formally adopted a written diversity policy and, given the size and stage of development of the Corporation, the Board and the CG&N Committee do not at this time formally consider the level of representation of women on the board or in senior management when identifying candidates for such positions."*

Panel B of Figure 5 plots the evolution of the percentage of firms indicating they do not consider gender diversity in their director nomination process. As shown, a minority of firms specifically note that they do not consider gender diversity in director nominations, with only 11% of firms indicating so in their 2014 proxy statements. Over the sample period, the proportion declines by 36% so that, by 2018 only 7% of firms specifically indicate that they do not consider gender diversity in director nominations.

On the other end of the spectrum, some firms not only state that they consider gender diversity in board nominations, but they specifically set a target goal for female board representation. Continuing the example above, Osisko Mining Corporation, which did not consider gender in board nominations as late as 2017, not only adopted a Diversity Policy in 2018, but in that same year, they included an aspirational target for female board representation:[21]

> *"On November 9, 2018, the Board adopted a Diversity Policy (the "Diversity Policy"). The purpose of the Diversity Policy is to communicate the importance that the Corporation places on the diversity of its Board.*
>
> *"The Corporation has set an objective of reaching 40% representation of women on the Board by December 31, 2021…"*

In Panel C of Figure 5, we plot the trajectory of the annual percentage of firms that include a target for female board representation. A larger fraction of firms adopts a targeted quota every year, as evidenced by an increase from 14% in 2014 to 39% in 2018. This 173% increase in firms with a female representation board target is substantial, although we note that,

[20] See page 58 of Osisko Mining Corporation's proxy circular (retrieved from https://www.sedar.com/).
[21] See page 58 of Osisko Mining Corporation's proxy circular (retrieved from https://www.sedar.com/).

as of 2018, about 40% of firms with a gender diversity policy do not include a target for female directors. Fried (2021) argues that comply-or-explain regulations are designed to have a naming and shaming effect such that boards would feel that explaining the lack of diversity is not a feasible alternative to complying. The fact that 40% of firms in 2018 still do not implement gender diversity targets suggests this is not the case.

As mentioned in the previous section, we read annual proxy statements to assess the firm's language regarding board gender diversity and construct a gender diversity sentiment index to summarize the data. Panel D plots the trajectory of annual average diversity sentiment index from 2014 to 2018. As shown in Panel D, firms adopt language that is more favorable toward director gender diversity in their proxy statements over time, including on average only one of these statements in 2014, increasing by 50%, to more than 1.5 statements on average by 2018.

As one might expect, the inclusion of diversity policies, consideration of gender in director nominations, female board target usage, and diversity sentiment differs for firms with and without female directors. Figure 6 presents graphics depicting these items based upon whether or not the firm had at least one female on their board in 2013. As shown in Panel A, fewer than 40% of firms with all-male boards in 2013 had adopted a diversity policy in 2014, while 60% of firms with at least one female director in 2013 had adopted such a policy in 2014. Interestingly, by 2018, the percentage of firms with diversity policies converges to about 78% for both groups, which suggests that the 2014 amendment had the strongest effect on the diversity policies of firms without female board representation prior to the amendment.

As mentioned earlier, adoption of a diversity policy does not mean that the firm considers gender diversity in board nominations. As shown in Panel B, the percentage of firms with all-male boards in 2013 disclosing in their proxy statements that they do not consider diversity in director nominations drops from 17% in 2014 to 11% in 2018 (a 33% relative drop). Among firms with at least one female director on their board in 2013, a much smaller fraction of firms indicate they do not consider gender diversity when nominating their directors (about 4%). This fraction remains almost unaltered between 2014 and 2018. Panel C shows that the annual average percentage of firms that include a targeted ratio of female directors on the board from 2014 to 2018 increases at a substantially faster pace for firms that had all-male boards in 2013 (from 3% in 2014 to 28% in 2018, versus from 24% to 47% for firms with at least one female

director in 2013). Finally, Panel D of Figure 6 shows similar increasing trends in the trajectory of annual average diversity sentiment index from 2014 to 2018 for firms that had at least one female on their boards in 2013, and those that did not. Notably, the average diversity sentiment index is lower in 2014 for firms with all-male boards and, although increasing over time, remains lower in 2018. Overall, the results in Figure 6 point to firms with all-male boards in 2013 gradually closing the gap in terms of the extent of compliance with the intent of the OSC amendment, relative to firms with at least one female director prior to the amendment. We will more formally test the significance of these differences in Section C.4 below.

Beyond policies on board gender diversity, the final OSC amendment also included two other components: director term limits and an executive gender diversity policy. Although we observe large variations in outcomes regarding board gender diversity in sample firms over time, we do not find much time-series variation in these other elements of the regulation. By 2018, 75% of the firms in our sample do not include a director term limit and say that they do not believe term limits are effective. This is only 7% lower than the similar statistic in 2014. Similarly, about 6% of firms in 2018 indicate the adoption of a target for number of female top executives, which is largely unchanged over the sample period. We posit that this may be due to the higher economic costs associated with replacing top executives relative to directors.

Although Figures 5 and 6 provide interesting univariate descriptive statistics on changes in board diversity issues following the OSC amendment, they do not control for cross-sectional differences that might explain their use. Thus, we provide multivariate regressions to provide insights into why firms respond differently following implementation of the OSC amendment.

C.3. Multivariate Analyses of Determinants of Compliance

The figures in the previous section demonstrate that sample firms are increasingly likely over time to adopt policies that improve board gender diversity. Moreover, we find this increasing trend even for firms with all-male boards before the amendment. In this section, using data from 2014-2018, we study cross-sectional differences in changes in board gender diversity following the OSC amendment and the firm characteristics that may explain whether firms choose to comply with greater board gender diversity, or to explain.

We posit that firms facing greater economic frictions to identify and appoint female directors will be less likely to implement board gender diversity practices. We capture such

frictions with variables related to the local supply of female directors: (1) the fraction of corporate boards consisting of female directors in the province in which a firm is headquartered, and (2) the mean of the number of interlocks of a board's directors with female directors of other boards. We posit that the greater the supply of female directors in the province, or the more connected the board is to female directors at other firms, the greater the likelihood the firm will embrace gender diversity policies following the OSC amendment.

Beyond supply frictions, we conjecture that a firm's culture may be influenced by others within its network. In this sense, we posit that firms with directors who have interlocks with directors at other firms which have already implemented board diversity practices will be more likely to implement board diversity practices themselves. Specifically, we include the following network variables to capture the influence of director networks on a board's diversity policy: (1) the number of board interlocks with directors of other firms that consider gender diversity in board nominations and (2) the number of board interlocks with directors of other firms with female target board quotas.

Finally, we posit that firms whose management is shielded from market pressures may be more likely to eschew board diversity practices and are, thus, more likely to explain rather than comply. To capture whether management is more likely shielded from market pressures, we consider whether the firm is a controlled corporation, measured by whether it has dual class voting shares or is closely held (with closely-held shares exceeding >30% of shares outstanding), and we control for the fraction of the board that is independent. In addition to these variables of interest, we also control for board characteristics such as board size, board age (the average age of the directors), board tenure (the average tenure of the directors), the average degree centrality of a board's directors (measured by the number of other directorships ever held by the firm's directors),[22] and we include firm characteristics such as total assets, market-to-book assets, return-on-assets, debt/assets. All specifications include year and one-digit-SIC industry fixed effects.

We present the results of multivariate logistic regressions in Table 9.[23] First, in model 1 of Panel A, we study the determinants of firms' inclusion of a formal gender diversity policy in

[22] Alternatively, we estimate degree centrality of a director using the number of other directorships "currently" held by the director. The results remain unchanged.

[23] The estimates of economic significance for logistic regressions in this section are based on marginal effects computed with all other variables held fixed at their means.

the proxy statement after the implementation of the amendment. We find that controlled corporations are less likely to include a formal gender diversity policy: having closely held shares or dual class voting shares is associated with a 9.4 percentage point decrease in the likelihood of having a formal gender diversity policy.[24]

We find that connections via board interlocks with female directors of other boards is significantly positively associated with inclusion of a formal gender diversity policy: a one standard deviation increase in the average interlock with female directors is associated with 9.6 percentage point increase in the likelihood of having a formal diversity policy. It is important to note that inclusion of a formal gender diversity policy does not indicate that the board has become more diverse, as some firms with a formal diversity policy provide explanations for why they do not include more women on the board. Therefore, we next turn our attention to the variation in the extent of compliance with best practices under the OSC amendment.

In model 2, we investigate the determinants for a firm to consider gender diversity in its director nomination process. We find that a one standard deviation increase in the ratio of female directors in the province where a firm is headquartered is associated with an 8.7 percentage point increase in the likelihood of the firm considering gender when nominating directors. This finding is statistically significant at the 5% level. This is consistent with constraints regarding the supply of qualified female directors negatively affecting a firm's decision to consider gender diversity in its director nomination process. However, this finding is also consistent with an omitted variable such as corporate culture negatively affecting both the presence of female executives and directors and the choice of considering female directors among these firms.[25] It is interesting to note that differences in corporate governance do not seem to be associated with whether firms consider gender diversity in the director nomination process.

In model 3, we investigate cross-sectional variation in the use of target female director quotas. We find that firms headquartered in provinces with a higher female director ratio are more likely to have a targeted number of female directors. In contrast, controlled corporations are less likely to have target female director quotas. These results are statistically significant at

[24] This result suggests that firms with weaker corporate governance have a lower level of compliance. Although it is possible that compliance with the regulation is not optimal, this possibility is inconsistent with compliance being lower for firms with weaker corporate governance.

[25] Including firm fixed effects could potentially help rule out the effect of corporate culture. However, our key variables such as the ratio of ratio of female directors in the province and the dummy for controlled corporations are also largely time invariant.

the 1% level. We also find that larger firms and firms with larger boards are more likely to employ a targeted number of female directors. Finally, we find that connections with firms that have a target quota and with firms with female directors through board interlocks have a positive and statistically significant association with the use of target female director quotas.

