

**Changing organizational form to avoid regulatory constraints:  
The effect of mandatory gender balance in the boardroom**

by\*

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**Abstract**

Norway is the first and so far only country to mandate a minimum fraction of male and female directors in non-state firms. We find that after the new gender balance law ruled that the firm will be liquidated unless its board has at least 40% of each gender, half the exposed firms exit to an organizational form which is not exposed to the new law. This response suggests the gender balance law is costly, and we find the cost to be firm-specific. Firms exit more often when they are non-listed, successful, small, young, have powerful owners, and few female directors. The decision to enter is driven by similar firm characteristics, which reflect high costs of increased gender diversity and low value loss of abandoning the current organizational form. Mandatory gender balance tends to make complying firms end up with the right organizational form, but the wrong board. Conversely, firms exiting or not entering to avoid the new regulation may get the right board, but the wrong organizational form.

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## 1. Introduction

The choice of organizational form determines the regulatory constraints on the firm's governance system, such as the stockholders' ability to design the board, separate cash flow rights from voting rights, and choose principles for financial reporting. Therefore, a regulatory shift may change the optimal way to organize the firm (Hansmann 1996, page 151). This paper analyzes how a large and unexpected shift in corporate law with a liquidation penalty for non-compliers influences the firm's choice of organizational form. In particular, we are the first to study how a new law for mandatory gender balance in the boardroom induces firms to exit from or not enter into the organizational form that suddenly becomes exposed to stricter regulation. We find that one half of the initially exposed firms choose to exit, and that the exit propensity is driven by firm characteristics. This result suggests the regulation is costly for firms in general, more costly for some firms than others, and that even non-exiting firms may end up with suboptimal boards because the benefit of keeping the exposed organizational form exceeds the cost of forced gender balance. Correspondingly, our findings for the entry decision indicate that firms choosing not to enter may keep their optimal board composition, but fail to obtain their best organizational form. Thus, the observed exit and entry propensities underestimate the regulatory cost of mandatory gender quotas.

The Norwegian Parliament passed a radical board regulation in 2003 requiring that at least 40% of the firm's directors be of each gender.<sup>1</sup> Ahern and Dittmar (2012) argue that this gender balance law (GBL) represents a massive, surprising shock to the stockholders' ability to optimally design their firm's board. The authors notice that the GBL represents a natural experiment which allows the researcher to study the choice of corporate governance mechanisms with less worry than usual about the endogeneity problem (Adams, Hermalin, and Weisbach 2010). They document the magnitude of the shock by observing that the average proportion of female directors in listed firms was about 10% when the GBL was passed in 2003. Over the next five years until the end of the transition period in 2008, firms that complied with the 40% quota replaced about one third of their existing male directors by females. The number of female directorships increased by 260% (from 165 to 592 seats), while the number of male directorships dropped by 38% (from 1,516 to 938 seats). Our paper identifies firm characteristics that separate the firms that choose to comply with the GBL by making these large board changes from the firms that avoid them by exiting their current organizational form. We also consider the flip side of the exit decision by analyzing how the GBL influences the tendency for unexposed firms to enter the exposed form.

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<sup>1</sup> The 40% fraction only applies exactly to boards with more than nine members. For smaller board size, the quota is specified as a minimum number of directors per gender. There must be at least one director of each gender if the board has two or three members, at least two of each if there are four or five members, at least three of each if they are six to eight members, and at least four of each gender if there are nine members. These thresholds imply that the minimum fraction of each gender may vary between 33% and 50% in the cross-section

Existing research shows that the large, forced upwards shift in the demand for female directors made it difficult to design post-GBL boards with pre-GBL qualities. For instance, 69% of the retained male directors had CEO experience, compared to 31% of the entering females. The new female directors also had less board experience and were on average eight years younger than their male co-directors (Ahern and Dittmar 2012). Thus, female directors in firms that chose to comply with the GBL differ widely from their male colleagues. This difference means that although the GBL only regulates gender mix per se, the law may effectively restrict the stockholders' ability to choose a board with desired qualities. The reason is that such director qualities correlate with gender. In particular, the two pools of potential male and female directors seem to differ considerably along dimensions that matter for the board's ability to create stockholders value, such as leadership experience and director tenure.

This impression of reduced board competence after the GBL is supported by Ahern and Dittmar, who find an average announcement return of -3.5% for listed firms with no female directors when the Minister of Trade and Industry surprisingly announced his plans to bring a GBL proposal to Parliament. These firms represent about three quarters of the population at that time, while the remaining firms experienced no abnormal announcement return. This result is consistent with evidence from a period before the GBL was announced (1989-2002) showing that firms would probably lose value if they voluntarily changed the gender mix in their boardrooms (Bøhren and Strøm 2010). The subsequent value drop documented by Ahern and Dittmar when the regulatory intent was announced shows that stockholders did indeed expect a prospective GBL to be costly. Moreover, this reduced firm value does not appear to be a temporary overreaction, since the firms that had to change their boards the most typically experienced an abnormal drop in their market to book ratio of 15% over the subsequent five years.

The cost of the GBL may differ across firms. First, the compliance costs may vary within the group of exposed firms that choose to keep their organizational form and hence fill the forced gender quota. For instance, the observed announcement returns support the notion that boards with more female directors have to sacrifice less board competence to reach the 40% threshold. Second, the exit costs may depend on the firm's listing status. The GBL applies not just to all listed (public) firms, but also to certain non-listed (private) firms. Since only listed firms must use the organizational form exposed to the GBL, however, exit to avoid the gender quota automatically triggers delisting for listed firms, but not for non-listed. Third, the GBL may not just influence the exit decision, but also the decision to enter, since the new law changes the benefit of having the exposed organizational form.

To improve the understanding of how this one-size-fits-all regulation of gender balance has heterogeneous consequences at the firm level, we study how the GBL affects the choice of organizational form of all exposed and unexposed firms over nine years. This approach provides new

insight for several reasons. First, following the firms' behavior over an extended time period turns out to be important. For instance, we find that among the exposed firms that existed when the GBL was passed in 2003 and that did not subsequently merge or go bankrupt, 51% had chosen to exit by the time the law became binding five years later. Second, including non-listed firms is essential not just for a priori reasons, but also because the exit propensity turns out to be much higher for non-listed firms than for listed. Third, we find that the tendency to enter from the unexposed to the exposed form is not just a mirror-image of the exits. Thus, studying both exit and entry deepens the insight into the regulatory effect. Finally, the two existing studies on valuation effects of the GBL report conflicting results. Ahern and Dittmar (2012) find negative valuation effects, whereas Nygaard (2011) finds positive effects using a different event date and a different sample. Our study of how firms respond to the regulatory shift by changing organizational form avoids these ambiguities. We think this more direct evidence on altered firm behavior may deepen the insight into what forced gender balance in the board does to the firms involved. Our key to is to identify how certain firm characteristics enable the firm to influence the cost of the regulatory shock by keeping or changing its organizational form.

The GBL was implemented on January 1<sup>st</sup> 2006 with a two year grace period.<sup>2</sup> The law only applies to limited liability firms that are subject to the most comprehensive regulation of their financial reporting and corporate governance. The number of such firms increased from 223 in 1996 to 599 in 2002. In contrast, the number decreased from 554 firms the year the GBL was passed in 2003 to 414 firms at the end of the transition period in 2008. Among the 309 exposed firms in 2002 that did not subsequently merge, fail or exit for other reasons unrelated to the GBL, 151 firms existed in 2008. This exit behavior represents a drop of 51%.

The exiting firms chose the alternative organizational form for a limited liability corporation which is not exposed to the GBL. This form is more flexible and less transparent, as the financial reporting and the corporate governance mechanisms are less tightly regulated. Key differences are summarized in Appendix 1. For instance, exposed firms must have ten times larger minimum share capital than unexposed firms, produce more detailed financial reports, and provide more specific compensation data on their officers and directors. Unlike in most unexposed firms, CEO-chair duality is illegal in exposed firms, and not more than half the share capital can be non-voting.

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<sup>2</sup> The law as passed in 2003 would have been withdrawn if the firms had voluntarily filled the gender quota by July 1 2005. Since that did not happen, the GBL became mandatory in 2008. All firms had complied by April 2008, including the 72 firms that violated the January 2008 deadline (Nygaard 2011). The regulation states that the firm will be liquidated three months after non-compliance, although the government may prevent liquidation if the firm is considered particularly important for society. No firm has been liquidated for non-compliance so far. An obvious reason is that the alternative to compliance is exit into the unexposed organizational form.

A listed firm must have the exposed organizational form, whereas a non-listed firm can choose. By year-end 2009, 42% of the exposed firms were non-listed.<sup>3</sup> As shown in Appendix 1, the exposed organizational form offers less discretion in the design of corporate governance mechanisms when the firm is listed. For instance, comply-or-explain governance codes, flagging requirements, and tender offer rules only apply to listed firms. This system of two alternative organizational forms for limited liability firms is the dominant system worldwide. The exceptions are the USA, Canada, and a few other countries (Lutter 1992).<sup>4</sup>

We find that unlike before the GBL was passed, exit is much more common than entry. However, exit primarily happens in non-listed firms. For instance, the number of listed firms in our sample increases by 11% from 2002 to 2008, while the number of non-listed firms decreases by 49%. Thus, listed firms, which cannot remain listed unless they keep the exposed form, exit much more seldom. Also, and unlike before the GBL, the propensity to enter the exposed form is higher if the firm immediately becomes listed at entry rather than stays private for a while in the exposed form before the IPO. These findings show that a study of exits in just listed firms would miss the vast majority of cases. Moreover, since the change in the number of exposed firms is the net of exits and entries, both the exit and entry decisions should be analyzed.

