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Does mandatory gender balance work?
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by

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Abstract

Norway is the first, and so far the only, country to mandate a minimum fraction of female and male directors on corporate boards. We find that after a new gender balance law surprisingly stipulated that the firm must be liquidated unless at least 40% of its directors are of each gender, half the firms exit to an organizational form not exposed to the law. This response suggests that forced gender balance is costly. The costs are also firm-specific, because exit is more common when the firm is non-listed, successful, small, young, has powerful owners, no dominating family owner, and few female directors. These characteristics reflect high costs of involuntary board restructuring and low costs of abandoning the exposed organizational form. Correspondingly, certain unexposed firms hesitate to become exposed. Overall, we find that mandatory gender balance may produce firms with inefficient organizational forms or inefficient boards.

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1. Introduction

The choice of organizational form determines regulatory constraints on firms' governance systems, such as stockholders' ability to design the board, to separate cash flow rights from voting rights, and to choose the principles for financial reporting. Therefore, a regulatory shift may change the optimal way to organize the firm (Hansmann 1996, p. 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 the stricter regulation.

We find that half the initially exposed firms choose to exit, and that exit propensity is driven by firm characteristics. This result suggests that the regulation is costly for firms in general, more costly for some firms than for others, and also that non-exiting firms may end up with suboptimal boards because the benefit of keeping their 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 changes in exit and entry propensities do not reflect the full corporate cost of mandatory gender balance.

The Norwegian Parliament passed a regulation in 2003 requiring that at least 40% of the firm's directors be of each gender. Ahern and Dittmar (2012) argue that this gender balance law (GBL) represents a massive, surprising shock to the stockholders' ability to design their firm's board optimally. The authors also notice that the GBL represents a natural experiment that allows the researcher to study the choice of corporate governance mechanisms with less worry than usual about endogeneity problems (Adams, Hermalin, and Weisbach 2010). Ahern and Dittmar 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. During the next five years until the end of the transition period in 2008, firms complying with the 40% quota replaced about one third of their 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 characteristics that separate firms that chose to comply with the GBL by making this large board restructuring, from the firms that avoided it by exiting their current organizational form. The firms exposed to the GBL have the ASA organizational form (*allmennaksjeselskap*), while the unexposed firms have the AS form (*aksjeselskap*). We also consider the flip side of the exit decision by analyzing how the GBL's passage influenced the tendency of unexposed firms to enter the exposed form, i.e., transform from AS to ASA.

Existing research has focused on firms that choose to remain ASA and hence comply with the GBL. The findings suggest that the large, forced upwards shift in the demand for female directors by ASA firms 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 had less board experience and were on average eight years younger than their male co-directors (Ahern and Dittmar 2012). Thus, most female directors in post-GBL ASAs differ from their male colleagues in terms of less experience and younger age.

This difference means that although the GBL regulates only gender balance per se, the law may effectively restrict stockholders' ability to choose a board with desired qualities. The reason is that such director qualities may correlate with gender. In particular, the two pools of potential male and female directors differ considerably along dimensions that may matter for the board's ability to create firm value, such as leadership experience.[1]

This impression of restricted board competence in ASAs after the GBL is supported by Ahern and Dittmar. They estimate an average announcement return of –3.5% for listed firms with no female directors when the Minister of Trade and Industry announced his plans to mandate gender balance. Firms with no female directors represented about three quarters of all listed firms at that time. This result is consistent with findings from 1989 to 2002, which is before the GBL was announced. The evidence suggests that the firms would most likely have lost value if they had voluntarily improved their boards' gender balance (Bøhren and Strøm 2010). The subsequent value drop when the regulatory intent was announced suggests that stockholders did indeed expect a prospective GBL to be likely and costly. Also, this value drop does not appear to be a temporary overreaction. Firms that had to change their boards the

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[1] There is growing evidence that the gender mix influences the board's behavior. Female directors tend to be associated with better board attendance (Adams and Ferreira 2009), with fewer takeover attempts and lower takeover premia (Levi et al. 2013), and with less layoffs and higher labor costs (Matsa and Miller 2013).

most typically experienced a 15% abnormal drop in their market-to-book ratio during the five subsequent years.

The cost of gender balance may differ across firms. First, the compliance costs may vary among ASAs that choose to keep their organizational form. For instance, the reported announcement returns support the notion that boards with more female directors pre-GBL must sacrifice less board competence to reach the 40% quota post-GBL. Second, firms converting from ASA to AS may experience different exit costs depending on the firm's listing status. This is because the GBL applies to any ASA regardless of whether it is listed or non-listed. However, only listed firms are required to be an ASA. Therefore, exit to avoid the quota automatically triggers delisting for a listed ASA, but not for a non-listed ASA. Third, because the GBL changes the benefit of being an ASA, the law may also influence whether the AS chooses to become an ASA.

To improve the understanding of how this one-size-fits-all regulation of gender balance has heterogeneous effects across firms, we study how the GBL affects the choice of organizational form of all exposed (ASA) and unexposed (AS) firms during nine years. This approach provides new insight for four reasons. First, following the firms' behavior during an extended time period turns out to be important. For instance, we find that among the ASAs that existed when the GBL was passed in 2003 and that did not subsequently merge or go bankrupt, 51% had chosen to exit into AS 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 firms.

Third, we find that the tendency to enter the ASA form is not just a mere mirror image of the tendency to exit it. Thus, studying both exit and entry deepens the insight into regulatory effects. Finally, the two existing studies on valuation effects of the GBL report conflicting results. Ahern and Dittmar (2012) find negative valuation effects, while Nygaard (2011) finds positive effects using a different event date and a different sample. We avoid such ambiguity by analyzing how firms respond to the regulatory shift by changing organizational form. This direct evidence on firm behavior may improve the understanding of what forced gender balance does to different firms and why announcement returns vary across firms. The key is to identify how certain characteristics enable the firm to influence the cost of the regulatory shock by either keeping or changing its organizational form.

The GBL was announced in 2002, passed in 2003, and implemented in 2006 with a two-year grace period. Among the 309 ASAs in 2002 that did not subsequently merge, fail, or exit for reasons unrelated to the GBL, we find that 151 firms existed in 2008. The number of non-listed ASAs decreases by 49%, while the number of listed ASAs increases by 11%. Moreover, unlike before the GBL, and unlike in neighboring countries without gender balance regulation, exit is much more common than entry.

Thus, listed firms, which cannot remain listed unless they keep the ASA form, are exiting much less often than non-listed ASAs. This finding supports the argument that the GBL less often induces a change of organizational form when the listing benefits are high. Hence, a study of exits in listed firms only would miss most of the interesting cases. Moreover, because the change in the number of ASAs is the net of exits and entries, both exit and entry should be addressed.