The economic significance of these results is as follows. An increase of one standard deviation in the female director ratio among firms headquartered in the same province increases the probability of the use of targeted female director quotas by 11.6 percentage points. This result is consistent with a high cost of access to qualified female directors playing a key role in the use of target quotas to increase female representation in the boardroom. Similarly, board interlocks with other female directors provide better access to a pool of qualified female directors: a one standard deviation increase in the average number of interlocks with other female directors is associated with 4.5% higher likelihood of using a targeted female director quota. Connections through the director's network are an important determinant of target quotas, as a one standard deviation increase in the average number of director interlocks with firms that have a target quota increases the probability of having a target female quota by 10.7 percentage points. We also find that controlled corporations have a 13.5 percentage point lower probability of targeting a specific number of female directors on their boards, suggesting that agency problems may partially explain why some firms avoid female director quotas.

In model 4, we focus our analysis on the subsample of firms that indicate in their proxy statement that they do not employ a target quota for female directors. Among these firms, we investigate which firms indicate that they select directors based on skills and experience or that director appointments are based only on merit. We find that firms with a large fraction of independent directors and more connected directors are more likely to indicate skills and experience (and not gender) as criteria used to nominate their directors (statistically significant at 5% and 1%, respectively). Interestingly, firms headquartered in provinces with a lower ratio of female directors and firms whose boards have a smaller number of interlocks with female directors are more likely to indicate that skills and experience are the key factors in director nominations (statistically significant at the 10% and 5% level, respectively). To summarize, within the subsamples of firms without a female director target quota, it is the better governed firms, those headquartered in provinces with a lower ratio of female directors, and those with better connected directors but with fewer connections to other female directors, which indicate

skill and experience as key variables used in the selection of their directors. These results provide some evidence consistent with the notion that in the presence of principles-based governance, firms are likely to explain the lack of use of target quotas when it is costly for them to attract qualified directors. Moreover, these findings suggest that it is less likely that firms abuse the flexibility afforded by principles-based governance to avoid compliance (e.g., due to agency problems).

Finally, in model 5, we conduct OLS regressions using the diversity sentiment index as the dependent variable. The results show that larger firms, firms headquartered in provinces with a high female director ratio, and those with more connections to directors of firms that include female director targets employ language in their proxy statement that is more favorable towards gender diversity (statistically significant at 5%, 5% and 1% levels, respectively). Conversely, controlled corporations use language that is less favorable toward board diversity. This finding is economically and statistically significant (at 1% level). Controlled corporations have a 0.35 lower diversity sentiment index (26.6% lower relative to the index's mean). In summary, both corporate governance and frictions related to supply of qualified female candidates affect firms' attitude and plans towards board gender diversity.

In Panel B of Table 9, we repeat the analysis and include an indicator for whether a firm is headquartered in the city of Calgary as an alternative proxy for the geographical supply of female directors, as a high proportion of firms in energy and mining, industries with fewer female directors and executives, are headquartered in Calgary. The Calgary indicator replaces the fraction of firms' boards consisting of female directors in the province where a firm is headquartered (Panel A). We do not include both variables because they have a strong positive correlation. The results are largely consistent with those from Panel A, although the Calgary dummy variable is significant only in models 2 and 3. In model 2 we find that firms head-quartered in Calgary are 14.9 percentage points less likely to consider gender diversity when nominating their directors (statistically significant at 5%), and model 3 shows that firms based on Calgary are 13.5 percentage points less likely to adopt a target female board quota (statistically significant at the 1%).

Overall, the findings in Table 9 suggest that economic frictions affecting the cost of access to a pool of eligible female directors, both through geographical proximity and connections within the directors' professional network, are the main determinants of the level of

compliance with OSC's amendment regarding gender diversity policies. However, we also find some evidence consistent with a negative relation between corporate governance quality and firms' level of compliance.

C.4. Cross-sectional Differences in Changes over Time

The results in the prior sections show that diversity policies have evolved in Canada in the years following the OSC amendment in 2014. However, without a control group upon which to compare, it is difficult to ascertain whether the evolution of diversity policies in Canada was a result of the OSC amendment, or of a more general improvement in diversity policies and disclosure over time. To help ascertain whether the OSC amendment had a real effect on board diversity policies, we compare the evolution of diversity policies for firms in 2013 with all-male boards, which might be viewed as being the least female-friendly, to those with at least one female director in 2013, which might be viewed as being more female-friendly. If the OSC amendment had a real effect, it should differentially affect the least female-friendly firms. Therefore, to better assess whether the improvements in board diversity can be attributed to the OSC amendment, we investigate whether firms with all-male boards prior in 2013 saw increased adoption of board gender diversity policies following the 2014 OSC amendment relative to firms with at least one female director in 2013.

We conduct this analysis by comparing the diversity policies in 2018 and 2014 for firms with all-male boards and those with at least one female director in the pre-regulation period (i.e., 2013). There are several reasons for why we set up the tests in this way. First, the focus on 2014 as the base year (instead of 2013) is motivated by the fact that disclosure of board gender diversity policies was not mandatory in 2013. Thus, we are able to avoid our results potentially being an artifact of selective disclosure in 2013.[26] Moreover, board gender diversity policies are adopted gradually between 2014-2018 (see Figures 5 and 6), which implies that most firms are unlikely to have immediately adopted a board gender diversity policy in 2014. Second, firms that comply with OSC's amendment in their board gender diversity policies do not reverse them in the ensuing years. Therefore, we do not lose interesting within-firm variation by omitting 2015-2017.

[26]Many of the variables of interest in this analysis rely on how firms comply or explain in reaction to the amendment. For example, firms that had board gender diversity policies pre-regulation (i.e., before 2014) generally did not explain any non-compliance. This makes comparing firms in the pre-amendment period to the post-amendment period less informative and further supports focusing on the post-amendment period (2014 and 2018).

The regressions in Table 10 are akin to a difference-in-differences analysis, as they allow us to test for changes in compliance with the OSC amendment (e.g., whether the firm has a target female board quota, whether the firm has a formal diversity policy, etc.) following the regulation, by comparing firms with all-male boards in 2013 (pre-regulation) to those with at least one female director in 2013. The dependent variables and control variables are similar to those in Table 9. Confirming the visual evidence in Figure 6, we find positive and statistically significant DiD coefficients on the All-Male $\text{Board}_{2013} \times 2018$ Dummy interaction term in three of the specifications in Table 10. This implies that the likelihood of adopting a target female quota, a formal diversity policy, and considering gender diversity in board nominations increased more between 2014 and 2018 for firms with all-male boards in 2013 relative to those with at least one female director in 2013.

These results are interesting, as they suggest that the regulation affected firms with all male boards in 2013 (i.e., less female-friendly firms) more, to the extent that the changes in their compliance from 2014 to 2018 exceeds that of firms in 2013 with at least one female director (i.e., more female-friendly firms). As shown graphically in Figure 6, firms with all-male boards in 2013 start at a lower level of compliance in 2014, but by 2018 they close the gap relative to firms that had at least one female director in 2013. Table 10 shows that these results are statistically significant. This suggests that the compliance levels of the two sets of firms do converge over time. Importantly, the variation in these tests comes from within the cross-section of Canadian firms and is not dependent on the use of U.S. firms as a control group. This evidence suggests that the OSC regulation did have a real effect on the evolution of gender diversity policies for Canadian boards.

V. Conclusion

The results in our paper indicate that a principles-based approach achieves the broad objective of increased female board representation while potentially mitigates some of the costs of complying with rules-based approaches. Although the flexibility afforded to firms regarding board gender diversity allows firms the choice not to comply, we find that 94% of firms in our sample included female directors on their boards in 2018, compared with only 56% before the OSC announcement. Moreover, when we compare our sample firms with matched U.S. firms, we find that the ratio of female directors in Canada increased significantly more than for similar U.S. firms during the same period. We find that firms less likely to comply are those that face

economic constraints in finding qualified female directors.

In contrast to the negative market reaction observed for approaches mandating board diversity, such as in Norway and California, we find that, for firms most affected by the ruling, market returns were significantly positive upon the announcement of the principles-based regulation in Canada. This, combined with the evidence suggesting that Canadian firms significantly increased board diversity following the ruling, suggests that the comply-or-explain provision has had an impact in encouraging board gender diversity in Canada. At a higher level, our findings suggest that in settings where firms face a heterogeneous costs of complying, as in the case of the director gender diversity regulation studied in this paper, a principles-based approach is less costly to shareholders than a prescriptive rules-based regulation.

The results of this paper speak to important policy issues. Whether a rules-based approach such as those approved by California in 2018 and by the European Union in 2022, or a principles-based approach, such as the OSC's amendment we study, or the new Nasdaq proposal recently approved by the SEC, is best depends on the regulator's objective. If the objective is to increase board diversity at any cost, a prescriptive mandate is likely to be most effective because a mandate allows the regulator to prescribe and enforce a board diversity target However, prescriptive mandates may not be appropriate for all firms, as the costs of complying may be prohibitively high for some firms. Moreover, given recent court rulings invalidating the California mandate, prescriptive mandates may not be legally feasible in the United States. Our results demonstrate that a principles-based, "comply or explain", regulation such as that put forward in 2014 by the OSC can have the desired effect of increasing board diversity, while giving firms the opportunity to select the optimal policy for themselves based on their individual benefits and costs of complying.

The Nasdaq principles-based proposal recently approved by the SEC aimed at improving board diversity is similar to the OSC amendment in that it gives firms the choice to comply or explain. However, the Nasdaq proposal is more prescriptive than the OSC amendment in how it defines compliance, and it encompasses a broader definition of diversity than the OSC amendment. The significant impact of the OSC amendment on female representation on Canadian boards is especially noteworthy given its relative leniency – unlike the Nasdaq proposal, the OSC amendment does not require a specific threshold but instead recommends that firms have a target gender quota. The impact of having a more prescriptive and restrictive

definition of compliance under a principles-based approach is ambiguous. On one hand, it could result in a larger increase in female representation if an appropriate target ratio is prescribed. On the other hand, it is also likely to raise the cost of complying, leading more firms to explain rather than complain. Given the relative leniency of the OSC amendment, our findings may be viewed as a lower bound on the impact and costs of a principles-based approach to increasing director gender diversity.