Regardless of listing status, we find that firms exit more often when they perform well and have powerful owners. This finding supports the idea that independently of the GBL, profitable firms with low agency costs benefit the least from the strictest regulatory standards for transparency and governance. Exit is also more common among firms not controlled by families, indicating that family owners are better able than other owners to radically change the board's gender balance. Moreover, firms also exit more often when they have few female directors, suggesting that regulatory costs are higher the more male directors must be replaced by females. Finally, small firms and young firms exit more frequently. This result may reflect that the compliance cost is fixed relative to firm size, and that the cost of changing organizational form grows as the firm becomes more mature.

Most of these relationships are supported by the evidence on entering firms. The exception is that unlike for exiting firms, the fraction of female directors is not a significant predictor of entry. This difference may be driven by the fact that whereas exposed firms must either fill the mandatory gender quota or exit, unexposed firms face no such pressure. The unexposed firms only enter if the expected compliance costs are small relative to the benefits. Radically changing the gender mix is apparently

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<sup>3</sup> The exposed and unexposed organizational forms are called ASA (*allmenaksjeselskap*) and AS (*aksjeselskap*), respectively. The ASA form was introduced in 1996 to align Norwegian corporate law with legislation in the European Union.

<sup>4</sup> The exposed and unexposed forms are called respectively S.A. and S.A.R.L. in France, AG and GmbH in Germany, ASA and AS in Norway, and Plc and Ltd in the UK. The countries differ as to whether a public firm can choose between the two forms.

not an important cost driver for firms that voluntarily choose to enter. A possible reason is that they have ensured easy access to the pool of qualified female directors they will need at entry.

Our results are robust to alternative econometric techniques, to the definition of family control, how we measure performance, and to how we account for corresponding changes of organizational form in neighboring countries during the same time period. The definition of exit matters, however, as the fraction of female directors is a weaker determinant of exit if the firm is classified as exiting only in the year it actually exits (as opposed to the preceding years as well). This result may reflect the empirical fact that after the GBL was passed, gender balance gradually increases also in firms that ultimately choose to exit. Thus, ignoring the years before the firm actually exits misses the general trend towards more gender balance in all exposed firms before 2008. In particular, this approach misses the cost this increasing trend imposes on firms that gradually improve their gender balance, but ultimately decide to exit.

Our findings do not imply that the GBL is more costly for firms that exit than for firms that stay. The reason is that the non-exiting firms may find the cost of changing organizational form to be even higher than the cost of complying with the GBL. Thus, losing the benefits of the more strongly regulated organizational form is more burdensome than being forced to radically change the board's gender mix. This happens particularly often to the listed firms in our sample, since exit implies losing the listing benefit. Correspondingly, firms that choose not to enter the exposed form may still carry a GBL-related cost. These non-entering firms stay unexposed because the cost of complying with the GBL exceeds the benefits of the exposed form that are independent of the GBL. Examples of such benefits are easier access to financing, higher transparency, and stronger legal protection of minority stockholder rights.

Our paper is related to the empirical literature on the economics of corporate governance regulation. Bushee and Leuz (2004) study the impact of stricter SEC disclosure requirements for firms trading on the over-the-counter bulletin board. They find that almost 75% of the firms either go private or exit to the pink sheet market, which is not exposed to the new regulation. The exit propensity is strongest for small, profitable firms with low leverage. Engel, Hayes, and Wang (2004) analyze corresponding effects of the Sarbanes-Oxley Act, finding a slightly increased tendency to go private. Small firms with high ownership concentration go private more often than others. A study of 17 European countries shows that firms go private more often when corporate governance codes are introduced and when minority protection is increased. Exit is more common among small and profitable firms (Thomsen and Vinten 2007). These results are generally consistent with ours.

Ahern and Dittmar (2012) briefly address exits after the GBL in their valuation study, but only consider listed firms. Hence, they ignore the firms that we find respond very differently to the GBL.

Since ownership characteristics are not included in their study, Ahern and Dittmar ignore agency costs as a determinant of the exit decision. This bias also applies to the valuation study of Nygaard (2011), who makes a robustness test of whether the firm's listing status influences the relationship between exit and the fraction of female directors. Both studies are biased towards finding excessive exit because they include financial firms, which were allowed to convert into the unexposed form one year before the gender quota became mandatory. Finally, these authors do not analyze the entry decision.

Gender quotas for corporate boards are currently a hot political topic internationally. France, Iceland, Netherlands, and Spain will implement quotas in 2013-2016. Proposals along the same lines have recently been made in Australia, Belgium, Canada, and Italy. Gender balance rules for state-owned firms have been implemented in Ireland, South Africa, and Switzerland. Some of these countries consider whether to use mandatory law like Norway or the softer comply-or-explain system, which is the common standard in national corporate governance codes in about 100 countries worldwide ([www.ecgi.org](http://www.ecgi.org)). Appendix 2 shows the details. So far, however, only Norway has experience with gender quotas, and no other country has chosen a mandatory system with liquidation penalty. This means our findings from the first country to adopt a radically new board regulation may contribute to a more informed choice elsewhere. In particular, we can document effects in a regulatory regime that is mandatory rather than voluntary, dictates the same gender balance in all boards rather than allows for firm-specific discretion, and applies to listed firms as well as some non-listed rather than to all firms or just listed firms.

The rest of the paper is organized as follows. Section 2 specifies our predictions, and section 3 presents the data and summary statistics. We explain the methodology and test the predictions in section 4, while section 5 summarizes and concludes.

## 2. Predictions

The firm should transform itself from the exposed to the unexposed organizational form when it benefits from doing so. This benefit,  $B(\text{Exit})$ , has three components:<sup>5</sup>

$$(1) \quad B(\text{Exit}) = \text{Compliance costs} - \text{Compliance benefits} - \text{Benefits regardless of the GBL}$$

Exit is optimal if  $B(\text{Exit})$  is positive. If negative, the best choice is to continue being exposed and comply with the new law. Section 4 deals with the entry decision, where the benefit of entry is the negative of (1). Changing organizational form requires a two thirds majority vote.

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<sup>5</sup> A similar logic is used by Engel, Hayes, and Wang (2004).

If there are no market imperfections such as irrational owners or conflicts of interest between owners and managers, the compliance benefits in (1) are zero. The only effect of the GBL is to add a new constraint to the owners' value maximization problem, ruling out any board design with less than 40% female and male directors. At best, this restriction leaves the owners' opportunity set unchanged.

Consequently, the GBL must be rationalized by its ability to reduce negative effects of market imperfections on stockholder wealth. In the absence of such benefits, the new regulation only produces compliance costs for the owners as reflected in the first term of (1). Consistent with this view, Ahern and Dittmar (2012) argue that lack of CEO and director experience among female directors is a major driver of compliance costs and the resulting loss of firm value.

The third term in (1) explains why a firm with low compliance benefits and high compliance costs may still decide not to exit. This happens when the net compliance cost of the GBL (the two first terms) is smaller than the benefit of having the exposed organizational form for reasons unrelated to the GBL (the third term). These reasons are independent of board composition, such as the value of having a liquid stock (if the firm is listed) and having the option to go public without first changing organizational form (if the firm is non-listed). The firm may also benefit from regulation ensuring more transparency and stronger protection of minority stockholders (if the firm has a majority owner).

The composite nature of the exit benefit in (1) has two immediate implications. First, cost measures based on the exiting firms alone will underestimate the full cost of the GBL. This happens because regulatory costs based on just exiting firms ignore the costs for firms that do not exit. The latter costs are particularly relevant for the listed firms in our sample, since they cannot exit without simultaneously delisting. Second, firms more likely to exit are not just those with high compliance costs and low compliance benefits. Exit is also optimal for firms with low benefits of having the exposed organizational form in the first place. For such firms, the third component in (1) is too small to dominate even a moderate GBL cost.

We next hypothesize how firm characteristics will influence the three components of  $B(\text{Exit})$  in (1) and hence the likelihood of switching from the exposed to the unexposed organizational form.

### **Compliance costs**

The costs of complying with the GBL consist of search costs for new directors, increased compensation costs for these directors, and reduced private benefits for owners who lose board control. If the owners have chosen the optimal board composition before the GBL, forced board changes and hence the costs of compliance will be higher the fewer women the board has at that time. This idea is supported by Ahern and Dittmar (2012), who find that firms with no female directors lose market



value at the GBL announcement. We predict that a lower fraction of female directors increases the tendency to exit.

If earlier experience as a CEO and board member matters for director quality, the findings of Ahern and Dittmar (2012) that women have less such experience than men imply that new qualified directors must be drawn from a smaller pool than earlier. Thus, both search costs and compensation costs will increase. Since these costs may be rather independent of firm size, however, compliance costs will more often produce a positive benefit of exit when the firm is small. We expect that the smaller the firm, the more often it opts out of the exposed form to avoid the GBL.