Regardless of listing status, we find that most exiting firms 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, which happens under the ASA form. Exit is also more common among non-family firms. This result may indicate that family owners are better able than others to radically change the board's gender balance. Moreover, most firms that exit have few female directors, suggesting that regulatory costs are higher the more the board must be restructured. Also, most firms that exit are small or young. This finding may reflect that the compliance cost is fixed relative to firm size, and that the cost of changing organizational form grows as the firm matures.

The economic significance of these results is considerably lower for firm size, firm age, performance, and ownership concentration than for family control, listing status, and the fraction of female directors. For instance, the odds of exit increase by 2.5% if the return on assets increases by one percentage point, while the odds decrease by 69% if the firm is listed rather than non-listed.

Most of these relationships are supported by the evidence for firms converting from AS to ASA. The exception is that unlike for the exiting firms, the fraction of female directors in the entering firms is not a significant predictor of conversion. This result may be driven by the fact that whereas the ASA must either meet the mandatory gender quota or exit, the AS faces

no such pressure. The AS enters only if it expects the benefits will exceed the compliance costs. Radically changing the gender mix is apparently not an important driver of compliance costs for firms that voluntarily choose to enter. A possible reason is that they have had sufficient time to ensure easy access to the pool of qualified female directors.

Our results are robust to alternative econometric techniques, to the definition of family control, and to how we measure performance. However, the findings do not imply that the GBL is more costly for firms that exit than for those 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, abandoning the more strongly regulated ASA form may be more burdensome than being forced to radically change board composition. This happens particularly often to the listed firms in our sample, where exit implies losing the listing benefit. Correspondingly, AS firms that choose not to enter the ASA form may still incur a GBL-related cost. This happens because AS firms will not enter whenever the cost of complying with the GBL exceeds the ASA benefits that are independent of the GBL, such as easier access to financing and stronger legal protection of minority stockholder rights.

This paper is related to the empirical literature on the economics of corporate governance regulation. Bushee and Leuz (2004) study the effect of stricter SEC disclosure requirements for firms trading on the OTC Bulletin Board. They find that almost 75% of the firms either go private or exit to the pink sheets 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 2002 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). Overall, the findings in these papers are consistent with ours.

Ahern and Dittmar (2012) briefly address exits after the GBL in their valuation study, but consider only listed firms. Because ownership characteristics are not included, the authors ignore agency costs as a determinant of exit. 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. Moreover, both approaches

are biased towards finding excessive exit because they include financial firms. Financial firms were allowed to convert from ASA to AS one year before the gender quota became mandatory. Finally, these authors do not address the entry decision.

Norway is so far the only country with gender quotas in non-state firms. Hence, our findings from the first country to adopt a radically new regulation on board diversity may contribute to a more informed choice in countries that currently consider similar political measures. In particular, we can document effects from a regulatory regime that is mandatory rather than voluntary, dictates the same gender balance in all boards rather than allows for firm-specific discretion, ensures full compliance by a liquidation penalty, and applies to listed firms as well as to some non-listed firms rather than to all firms or just to listed firms.

The rest of the paper is organized as follows: Section 2 provides the institutional setting, section 3 specifies our predictions, and section 4 presents the data and summary statistics. We explain the methodology and test the predictions in section 5, while we summarize and conclude in section 6.

2. Institutional setting

The first official initiatives to regulate gender balance in Norwegian corporate boards were made in 1999 and once more in 2001 through public hearings about possible overhaul of the Equal Opportunities Act from 1978. The first public announcement of the planned regulation was made in February 2002. The gender balance law (GBL) was passed as corporate law by Parliament in December 2003 and once more in June 2005, with the added provision of a liquidation penalty for non-compliers. The transition period from the old to the new regime ended at year-end 2007, although 72 firms were allowed to postpone compliance until the end of February 2008. [2]

The GBL states that the firm will be liquidated three months after non-compliance, although the government may abstain from liquidation if the firm is considered particularly important for society. However, no firm has been liquidated for non-compliance so far. A likely reason is that the alternative to fill the quota is not to liquidate, but to exit into the unexposed form.

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[2] The GBL as passed in 2003 would have been withdrawn if the firms had voluntarily filled the gender quota by June 1, 2005. Because that did not happen, the GBL became mandatory in 2008 (Nygaard 2011).

Norwegian firms with limited liability can choose between the ASA and AS organizational forms.[3] This dual system is dominant worldwide, although exceptions exist in Canada, the United States, and a few other countries (Lutter 1992). The Norwegian ASA and AS forms resemble, respectively, A/S and ApS in Denmark, S.A. and S.A.R.L. in France, AG and GmbH in Germany, AB (publ.) and AB in Sweden, and Plc. and Ltd. in the United Kingdom.

Table 1 shows how the firms in our sample can respond to the GBL by changing or not changing their current organizational form.

<center>Table 1</center>

The GBL applies to the ASA firms, only. Hence, an ASA may respond to the GBL by keeping its current organizational form. If it does, the 40% gender quota must be filled.[4] This choice response corresponds to the first row of table 1 (Stay). Alternatively, the ASA may convert into an AS (Exit), which is the response shown in the second row. Unlike for Stay, the Exit option allows the firm to continue having a board with the preferred gender mix.

The AS firms in rows 3 and 4 are not exposed to the GBL. If the AS chooses to become an ASA (Enter), it must fill the gender quota. Alternatively, the firm remains an AS (Do not enter) and chooses whatever gender balance the owners prefer.

As shown by Appendix 1, the financial reporting and the corporate governance mechanisms are less tightly regulated for AS than for ASA. For instance, an ASA must have ten times larger minimum share capital, produce financial reports containing greater detail, and provide compensation data containing greater specificity about its officers and directors. Unlike for most AS firms, CEO-chair duality is illegal in ASAs, and not more than half their share capital can be non-voting.

Appendix 1 also shows that there is less discretion in the design of corporate governance mechanisms when the ASA is listed. For instance, only listed ASAs are subject to comply-or-explain governance codes, flagging requirements, and tender offer rules. 42% of the ASAs in our sample are non-listed by year-end in 2009.

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[3] The dual system was introduced in 1996 to align Norwegian corporate law with legislation in the European Union.
[4] The 40% quota applies only to boards with more than nine members. For smaller boards 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 there are six to eight members, and at least four of each gender if the board has nine members. These thresholds imply that the quota may vary between 33% and 50% in the cross-section of compliers.

Although Norway was the first country to regulate gender balance in the private sector, gender quota for corporate boards is currently a hot political topic internationally. The obvious reason is that corporate boards are strongly dominated by men. The highest fraction of female directors in listed firms outside Norway is 27% (Sweden), while 70% of the 43 countries included in a recent survey have fewer than 10% of their board positions filled by women (*www.catalyst.org*). France, Iceland, Netherlands, and Spain will implement quotas in 2013–2016. Proposals along the same lines have recently been made in Australia, Belgium, Canada, Italy, and the EU Commission. Gender balance rules for state-owned firms have already been launched in Ireland, South Africa, and Switzerland.