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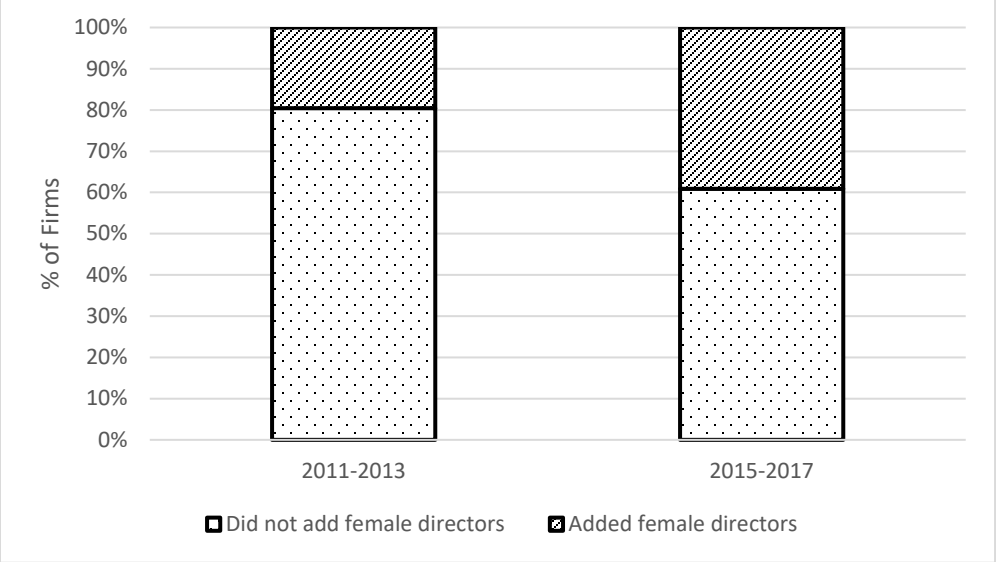
Figure 1 – Changes in Female Directorships

This figure presents data on female directorships for firms included in S&P TSX Composite Index at any point between 2010 and 2016, with directorship data in BoardEx and financial data in Compustat. Panel A reports the fractions of firms in the sample that added and did not add any female directors during the 2011-2013 and 2015-2017 periods. Panel B reports the fraction of firms that added and did not add female directors during the 2015-2017 period, for firms that had at least 1 female director in 2013 and firms that no female directors in 2013.

Panel A. Percentage of Firms Adding Female Directors



Panel B. Percentage of Firms Adding Female by Presence of Female Directors in 2013

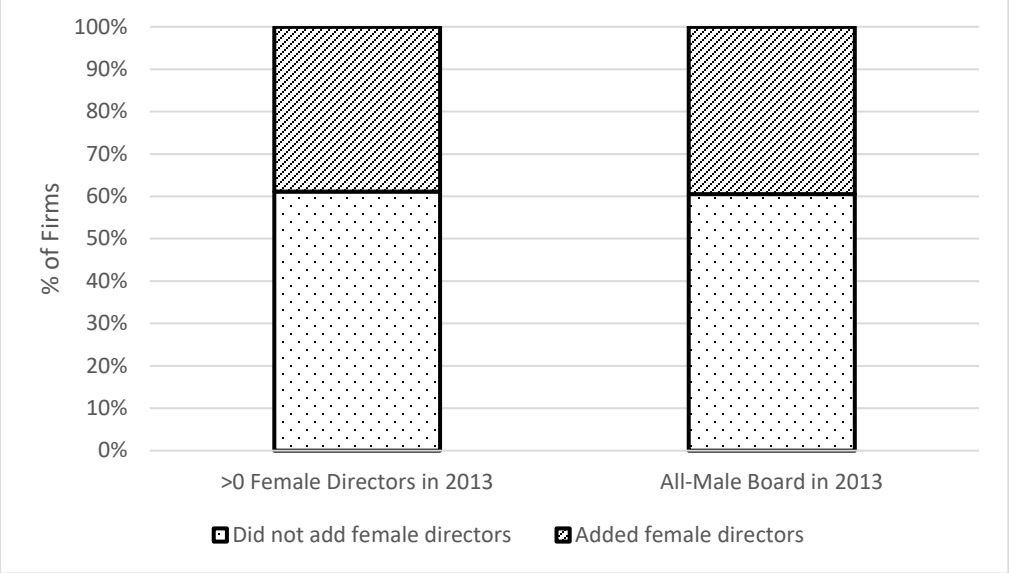
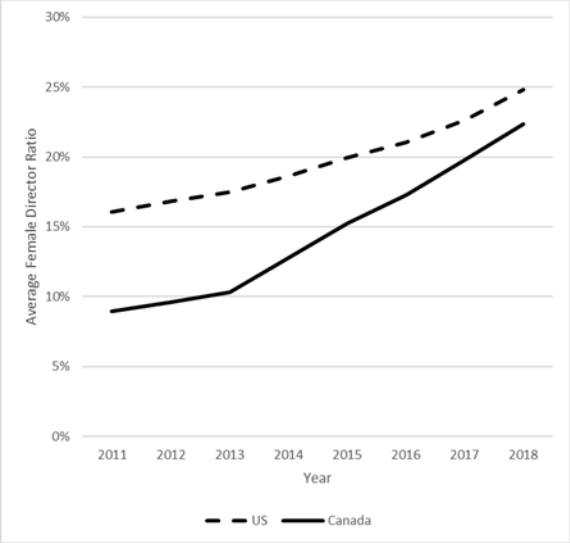


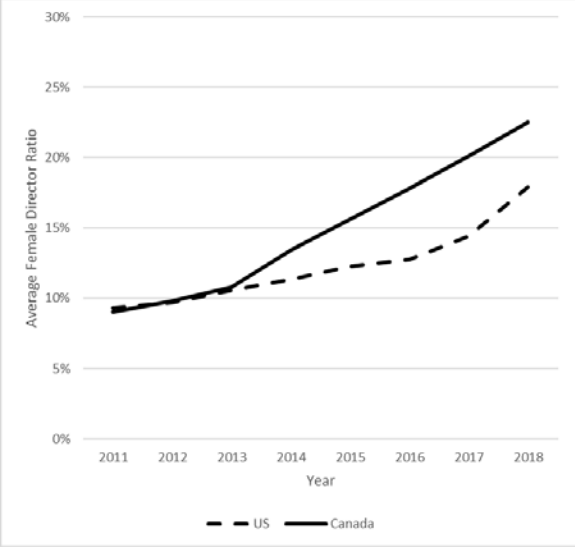
Figure 2 – Comparison of Changes in Female Director Ratios in Canada and the U.S.

This figure presents data on female directorships for Canadian firms included in S&P TSX Composite Index at any point between 2010 and 2016 and a comparison group of U.S. firms, with directorship data in BoardEx and financial data in Compustat, over the 2011-2018 period. The graphs plot the average fraction of firms' boards consisting of female directors each year. Panel A reports data for Canadian firms and U.S. firms that were included in the S&P 500 index at any point between 2010 and 2016. Panel B reports data for Canadian firms and a matched sample of U.S. firms, each selected from within the same 1-digit SIC industry as and are closest in total assets to the corresponding Canadian firm in 2013 (only Canadian firms with a match available are included). Panel C reports data for Canadian firms that are cross-listed on a U.S stock exchange and a matched sample of U.S. firms, each selected from within the same 1-digit SIC industry as and are closest in total assets to the corresponding Canadian firm in 2013 (only Canadian firms with a match available are included).

Panel A. Comparison of Canadian S&P TSX Firms and U.S. S&P 500



Panel B. Comparison of Canadian S&P TSX and U.S. Matched Firms



Panel C. Comparison of Canadian S&P TSX ADRs and U.S. Matched Firms

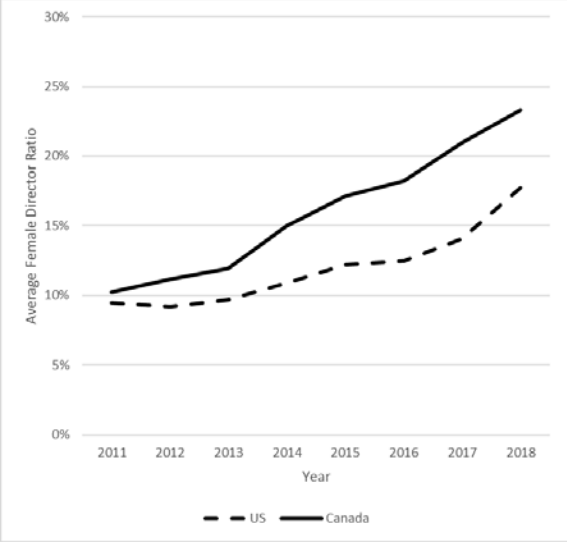


Figure 3 – Dynamic Model of Year-on-Year Changes in the Female Director Ratios of Canadian Firms

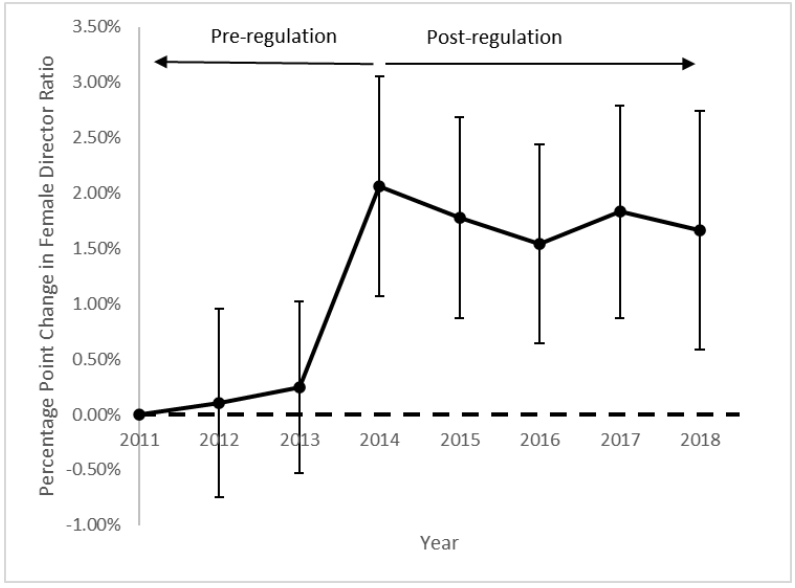
This figure plots coefficient estimates and the 95% confidence intervals from the following regression specifications:

$$\text{Panel A: } \Delta Female\ Director\ Ratio_{i,t} = \alpha + \sum_{j=2012}^{2018} \theta_j \cdot \times \mathbb{1}[Year = j] + \varphi_{i,t} \cdot Controls + \gamma_i + \varepsilon_{i,t}$$

$$\text{Panel B: } \Delta Female\ Director\ Ratio_{i,t} = \alpha + \sum_{j=2012}^{2018} \beta_j \cdot All\ Male\ Board_{i,2013} \times \mathbb{1}[Year = j] + \sum_{j=2012}^{2018} \theta_j \cdot \times \mathbb{1}[Year = j] + \varphi_{i,t} \cdot Controls + \gamma_i + \varepsilon_{i,t}$$

The sample consists of Canadian firms included in S&P TSX Composite Index at any point between 2010 and 2016 with directorship data in BoardEx and financial data in Compustat, over the 2011-2018 period. The observations are at the firm-year level with *i* indexing firms and *t* indexing calendar years. The dependent variable is the percentage point change in the fraction of a firm's board consisting of female directors between the current year, *t*, and the previous year, *t-1*. "All-Male Board$_{2013}$" is an indicator equal to 1 if a firm has no female directors in 2013. Control Variables consist of Log(Assets), Market-to-Book Assets, ROA and Debt/Assets. All variables are defined in Table A.1. Firm fixed effects (γ_i) are included. The omitted year in the specifications, and thus the benchmark year, is 2011. The graph in Panel A displays the coefficient estimates θ_j of the percentage point change in the female director ratio in each year, relative to 2011. The graph in Panel B displays the coefficient estimates β_j of the difference between the change in the female director ratio for firms with all-male boards and firms with female directors, relative to 2011. The post-regulation period is years 2015 onward. The error bars indicate 95% confidence intervals for the coefficient estimates.