Firms controlled by a family often have members of the controlling family holding board and CEO positions (Anderson and Reeb 2003; Wallvik 2009). To illustrate, family controlled firms in our sample have a median ownership concentration of 50%, a family chairperson in 38% of the cases and a family CEO in 30%. In contrast, firms not controlled by a family have a median ownership concentration of 26%, and the largest owner holds the chair or is the CEO in 17% of the cases. The GBL may threaten the family's ability to extract private benefits whenever the gender mix among the family's director candidates does not match the mandated gender quota. A concern for family-internal recruiting to the board suggests that firms controlled by families convert more often to the unexposed organizational form than other firms after the GBL.

This concern for internal recruiting may still be just half the story for the family firm's compliance costs. The high ownership concentration in family firms and the family's involvement in the firm's governance over an extended period suggests that family firms often have particularly powerful and committed owners. This long and deep experience with the firm and its environment may have enabled the family firm to establish an unusually rich network with resourceful individuals outside the firm. Therefore, the firm's controlling owner may know the outside pool of potential female directors particularly well. This argument suggests that unlike for the family's ability to recruit female directors from inside the family, it may be less costly to fill the gender quota with female board members outside the family. Hence, compared to other firms, family-controlled firms may exit the exposed organizational form less often rather than more. These conflicting predictions mean that we leave unspecified the expected relationship between family control and exit. We define a family-controlled firm as one where a group of ultimate owners by blood or marriage hold more than half the equity.

### **Compliance benefits**

The hypotheses discussed so far assume that owners always know their best interest, including the ability to establish the optimal board before the GBL. Allowing for imperfections in terms of gradual learning, however, firms may need time to locate the pool of director candidates and pick the best team. Such a limited ability to choose the optimal board may be particularly relevant for gender mix,

since boards and recruiting committees were strongly dominated by men before the GBL (Rosener 2011). Hence, older firms with a long learning history pre GBL may have been closer to their value-maximizing gender balance than younger firms with a shorter history. This logic suggests that older firms will be hurt by a rule mandating the same gender mix for every firm, while younger firms may even benefit from being forced to establish a more gender-balanced board. On the other hand, older firms tend to be more complex and rigid and may find it harder to change organizational form (Boone et al. 2007). This argument suggests older firms are less rather than more prone to exit than younger firm. Thus, we do not specify the expected relationship between firm age and exit propensity.

### **Benefits regardless of the GBL**

The exposed firms in our sample are subject to tighter reporting requirements than unexposed firms. This higher transparency reduces the asymmetric information between old and new stockholders, between majority and minority stockholders, and between borrowers and lenders. Thus, being organized under the most demanding organizational form may reduce the cost of raising outside finance. This option is more valuable the more financially constrained the firm (Myers and Majluf 1984). We predict that the weaker the financial constraint, the higher the propensity to exit, using leverage as the proxy for financial constraints. For similar reasons, we expect profitable firms to suffer less after exit because they can more easily finance growth internally. Thus, exit will be more common the more profitable the firm, measuring profitability as operating returns to assets after taxes (ROA).

More transparency may induce closer monitoring by financiers, analysts, and the media. The resulting reduction in information asymmetry is potentially more valuable the stronger the separation between ownership and control (Morck, Shleifer, and Vishny 1989). Hence, lower potential for agency costs means lower governance benefits of being exposed. Moreover, lower agency costs increase the likelihood that the firm will rationally choose organizational form according to the value-maximizing exit criterion in (1). We hypothesize that lower separation between ownership and control increases the tendency to exit. Ownership concentration is used to capture the owners' incentives and power to monitor, measuring concentration by the ultimate fraction of outstanding equity held by the firm's largest owner.

Unlike listed firms, non-listed firms with the exposed organizational form do not change listing status when exiting to the unexposed form. Thus, owners of listed firms have more to lose by not having their stock traded in a liquid market (Bahrat and Dittmar 2006). Listed firms also have a much wider stockholder base, which makes them more vulnerable to free rider and coordination problems when concerted action benefits stockholders as a group (Shleifer and Vishny 1986). For instance, Norwegian listed and non-listed exposed firms of similar size have on average roughly 4,000 and 10 stockholders, respectively (Bøhren 2011). We expect non-listed firms to exit more often than listed.

Summarizing our predictions, we hypothesize that firms exit the organizational form exposed to the gender balance law more often when they have low leverage, high profitability, high ownership concentration, small size, few women on the board, and when they are non-listed. The expected effects on exit of firm age and family control are left unspecified.

### 3. Data and descriptive statistics

The sample for the exit study is based on the population of exposed firms by year-end.<sup>6</sup> We ignore firms that exit due to merger or bankruptcy. Financial firms are excluded because they had to choose the exposed form until a new law lifted this requirement in 2007.<sup>7</sup>

The first official initiative to regulate gender balance in corporate boards was made in 2001 through a public hearing about possible overhaul of the Equal Opportunities Act from 1978. The first announcement of the planned quota was made in February 2002, and the regulation was passed as corporate law in December 2003. The transition period from the old to the new regime ended in 2007, and 77 firms were allowed to postpone compliance until the end of February 2008. To allow for approximately two non-event years at the beginning and end of the sample period, our sample period is 2000-2009.

Table 1 shows the number of exposed firms by year-end from the dual system for limited liability firms was established in 1996 to the end of the sample period in 2009. Group 1 includes all exposed firms, group 2 excludes financial firms, while group 3 excludes financial firms and firms that merge or go bankrupt. The number of exposed firms in each group grows almost monotonically to a maximum in 2001, gradually decreasing thereafter to a minimum in 2009. For instance, the number of firms in group 3 starts at 177 in 1996, peaks at 317 in 2001, and reaches its minimum of 217 firms in 2009.

Table 1

The table documents that the decline after 2001 happens among the non-listed firms. To illustrate, the number of non-listed firms in group 3 drops by 56% from 2001 to 2009, while the number of listed firms grows by 6%. This large difference suggests that if the underlying exit and entry decisions are partially driven by the GBL, the benefit of changing organizational form to avoid the GBL is considerably larger for non-listed firms.

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<sup>6</sup> Our data is from the Centre for Corporate Governance Research ([www.bi.edu/ccgr](http://www.bi.edu/ccgr)). The data on family relationships is from the tax authorities, while Experian ([www.experian.no](http://www.experian.no)) has delivered the accounting data and the corporate governance data.

<sup>7</sup> Financials are also regulated differently than other firms regarding their financing and governance. For instance, the risk-adjusted leverage of banks cannot exceed 92% according to the Basel rules, and Norwegian banking law rules that no investor can own more than 10% of a bank's equity without government permission.

The change in the number of firms from one year to the next in table 1 is the difference between entering and exiting firms over that year. Panel A of table 2 shows the exits, entries, and net exits over time for our sample firms, which is group 3 from table 1 from 2000 to 2009. As already documented by table 1, net exit (exit minus entry) is generally positive and increasing. There were altogether 217 exit firms and 146 entry firms, producing a net exit of 71 firms. Panel B confirms that the tendency to exit is much stronger among non-listed firms. For instance, while table 1 shows that the number of firm years is similar for non-listed and listed firms (1,903 and 1,784, respectively), non-listed firms account for over four times more of the exits (175 vs. 42, respectively). 12.1% of the non-listed firms exit from one year to the next on average, while only 3.3% of the listed firms do.

Table 2

Panel C shows that when an unexposed firm decides to become exposed, it more often enters as non-listed than listed, where the latter alternative involves going public directly at entry (92 firms vs. 54 firms, respectively). However, this tendency is reversed after the passage of the GBL, when it becomes much more common to go public directly. Whereas 21% of the entry firms went public directly up to 2003, 54% did from then on. This shift suggests that although the GBL may produce similar net compliance benefits regardless of listing status, listed firms earn more benefits that are unrelated to the GBL. Therefore, firms considering to become exposed after the GBL increasingly find that entry does not pay off unless the firm immediately reaps the benefits of becoming listed as well. We focus on the exits in the following, leaving the entry decision to section 4.

The empirical proxies are defined in table 3, and table 4 shows their distributional properties in the sample. For instance, 55% of the observations are for non-listed firms, the largest stockholder owns on average 43% of the equity, the average board has 17% female directors and 5.6 members, and 20% of the firms are majority controlled by a family.

Table 3

Table 4

A firm is classified as exiting if it transforms from the exposed to the unexposed form over the sample period. An exiting firm leaves the sample the year it actually exits. The firm is called non-exiting if it never leaves the exposed form. Table 5 shows the mean value of each variable from table 4 separately for exiting and non-exiting firms. The table documents that compared to firms that stay exposed to the GBL, exiting firms are different according to most of the hypothesized determinants. For instance, exiting firms are significantly more often non-listed (78% vs. 42%), younger (20 years vs. 29 years), have higher ownership concentration (53% vs. 38%), less women on the board (10% vs. 20%), and are

more often controlled by a family (22% vs. 19%). These univariate relationships are consistent with the predictions from section 2.