Some of these countries consider whether to use mandatory law like in Norway or the softer comply-or-explain system, which is the common standard in national corporate governance codes among more than 100 countries worldwide (*www.ecgi.org*). Appendix 2 shows the details.

3. Predictions

The firm should transform itself from the ASA (exposed) to the AS (unexposed) organizational form when the firm benefits from doing so. This benefit, B(Exit), has three components:[5]

(1)   *B (Exit) = Compliance costs – Compliance benefits – Benefits regardless of the GBL*

Exit is optimal if B(Exit) is positive. If negative, the best choice is to continue being an ASA in compliance with the GBL. Section 5 deals with the entry decision, where the benefit of entry is the negative of (1). Either way, changing organizational form requires a two-thirds majority vote at the stockholder meeting.

If there are no market imperfections such as irrational owners or conflicts of interest between owners and managers, the compliance benefits in the second term of (1) are zero. The only effect of the GBL in such a case is to add a new constraint to the owners' value maximization problem by ruling out in an ASA any board design involving fewer than 40% of the positions

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[5] A similar logic is used by Engel, Hayes, and Wang (2004).

going to each gender. This added restriction will at best leave the owners' opportunity set unchanged.

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

The third term in (1) explains why an ASA 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 first two terms) is smaller than the benefit of being an ASA for reasons unrelated to the GBL (the third term). These latter reasons are independent of board composition and were also valid before the GBL. Examples are the benefit of having a liquid stock if the ASA is listed and of having the option to go public without first changing organizational form if the ASA is non-listed. Regardless of listing status, any ASA may also benefit from regulation ensuring more transparency and stronger protection of minority stockholders.

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 stay. The latter costs are particularly relevant for the listed firms in our sample, because 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 to AS is also optimal for firms with low benefits from being an ASA in the first place. For such firms, the third component in (1) is too small to overcome even a moderate cost of the GBL.

We next hypothesize how firm characteristics will influence the three components of B(Exit) in (1) and hence the likelihood of switching from the ASA to the AS organizational form after the GBL.

3.1 Compliance costs

The costs of complying with the GBL consist of search costs for new directors, increased compensation costs for these directors once hired, and reduced private benefits for owners, who may lose control because the board is restructured.

If the owners have chosen the optimal board composition before the GBL, forced board changes, and hence the compliance costs, will be higher the fewer women the board has. This logic is supported by Ahern and Dittmar (2012), who find that on average, only firms with no female directors lose market value at the GBL announcement. We predict that *the lower the fraction of female directors, the higher the propensity to exit (H1).*

If earlier top management experience matters for director quality, the finding by Ahern and Dittmar (2012) that women have less such experience than men does imply that new qualified directors must be drawn from a smaller pool than earlier. Thus, the GBL will increase both search costs and compensation costs. Because these increased costs seem rather independent of firm size, however, compliance costs will more often produce a positive exit benefit when the firm is small. We expect that *the smaller the firm, the higher the propensity to exit (H2).*

Family firms often have members of the controlling family in board and CEO positions (Anderson and Reeb 2003). To illustrate, family-controlled firms in our sample have a median ownership concentration of 50%, a family chairperson in 38% of these cases, and a family CEO in 30%. In contrast, non-family firms have a median ownership concentration of 26%, and the largest owner is chairperson or CEO in 17% of the cases. The GBL may therefore threaten the family's ability to extract private benefits in the ASA whenever the gender mix among the family's director candidates does not match the mandated gender quota. Such concerns for family-internal recruiting to the board suggest that ASAs controlled by families convert more often to the AS form than other firms after the GBL.

Nevertheless, this concern for family-internal recruiting may not tell the full story about the family firm's compliance costs. The high ownership concentration and the family's governance involvement during extended periods suggest that family firms often have particularly powerful and committed owners. The long and deep experience with the firm and its environment may have enabled the family to establish a rich network with resourceful individuals outside the firm. Therefore, the controlling owner may know the outside pool of potential female directors particularly well. This argument suggests that unlike the family's

ability to recruit female directors from inside the family, it may be relatively easy to fill the gender quota by recruiting from outside the family. Hence, compared to other firms, family-controlled firms may exit the exposed organizational form less often rather than more often. We define a family-controlled firm as one where ultimate owners by blood or marriage hold more than half the equity. The two conflicting arguments imply that *the expected relationship between family control and exit propensity is unspecified (H3).*

3.2 Compliance benefits

The hypotheses discussed so far assume that owners always know their best interest, including the ability to establish an optimally designed 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, because 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 were 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 benefit from being forced to establish a more gender-balanced board. On the other hand, older firms may find it harder to change organizational form because they are more complex and rigid (Boone et al. 2007). This argument suggests older firms are less rather than more prone to exit. Thus, *the expected relationship between firm age and exit propensity is unspecified (H4).*

3.3 Benefits regardless of the GBL

The ASA firms in our sample are subject to tighter reporting requirements than the AS firms are. This higher transparency of ASAs reduces the asymmetric information between old and new stockholders, between majority and minority stockholders, and also 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). Using leverage to proxy for financial constraints, we predict that *the weaker the financial constraint, the higher the propensity to exit (H5).*

For similar reasons, profitable firms may suffer less after exit because they can more easily finance growth internally. Measuring profitability as operating returns to assets after taxes (ROA), we expect that *the more profitable the firm, the higher the propensity to exit (H6)*.

The higher transparency of ASAs than ASs because of regulatory differences may induce less costly and more intense monitoring by financiers, analysts, and the media. The resulting lower information asymmetry in ASA firms is more valuable the higher the potential agency costs, that is, the weaker the owners' incentives and power to monitor management (Morck, Shleifer, and Vishny 1989). Hence, an ASA with low potential agency costs reaps fewer governance benefits from being an ASA. Moreover, these low agency costs increase the likelihood that the firm will rationally choose organizational form according to the value-maximizing exit criterion in (1). We relate agency costs to ownership concentration, which we measure as the fraction of outstanding equity held by the firm's largest ultimate owner. We hypothesize that *the higher the ownership concentration, the higher the propensity to exit (H7)*.

Unlike a listed ASA, a non-listed ASA does not change listing status when exiting to AS. 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 would benefit all stockholders as a group (Shleifer and Vishny 1986). For instance, Norwegian listed and non-listed ASAs of similar size have on average roughly 4,000 and 10 stockholders, respectively (Bøhren 2011). We expect that *non-listed firms will exit more often than listed firms do (H8)*.

Summarizing predictions H1–H8, we hypothesize that a firm with the ASA organizational form, which is exposed to the GBL, will exit more often to the unexposed AS form when the firm has low leverage, high profitability, high ownership concentration, small size, few female directors, and when the firm is non-listed. The expected effects on exit of firm age and family control are left unspecified.