Panel A. Year-on-Year Change in Female Director Ratio



Panel B. Difference in Year-on-Year Change in Female Director Ratio between Firms with All-Male Boards and Firms with Female Directors

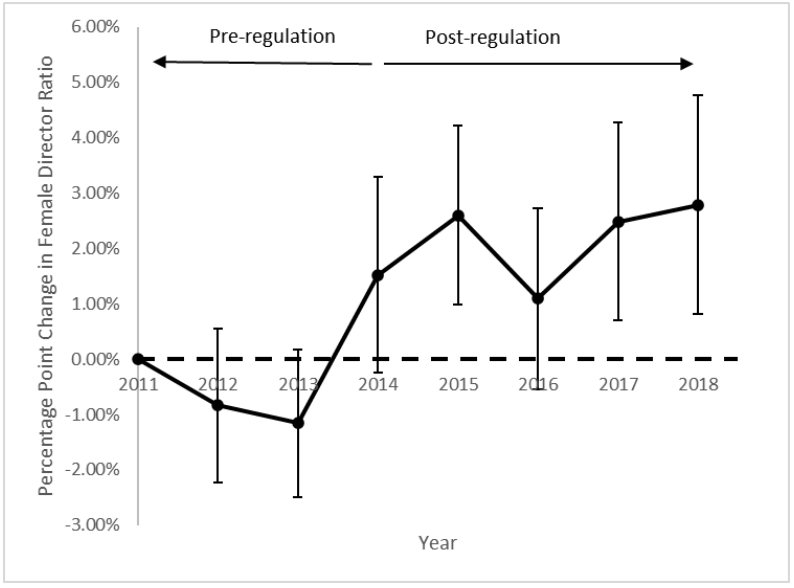
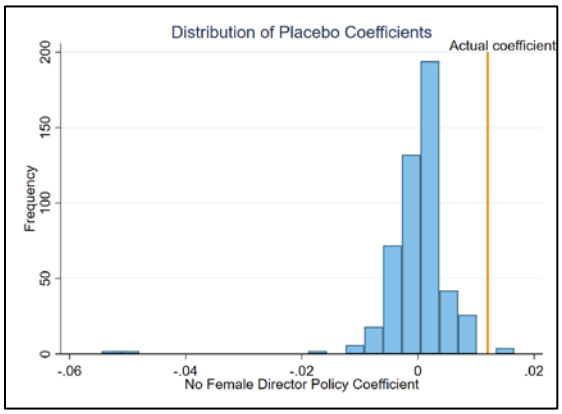


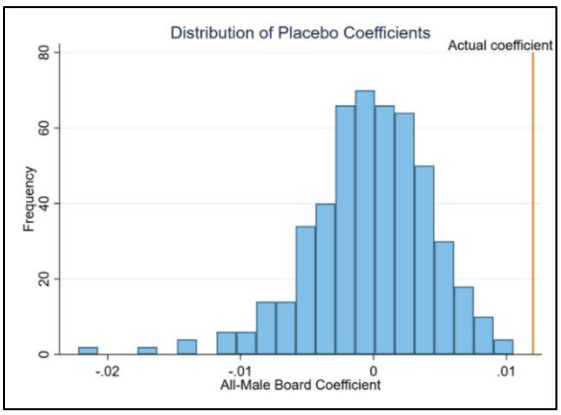
Figure 4 – Distribution of Placebo Regression Coefficients for CARs around the OSC's Announcement

This figure presents the distribution of placebo OLS regression coefficients examining cross-sectional differences in the cumulative abnormal returns (CARs) around July 30, 2013 – when the Ontario Securities Commission announced proposed rules requiring the disclosure of policies promoting the representation of females on boards of directors. The sample consists of firms that are included in S&P TSX Composite Index at any point between 2010 and 2016, with directorship data in BoardEx and financial data in Compustat. The observations are at the firm-level. The dependent variable is the (0,+1) window CAR. CARs are computed using standard event study methodology with a 4-factor return model (Fama and French, 1993, Carhart, 1997) and a 250-day estimation window ending on day -30, with at least 60 observations. Data on firms' daily stock returns are obtained from Datastream. Data on Canadian factor returns are obtained from AQR Capital Management. "No Female Director Policy$_{2013}$" (Panel A) is an indicator equal to 1 if a firm discloses that they have a policy regarding the representation of females on the board in 2013. "All-Male Board$_{2013}$" (Panel B) is an indicator equal to 1 if a firm has no female directors in 2013. "Male Director Ratio$_{2013}$" (Panel C) is the fraction of the board consisting of male directors in 2013. Industry fixed effects at the 1-digit SIC level are included. Each day in the period between days -300 and +300 relative to the announcement of 10D-1 on July 1, 2015, excluding days -50 to +50 is considered as a placebo announcement date (500 placebo dates in total). For each placebo date, we compute the CARs using the same methodology above with the same estimation window relative to the placebo date (e.g. for the placebo announcement on day -300, the estimation window used is -580 to -231). Models (1), (3) and (5) from Table 4 are then estimated with the CAR for each placebo date used as the dependent variable in place of the CAR for the actual announcement to obtain 500 placebo coefficients for each model. *t*-statistics are computed using heteroscedasticity-consistent standard errors. The actual event date coefficients are from models (1), (3) and (5) of Table 4.

Panel A. Placebo Coefficients for Firms with No Female Director Policy



Panel B. Placebo Coefficients for Firms with All-Male Boards



Panel C. Placebo Coefficients for Fraction of the Board

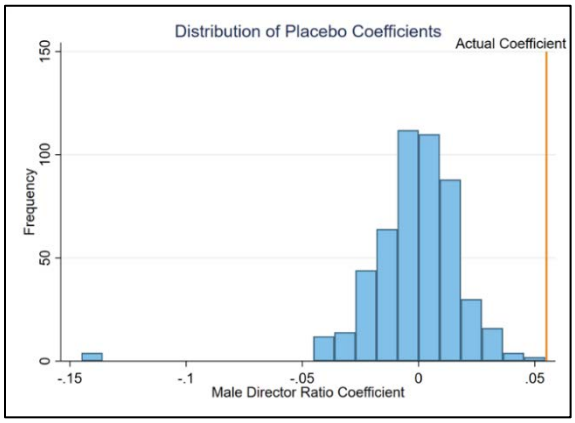
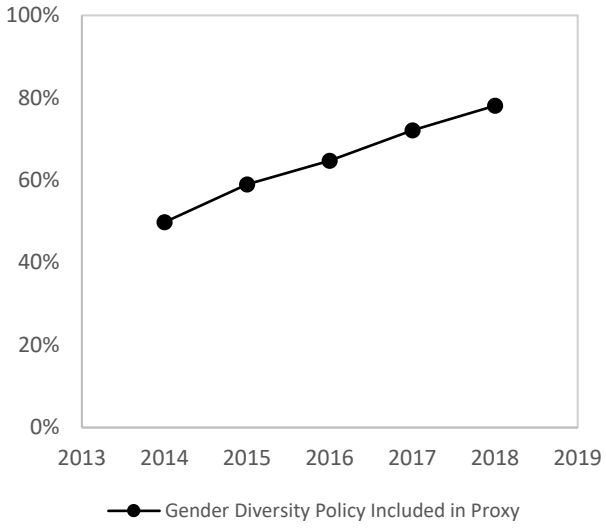


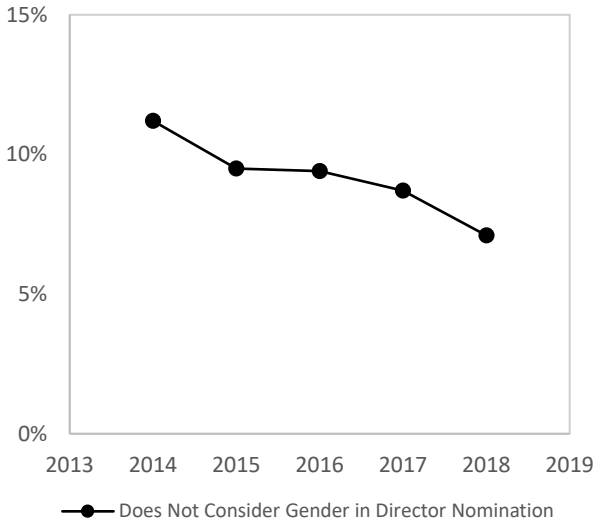
Figure 5 – Gender Diversity Policy in Canada Following the OSC's Amendment

This figure presents data on Gender Diversity Policy for Canadian firms included in S&P TSX Composite Index at any point between 2010 and 2016, with directorship data in BoardEx and financial data in Compustat, over the 2014-2018 period. In Panel A the graph plots the average fraction of firms with gender diversity policy each year. In Panel B the graph plots the average fraction of firms that do not consider gender diversity in their director nomination process. In Panel C the graph plots the average fraction of firms with disclosed targeted number of women directors each year. In Panel D the graph plots the diversity sentiment index (see section C for the definition of the index).