Table 5

Unreported tests show that when we split the sample based on listing status rather than exit status, a similar pattern emerges as in table 5. This similarity suggests that whether or not the firm is listed correlates both with the exit/non-exit choice and with the other determinants of exit beyond listing status. Thus, not controlling for listing status may create a serious omitted variable bias in the regressions. That does not imply, however, that any other hypothesized determinants than listing status is redundant in an exit model. This argument is supported by the bivariate correlation coefficients in table 6. The table shows that listing status does correlate with the other determinants, but not alarmingly.<sup>8</sup>

Table 6

#### 4. Statistical tests

Tables 1 and 2 showed that the number of firms exposed to the GBL has been dropping every year since the intention to regulate gender balance in corporate boards was announced in 2002. Although the two tables ignore all firms that change organizational form due to merger, bankruptcy, and deregulated financials, our filtering criteria may still fail to exclude other exogenous exit determinants unrelated to the GBL. In order to account for this possibility, we compare the exit propensity in Norway to the exit propensity in the neighboring countries Denmark and Sweden. These two countries do not mandate gender-balanced boards, but did establish the system of dual organizational forms at about the same time that Norway did.<sup>9</sup>

We use a difference-in-difference approach to test whether the change in organizational form by Norwegian firms differs from what it is in its neighbor countries. The event is the passage of the GBL in 2003, the event group is the Norwegian firms exposed to the GBL, and the non-event (control) group is firms in Denmark or Sweden with the same organizational form. The post-event period is 2003-2009, while the pre-event period is 1997-2002 for Norway and Denmark and 2000-2002 for Sweden, which did not start reporting the number of firms until 2000. Hence, all firms in our sample have the option to change organizational form any time during the sample period. Only Norwegian firms may consider doing exiting to avoid the GBL, however, and this can only happen in the event period.

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<sup>8</sup> The listed/non-listed dummy correlates the strongest with ownership concentration, having a Pearson correlation coefficient of -0.42. As a rule of thumb, +/- 0.8 is a critical limit (Greene 2007).

<sup>9</sup> Denmark, Norway and Sweden introduced the dual system in 1974, 1996, and 1995, respectively.

The statistic of interest is the difference-in-difference  $D \equiv \Delta_{\text{Norway}} - \Delta_{\text{Foreign}}$ , where  $\Delta_{\text{Norway}}$  is the difference between the number of Norwegian firms in the post-event period and the pre-event period, respectively. Correspondingly,  $\Delta_{\text{Foreign}}$  is the same difference between the number of firms in the two periods in the foreign country (Denmark, Sweden or both). We estimate the model

$$(2) \quad y_{it} = \beta_0 + \beta_1 EG_i + \beta_2 PE_t + \beta_3 EG_i \cdot PE_t + \varepsilon_{it},$$

where  $y_{it}$  is the number of firms in group  $i$  at time  $t$ .  $EG_i$  is a dummy variable which is 1 if the firm is in the event group and 0 if it is in the non-event group. Similarly,  $PE_t$  is 1 if  $t$  is in the post-event period and 0 if  $t$  is in the pre-event period.

The estimator of  $D$  is the OLS estimate of  $\beta_3$  in (2), which reflects the marginal effect on the number of firms in Norway in the event period. The estimate is shown in table 7, which alternatively uses Denmark, Sweden and both countries as the control group. The estimated  $\beta_3$  is negative and significant in every case. This result reflects that the drop in the number of firms exposed to the GBL after 2001 as observed in tables 1 and 2 is a unique Norwegian phenomenon.

The findings in table 7 strengthen the impression of a systematic relationship between the GBL and the firm's choice of organizational form. We analyze this link more closely in the following by relating the firm's exit and entry behavior to characteristics of the firm as specified in section 2. We first report the findings from the base case, followed by a series of robustness tests. Finally, we present estimates of an entry model.

### **The base case**

Our basic model is the following:

$$(3) \quad \begin{aligned} Exit_{it} = & \alpha + \beta_1 Female\ directors_{it} + \beta_2 Firm\ size_{it} + \beta_3 Family\ control_{it} + \beta_4 Firm\ age_{it} \\ & + \beta_5 Financial\ constraints + \beta_6 Performance + \beta_7 Ownership\ concentration_{it} + \beta_8 Listed_{it} + u_{it} \end{aligned}$$

The dependent variable,  $Exit_{it}$ , is a dummy variable which equals 1 if firm  $i$  exits the exposed form during the sample period and 0 otherwise. We estimate (3) as a logit model.

Table 8 shows the estimates. Consistent with our prediction based on the compliance cost component of  $B(\text{Exit})$  in (1), the table documents that firms with few female directors exit more often from the exposed to the unexposed organizational form. This inverse relationship suggests that the costs of complying with the GBL are higher the more male directors must be replaced by females, The result is also in line with Ahern and Dittmar (2012), who find that the fewer women on the board, the more value was lost when plans for the GBL were announced.

Table 8

Smaller firms exit more often than others, supporting the economies of scale argument that compliance costs are fixed relative to firm size, such as the cost of searching for new female directors and having to pay them higher compensation because of short supply.

Firms controlled by families exit less often than other firms. This result is inconsistent with the idea that the family's ability to extract private benefits is threatened by a GBL which mandates a gender-based board composition that the family cannot match. Rather, it seems family owners have better access than other owners to female directors who can protect the owners' interest.

Turning next to potential compliance benefits, the estimates show that younger firms exit more often than older firms. This result is inconsistent with the ignorant-owner argument, but it supports the idea that mature firms find it more costly to change organizational form.

The third component of B(Exit) in (1) is benefits of the exposed organizational form which are independent of the GBL. Table 8 shows that the exit decision is not significantly related to financial constraints as measured by leverage. More profitable firms are more willing to leave the exposed form, however, possibly because they can more easily self-finance investments by high earnings and afford the higher financing costs as they become less transparent. Exit is also more common when ownership concentration is high. This is evidence that strong owners can be a substitute for the disciplining benefit of a stricter regulatory regime.

Finally, non-listed firms are more prone to exit. This result is consistent with the notion that listed firms have more to lose by exiting for reasons unrelated to the GBL, such as better stock liquidity, continuous pricing, and closer following by financial analysts and the media.

### **Robustness**

Table 9 estimates the base-case model (1) with five alternative econometric techniques. The table documents that the results are insensitive to whether we use logit (the base case), probit, a standard panel method with random effects, a logit panel method with random effects, a pooled OLS approach, or pooled OLS with standard errors adjusted for clustering at the firm level. Thus, the choice of econometric technique is not driving the base-case results.

### Table 9

Family control may be operationalized in several ways. Table 10 shows what happens when we measure family control by other proxies than the one used in table 8. We alternatively measure family control by the family's equity fraction in the firm (family ownership), the fraction of board seats held by the family (family board), whether or not the CEO is recruited from the family (family CEO), the number of family members owning stock in the firm (family size), and by whether a family member

heads the board (family chair). The first column of results copies table 8, where we measure family control by whether or not the family holds a majority ownership stake (family firm).

The table shows that the relationship between the exit decision and all other variables than ownership concentration is insensitive to how we measure family control. As in the base case, higher ownership concentration always increases the expected exit propensity, but the statistical significance is weaker when we use family control variables that do not directly reflect the family's ownership stake. This result suggests that formal power at the stockholder meeting is the key ownership determinant of the exit decision. Overall, table 10 reflects that the estimates of the model in (3) are robust to how family control is measured.

Table 10

Table 11 analyzes the effect of using alternative proxies for financial constraints and performance, respectively. Instead of measuring financial constraints by leverage, we alternatively use real sales growth over the current, the last two, and the last three years. The estimates are equivalent to those in the base case. As for performance, we alternatively measure ROA over the current, the last two, and the last three years, where the latter represents the base case. The three rightmost columns of table 11 show that the results are insensitive to the length of the time period used to measure performance.

Table 11

We have so far used the convention that if the firm exits at time  $t$ , it is classified as an exit firm also before  $t$ . Table 12 repeats the base-case result from table 8 in model I, while model II classifies the firm as an exiting firm only in the year it actually changes organizational form. The estimates show that female directors and performance become insignificant determinants in model II, and firm size becomes positive and significant at the 4% level. The role of ownership concentration, family control, listing status, and firm age is unaltered.

The insignificant coefficient for female directors may turn up because all firms in our sample tend to increase their use of female directors over time, regardless of whether or not the firm ultimately exits. For instance, firms that exit increase their average female fraction before exit from 8% in 2002 to 30% in 2008. This means that when a firm is classified as exiting only in the year it actually exits, it is an exiting firm in our test only in the year in its life when its fraction of female directors is the highest and hence closest to that of firms that do not exit. Therefore, the female fraction cannot significantly distinguish between exiting and non-exiting firms.

Table 12



Summarizing, we have shown that the base-case results are independent of what econometric technique is used, how we define family control, how we measure return on assets, and whether we use leverage or growth to proxy for financial constraints. The definition of an exit firm matters, as the fraction of female directors is not a significant predictor of exit when a firm is classified as exiting only in the year it actually changes organizational form.

### **Entry**

The entry decision is expected to be driven by almost the same firm characteristics as for exit. We specify the following model:

$$(4) \quad \text{Entry}_{it} = \alpha + \beta_1 \text{Female directors}_{it} + \beta_2 \text{Firm size}_{it} + \beta_3 \text{Family control}_{it} + \beta_4 \text{Firm age}_{it} \\ + \beta_5 \text{Financial constraints}_{it} + \beta_6 \text{Performance}_{it} + \beta_7 \text{Ownership concentration}_{it} + \beta_8 \text{IPO}_{it} + u_{it}$$

Entry is a dummy variable which is 1 for firms that enter the exposed organizational form and 0 otherwise. Based on the theoretical arguments for the exit decision in section 2, we predict that entry is more probable if the firm has many female directors ( $\beta_1 > 0$ ), large size ( $\beta_2 > 0$ ), binding financial constraints ( $\beta_5 > 0$ ), low performance ( $\beta_6 < 0$ ), and low ownership concentration ( $\beta_7 < 0$ ). Like for exit, the hypothesized effects of family control ( $\beta_3$ ) and firm age ( $\beta_4$ ) are left unspecified.