13

4. Data and descriptive statistics

To allow for approximately two non-event years at the beginning and end of the regulatory events described in section 2, our sample period is 2000–2009. The sample for the analysis of exits is based on the population of ASA firms by year-end.[6] We ignore firms that exit due to merger or bankruptcy. Financial firms are excluded because they had to choose the ASA form until a new law lifted this requirement in 2007.[7] Because merging firms and financial firms may also have left the ASA form partly because of the GBL, this sample restriction biases our tests towards accepting the null hypothesis that the GBL has no effect on the choice of organizational form.

Table 2 shows the number of sample firms by year-end during the sample period. The total number of sample firms in panel A (All) represents 274 observations per year on average, which is 53% of the population.[8] This large difference between the population and the sample shows that our filters are important for eliminating firms that have probably exited for other reasons than the GBL.

The number of ASAs is largest in 2001, monotonically decreasing thereafter to a minimum in 2009. Although not shown in the table, the peak in 2001 becomes more obvious if we also include every year from when the dual system of ASA and AS was established in 1996. The number of ASA firms starts at 177 in 1996 and grows every year until 2001.

Table 2

Panel A also documents that the decline after 2001 only happens in the sub-sample of non-listed firms. The number of non-listed firms drops by 56% from 2001 to 2009, while the number of listed firms grows by 6%. This large difference suggests that if the exit decision is partially driven by the GBL's introduction, the benefit of changing organizational form to avoid the GBL is considerably larger for non-listed firms.

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[6] Our data set is organized by the Centre for Corporate Governance Research (*www.bi.edu/ccgr*). The data on family relationships are delivered by the tax authorities (*www.skatteetaten.no*), while Experian (*www.experian.no*) has delivered the accounting data and the corporate governance data.

[7] Financials are also regulated differently than other firms regarding capital structure and corporate governance. For instance, the risk-adjusted leverage of banks cannot exceed 92% according to the Basel regulation, and Norwegian banking law stipulates that no investor can own more than 10% of a bank's equity without the government's permission.

[8] The population of ASA firms averages 482 firms per year. Excluding financial ASAs reduces this number to 340, dropping further to 274 when we also exclude ASAs that go bankrupt or become AS because of a merger.

The change in the number of firms from one year to the next in panel A reflects the difference between entering firms (from AS to ASA) and exiting firms (from ASA to AS) during the year. Panel B shows the exits, entries, and net exits. As already documented by panel A, 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 during the sample period. Panel C confirms that this tendency to exit is much stronger among the non-listed firms. For instance, while panel A shows that the number of firm years is rather independent of listing status, non-listed firms account for over four times more of the exits (175 vs. 42, respectively). In all, 12.1% of the non-listed firms exit yearly on average, while only 3.3% of the listed firms do.

Panel D shows that when an AS decides to transform into ASA and hence become exposed to the GBL, the firm more often enters as non-listed (no IPO) than listed (IPO), where the latter means going public in the ASA entry year (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 go public directly up to 2003, 54% do so subsequently. This shift in IPO propensity by entry firms suggests that although compliance with the GBL may produce similar costs and 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 quickly reaps the listing benefits as well. We focus on the exits in the following, leaving discussion of the entry decision to section 5.

The empirical variables are defined in Appendix 3. Unreported summary statistics for these variables show that non-listed firms account for 55% of our observations, the largest stockholder owns on average 43% of the equity, the average board has 5.6 members of which 17% are females, while 20% of the firms are majority controlled by a family.

A firm is classified as exiting if it transforms from ASA to AS during the sample period. An exiting firm leaves the sample the year it actually exits. The firm is called non-exiting if it never abandons the ASA form during the sample period. Table 3 shows that compared to ASA firms that stay exposed to the GBL, the ASAs that convert to AS and hence become unexposed are different according to most of the hypothesized determinants. For instance, exiting firms have significantly fewer women on the board (10% vs. 20%), are younger (20 years vs. 29 years), have higher ownership concentration (53% vs. 38%), and are more often

15

non-listed (78% vs. 42%). Compared to our hypotheses from section 3, these univariate relationships are consistent with H1, H4, H7, and H8, respectively.

Table 3

Unreported tests show that when we split the sample based on listing status rather than exit status, a similar pattern emerges as for exit vs. non-exit firms. This similarity suggests that whether or not the firm is listed correlates both with the exit/non-exit choice and with other determinants of exit beyond listing status. Thus, not controlling for listing status may create a serious omitted variable bias in a regression where exit is the dependent variable. That does not imply, however, that any other hypothesized determinant than listing status is redundant in an exit model. This argument is supported by the bivariate correlation coefficients, which show that listing status does not correlate alarmingly with any other determinant.[9]

5. Statistical tests

Table 2 shows that the number of firms exposed to the GBL has been dropping every year since 2002, when the intention to regulate gender balance in corporate boards was announced. Although table 2 ignores all ASA firms that become AS because of merger, bankruptcy, or regulatory change for financials, our filtering criteria might still have failed to exclude other exogenous exit determinants that are unrelated to the GBL. To account for this possibility, we compare the exit propensity for ASA firms in Norway with the exit propensity from the similar organizational form in the neighboring countries Denmark and Sweden. These two countries do not mandate gender-balanced boards, but they have the same system of dual organizational forms as Norway has.

We use a difference-in-difference approach to test whether the tendency to change organizational form by Norwegian firms differs from what it is in the neighboring countries. The event is the passage of the GBL in 2003, and the event group is the Norwegian ASA firms. The alternative non-event groups are the firms in Denmark, Sweden, or both, with similar organizational form as the firms in the event group. The post-event period is 2003–2009, while the pre-event period is 1996–2002. Hence, all firms in our sample have the option to change organizational form any time during the sample period. Only Norwegian firms may

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[9] The listed/non-listed dummy correlates the strongest with ownership concentration. The Pearson correlation coefficient is -0.42, which is nevertheless well below the rule-of-thumb critical limit of +/- 0.8 (Greene 2007).

consider exiting to avoid the GBL, however. Moreover, this can be a valid reason only in the post-event period.

The statistic of interest is the difference-in-difference statistic $D \equiv \Delta_{\text{Norway}} - \Delta_{\text{Foreign}}$, where Δ_{Norway} is the difference between the number of Norwegian firms in the post-event period and the pre-event period, respectively. Correspondingly, Δ_{Foreign} is the difference between the number of firms in the two periods in the foreign country (Denmark, Sweden, or both). We estimate D by 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 relative to the number of group i firms in the event year. Because the number of firms varies strongly across the three countries, we use the relative rather than the absolute number of firms over time in a given country. EG_i is a dummy variable which is 1 if the firm is in the event group and 0 if the firm 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 β_3 in (2). This coefficient reflects the effect on the number of firms if the observation is from Norway (rather than a neighboring country) in the event period (rather than in the non-event period).