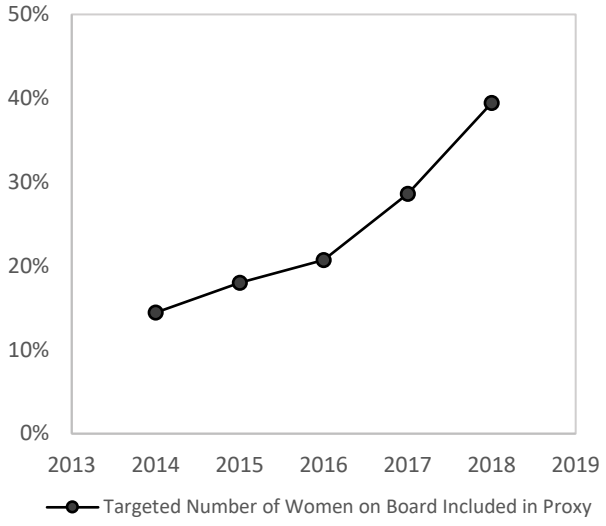
Panel A. Percent with a Formal Gender Diversity Policy



Panel B. Percent that Do Not Consider Gender Diversity



Panel C. Percent with Female Director Target Ratio



Panel D. Diversity Sentiment Index Scores

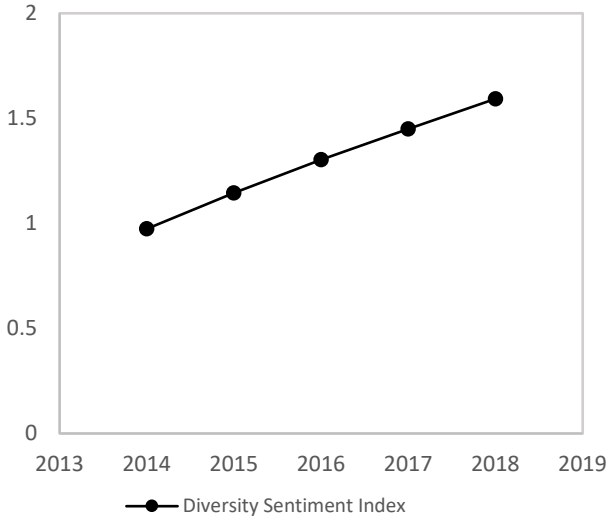
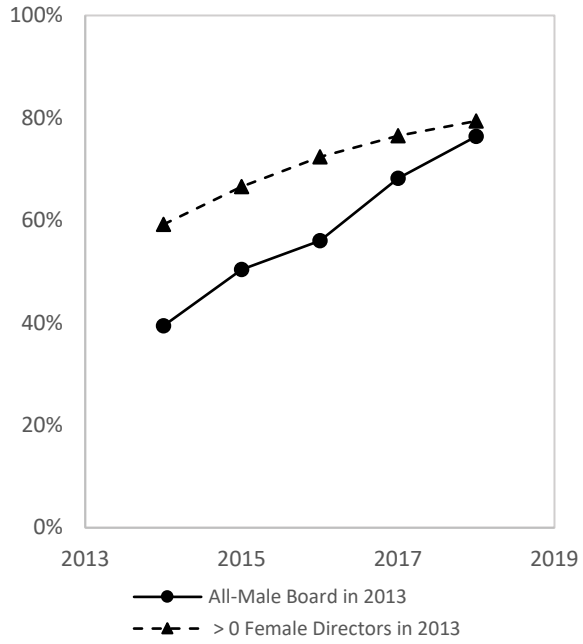


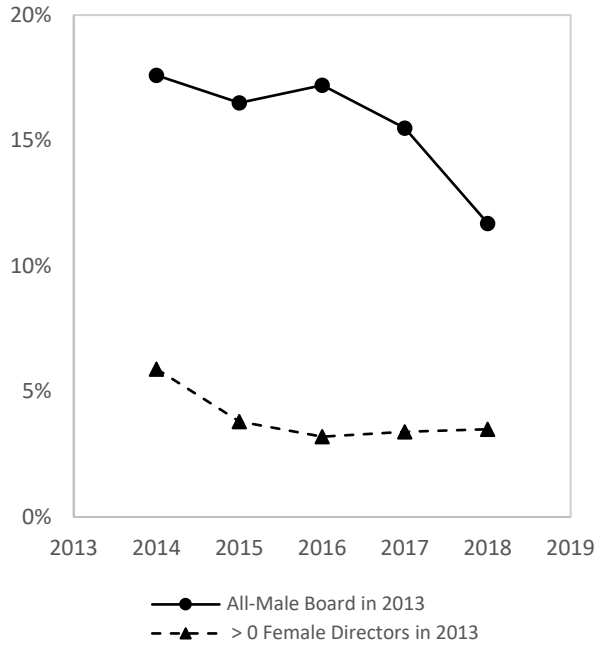
Figure 6 – Gender Diversity Policy in Canada Following OSC's Amendment, by Whether Firm had Female Directors in 2013

This figure presents data on Gender Diversity Policy for Canadian firms included in S&P TSX Composite Index at any point between 2010 and 2016, with directorship data in BoardEx and financial data in Compustat, over the 2014-2018 period. In Panel A the graph plots the average fraction of firms with gender diversity policy each year. In Panel B the graph plots the average fraction of firms that do not consider gender diversity in their director nomination process. In Panel C the graph plots the average fraction of firms with disclosed targeted number of women directors each year. In Panel D the graph plots the diversity sentiment index (see section C for the definition of the index). The solid lines represent firms with all-male boards in 2013 and the dashed lines represent firms with at least one female director in 2013.

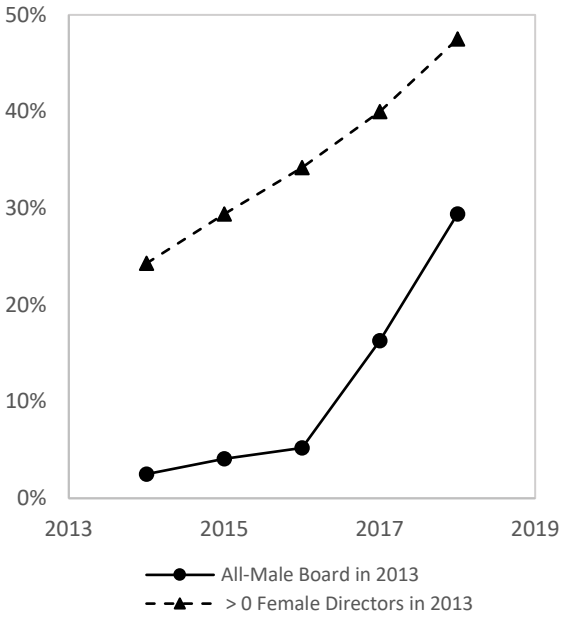
Panel A. Percent with a Formal Gender Diversity Policy



Panel B. Percent that Do Not Consider Gender Diversity



Panel C. Percent with Female Director Target Ratio



Panel D. Average Diversity Sentiment Index Score

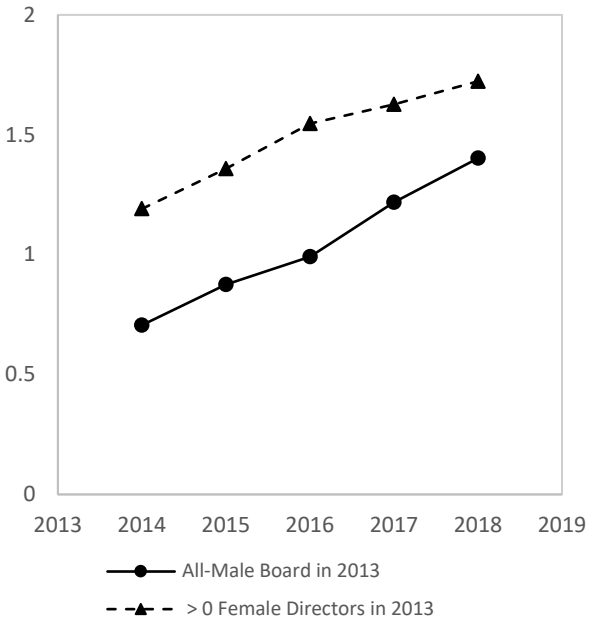


Table 1 – Regression Analysis of Changes in Female Directorships

This figure reports estimates from OLS regressions examining changes in female directorships for firms that are included in S&P TSX Composite Index at any point between 2010 and 2016, with directorship data in BoardEx and financial data in Compustat. The sample period is 2011 to 2017. The observations are at the firm-year level. The dependent variable is the fraction of a firm's board consisting of female directors. In model (1), the sample consists only of Canadian firms. In model (2), the sample consists of Canadian firms and U.S. firms that were included in the S&P 500 index at any point between 2010 and 2016. In model (2), the sample consists of Canadian firms and a matched sample of U.S. firms, each selected from within the same 1-digit SIC industry as and are closest in total assets to the corresponding Canadian firm in 2013 (only Canadian firms with a match available are included). In model (4), the sample consists of Canadian firms that are cross-listed on a U.S. stock exchange and a matched sample of U.S. firms, each selected from within the same 1-digit SIC industry as and are closest in total assets to the corresponding Canadian firm in 2013 (only Canadian firms with a match available are included). Post-2014 is an indicator equal to 1 in years 2015 onward. Year fixed effects are included in all specifications except for model (1). Firm fixed effects are included in all specifications. All other variables are defined in Table A.1. Standard errors are reported in parentheses and are clustered at the firm-level. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

Dependent Variable:	**Female Director Ratio**			
Sample:	**Canada Only**	**Canada & U.S. S&P 500**	**Canada & U.S. Matched**	**Canada ADR & U.S. Matched**
	(1)	(2)	(3)	(4)
Post-2014	0.066***			
	(0.004)			
Canadian Firm × Post-2014		0.032***	0.043***	0.038***
		(0.005)	(0.008)	(0.013)
Log(Assets)	0.013*	0.003	0.004	-0.002
	(0.007)	(0.005)	(0.006)	(0.006)
Market-to-Book Assets	0.005	0.001	0.004**	0.007
	(0.003)	(0.002)	(0.002)	(0.005)
Return-on-Assets	0.003*	0.002	0.001	0.006
	(0.002)	(0.002)	(0.002)	(0.006)
Debt/Assets	0.022	-0.001	-0.022*	0.030
	(0.016)	(0.015)	(0.011)	(0.027)
Constant	-0.012	0.142***	0.094**	0.134**
	(0.059)	(0.048)	(0.047)	(0.057)
Year Fixed Effects	No	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
Observations	1904	5531	3185	1136
Adjusted R-squared	0.289	0.254	0.271	0.258