Listing status is an irrelevant determinant of entry into the exposed organizational form, since an unexposed firm considering such a decision must be non-listed. However, we expect that the GBL will increase the tendency for entering firms to become listed (go public; make an IPO) directly upon entry rather than stay non-listed in their new, exposed organizational form. The reason is that listed firms enjoy more of the benefits of the exposed organizational form that are independent of the GBL. Hence, the GBL makes it relatively more attractive to be listed than non-listed once the firm is already exposed. The dummy variable IPO in (4) is 1 if the entering firm chooses to become listed in the entry year and 0 otherwise. We expect a positive relationship between the propensity to enter and the intention to become listed upon entry ( $\beta_8 > 0$ ). The sample is unexposed firms over the period 2000-2009 and exposed firms in their entry year. To qualify as an unexposed entry candidate, we require that the firm has at least three board members and sales not smaller than the lowest sales observed among the exposed firms that year.

The estimates of the relationship in (4) are shown in table 13, which reports the results from two models. In model A a firm that enters the exposed organizational form during the sample period is classified as entering every year until it enters, which is the firm's last sample year. Model B uses the alternative definition, which classifies the firm as entering only in the year it actually enters. Unlike in the exit case, where every exit candidate already has the exposed organizational form, it seems more appropriate in the entry case to use the definition under model B. The reason is that an entry candidate

is not exposed to the gender balance law until it voluntarily chooses to enter, and many non-entering firms that qualify for entry may not even consider entry a relevant option. Also, firms choosing to enter know what new regulation they must comply with, regardless of whether entry is chosen before or after the GBL has become mandatory. Hence, B seems to reflect the more reasonable definition of an entering firm.

### Table 13

The estimates are consistent with our predictions for the impact of firm size, family control, firm age, ownership concentration, and the decision to go public directly. The negative coefficient for financial constraints is inconsistent with the prediction, strengthening the impression from the exit model in table 8 that financial constraints is not a reliable predictor of a change in organizational form. More surprisingly, the fraction of female directors is not a significant determinant of entry in model B and is even significantly negative in model A. Unreported regressions show that gender balance continues to be insignificant when we reestimate the two models on the subsample of firms that enter after December 2005, when Parliament decided to punish non-compliers with automatic liquidation.

This finding suggests that non-entering firms are not held back more than entering firms by the GBL's requirement to replace a large portion of the male directors. This result is apparently puzzling, given our earlier finding in table 8 that the existing gender mix is a strong determinant of exit. However, exiting and entering firms are fundamentally different in a GBL compliance sense. A firm exposed to the GBL has no choice in the sense what unless it exits, it must comply with the 40% quota or accept to be liquidated. An unexposed firm, however, chooses to enter and hence comply only if it wants to. Therefore, unexposed firms that voluntarily decide to become exposed do this because their owners think the cost of filling the gender quota is small. Apparently, they also think this cost is independent of the current gender mix i their board.

Tables 7 and 12 jointly document that family-controlled firms are more hesitant than other firms both to exit from and enter into the exposed form. This finding suggests that such firms are inclined to keep their organizational form when new regulation changes the benefit of status quo. One possible reason is that firms controlled by families have transaction costs of organizational change that are not well accounted for by the other independent variables we have included in the entry and exit models.

## 5. Summary and conclusions

The findings of this paper support the general idea that firms may respond to more restrictive regulation by changing their organizational form. This happens when the added cost of the new constraint makes the current organizational form less attractive than the best alternative. Strikingly, we find that half the firms that suddenly become exposed to a gender balance law mandating at least 40% of each gender in Norwegian boardrooms choose to exit into an organizational form that is not exposed to the new law. This tendency to avoid costly regulation varies systematically with firm characteristics. We find that exit is significantly more common when the firm is not listed on the stock exchange, and when the firm is profitable, small, and young. Exiting firms also tend to have powerful owners, no controlling family, and few female directors. Most of these characteristics also influence the decision by firms not exposed to the gender balance law to enter or not enter the exposed organizational form. Even though we find that listed firms exit much less often than non-listed, listed firms that do not exit may nevertheless carry the highest cost of the new regulation.

This evidence is consistent with theoretical predictions and with empirical findings from regulatory changes in other countries that differ from the one we analyze. The results are also in line with earlier findings that compulsory gender balance in the boardroom shrinks the pool of competent directors and lowers firm value. Our evidence supports the notion that optimal board composition and the best response to regulatory shocks are firm-specific properties. Moreover, regulation may destroy less wealth if firms have the option to exit into organizational forms where the law does not apply.

Recent signals from the Norwegian government indicate that the exit option analyzed in this paper may soon disappear. This is because mandatory gender balance may be made mandatory for more than just one organizational form.<sup>10</sup> If that happens, Norway will not just be special by being the first and only country in the world to mandate a massive, rapid shift in the gender mix of corporate boards and to punish non-compliers with liquidation. The regulator also considers eliminating the possibility firms currently have to mitigate regulatory costs by transforming into or not leaving organizational forms that are not exposed to the law. Every other country considering gender balance regulation at the moment seems to favor the comply-or-explain system or at least milder sanctions than liquidation when a mandatory quota is considered. This type of regulation leaves the gender balance choice to the firm's discretion and will hence allow for firm heterogeneity. Our findings suggest that compared to this more flexible alternative, the mandatory approach, and particularly one without exit options, is a particularly costly way of regulating gender balance in corporate boards.

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<sup>10</sup> <http://e24.no/jobbn/naa-vil-regjeringen-ha-kvinner-i-alle-styrer/20060520>.

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**Table 1: The number of firms with organizational form exposed to the gender balance law**

Year	<u>Group 1</u>			<u>Group 2</u>			<u>Group 3</u>		
	All	Non-listed	Listed	All	Non-listed	Listed	All	Non-listed	Listed
1996	223	51	172	197	45	152	177	39	138
1997	361	144	217	251	100	151	226	86	140
1998	475	240	235	333	168	165	253	141	112
1999	525	310	215	368	217	151	288	168	120
2000	602	388	214	421	271	150	313	187	126
2001	630	418	212	441	293	148	317	190	127
2002	599	396	203	419	277	142	309	187	122
2003	554	376	178	387	263	124	292	175	117
2004	522	334	188	365	234	131	283	166	117
2005	494	275	219	346	193	153	270	146	124
2006	505	276	229	353	193	160	263	130	133
2007	483	242	241	338	169	169	248	110	138
2008	414	190	224	289	133	156	231	95	136
2009	362	152	210	253	106	147	217	83	134
Average	482	270	211	340	190	150	263	136	127
Total	6,749	3,792	2,957	4,761	2,662	2,100	3,687	1,903	1,784

This table shows the number of firms operating under the organizational form that is exposed to the gender balance law. Group 1 is the population of exposed firms, Group 2 excludes financial firms, and Group 3 excludes financial firms and firms that leave the exposed form in the sample period 2000-2009 due to takeover or bankruptcy. Listed firms are quoted at the Oslo Stock Exchange.

**Table 2: Exit and entry**

Year	<u>A: All firms</u>			<u>B: Exit by listing status</u>			<u>C: Entry by IPO propensity</u>		
	Exit	Entry	Net exit	All	Non-listed	Listed	All	Non-listed	Listed
2000	8	33	-25	8	6	2	33	29	4
2001	14	18	-4	14	13	1	18	15	3
2002	17	9	8	17	13	4	9	6	3
2003	23	6	17	23	18	5	6	2	4
2004	19	10	9	19	13	6	10	5	5
2005	25	12	13	25	23	2	12	3	9
2006	28	21	7	28	24	4	21	11	10
2007	46	31	15	46	36	10	31	17	14
2008	22	5	17	22	16	6	5	3	2
2009	15	1	14	15	13	2	1	1	0
<b>Total</b>	<b>217</b>	<b>146</b>	<b>71</b>	<b>217</b>	<b>175</b>	<b>42</b>	<b>146</b>	<b>92</b>	<b>54</b>

Panel A shows the number of firms that exit and enter the exposed organizational form as well as the net exit, which is the difference between the two. Panel B shows the number of exits from panel A separately for non-listed and listed firms. Panel C splits the entry firm sample from panel A according to whether or not the firm makes an IPO in the entry year. The sample is all Norwegian limited liability firms with the organizational form exposed to the gender balance law and that are not financials or have not exited the exposed organizational form due to takeover or bankruptcy during the sample period.