The number of firms in the three countries is shown in panel A of table 4. Two major factors explain why the number of firms in Denmark is much higher than in the two other countries. First, Norway and Sweden wrote their laws for ASA type of firms around 1995 based primarily on an EU directive. Denmark, however, wrote its ASA law twenty years earlier primarily based on its existing AS law. Second, both Danish laws are less restrictive than their Norwegian and Swedish counterparts (Gomard and Schaumburg-Müller 2011). For these reasons, we will estimate (2) using alternatively Denmark, Sweden, and both as the non-event group.

Table 4

Panel B shows the estimate of β_3, which is negative and statistically significant in every case. The economic significance is strong. For instance, the expected number of ASA firms in the post-event period relative to the pre-event is 42% smaller in Norway than in Denmark. This

17

result reflects that the drop in the number of firms with organizational form exposed to the GBL as observed in table 2 is a unique Norwegian phenomenon.

The findings in table 4 strengthen the impression of an inverse relationship between the introduction of the GBL and the use of ASA as organizational form. We analyze this link more closely in the following by relating the exit and entry behavior to firm characteristics 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.

5.1 The base case

Our base-case model is the following:

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

$Exit_{it}$ is a dummy variable that equals 1 if firm i leaves the exposed form (ASA) during the sample period and 0 otherwise. We estimate (3) as a logit model, using the GLM and a sample from 2000–2009.

Table 5 shows the coefficient estimates in the third column. Consistent with our prediction based on the compliance cost component of B(Exit) in (1), the table documents that firms with few female directors exit more often from the exposed to the unexposed organizational form (H1). This inverse relationship suggests that the costs of complying with the GBL are higher the more the board must be restructured in general, and the more that male directors must be replaced by females in particular. The finding is also in line with Ahern and Dittmar (2012), who report that firms with no female directors lost value when plans for a GBL were announced.

Table 5

Smaller firms exit more often than other firms do. This finding supports 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 (H2). Moreover, firms controlled by families exit less often than other firms do. This result is inconsistent with the logic that the family's ability to extract private benefits is threatened by a GBL that mandates a gender-based board composition the family cannot

18

match. Rather, the finding supports the argument that family owners have better access than others to female directors who can protect the owners' interests (H3).

Turning next to potential compliance benefits, the estimates show that younger firms exit more often than older firms do. This result is inconsistent with the ignorant-owner argument, but supports the notion that mature firms find it more costly to change organizational form (H4).

The third component of B(Exit) in (1) is benefits of the exposed organizational form that are independent of the GBL. Table 5 shows that unlike what we predicted, the exit decision is not significantly related to financial constraints as measured by leverage (H5). A more profitable firm is more willing to leave the exposed form, however, possibly because it can more easily self-finance investments by high earnings and can also afford the higher financing costs as the firm becomes less transparent (H6). Exit is more common when ownership concentration is high. This is evidence that strong owners can be a substitute for the disciplining effect of a stricter regulatory regime (H7).

Finally, non-listed firms are more prone to exit. This result supports the notion that listed firms have more to lose by exiting for reasons unrelated to the GBL, such as better stock liquidity, continuous pricing of their stock, and closer following by financial analysts and the media (H8).

The odds ratios in column four of table 5 show the marginal effect of the independent variables on the odds of exit. An odds ratio close to one reflects an insignificant economic effect. The independent variable reduces the odds of exit by more the closer the odds ratio is to zero, while the odds increase more strongly the more the odds ratio exceeds one.

The table documents that the economic significance of the statistically significant variables is relatively low for firm size, firm age, performance, and ownership concentration, medium for family control, and high for listing status and female directors. For instance, increasing ROA by one percentage point increases the odds of exit by 2.5%, while they decrease by 50% if the firm is controlled by a family rather than not. The odds of exit decrease by 69% if the firm is listed rather than non-listed, while they decrease by 95% if the board has only women rather than only men.

5.2 Robustness

Table 6 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, pooled OLS, 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 6

Family control may be operationalized in several ways. Table 7 shows what happens when we measure family control by other proxies than the one used in table 5, which is whether the family holds a majority ownership stake (family firm). We alternatively measure family control by the fraction of board seats held by the family (family board), by whether the CEO is recruited from the family (family CEO), by the number of family members owning stock in the firm (family size), by whether a family member heads the board (family chair), and by the family's equity in the firm (family ownership).

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. However, the statistical significance is weaker when we use family control variables that do not directly reflect the family's ownership rights. This result suggests that formal power at the stockholder meeting is the key ownership determinant of the exit decision. Overall, table 7 reflects that the estimates of (3) are robust to how family control is measured.

Table 7

Unreported tests use alternative empirical measures for financial constraints and for performance. Instead of measuring financial constraints by leverage, we use annual real sales growth during either the current, the last two, or the last three years. The estimates are equivalent to those in table 5. We find the same result if we measure annual ROA during the current year or as an average during the last three years.

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 8 repeats the base-case result from table 5 in model I, while model II classifies the firm as exiting only in the year it actually switches from ASA to AS. The

estimates show that female directors and firm performance become insignificant determinants in model II, and that firm size becomes positive and significant at the 4% level. The relationship with exit is unaltered for ownership concentration, family control, listing status, and firm age.

The insignificant relationship between exit and female directors may turn up because all firms in our sample tend to increase their use of female directors over time, regardless of whether the firm ultimately exits. For instance, firms that exit increase the average fraction of females on their boards before exit from 8% in 2002 to 30% in 2008. This increasing use of female directors regardless of exit behavior means that when a firm is classified as exiting only in the year it actually exits, it is an exit firm in our test only when its female director fraction is the highest and hence the closest to the female fraction for non-exiting firms. This is probably why this firm characteristic is unable to separate exiting firms from the non-exiting.

Table 8

Summarizing, we have shown that the base-case results are independent of what econometric technique we use, how we define family control, how we measure return on assets, and whether we use leverage or growth to measure financial constraints. The definition of an exit firm matters, because the fraction of female directors is not a significant predictor of exit behavior when the firm is classified as exiting only in the year it actually exits.[10]

5.3 Entry

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

$$(4) \quad \begin{aligned} Entry_{it} &= \alpha + \beta_1 Female\ directors_{it} + \beta_2 Firm\ size_{it} + \beta_3 Family\ control_{it} + \beta_4 Firm\ age_{it} \\ &+ \beta_5 Financial\ constraints_{it} + \beta_6 Performance_{it} + \beta_7 Ownership\ concentration_{it} + \beta_8 IPO_{it} + u_{it} \end{aligned}$$

Entry is a dummy variable that is 1 for firms that enter the exposed organizational form and 0 otherwise. Based on the theoretical arguments for the exit decision in section 3 as specified in hypotheses H1–H8, we predict that entry is more likely if the firm has many female directors ($\beta_1 > 0$), large size ($\beta_2 > 0$), binding financial constraints ($\beta_5 > 0$), low performance ($\beta_6 < 0$),

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[10] Boards in firms with more than 200 employees have one third of their directors elected by and from the employees. We find no evidence that the exit decision depends on whether the board has employee directors. Hence, even if employee directors may be more positive to the GBL than stockholders are, stockholders do not seem so be influenced by this view when making the exit decision.

and low ownership concentration ($\beta_7 < 0$). Like we did for exit, we leave unspecified the expected effects on entry of family control (β_3) and firm age (β_4).