Table 2– Regression Analysis of Changes in Female Executive Positions

This table reports estimates from OLS regressions examining changes in female named executive officer positions for firms that are included in S&P TSX Composite Index at any point between 2010 and 2016, with directorship data in BoardEx and financial data in Compustat. The sample period is 2011 to 2017. The observations are at the firm-year level. The dependent variable in Panel A is the fraction of top 5 named executive officers, listed in the proxy circular for the relevant fiscal year, who are female. The dependent variable in Panel B is an indicator for whether a firm's CEO is female. In model (1), the sample consists only of Canadian firms. In model (2), the sample consists of Canadian firms and U.S. firms that were included in the S&P 500 index at any point between 2010 and 2016. In model (2), the sample consists of Canadian firms and a matched sample of U.S. firms, each selected from within the same 1-digit SIC industry as and are closest in total assets to the corresponding Canadian firm in 2013 (only Canadian firms with a match available are included). In model (4), the sample consists of Canadian firms that are cross-listed on a U.S. stock exchange and a matched sample of U.S. firms, each selected from within the same 1-digit SIC industry as and are closest in total assets to the corresponding Canadian firm in 2013 (only Canadian firms with a match available are included). Post-2014 is an indicator equal to 1 in years 2015 onward. Year fixed effects are included in all specifications except for model (1). Firm fixed effects are included in all specifications. All other variables are defined in Table A.1. Standard errors are reported in parentheses and are clustered at the firm-level. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

Panel A:				
Dependent Variable:	**Female Executive Ratio**			
Sample:	**Canada Only**	**Canada & U.S. S&P 500**	**Canada & U.S. Matched**	**Canada ADR & U.S. Matched**
	(1)	(2)	(3)	(4)
Post-2014	0.027***			
	(0.007)			
Canadian Firm × Post-2014		0.003	0.019*	0.009
		(0.008)	(0.011)	(0.010)
Log(Assets)	-0.008	0.002	0.018	-0.005
	(0.010)	(0.008)	(0.011)	(0.004)
Market-to-Book Assets	0.004	-0.000	-0.001	-0.004
	(0.004)	(0.003)	(0.007)	(0.003)
ROA	0.001	-0.000	-0.003	0.001
	(0.003)	(0.003)	(0.004)	(0.002)
Debt/Assets	-0.021	-0.006	0.019	0.001
	(0.029)	(0.023)	(0.016)	(0.007)
Constant	0.137*	0.068	-0.083	0.078**
	(0.080)	(0.071)	(0.098)	(0.036)
Year FE	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Observations	1866	5478	3045	1111
Adjusted R-squared	0.026	0.022	0.023	0.030

Table 2 – Regression Analysis of Changes in Female Executive Positions continued.

Panel B:				
Dependent Variable:	**Female CEO Indicator**			
Sample:	**Canada Only**	**Canada & U.S. S&P 500**	**Canada & U.S. Matched**	**Canada ADR & U.S. Matched**
	(1)	(2)	(3)	(4)
Post-2014	0.008			
	(0.006)			
Canadian Firm × Post-2014		-0.006	0.009	-0.009
		(0.008)	(0.010)	(0.012)
Log(Assets)	-0.013*	-0.004	-0.005	-0.005
	(0.007)	(0.009)	(0.004)	(0.004)
Market-to-Book Assets	-0.006	-0.000	-0.004	-0.012
	(0.004)	(0.004)	(0.003)	(0.011)
ROA	0.004	0.000	0.001	0.007
	(0.003)	(0.003)	(0.002)	(0.010)
Debt/Assets	-0.003	-0.003	0.001	0.000
	(0.017)	(0.022)	(0.007)	(0.015)
Constant	0.140**	0.085	0.078**	0.077
	(0.058)	(0.084)	(0.036)	(0.050)
Year FE	No	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Observations	1866	5478	3045	1111
Adjusted R-squared	0.006	0.003	0.000	0.004

Table 3 – Univariate Analysis of CARs around the OSC's Announcement

This table reports summary statistics for cumulative abnormal returns (CARs) around July 30, 2013, when the Ontario Securities Commission announced proposed rules requiring the disclosure of policies promoting the representation of females on boards of directors. The sample consists of firms that are included in S&P TSX Composite Index at any point between 2010 and 2016, with directorship data in BoardEx and financial data in Compustat. CARs are computed using standard event study methodology with a 4-factor return model (Fama and French, 1993, Carhart, 1997) and a 250-day estimation window ending on day -30, with at least 60 observations. Data on firms' daily stock returns are obtained from Datastream. Data on Canadian factor returns are obtained from AQR Capital Management. "[No] Female Director Policy in 2013" indicates firms that do [not] disclose that they have a policy regarding the representation of females on the board in 2013. "All-Male Board in 2013" [">0 Female Directors in 2013]" indicates firms that have no [>0] female directors in 2013. *t*-statistics for CARs are computed following Kolari and Pynnönen (2010). ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

Window	**Mean CAR**	***t*-stat**	***p*-value**
	All Firms (N=274)		
(0,0)	0.688%	1.194	0.233
(0,+1)	1.016%	0.923	0.357
(-1,+1)	0.543%	0.634	0.527
	No Female Director Policy in 2013 (N=213)		
(0,0)	0.786%	2.020	0.045
(0,+1)	1.387%	2.092	0.038
(-1,+1)	0.813%	1.345	0.180
	Female Director Policy in 2013 (N=61)		
(0,0)	0.346%	0.078	0.938
(0,+1)	-0.277%	-0.607	0.546
(-1,+1)	-0.401%	-0.517	0.607
	All-Male Board in 2013 (N=127)		
(0,0)	1.115%	2.792	0.006
(0,+1)	2.001%	3.021	0.003
(-1,+1)	1.290%	2.188	0.031
	>0 Female Directors in 2013 (N=147)		
(0,0)	0.319%	0.227	0.821
(0,+1)	0.165%	-0.325	0.745
(-1,+1)	-0.103%	-0.381	0.704

Table 4 – Regression Analysis of CARs around the OSC's Announcement

This table reports estimates examining cross-sectional differences in the cumulative abnormal returns (CARs) around July 30, 2013, when the Ontario Securities Commission announced proposed rules requiring the disclosure of policies promoting the representation of females on boards of directors. The sample consists of firms that are included in S&P TSX Composite Index at any point between 2010 and 2016, with directorship data in BoardEx and financial data in Compustat. The observations are at the firm-level. The dependent variable is the (0,+1) window CAR. CARs are computed using standard event study methodology with a 4-factor return model (Fama and French, 1993, Carhart, 1997) and a 250-day estimation window ending on day -30, with at least 60 observations. Data on firms' daily stock returns are obtained from Datastream. Data on Canadian factor returns are obtained from AQR Capital Management. "No Female Director Policy$_{2013}$" is an indicator equal to 1 if a firm does not disclose that they have a policy regarding the representation of females on the board in 2013. "All-Male Board$_{2013}$" is an indicator equal to 1 if a firm has no female directors in 2013. "Male Director Ratio$_{2013}$" is the fraction of the board consisting of male directors in 2013. "All-Male Board through 2017" is an indicator equal to 1 if a firm has no female directors at any point between 2013 and 2017. Industry fixed effects at the 1-digit SIC level are included. All variables are defined in the Table A.1. Heteroscedasticity-consistent standard errors are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

	CAR(0,+1)							
Dependent Variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
No Female Director Policy$_{2013}$	0.012**	0.012**						
	(0.005)	(0.005)						
All-Male Board$_{2013}$			0.012**	0.012**			0.014***	0.014***
			(0.005)	(0.005)			(0.005)	(0.005)
Male Director Ratio$_{2013}$					0.055**	0.056**		
					(0.022)	(0.023)		
All-Male Board through 2017							-0.011	-0.011
							(0.008)	(0.008)
Log(Assets)	-0.002	-0.002	-0.001	-0.001	-0.001	-0.001	-0.001	-0.000
	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.001)
Market-to-Book Assets		-0.001		-0.002		-0.002		-0.000
		(0.003)		(0.003)		(0.003)		(0.003)
ROA		-0.008		-0.017		-0.016		-0.013
		(0.019)		(0.020)		(0.020)		(0.019)
Debt/Assets		-0.017*		-0.013		-0.016		-0.007
		(0.010)		(0.010)		(0.010)		(0.011)
Constant	-0.000	0.002	-0.003	0.002	-0.045*	-0.042*	-0.009	-0.008
	(0.010)	(0.014)	(0.011)	(0.015)	(0.023)	(0.022)	(0.012)	(0.014)
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	274	274	274	274	274	274	238	238
Adjusted R-squared	0.078	0.074	0.079	0.077	0.078	0.077	0.122	0.113

Table 5 – Sample Summary Statistics

This table reports summary statistics for firm characteristics in 2013 – the fiscal year prior to the Ontario Securities Commission implemented rules requiring the disclosure of policies promoting the representation of females on boards of directors. The sample consists of firms that are included in S&P TSX Composite Index at any point between 2010 and 2016, with directorship data in BoardEx and financial data in Compustat. "[No] Female Director Policy in 2013" indicates firms that do [not] disclose that they have a policy regarding the representation of females on the board in 2013. "All-Male Board in 2013 [>0 Female Directors in 2013]" indicates firms that have no [>0] female directors in 2013. All other variables are defined in Table A.1. Panel A reports data for the sample split based on All-Male Board in 2013 and Panel B reports data based on whether the firm had a Female Director Policy in 2013. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels respectively in the differences in means and medians of the variables in the two groups using the t-test for means and Wilcoxon signed rank-sum test for medians.