**Table 3: The empirical proxies**

Variable	Definition
Exit	Dummy variable which equals 1 if the firm leaves the organizational form exposed to the gender balance law during the sample period and 0 otherwise
Entry	Dummy variable which is equal to 1 if the firm enters the organizational form exposed to the gender balance law during the sample period and 0 otherwise
<u>General firm characteristics</u>	
Listed	Dummy variable which is 1 if the firm is publicly listed and zero otherwise
Financial constraints	Total debt divided by total assets (leverage)
Growth	The average percentage increase in real sales from year t-3 to t
Performance	The average real return on assets from year t-3 to t (ROA)
Firm age	The number of years since the firm was founded
Firm size	Sales in constant 2009 MNOK. Log transformed in regressions
IPO	Dummy variable which is 1 if the firm becomes listed the same year it enters the exposed organizational form and 0 otherwise
<u>Ownership characteristics</u>	
Ownership concentration	The fraction of equity held by the largest stockholder
Family ownership	The fraction of equity held by the family with the largest equity stake
Inside ownership	The fraction of equity held by the officers and directors
<u>Board characteristics</u>	
Female directors	The proportion of shareholder-elected board members who are women
Board size	The number of shareholder-elected board members
<u>Family characteristics</u>	
Family firm	Dummy variable which equals 1 if the largest family owns more than 50% of the equity and 0 otherwise
Family size	The number of owners in the largest family by ownership
Family chair	Dummy variable which equals 1 if the chair belongs to the largest family by ownership and 0 otherwise
Family CEO	Dummy variable which equals 1 if the CEO belongs to the largest family by ownership and 0 otherwise
Family board	The fraction of directors coming from the largest family by ownership

This table defines the variables used in the empirical analysis. The ownership characteristics reflect ultimate (direct plus indirect) equity holdings in the firm.



**Table 4: Distributional properties of the independent variables**

Variable	Mean	St.dev.	Percentile							N
			0	5	25	50	75	95	100	
Exit	0.360	0.009	0.000	0.000	0.000	0.000	1.000	1.000	1.000	3,022
<u>General firm characteristics</u>										
Listed	0.449	0.497	0.000	0.000	0.000	0.000	1.000	1.000	1.000	3,022
Financial constraints	0.527	0.246	0.000	0.076	0.347	0.545	0.710	0.913	1.000	2,780
Growth	1.775	4.515	0.000	0.233	0.863	1.081	1.388	3.977	81.583	2,510
Performance	7.589	8.112	-7.318	-1.200	2.088	5.387	11.010	23.564	58.500	2,020
Firm age	25.936	32.621	0.000	2.000	6.000	14.000	27.000	108.000	162.000	2,836
Firm size	2,234.727	19,249.102	0.000	1.552	30.847	140.633	534.623	4,828.653	452,369.730	2,767
<u>Ownership characteristics</u>										
Ownership concentration	43.280	31.166	0.000	8.850	18.000	33.600	59.855	100.000	100.000	2,897
Family ownership	32.343	26.730	0.000	1.101	10.616	25.858	47.720	96.050	100.000	2,117
Inside ownership	12.717	22.099	0.000	0.000	0.000	0.000	17.013	62.744	100.000	2,858
<u>Board characteristics</u>										
Female directors	0.167	0.176	0.000	0.000	0.000	0.143	0.333	0.444	1.000	3,022
Board size	5.639	1.906	3.000	3.000	4.000	5.000	7.000	9.000	12.000	3,022
<u>Family characteristics</u>										
Family firm	0.204	0.403	0.000	0.000	0.000	0.000	0.000	1.000	1.000	2,372
Family size	2.017	1.394	1.000	1.000	1.000	1.000	3.000	5.000	12.000	2,117
Family chair	0.214	0.409	0.000	0.000	0.000	0.000	0.000	1.000	1.000	2,117
Family CEO	0.198	0.399	0.000	0.000	0.000	0.000	0.000	1.000	1.000	2,117
Family board	0.124	0.152	0.000	0.000	0.000	0.091	0.200	0.400	1.000	2,117

This table shows distributional properties of the variables used in the empirical analyses of the exit decision. Performance is censored at the 0.5% tail and thereafter winzORIZED at the 1% and 99% tails. Leverage and growth are winzORIZED at 1% and 99%. Table 3 defines the variables. The sample is all Norwegian limited liability firms with the organizational form exposed to the gender balance law and that are not financials or have not exited the exposed organizational form due to takeover or bankruptcy during the sample period.

**Table 5: Characteristics of exit firms and non-exit firms**

	Exit	Non-exit	Exit less Non-exit	t-value	(p-value)
<u>General firm characteristics</u>					
Listed	0.221	0.582	-0.361	-20.982	(0.000)
Financial constraints	0.542	0.519	0.023	2.108	(0.035)
Growth	1.659	1.847	-0.188	-1.112	(0.268)
Performance	6.864	6.813	0.051	0.129	(0.893)
Firm age	19.800	29.428	-9.628	-8.288	(0.000)
Firm size	658.930	3,225.282	-2,566.352	-4.299	(0.000)
<u>Ownership characteristics</u>					
Ownership concentration	52.768	37.699	15.069	11.783	(0.000)
Family ownership	35.132	30.754	4.378	4.078	(0.000)
Inside ownership	13.934	12.042	1.892	2.144	(0.032)
<u>Board characteristics</u>					
Female directors	0.100	0.201	-0.101	-15.911	(0.000)
Board size	5.129	5.926	-0.797	-10.545	(0.000)
<u>Family characteristics</u>					
Family firm	0.222	0.189	0.033	1.874	(0.062)
Family size	1.847	2.109	-0.262	-5.072	(0.000)
Family chair	0.200	0.221	-0.021	-1.244	(0.214)
Family CEO	0.184	0.214	-0.030	-1.923	(0.055)
Family board	0.134	0.124	0.010	1.639	(0.101)
N	1,100	1,900			

This table compares the mean values of general firm, ownership, board, and family characteristics for exit firms and non-exit firms, respectively. The difference between the mean values and the corresponding t values and p values (in parentheses) are reported in the three right-most columns. Table 3 defines the variables, and the sample is all firms with limited liability in 2000-2009 and an organizational form that is exposed to the gender balance law. The sample is all Norwegian limited liability firms with the organizational form exposed to the gender balance law and that are not financials or have not exited the exposed organizational form due to takeover or bankruptcy during the sample period.

**Table 6: Bivariate correlations**

	Female directors	Ownership concentration	Family firm	Listed	Financial constraints	Performance	Firm age	Firm size
Exit	-0.286 (0.000)	0.234 (0.000)	0.031 (0.132)	-0.348 (0.000)	0.057 (0.002)	0.086 (0.000)	-0.142 (0.000)	-0.136 (0.000)
Female directors		-0.033 (0.074)	-0.080 (0.000)	0.285 (0.000)	-0.016 (0.402)	0.061 (0.008)	0.169 (0.000)	0.200 (0.000)
Ownership concentration			0.363 (0.000)	-0.414 (0.000)	0.243 (0.000)	0.126 (0.000)	0.037 (0.055)	0.074 (0.000)
Family firm				-0.223 (0.000)	0.115 (0.000)	0.160 (0.000)	-0.071 (0.001)	-0.057 (0.008)
Listed					-0.155 (0.000)	-0.059 (0.010)	0.185 (0.000)	0.276 (0.000)
Financial constraints						-0.008 (0.738)	0.040 (0.043)	0.361 (0.000)
Performance							0.079 (0.000)	0.110 (0.000)
Firm age								0.151 (0.000)

This table shows pairwise Pearson correlation coefficients between key variables in the empirical tests and the corresponding p-values (in parentheses) for whether the related t-statistic differs from zero. Table 3 defines the variables, and the sample is all firms with limited liability in 2000-2009 and an organizational form that is exposed to the gender balance law. The sample is all Norwegian limited liability firms with the organizational form exposed to the gender balance law and that are not financials or have not exited the exposed organizational form due to takeover or bankruptcy during the sample period.

**Table 7: Exit propensity in Norway and its neighboring countries**

Non-event group	Estimate	(p-value)	Adjusted R <sup>2</sup>	N
Denmark	-0.284	(0.003)	0.637	26
Sweden	-0.469	(0.012)	0.349	20
Denmark and Sweden	-0.332	(0.000)	0.826	20

This table reports the estimates of the difference-in-difference equation defined in model (2) of the main text. The coefficient estimates reflect the difference between the number of firms in Norway in the event period and the non-event period relative to the corresponding difference in Denmark, Sweden or both (the non-event group). The sample period for Norway and Denmark is 1997-2008, where 1997-2002 is the pre-event period and 2003-2009 is the post-event period. The pre-event period for Sweden and for Denmark and Sweden as a group is 2000-2002. Norwegian firms are all firms with an organizational form exposed to the gender balance law as introduced in 2003 (the event). The Danish, Swedish and the combined Danish and Swedish samples include all firms with the same organizational form as the one subject to the gender balance law in Norway.

**Table 8: The base-case estimates**

Independent variable	Prediction	Estimate
Female directors	(-)	-3.064 (0.000)
Firm size	(-)	-0.104 (0.001)
Family control	(+/-)	-0.701 (0.000)
Firm age	(+/-)	-0.011 (0.000)
Financial constraints	(-)	0.349 (0.222)
Performance	(+)	0.025 (0.000)
Ownership concentration	(+)	0.010 (0.000)
Listed	(-)	-1.182 (0.000)
N		1,560
LR $\chi^2(8)$		377.470
Prob > $\chi^2$		(0.000)
Pseudo $R^2$		0.182

This table shows the estimated coefficients from a logit regression of ownership, board, family, and general firm characteristics on the decision to exit the organizational form that is exposed to the gender balance law. The relationship is specified as model (3) of the main text. The predicted sign of the coefficients are shown in the second column, and the p-values are stated in parentheses. The dependent variable is 1 if the observation is an exit firm and 0 otherwise. Female directors is the proportion of shareholder-elected board members who are women. Firm size is the log of sales in constant 2009 MNOK. Family control is a dummy variable which equals 1 if the largest family owns more than 50% of the equity and 0 otherwise. Firm age is the number of years since the firm was founded. Financial constraints is total debt divided by total assets. Performance is the average real return on assets from year t-3 to t. Ownership concentration is the fraction of equity held by the largest stockholder. Listed is a dummy variable which is 1 if the firm is publicly listed and 0 otherwise. The sample is all firms with limited liability in 2000-2009 and an organizational form that is exposed to the gender balance law. We exclude financials and firms that exit due to takeover or bankruptcy during the sample period.