Because an AS firm considering entry must necessarily be non-listed, listing status is an irrelevant determinant. However, and as suggested by table 2, we expect the GBL will increase the tendency of entering firms to become listed (make an IPO; go public) directly upon entry rather than to stay non-listed in their new ASA form. The reason is that listed firms enjoy more of the benefits of being an ASA 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 an ASA. 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 tendency to become listed upon entry ($\beta_8 > 0$).

The sample is AS firms that are entry candidates during the period 2000–2009. To qualify as an entry candidate, the AS must have at least three board members and sales not less than the lowest sales observed among the ASAs.

The estimates of the relationship in (4) are shown in table 9, which reports the results from two models. In model A, an AS that converts to ASA during the sample period is classified as entering every year until the year it enters, which is the firm's last sample year. Model B uses the alternative definition, where the firm is classified as entering only in the year it actually enters. Unlike in the exit case, where every exit candidate already is an ASA, it seems more appropriate for the entry case to use the definition in model B. This definition is more appropriate because an entry candidate is not exposed to the GBL until it voluntarily chooses to enter. Moreover, many non-entering firms that qualify for entry may not even consider entry a relevant option. Finally, firms choosing to enter know what new regulation they must comply with. Hence, model B seems to reflect the more reasonable definition of an entering firm.

Table 9

The estimates are consistent with our predictions for the effect 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 hypothesis, strengthening the

impression gathered from the exit model that financial constraints do not reliably predict changes in organizational form.

The fraction of female directors is not a significant determinant of entry in model B and is even significantly negative in model A.[11] This finding suggests that non-entering firms are not held back more than entering firms are 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 5 that the existing gender mix in the board is a strong determinant of exit. However, and as already discussed, exiting and entering firms are fundamentally different in a GBL compliance sense. An ASA firm is already exposed to the GBL and has no choice in the sense that unless it exits to AS, it must comply with the 40% quota or accept to be liquidated. An AS, however, chooses to enter and hence comply only if it wants to. Therefore, AS firms that voluntarily decide to become ASA do so because their owners think the cost of filling the gender quota is small relative to the benefit of being an ASA. Apparently, the owners also consider this cost to be independent of the board's current gender mix.

Finally, tables 5 and 9 jointly document that family-controlled firms are more hesitant than are other firms both to exit from and to enter into the ASA form. This finding suggests that when new regulation changes the benefit of the status quo, family firms are inclined to keep their organizational form, whatever that is. One possible reason is that family-controlled firms have transaction costs of organizational change that are not well accounted for by the other independent variables in our entry and exit models.

The odds ratios for model B in the rightmost column of table 9 show that the economic significance of the statistically significant determinants is low for firm size, firm age, performance, and ownership concentration. In contrast, the effect is strong for family control, financial constraints, and IPO. For instance, the odds of entry drop by 14% as the firm gets one year older, while they drop by 82% if the firm is controlled by a family rather than not.

Overall, we have shown that the radical board restructuring mandated by the GBL has strong effects on the choice of organizational form. This evidence suggests the regulation is costly, and estimates made elsewhere may indicate the magnitude of this cost. First, Ahern and Dittmar (2012) find that listed firms with no female directors experienced an abnormal price

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[11] Unreported regressions show that the fraction of female directors continues to be insignificant when we re-estimate the two models on the subsample of firms that enter after December 2005, when Parliament decided to punish non-compliers with liquidation.

drop of 3.5% when the intention to regulate was announced. This estimate is an upper limit for the average GBL cost to ASAs, because the estimate reflects the listed ASAs only, including the three quarters of them that must restructure their boards the most if they decide to stay. Second, Fjesme (2012) finds an average first-day IPO return of 2.7% at the Oslo Stock Exchange during 2000–2008. This evidence of IPO underpricing may represent the minimum average benefit for an ASA firm of being listed instead of non-listed. Hence, 3% may be a rough estimate of the average cost of the GBL for owners of listed firms. The average cost for non-listed ASAs is below 3%, because they lose less value when exiting than listed firms do. Importantly, however, all these estimates are averages and do not necessarily apply to an individual firm in the sample. This limitation follows from our finding that the cost and benefit of exiting or entering the organizational form exposed to the GBL depends on a series of firm characteristics.

6. Summary and conclusions

The findings of this paper support the idea that firms may respond to more restrictive regulation by changing their organizational form. Such change occurs when the added cost of the new regulatory constraint makes the firm's current organizational form less attractive than the best alternative. Strikingly, we find that when a new law mandates at least 40% of men and women in Norwegian boardrooms, half the firms choose to exit into an organizational form that is not exposed to the law. This tendency to avoid costly regulation by changing organizational form varies systematically with firm characteristics. We find that exit is significantly more likely when the firm is profitable, small, young, and non-listed. Exiting firms also tend to have powerful owners, no controlling family, and few female directors. Most of these characteristics also influence the decision to enter the exposed organizational form by firms that are not exposed to the gender balance law. Even though far fewer listed firms exit than do non-listed firms, listed firms that do not exit may nevertheless have to bear the highest cost of the new regulation.

This evidence is consistent with theoretical predictions and existing empirics on how firms respond to regulatory shocks. The results are also in line with earlier findings that board composition matters for firm value, and that compulsory gender balance in the boardroom shrinks the pool of competent directors and reduces stockholder wealth. Our evidence

supports the notion that optimal board composition and the best response to regulatory shocks varies from firm to firm. Moreover, gender balance regulation may be less disruptive if firms have the option to exit into organizational forms where the law does not apply.

Recent political signals indicate that the exit option we analyze in this paper may soon disappear. In particular, gender balance in corporate boards may be made mandatory for more than just one organizational form.[12] If that happens, Norway will not just be special for being the first and only country to mandate a massive, rapid shift in the composition of corporate boards and to punish non-compliers with liquidation. The regulators may also decide to eliminate the possibility firms currently have to mitigate the costs of regulatory shocks by transforming into organizational forms that are not exposed to the law. Every other country considering gender balance regulation seems to favor the comply-or-explain system or considerably milder sanctions than liquidation. Such regulatory regimes would leave the gender balance choice to the firm's discretion and hence allow for firm heterogeneity in board design. Our findings suggest that compared to this more flexible alternative, the mandatory approach, and particularly one without exit options, is a costly way to regulate gender balance in corporate boards.