Panel A: Summary Statistics for Firms with All-Male Boards and Boards with at Least One Female in 2013

	All-Male Board in 2013 (N=127)		> 0 Female Directors in 2013 (N=147)		Difference	
Variable	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**
Log(Assets)	7.037	6.927	8.613	8.254	1.567**	1.327***
Market-to-Book Assets	1.967	1.228	1.227	1.541	-0.740	0.313
Debt/Assets	0.207	0.189	0.268	0.249	0.061**	0.060**
Return-on-Assets	0.054	0.084	0.079	0.086	0.025	0.002
No Term Limit	0.815	1.000	0.730	1.000	-0.085	0.000
Female Executive Ratio	0.066	0.000	0.068	0.000	0.002	0.000
Controlled Corporation	0.163	0.000	0.314	0.000	0.151**	0.000*

Panel B: Summary Statistics for Firms without and with a Board Diversity Policy in 2013

	No Female Director Policy in 2013 (N=213)		Female Director Policy in 2013 (N=61)		Difference	
Variable	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**
Log(Assets)	8.097	7.900	9.126	8.948	1.029***	1.048***
Market-to-Book Assets	1.740	1.285	1.926	1.607	0.186	0.322
Debt/Assets	0.227	0.215	0.271	0.257	0.044*	0.042*
Return-on-Assets	0.073	0.091	0.077	0.083	0.004	-0.008
No Term Limit	0.857	1.000	0.654	1.000	-0.203*	-0.000*
Female Executive Ratio	0.067	0.000	0.068	0.000	0.001	0.000
Controlled Corporation	0.304	0.000	0.204	0.000	-0.100	0.000

Table 6 – Summary Statistics for Placebo Regression Analysis of CARs around the OSC's Announcement

This table reports summary statistics for placebo OLS regression coefficients examining cross-sectional differences in the cumulative abnormal returns (CARs) around July 30, 2013 – when the Ontario Securities Commission announced proposed rules requiring the disclosure of policies promoting the representation of females on boards of directors. The sample consists of firms that are included in S&P TSX Composite Index at any point between 2010 and 2016, with directorship data in BoardEx and financial data in Compustat. The observations are at the firm-level. The dependent variable is the (0,+1) window CAR. CARs are computed using standard event study methodology with a 4-factor return model (Fama and French, 1993, Carhart, 1997) and a 250-day estimation window ending on day -30, with at least 60 observations. Data on firms' daily stock returns are obtained from Datastream. Data on Canadian factor returns are obtained from AQR Capital Management. "No Female Director Policy$_{2013}$" is an indicator equal to 1 if a firm does not disclose that they have a policy regarding the representation of females on the board in 2013. "All-Male Board$_{2013}$" is an indicator equal to 1 if a firm has no female directors in 2013. "Male Director Ratio$_{2013}$" is the fraction of the board consisting of male directors in 2013. Industry fixed effects at the 1-digit SIC level are included. Each day in the period between days -300 and +300 relative to the announcement of 10D-1 on July 1, 2015, excluding days -50 to +50 is considered as a placebo announcement date (500 placebo dates in total). For each placebo date, we compute the CARs using the same methodology above with the same estimation window relative to the placebo date (e.g., for the placebo announcement on day -300, the estimation window used is -580 to -231). Models (1), (3) and (5) from Table 4 are then estimated with the CAR for each placebo date used as the dependent variable in place of the CAR for the actual announcement to obtain 500 placebo coefficients for each model. *t*-statistics are computed using heteroscedasticity-consistent standard errors. The actual event date coefficients are from models (1), (3) and (5) of Table 4. 5% sig. indicates the fraction of coefficients that are statistically significant at the 5% level. Statistical significance is evaluated using heteroscedasticity-consistent standard errors.

		Placebo Event Dates							
Coefficient (Model)	**Actual Event Date**	**Mean**	**Median**	**SD**	**5th**	**95th**	**5% sig.**	**>0 & 5% sig.**	**>Actual & 5% sig.**
No Female Director Policy$_{2013}$ (model 1)	0.012	0.000	0.001	0.006	-0.007	0.007	6%	4%	0%
All-Male Board$_{2013}$ (model 3)	0.012	0.000	0.000	0.005	-0.008	0.006	5%	1%	0%
Male Director Ratio$_{2013}$ (model 5)	0.055	-0.001	0.000	0.020	-0.029	0.025	3%	1%	0%

Table 7 – Analyses of CARs around Other Announcements

This table reports summary statistics for cumulative abnormal returns (CARs) around other dates related to the OSC's regulation requiring the disclosure of policies promoting the representation of females on boards of directors. CARs are estimated using the (0,+1) window around the announcement dates. The sample consists of firms that are included in S&P TSX Composite Index at any point between 2010 and 2016, with directorship data in BoardEx and financial data in Compustat. CARs are computed using standard event study methodology with a 4-factor return model (Fama and French, 1993, Carhart, 1997) and a 250-day estimation window ending on day -30, with at least 60 observations. Data on firms' daily stock returns are obtained from Datastream. Data on Canadian factor returns are obtained from AQR Capital Management. The event dates are as follows: May 2, 2013 – The release of Ontario budget statement discussing its support for gender diversity on boards and in senior management of corporations. June 14, 2013 – Minister of Finance, Charles Sousa, and the then Minister Responsible for Women's Issues, Laurel Broten, request that the OSC undertake a public consultation process regarding disclosure requirements for gender diversity. January 16, 2014 – OSC releases the Proposed Amendment to Form 58-101 which now includes the addition of disclosure related to director term limits. October 15, 2014 – OSC releases the Notice of Implementation of Amendments to Form 58-101. Panel A reports the results for the entire sample. Panels B, C and D report the results for different subsamples. "[No] Female Director Policy in 2013" indicates firms that do [not] disclose that they have a policy regarding the representation of females on the board in 2013. "All-Male Board in 2013 [>0 Female Directors in 2013]" indicates firms that have no [>0] female directors in 2013. "[No] Term Limits in 2013" indicates firms that do [not] disclose that they have a policy regarding director term limits in 2013. *t*-statistics for CARs are computed following Kolari and Pynnönen (2010). ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

Event Date	**Mean CAR**	***t*-stat**	***p*-value**	**Mean CAR**	***t*-stat**	***p*-value**
Panel A:	All Firms					
May 2, 2013	0.00377	1.053	0.293			
June 14, 2013	0.00475	1.407	0.161			
January 16, 2014	-0.00065	0.238	0.812			
October 15, 2014	0.01155	0.687	0.493			
Panel B:	No Female Director Policy in 2013			Female Director Policy in 2013		
May 2, 2013	0.00488	1.395	0.164	-0.0001	-0.051	0.96
June 14, 2013	0.00495	1.444	0.15	-0.0001	0.952	0.345
January 16, 2014	-0.0022	-0.118	0.906	0.00473	1.418	0.161
October 15, 2014	0.01414	0.953	0.342	0.00256	-0.047	0.963
Panel C:	All-Male Board in 2013			>0 Female Directors in 2013		
May 2, 2013	0.0054	1.147	0.254	0.00236	0.76	0.448
June 14, 2013	0.00547	1.646	0.102	0.00413	0.949	0.344
January 16, 2014	-0.00038	0.379	0.705	-0.00085	0.045	0.964
October 15, 2014	0.01976	1.544	0.125	0.0055	-0.036	0.971
Panel D:	No Term Limits in 2013			Term Limits in 2013		
January 16, 2014	-0.00073	0.149	0.882	-0.00019	0.573	0.57
October 15, 2014	0.01263	1.045	0.297	0.00582	-0.446	0.658

Table 8 – Diversity Sentiment Index (2014-2018)

This table reports the components of the Diversity Sentiment Index following the OSC's diversity regulation. The index is based on six common statements found in firms' proxy statements that express support for director gender diversity and are used increasingly over time. The index is the sum of the indicator variables for each of the six statements where each indicator variable equals one if the proxy statement includes the specific statement and zero otherwise. The annual mean of each indicator variable (i.e., the percent of firms indicating each statement for proxy statements issued each year) and the sum of the indicator variables (i.e., the Diversity Sentiment Index) during the period of 2014 and 2018 are reported.

Diversity Sentiment Index Statement	**2014**	**2015**	**2016**	**2017**	**2018**
1. The company has an inclusive culture/ encourages diversity	19.1%	20.4%	28.0%	31.7%	35.4%
2. The Corporate Governance committee considers gender diversity in board nominations	32.1%	36.7%	40.3%	42.7%	43.8%
3. The Corporate Governance committee reviews the diversity policy annually	22.3%	26.5%	30.5%	34.7%	38.6%
4. The Corporate Governance committee oversees/ evaluates the diversity policy	10.5%	12.0%	12.7%	13.3%	14.3%
5. The Corporate Governance committee is committed to identifying a diverse pool	5.4%	6.3%	8.7%	7.6%	9.6%
6. The search is directed to include a diverse set of candidates.	7.5%	9.1%	10.9%	14.9%	17.1%
Average Diversity Sentiment Index	0.97	1.11	1.31	1.45	1.59

Table 9 – Regression Analysis of Gender Diversity Polices

This table reports estimates examining cross-sectional differences in gender diversity policies following the implementation of the Ontario Securities Commission rules requiring the disclosure of policies promoting the representation of females on boards of directors. The sample consists of Canadian firms that are included in S&P TSX Composite Index at any point between 2010 and 2016, with directorship data in BoardEx and financial data in Compustat. The sample period is 2014 to 2018. The observations are at the firm-level. The regressions in Panel A and Panel B are identical, except that Panel A includes the Province Female Director Ratio, which measures the ratio of female-to-male directors across the province the firm is headquartered in, while Panel B includes a dummy variable for firms headquartered in Calgary, a city known to have few female directors. The dependent variable in model (1) is whether a firm has a formal diversity policy; the dependent variable in model (2) is whether a firm indicates it considers gender diversity in its director nomination; the dependent variable in model (3) is whether a firm includes a gender diversity target quota in its policy. In model (4), the sample is restricted to only firms that do not have a target female director quota, and the dependent variable is whether a firm indicates that it nominates directors based solely on skill and experience. Models (1)-(4) are logistic regressions. Model (5) is an OLS regression, in which the dependent variable is the diversity sentiment index (see section C for the definition of the index). Year and one-digit-SIC industry fixed effects are included in all specifications. All other variables are defined in Table A.1. Standard errors are reported in parentheses and are clustered at the firm-level. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

Table 9 (continued)

Panel A: Multivariate Regressions including a Control for Province Female Director Ratio