**Table 9: Alternative estimation methods**

Independent variable	Method					
	Logit	Probit	Standard panel	Logit panel	Pooled OLS	Clustered OLS
Female directors	-3.064 (0.000)	-1.809 (0.000)	-0.897 (0.000)	-9.547 (0.000)	-0.561 (0.000)	-0.561 (0.000)
Firm size	-0.104 (0.001)	-0.061 (0.001)	-0.026 (0.032)	-0.65 (0.003)	-0.019 (0.001)	-0.019 (0.039)
Family control	-0.701 (0.000)	-0.421 (0.000)	-0.158 (0.028)	-4.387 (0.000)	-0.139 (0.000)	-0.139 (0.005)
Firm age	-0.011 (0.000)	-0.007 (0.000)	-0.001 (0.223)	-0.493 (0.001)	-0.002 (0.000)	-0.002 (0.007)
Financial constraints	0.349 (0.222)	0.215 (0.209)	-0.022 (0.859)	1.054 (0.603)	0.058 (0.273)	0.058 (0.499)
Performance	0.025 (0.000)	0.015 (0.000)	0.008 (0.009)	0.186 (0.000)	0.005 (0.000)	0.005 (0.018)
Ownership concentration	0.01 (0.000)	0.006 (0.000)	0.003 (0.002)	0.351 (0.062)	0.002 (0.000)	0.002 (0.033)
Listed	-1.182 (0.000)	-0.706 (0.000)	-0.162 (0.009)	-3.945 (0.000)	-0.248 (0.000)	-0.248 (0.000)
N	1,560	1,560	1,560	1,246	1,560	1,560
LR chi <sup>2</sup> (8)/Wald chi <sup>2</sup> (8)	377.47	377.99		407.48		
Prob > chi <sup>2</sup>	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
F(t,n)					53.97	24.28
Prob > F (t,n)					(0.000)	(0.000)
Pseudo R <sup>2</sup>	0.182	0.183	0.213		0.214	0.212
Random firm effects	no	no	yes	yes	no	no

This table shows the effect of estimating the base case model (3) in the main text with alternative econometric techniques. The dependent variable is 1 if the observation is an exit firm and 0 otherwise. Logit is the base case from table 8, Standard panel is a random effects model with exit considered a continuous variable, Pooled OLS uses no panel method and treats exit as a continuous variable, while clustered OLS treats exit as a continuous variable and uses standard errors adjusted for dependence between observations at the firm level. The p-values are stated in parentheses. Female directors is the proportion of shareholder-elected board members who are women. Firm size is the log of sales in constant 2009 MNOK. Family control is a dummy variable which equals 1 if the largest family owns more than 50% of the equity and 0 otherwise. Firm age is the number of years since the firm was founded. Financial constraints is total debt divided by total assets. Performance is the average real return on assets from year t-3 to t. Ownership concentration is the fraction of equity held by the largest stockholder. Listed is a dummy variable which is 1 if the firm is publicly listed and 0 otherwise. The sample is all Norwegian firms with limited liability in 2000-2009 and an organizational form that is exposed to the gender balance law. We exclude financials and firms that exit due to takeover or bankruptcy during the sample period.

**Table 10: Alternative definitions of family control**

Independent variable	Family control					
	Family firm	Family board	Family CEO	Family size	Family chair	Family ownership
Female directors	-3.064 (0.000)	-2.956 (0.000)	-2.876 (0.000)	-2.830 (0.000)	-2.790 (0.000)	-2.841 (0.000)
Firm size	-0.104 (0.001)	-0.129 (0.000)	-0.125 (0.001)	-0.113 (0.002)	-0.107 (0.003)	-0.125 (0.001)
Family control	-0.701 (0.000)	-1.575 (0.001)	-0.807 (0.000)	-0.195 (0.264)	-0.174 (0.003)	-0.009 (0.002)
Firm age	-0.011 (0.000)	-0.013 (0.000)	-0.012 (0.000)	-0.013 (0.000)	-0.011 (0.000)	-0.014 (0.000)
Financial constraints	0.349 (0.222)	0.219 (0.514)	0.167 (0.621)	0.227 (0.497)	0.106 (0.751)	0.272 (0.417)
Performance	0.025 (0.000)	0.027 (0.002)	0.029 (0.001)	0.026 (0.002)	0.025 (0.004)	0.029 (0.001)
Ownership concentration	0.010 (0.000)	0.004 (0.112)	0.003 (0.294)	0.004 (0.200)	0.004 (0.150)	0.008 (0.015)
Listed	-1.182 (0.000)	-1.156 (0.000)	-1.208 (0.000)	-1.097 (0.000)	-1.114 (0.000)	-1.171 (0.000)
N	1,560	1,145	1,145	1,145	1,145	1,145
LR $\chi^2(8)$	377.470	269.910	279.890	259.940	267.920	268.820
Prob > $\chi^2$	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Pseudo $R^2$	0.182	0.179	0.186	0.173	0.178	0.179

This table shows estimates of model (3) in the main text under alternative proxies for family control. The first column of results reproduces the base-case results from table 8. The dependent variable is 1 if the observation is an exit firm and 0 otherwise. The p-values are stated in parentheses. Female directors is the proportion of shareholder-elected board members who are women. Firm size is the log of sales in constant 2009 MNOK. Family control is a dummy variable which equals 1 if the largest family owns more than 50% of the equity and 0 otherwise. Firm age is the number of years since the firm was founded. Financial constraints is total debt divided by total assets. Performance is the average real return on assets from year t-3 to t. Ownership concentration is the fraction of equity held by the largest stockholder. Listed is a dummy variable which is 1 if the firm is publicly listed and 0 otherwise. The sample is all firms with limited liability in 2000-2009 and an organizational form that is exposed to the gender balance law. We exclude financials and firms that exit due to takeover or bankruptcy during the sample period.

**Table 11: Alternative measures of financial constraints and performance**

Independent variable	Financial constraints: Growth			Performance: ROA		
	(t-3) to t	(t-2) to t	(t-1) to t	(t-3) to t	(t-2) to t	(t-1) to t
Female directors	-3.331 (0.000)	-3.121 (0.000)	-3.106 (0.000)	-3.064 (0.000)	-3.041 (0.000)	-2.743 (0.000)
Firm size	-0.014 (0.000)	-0.013 (0.000)	-0.014 (0.000)	-0.011 (0.000)	-0.011 (0.000)	-0.009 (0.000)
Family control	-0.708 (0.001)	-0.790 (0.000)	-0.800 (0.000)	-0.701 (0.000)	-0.667 (0.000)	-0.558 (0.000)
Firm age	-0.089 (0.015)	-0.092 (0.003)	-0.089 (0.004)	-0.104 (0.001)	-0.095 (0.002)	-0.083 (0.001)
Financial constraints	-0.016 (0.294)	-0.008 (0.394)	-0.023 (0.248)	0.349 (0.222)	0.323 (0.257)	0.202 (0.395)
Performance	0.025 (0.008)	0.025 (0.003)	0.026 (0.002)	0.025 (0.000)	0.017 (0.003)	0.017 (0.000)
Ownership concentration	0.011 (0.001)	0.011 (0.000)	0.010 (0.007)	0.010 (0.000)	0.009 (0.000)	0.010 (0.000)
Listed	-1.237 (0.000)	-1.216 (0.000)	-1.210 (0.000)	-1.182 (0.000)	-1.202 (0.000)	-1.027 (0.000)
N	956	1,226	1,244	1,560	1,725	1,948
LR chi <sup>2</sup> (8)	268.820	319.240	319.180	377.470	379.020	386.030
Prob > chi <sup>2</sup>	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Pseudo R <sup>2</sup>	0.215	0.198	0.195	0.182	0.180	0.145

This table shows the estimates of model (3) in the main text under alternative proxies for financial constraints and for performance. The dependent variable is 1 if the observation is an exit firm and 0 otherwise. The p-values are stated in parentheses. Female directors is the proportion of shareholder-elected board members who are women. Firm size is the log of sales in constant 2009 MNOK. Family control is a dummy variable which equals 1 if the largest family owns more than 50% of the equity and 0 otherwise. Firm age is the number of years since the firm was founded. Performance is the average real return on assets from year t-3 to t. Ownership concentration is the fraction of equity held by the largest stockholder. Listed is a dummy variable which is 1 if the firm is publicly listed and 0 otherwise. The sample is all firms with limited liability in 2000-2009 and an organizational form that is exposed to the gender balance law. We exclude financials and firms that exit due to takeover or bankruptcy during the sample period.