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[12] http://e24.no/jobb/naa-vil-regjeringen-ha-kvinner-i-alle-styrer/20060520.

Acknowledgments

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Table 1: Responding to the gender balance law by choosing organizational form

| Response | Organizational form | |
	Before the gender balance law	After the gender balance law
Stay	ASA	ASA
Exit	ASA	AS
Enter	AS	ASA
Do not enter	AS	AS

This table shows the relationship between alternative responses to the gender balance law (Stay, Exit, Enter, and Do not enter) and the implied choice of organizational form (ASA and AS).

Table 2: Sample size by listing status, exit behavior, and entry behavior

Year	A: Listing status			B: Exit and Entry			C: Exit by listing status			D: Entry by IPO propensity		
	All	Non-listed	Listed	Exit	Entry	Net exit	All	Non-listed	Listed	All	IPO	No IPO
2000	313	187	126	8	33	-25	8	6	2	33	29	4
2001	317	190	127	14	18	-4	14	13	1	18	15	3
2002	309	187	122	17	9	8	17	13	4	9	6	3
2003	292	175	117	23	6	17	23	18	5	6	2	4
2004	283	166	117	19	10	9	19	13	6	10	5	5
2005	270	146	124	25	12	13	25	23	2	12	3	9
2006	263	130	133	28	21	7	28	24	4	21	11	10
2007	248	110	138	46	31	15	46	36	10	31	17	14
2008	231	95	136	22	5	17	22	16	6	5	3	2
2009	217	83	134	15	1	14	15	13	2	1	1	0
Average	274	147	127	22	15	7	22	18	4	15	9	5
Total	2,743	1,469	1,274	217	146	71	217	175	42	146	92	54

This table shows the number of sample firms by alternative classification criteria. Panel A shows the total number of ASA firms (All) and the number of such firms by listing status (Non-listed and Listed), while Panel B shows the number of ASA firms that exit to AS (Exit), the number of AS firms that enter into ASA (Entry), and the difference between the two (Net exit). Panel C splits the number of exits from panel B into non-listed and listed firms, while panel D splits the sample of entry firms from panel B according to whether the firm makes an initial public offering (IPO) in the entry year. ASA firms are exposed to the gender balance law, while AS firms are not. Listed firms are quoted on the Oslo Stock Exchange. The sample is all Norwegian AS firms entering the ASA form and all Norwegian ASA firms that are not financials or have not exited the ASA form because of takeover or bankruptcy during the sample period.

Table 3: Characteristics of exit firms and non-exit firms

	Exit	Non-exit	Exit less Non-exit	t-value	(p-value)
General firm characteristics					
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)
Ownership characteristics					
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)
Board characteristics					
Female directors	0.100	0.201	-0.101	-15.911	(0.000)
Board size	5.129	5.926	-0.797	-10.545	(0.000)
Family characteristics					
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 exit firms to non-exit firms in terms of their mean value for general firm, ownership, board, and family characteristics. The difference between the two mean values, the t-value, and the p-value (in parentheses) of this difference are reported in the three right-most columns. Performance is censored at the 0.5% tail and then winzorized at the 1% and 99% tails. Financial constraints and growth are winzorized at the 1% and 99% tails. Appendix 3 defines the variables, and the sample is all Norwegian ASA firms in 2000–2009 that are not financials or have not exited to the AS form because of takeover or bankruptcy during the sample period. Unlike AS firms, ASA firms must comply with the gender balance law.

Table 4: Exit propensity in Norway and in neighboring countries

A: Number of firms

Year	Norway	Denmark	Sweden	Denmark and Sweden
1996	177	22,572	286	22,858
1997	226	22,898	448	23,346
1998	253	23,589	420	24,009
1999	288	24,855	460	25,315
2000	313	25,978	470	26,448
2001	317	29,164	452	29,616
2002	309	30,540	430	30,970
2003	292	31,894	420	32,314
2004	283	32,519	447	32,966
2005	270	38,021	487	38,508
2006	263	39,525	533	40,058
2007	248	41,087	595	41,682
2008	231	41,778	592	42,370
2009	217	41,280	575	41,855
Average	263	31,836	473	32,308

B: Difference-in-difference regressions

Non-event group	Estimate	(p-value)	Adjusted R^2	N
Denmark	-0.426	(0.000)	0.593	27
Sweden	-0.271	(0.027)	0.494	27
Denmark and Sweden	-0.424	(0.000)	0.592	27

This table compares the number of ASA firms in Norway with the number of firms in Denmark and Sweden that have a similar organizational form, but that are not subject to gender balance regulation. Panel A reports the number of firms per year, while Panel B shows estimates of the difference-in-difference equation defined in model (2) of the main text. The estimate in the first column of results reflects the difference between the number of Norwegian firms (the event group) in the event period and the non-event period relative to the corresponding difference in Denmark, Sweden, or both (the three alternative non-event groups). The sample period is 1996–2009, where 1996–2002 is the pre-event period and 2003–2009 is the post-event period. We exclude Norwegian ASAs that are financials or firms that have exited the ASA form because of takeover or bankruptcy during the sample period. The Danish, Swedish, and the combined Danish and Swedish samples consist of all firms with the organizational form that is similar to the Norwegian ASA form. Sources for the Danish and Swedish data are *www.dst.dk* and Finbas, respectively.

Table 5: The base-case estimates

Independent variable	Prediction	Coefficient estimate	Odds ratio estimate
Female directors	(-)	-3.064	0.047
		(0.000)	
Firm size	(-)	-0.104	0.901
		(0.001)	
Family control	(-/+)	-0.701	0.496
		(0.000)	
Firm age	(-/+)	-0.011	0.989
		(0.000)	
Financial constraints	(-)	0.349	1.418
		(0.222)	
Performance	(+)	0.025	1.025
		(0.000)	
Ownership concentration	(+)	0.010	1.010
		(0.000)	
Listed	(-)	-1.182	0.307
		(0.000)	
Constant		1.868	6.475
		(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 and the estimated odds ratios for a logit regression of ownership, board, family, and general firm characteristics on the decision to exit or not exit the organizational form exposed to the gender balance law. The relationship is specified in model (3) of the main text. The predicted signs of the coefficients are shown in the second column, and the p-values of the estimated coefficients reported in the third column are stated in parentheses underneath. The estimated odds ratio in the rightmost column has the same p-value as the coefficient estimate. The dependent variable is 1 if the firm 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 millions of NOK. 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 per year 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 quoted on the Oslo Stock Exchange and 0 otherwise. Performance is censored at the 0.5% tail and then winzorized at the 1% and 99% tails. Financial constraints is winzorized at the 1% and 99% tails. The sample is all Norwegian ASA firms in 2000–2009 that are not financials or have not exited to the AS form because of takeover or bankruptcy during the sample period. Unlike AS firms, ASA firms must comply with the gender balance law.