Dependent Variable:	**Firm has Formal Diversity Policy**	**Considers Gender Diversity in Board Nominations**	**Target Female Board Quota**	**Selects Directors Based on Skills and Experience**	**Diversity Sentiment Index**
	(1)	(2)	(3)	(4)	(5)
Province Female Director Ratio	1.601	6.720**	13.370***	-6.480*	3.517**
	(3.127)	(3.183)	(3.912)	(3.840)	(1.359)
Interlock with Female Directors	0.382***	-0.036	0.292***	-0.303**	-0.037
	(0.129)	(0.107)	(0.104)	(0.120)	(0.057)
Interlock with Considers Diversity		-0.551			0.446
		(0.741)			(0.379)
Interlock with Target Quota			3.975***		1.373***
			(0.805)		(0.437)
Controlled Corporation	-0.420*	0.136	-0.793***	0.202	-0.313***
	(0.249)	(0.246)	(0.295)	(0.295)	(0.117)
Independent Board	1.829	-1.025	0.559	3.948**	0.935
	(1.551)	(1.500)	(1.955)	(1.593)	(0.677)
Log(Assets)	0.285***	0.099	0.305***	-0.151	0.104**
	(0.107)	(0.103)	(0.115)	(0.131)	(0.047)
Market-to-Book Assets	-0.0014	-0.015	-0.008	-0.0003	-0.002
	(0.003)	(0.011)	(0.010)	(0.003)	(0.001)
Return-on-Assets	-0.280**	0.365*	-0.173	0.044	0.037
	(0.139)	(0.215)	(0.216)	(0.206)	(0.056)
Debt/Assets	-0.006	0.979*	-0.741	1.373*	0.042
	(0.566)	(0.589)	(0.800)	(0.786)	(0.271)
Board Size	0.031	-0.056	0.123*	-0.049	0.012
	(0.060)	(0.061)	(0.063)	(0.069)	(0.028)
Board Degree Centrality	-0.020	0.0063	0.010	0.149***	-0.006
	(0.038)	(0.035)	(0.048)	(0.050)	(0.019)
Board Tenure	0.020	-0.018	-0.098	0.098*	-0.015
	(0.051)	(0.050)	(0.062)	(0.058)	(0.024)
Board Age	0.059	-0.0103	0.012	0.085*	0.004
	(0.036)	(0.038)	(0.050)	(0.045)	(0.017)
Constant	-8.58**	-0.026	-8.586**	-9.980**	-2.378
	(3.37)	(3.545)	(4.171)	(4.319)	(1.527)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	1311	1311	1311	978	1311
Pseudo R^2/Adj. R^2	0.138	0.037	0.299	0.137	0.225

Table 9 (continued)

Panel B: Multivariate Regressions including a Control for Firms Headquartered in Calgary

Dependent Variable:	**Firm has Formal Diversity Policy**	**Considers Gender Diversity in Board Nominations**	**Target Female Board Quota**	**Selects Directors Based on Skills and Experience**	**Diversity Sentiment Index**
	(1)	(2)	(3)	(4)	(4)
Calgary Firm	-0.093	-0.705**	-1.028***	0.173	-0.171
	(0.303)	(0.324)	(0.388)	(0.334)	(0.156)
Interlock with Female Directors	0.394***	-0.009	0.277***	-0.334***	-0.025
	(0.131)	(0.103)	(0.102)	(0.117)	(0.058)
Interlock with Considers Diversity		-0.577			0.387
		(0.746)			(0.390)
Interlock with Target Quota			4.021***		1.406***
			(0.812)		(0.436)
Controlled Corporation	-0.529**	0.206	-0.792***	0.105	-0.325***
	(0.254)	(0.248)	(0.296)	(0.290)	(0.122)
Independent Board	1.855	-0.803	0.455	3.813**	0.866
	(1.599)	(1.513)	(1.997)	(1.594)	(0.715)
Log(Assets)	0.307***	0.138	0.326***	-0.137	0.112**
	(0.111)	(0.106)	(0.113)	(0.128)	(0.050)
Market-to-Book Assets	-0.001	-0.015	-0.009	-0.0006	-0.0015
	(0.003)	(0.011)	(0.010)	(0.003)	(0.001)
Return-on-Assets	-0.247**	0.391*	-0.062	-0.026	0.072
	(0.125)	(0.236)	(0.167)	(0.211)	(0.051)
Debt/Assets	0.213	0.813	-0.443	1.387*	0.058
	(0.568)	(0.614)	(0.803)	(0.791)	(0.286)
Board Size	0.043	-0.069	0.131**	-0.048	0.0159
	(0.061)	(0.062)	(0.064)	(0.067)	(0.029)
Board Degree Centrality	-0.019	-0.006	0.0032	0.157***	-0.008
	(0.039)	(0.035)	(0.048)	(0.051)	(0.019)
Board Tenure	0.013	-0.011	-0.102	0.085	-0.016
	(0.053)	(0.051)	(0.063)	(0.058)	(0.025)
Board Age	0.052	0.0002	0.018	0.072	0.005
	(0.037)	(0.039)	(0.049)	(0.045)	(0.018)
Constant	-8.173**	-0.062	-7.056*	-9.873**	-2.137
	(3.541)	(3.576)	(4.284)	(4.294)	(1.621)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	1311	1311	1311	978	1311
Pseudo R^2/Adj. R^2	0.147	0.038	0.286	0.127	0.215

Table 10 – Changes in Gender Diversity Polices

This table reports estimates of changes in gender diversity policies following the implementation of the Ontario Securities Commission rules requiring the disclosure of policies promoting the representation of females on boards of directors. The sample consists of Canadian firms that are included in S&P TSX Composite Index at any point between 2010 and 2016, with directorship data in BoardEx and financial data in Compustat. The sample in this table includes only 2014 and 2018. "2018 Dummy" is an indicator variable that equals 1 if the observation is in 2018 and zero if the observation is in 2014. "All-Male $Board_{2013}$" is an indicator equal to 1 if a firm has no female directors in 2013. The observations are at the firm-level. The regressions include control variables from similar specifications in Panel A of Table 9 but these are omitted in the table for brevity. The dependent variable in model (1) is whether a firm has a formal diversity policy; the dependent variable in model (2) is whether a firm indicates it considers gender diversity in its director nomination; the dependent variable in model (3) is whether a firm includes a gender diversity target quota in its policy. In model (4), the sample is restricted to only firms that do not have a target female director quota, and the dependent variable is whether a firm indicates that it nominates directors based solely on skill and experience. Models (1)-(4) are logistic regressions. Model (5) is an OLS regression, in which the dependent variable is the diversity sentiment index (see section C for the definition of the index). Year and one-digit-SIC industry fixed effects are included in all specifications. All other variables are defined in Table A.1. Standard errors are reported in parentheses and are clustered at the firm-level. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels.

Dependent Variable:	**Firm has Formal Diversity Policy**	**Considers Gender Diversity in Board Nominations**	**Target Female Board Quota**	**Selects Directors Based on Skills and Experience**	**Diversity Sentiment Index**
	(1)	(2)	(3)	(4)	(5)
All-Male $Board_{2013}$	-0.273	-0.351	-1.563**	0.389	-0.096
	(0.341)	(0.348)	(0.655)	(0.360)	(0.164)
All-Male $Board_{2013}$ × 2018 Dummy	0.712**	0.429*	1.434**	0.019	0.112
	(0.360)	(0.246)	(0.662)	(0.363)	(0.144)
Controls	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	503	503	503	408	503
Pseudo R^2/Adj. R^2	0.189	0.053	0.329	0.153	0.238

Appendix A – Variable Definitions

Table A.1 – Variable Definitions.

This table lists the definitions of the variables used in our paper (in alphabetical order).

Variable	Definition
All-Male Board$_{2013}$	Equals 1 if a firm has no female directors on its board in 2013, and zero otherwise (source: BoardEx).
Board Age	The mean age of the directors on a firm's board (source: BoardEx).
Board Degree Centrality	The number of other directorships ever held by the firm's directors until and including the current year (source: BoardEx).
Board Size	The number of directors on a firm's board (source: BoardEx).
Board Tenure	The mean tenure of the directors on a firm's board (source: BoardEx).
Calgary Firm	Equals 1 if a firm is headquartered in Calgary, AB (source: Worldscope).
Canadian Firm	Equals 1 if firm is listed on the Toronto Stock Exchange (source: Worldscope).
CAR(i,j)	The cumulative abnormal return from day i to j around to the Ontario Security Commission's announcement on July 30, 2013 of a proposed rule amendment regarding a policy relating to the representation of women in boards and in executive officer positions. The cumulative abnormal returns are computed using a 4-factor return model (Fama and French, 1993, Carhart, 1997) with a 250-day estimation window ending 30 days before the announcement with at least 60 observations (Source: Datastream).
Controlled Corporation	Equals 1 if a firm has multiple voting share classes and/or it has closely held shares exceeding 30% of its shares outstanding and zero otherwise (source: SEDAR, Worldscope).
Debt/Assets	Long term debt plus debt in current liabilities divided by total assets (source: Compustat).
Female CEO Indicator	Equals 1 if the firm has a female CEO (source: SEDAR).
Female Executive Ratio	The fraction of a firm's top five named executive officers disclosed in their proxy circular who are female (source: SEDAR).
Independent Board	The fraction of a firm's board consisting of Non-executive directors (source: BoardEx).
Interlock with Considers Diversity	The mean number of board interlocks that directors of a firm have with directors who sit on the board of firm that has a target quota (source: BoardEx, SEDAR).
Interlock with Female Directors	The mean number of board interlocks that directors of a firm have with female directors, excluding the female directors of the firm itself (source: SEDAR).
Interlock with Target Quota	The mean number of board interlocks that directors of a firm have with directors who sit on the board of a firm that has a target quota for female directors, excluding the firm itself (source: BoardEx, SEDAR).
Log(Assets)	Natural logarithm of total assets (source: Compustat).
Male Director Ratio	The fraction of the firm's directors consisting of male directors (source: BoardEx) in 2018.
Market-to-Book Assets	Fiscal year-end market capitalization plus book value of preferred stock (liquidation value or redemption value if liquidation value is missing) plus deferred taxes and investment tax credit plus long term debt plus debt in current liabilities all divided by total assets (source: Compustat).
No Female Director Policy$_{2013}$	Equals 1 if a firm does not voluntarily include a gender diversity policy in its proxy circular in 2013, and zero otherwise (source: SEDAR).
No Term Limit	Equals 1 if a firm does not impose a limit on the duration a director may serve on the board, and zero otherwise (source: SEDAR).
Province Female Director Ratio	The mean fraction of boards consisting of female directors for all firms located in the same province as a firm (source: BoardEx, Worldscope).
Return-on-Assets	Operating income before depreciation divided by total assets (source: Compustat).