**Table 12: Defining exit status**

Independent variable	Model	
	I	II
Female directors	-3.064 (0.000)	-0.541 (0.503)
Firm size	-0.104 (0.001)	0.124 (0.040)
Family control	-0.701 (0.000)	-0.651 (0.022)
Firm age	-0.011 (0.000)	-0.014 (0.010)
Financial constraints	0.349 (0.222)	-0.377 (0.480)
Performance	0.025 (0.000)	-0.002 (0.878)
Ownership concentration	0.010 (0.000)	0.017 (0.000)
Listed	-1.182 (0.000)	-1.881 (0.000)
N	1,560	1,060
LR $\chi^2(8)$	377.47	109.77
Prob > $\chi^2$	(0.000)	(0.000)
Pseudo R <sup>2</sup>	0.182	0.162

This table shows the effect of defining exit in two alternative ways. Model I is the base case from table 8, where the firm is classified as an exit firm every year until exit if it leaves the exposed organizational form during the sample period. Model II assigns exit status to the firm only in the year it changes organizational form. The dependent variable is 1 if the observation is an exit firm and 0 otherwise. The p-values are stated in parentheses. Female directors is the proportion of shareholder-elected board members who are women. Firm size is the log of sales in constant 2009 MNOK. Family control is a dummy variable which equals 1 if the largest family owns more than 50% of the equity and 0 otherwise. Firm age is the number of years since the firm was founded. Performance is the average real return on assets from year  $t-3$  to  $t$ . Ownership concentration is the fraction of equity held by the largest stockholder. Listed is a dummy variable which is 1 if the firm is publicly listed and 0 otherwise. The sample is all firms with limited liability in 2000-2009 and an organizational form that is exposed to the gender balance law. We exclude financials and firms that exit due to takeover or bankruptcy during the sample period.

**Table 13: The entry decision**

Independent variable	Prediction	Model	
		A	B
Female directors	(+)	-1.381 (0.001)	-0.336 (0.546)
Firm size	(+)	0.226 (0.000)	0.178 (0.000)
Family control	(+/-)	-1.455 (0.000)	-1.705 (0.000)
Firm age	(+/-)	-0.130 (0.000)	-0.149 (0.000)
Financial constraints	(+)	-1.640 (0.000)	-2.115 (0.000)
Performance	(-)	-0.009 (0.206)	-0.003 (0.775)
Ownership concentration	(-)	-0.013 (0.000)	-0.012 (0.002)
IPO	(+)	1.062 (0.000)	2.019 (0.000)
N		126,152	126,152
LR $\chi^2(8)$		813.858	484.060
Prob > $\chi^2$		(0.000)	(0.000)
Pseudo $R^2$		0.232	0.280

This table shows the estimated coefficients from a logit regression of ownership, family, and general firm characteristics on the decision to enter the organizational form exposed to the gender balance law. The predicted sign of the coefficients is shown in the second column. Model A classifies the firm as an entry firm every year before entry if it enters the exposed organizational form during the sample period. Model B assigns entry status to the firm only the year it actually enters. The dependent variable is 1 if the observation is an entry firm and 0 otherwise. Female directors is the proportion of shareholder-elected board members who are women. Firm size is the log of sales in constant 2009 MNOK. Family control is a dummy variable which equals 1 if the largest family owns more than 50% of the equity and 0 otherwise. Firm age is the number of years since the firm was founded. Performance is the average real return on assets from year t-3 to t. Ownership concentration is the fraction of equity held by the largest stockholder. IPO is a dummy variable which is 1 if the firm becomes listed in the entry year and 0 otherwise. The p-value of the estimated coefficient's t-statistic is shown in parentheses. The sample is unexposed firms and the exposed firms in their entry year over the period 2000-2009. To qualify as an entry candidate, the firm must have limited liability, at least three board members, and sales not smaller than the lowest sales among the exposed firms that year. We censor financial constraints and performance at the +/- 1% tails.

**Appendix 1: Regulatory differences between limited liability firms with alternative organizational forms**

Regulation	Organizational form		
	Exposed listed	Exposed non-listed	Unexposed
1. Minimum share capital	1 MNOK	1 MNOK	0.1 MNOK
2. Corporate governance code (comply-or-explain)	The annual report must specify item by item whether the firm complies with the OSE corporate governance code	No corporate governance code	No corporate governance code
3. CEO-chair duality	Illegal	Illegal	Legal if share capital is below 3 MNOK
4. Gender balance on board	At least 40% of each gender	At least 40% of each gender	No gender balance requirement
5. Non-voting shares	Up to 50% of the shares can be non-voting	Up to 50% of the shares can be non-voting	No restriction on non-voting shares
6. Mandatory flagging	An investor passing up and down through the thresholds of 5%, 10%, 20%, 1/3, 50%, 2/3, and 90% of the outstanding cash flow rights must notify both the firm and OSE no later than the next morning	No flagging rule	No flagging rule
7. Mandatory tender offer	An investor passing the 5%, 1/3, and 40% thresholds must offer to buy all the remaining stock in the firm	No tender offer requirement	No tender offer requirement
8. Reporting of trade by corporate insiders	Insiders (the firm's officers and directors) must report their trade to the OSE no later than the next morning	Insiders must report to the board. The information is not public	No insider reporting required
9. Ownership recording	The firm must report every transaction in its outstanding equity securities to the VPS. The notification must specify the identity of the buyer and seller, the exact time of the transaction, the number of securities traded, and the security price	The firm must report every transaction in its outstanding equity securities to the VPS. The notification must specify the identity of the buyer and seller, the exact time of the transaction, the number of securities traded, and the security price	The firm must have a register that keeps track of every trade in the firm's stock. The information is not public
10. Accounting rules	The firm must report in detail on the executives' and directors' compensation, and on the stockholdings of the officers, directors, and their close family. The firm must report the interest adjustment dates on bonds	Less detailed reporting requirements than for exposed listed firms on compensation, ownership, and debt	Less detailed reporting requirements than for exposed listed firms on compensation, ownership, and debt

This table shows regulatory differences between Norwegian limited liability firms organized as exposed listed firms (listed ASA), exposed non-listed firms (non-listed ASA), and unexposed firms (AS). An exposed firm is subject to the gender balance law. OSE is the Oslo Stock Exchange. VPS is Verdipapirsentralen.

## Appendix 2: Gender quotas on the board across the world

Country	Percentage of female directors	Gender quota	Regulatory activity	Mandatory(m)/ Comply or explain(ce)
Australia	8.4	no	Firms should adopt and publicly explain a diversity policy.	ce
Belgium	7.7	yes	A draft for law was filed in December 2009 requiring boards of listed firms and certain non-listed firms to have at least one third of their directors from each gender. No sanction.	pending
Canada	10.3	no	The canadian Board of Diversity was launched in November 2009 with a goal of improving diversity on boards, including gender diversity.	pending
France	12.7	yes	Parliment proposed a law in January 2011 which requires a quota of 25% female directors within 3 years and 40% female directors within 6 years for companies employing at least 500 workers and with revenues over euro 50 million. Self-regulation; no sanction.	ce
Germany	11.2	no	The German Corporate Governance Code, which applies to listed firms, contains recommendations aimed at promoting greater female representation on boards.	ce
Iceland	3.8	yes	Law of March 2010; quota of 40%. No sanction.	pending
Italy	3.7	yes	A law was passed in December 2010 requiring 1/3 of each gender on boards of listed firms and state-owned firms. The law requires approval by the Senate, and it will apply to new board nominations six months after such approval. No sanction.	pending
Netherlands	14	yes	A law on gender quotas for the executive and the supervisory boards recieved governmental approval in December 2009. The law, which is still not put into effect, proposes at least 30% of each gender on the board of listed and non-listed firms that meet certain financial and employment criteria. Self-regulation; no sanction.	ce
New Zealand	7.5	no	The New Zealand Shareholders' Association will make diversity on boards one of three priorities.	pending
Norway	40.1	yes	A law passed in 2003 and implented in 2008 mandates at least 40% of each gender on the board of listed firms and certain non-listed firms*). Non-complying firms will be liquidated.	m
Spain	9.3	yes	Parliment passed a 'Law of Equality' in 2007, which requires listed firms to appoint 40%-60% female directors. Firms are allowed until 2015 to comply. **)	ce
United Kingdom	15	no	The Corporate Governance Code recommends gender diversity in the board. The Conservative Party has announced that it will require the long list of directorship candidates to include 50% females.	pending
United States	16.1	no	The SEC approved a rule in December 2009 requiring disclosure of whether and how the board nomination committee considers diversity when identifying director candidates. If the committee or the board has a diversity policy, the SEC rule requires disclosure of how this policy is implemented and how the nomination committee or board assesses the policy's effectiveness. The rule was implemented in February 2010.	ce

This table shows the regulatory status on gender quotas and the actual fraction of females in the board room across the world as of 2010. In addition to the countries specified above, Ireland, South Africa, and Switzerland have gender quotas for state owned firms. \*) Boards with less than ten members have the quota stated in terms of a minimum number of members per gender rather than a ratio \*\*) No formal penalty will apply to non-compliers, but the government will take compliance into account when awarding state contracts to private firms. Sources: Ahern and Dittmar (2011), [www.corpgov.deloitte.com](http://www.corpgov.deloitte.com) and [www.nho.no](http://www.nho.no).