Table 6: Alternative estimation methods

Independent variable	Method					
	Logit	Probit	Standard panel	Logit panel	Pooled OLS	Clustered OLS
Female directors	-3.064	-1.809	-0.897	-9.547	-0.561	-0.561
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm size	-0.104	-0.061	-0.026	-0.65	-0.019	-0.019
	(0.001)	(0.001)	(0.032)	(0.003)	(0.001)	(0.039)
Family control	-0.701	-0.421	-0.158	-4.387	-0.139	-0.139
	(0.000)	(0.000)	(0.028)	(0.000)	(0.000)	(0.005)
Firm age	-0.011	-0.007	-0.001	-0.493	-0.002	-0.002
	(0.000)	(0.000)	(0.223)	(0.001)	(0.000)	(0.007)
Financial constraints	0.349	0.215	-0.022	1.054	0.058	0.058
	(0.222)	(0.209)	(0.859)	(0.603)	(0.273)	(0.499)
Performance	0.025	0.015	0.008	0.186	0.005	0.005
	(0.000)	(0.000)	(0.009)	(0.000)	(0.000)	(0.018)
Ownership concentration	0.01	0.006	0.003	0.351	0.002	0.002
	(0.000)	(0.000)	(0.002)	(0.062)	(0.000)	(0.033)
Listed	-1.182	-0.706	-0.162	-3.945	-0.248	-0.248
	(0.000)	(0.000)	(0.009)	(0.000)	(0.000)	(0.000)
Constant	1.868	1.105	0.581	9.093	0.856	0.856
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	1,560	1,560	1,560	1,246	1,560	1,560
LR chi^2(8)/Wald chi^2(8)	377.47	377.99		407.48		
Prob > chi^2	(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^2	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 firm is an exit firm and 0 otherwise. Logit is the base case from table 5, Probit is a probit model, 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 millions of NOK. 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 per year 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 quoted on the Oslo Stock Exchange and 0 otherwise. Performance is censored at the 0.5% tail and then winzorized at the 1% and 99% tails. Financial constraints is winzorized at the 1% and 99% tails. The sample is all Norwegian ASA firms in 2000–2009 that are not financials or have not exited to the AS form because of takeover or bankruptcy during the sample period. Unlike AS firms, ASA firms must comply with the gender balance law.

Table 7: Alternative definitions of family control

	Family control definition					
Independent variable	Family firm	Family board	Family CEO	Family size	Family chair	Family ownership
Female directors	-3.064	-2.956	-2.876	-2.830	-2.790	-2.841
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm size	-0.104	-0.129	-0.125	-0.113	-0.107	-0.125
	(0.001)	(0.000)	(0.001)	(0.002)	(0.003)	(0.001)
Family control	-0.701	-1.575	-0.807	-0.195	-0.174	-0.009
	(0.000)	(0.001)	(0.000)	(0.264)	(0.003)	(0.002)
Firm age	-0.011	-0.013	-0.012	-0.013	-0.011	-0.014
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Financial constraints	0.349	0.219	0.167	0.227	0.106	0.272
	(0.222)	(0.514)	(0.621)	(0.497)	(0.751)	(0.417)
Performance	0.025	0.027	0.029	0.026	0.025	0.029
	(0.000)	(0.002)	(0.001)	(0.002)	(0.004)	(0.001)
Ownership concentration	0.010	0.004	0.003	0.004	0.004	0.008
	(0.000)	(0.112	(0.294)	(0.200)	(0.150)	(0.015)
Listed	-1.182	-1.156	-1.208	-1.097	-1.114	-1.171
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	1.868	2.120	2.051	2.231	1.955	2.235
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(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 six alternative proxies for family control. The first column of results reproduces the base-case findings from table 5. The dependent variable is 1 if the firm 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 millions of NOK. Performance is the average real return on assets per year 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 quoted on the Oslo Stock Exchange and 0 otherwise. Performance is censored at the 0.5% tail and then winzorized at the 1% and 99% tails. Financial constraints is winzorized at the 1% and 99% tails. The sample is all Norwegian ASA firms in 2000–2009 that are not financials or have not exited to the AS form because of takeover or bankruptcy during the sample period. Unlike AS firms, ASA firms must comply with the gender balance law.

Table 8: Defining exit status

Independent variable	Model I	Model II
Female directors	-3.064	-0.541
	(0.000)	(0.503)
Firm size	-0.104	0.124
	(0.001)	(0.040)
Family control	-0.701	-0.651
	(0.000)	(0.022)
Firm age	-0.011	-0.014
	(0.000)	(0.010)
Financial constraints	0.349	-0.377
	(0.222)	(0.480)
Performance	0.025	-0.002
	(0.000)	(0.878)
Ownership concentration	0.010	0.017
	(0.000)	(0.000)
Listed	-1.182	-1.881
	(0.000)	(0.000)
Constant	1.868	-4.194
	(0.000)	(0.000)
N	1,560	1,060
LR chi^2(8)	377.47	109.77
Prob > chi^2	(0.000)	(0.000)
Pseudo R^2	0.182	0.162

This table shows the effect of defining exit in two alternative ways. Model I is the base case from table 5, where the firm is classified as an exit firm every year until it leaves the ASA oganizational form and enters the AS form at some point during the sample period. Model II assigns exit status to the firm only in the year it becomes an AS. The dependent variable is 1 if the firm 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 millions of NOK. 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 per year 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 quoted on the Oslo Stock Exchange and 0 otherwise. Performance is censored at the 0.5% tail and then winzorized at the 1% and 99% tails. Financial constraints is winzorized at the 1% and 99% tails. The sample is all Norwegian ASA firms in 2000–2009 that are not financials or have not exited to the AS form because of takeover or bankruptcy during the sample period. Unlike AS firms, ASA firms must comply with the gender balance law.

Table 9: The entry decision

Independent variable	Prediction	Model A		Model B	
		Coefficient estimate	Odds ratio estimate	Coefficient estimate	Odds ratio estimate
Female directors	(+)	-1.381	0.251	-0.336	0.715
		(0.001)		(0.546)	
Firm size	(+)	0.226	1.254	0.178	1.195
		(0.000)		(0.000)	
Family control	(-/+)	-1.455	0.233	-1.705	0.182
		(0.000)		(0.000)	
Firm age	(-/+)	-0.130	0.878	-0.149	0.862
		(0.000)		(0.000)	
Financial constraints	(+)	-1.640	0.194	-2.115	0.121
		(0.000)		(0.000)	
Performance	(-)	-0.009	0.991	-0.003	0.997
		(0.206)		(0.775)	
Ownership concentration	(-)	-0.013	0.987	-0.012	0.988
		(0.000)		(0.002)	
IPO	(+)	1.062	2.892	2.019	7.531
		(0.000)		(0.000)	
Constant		-5.277	0.005	-5.160	0.006
		(0.000)		(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 and odds ratios for logit regressions of ownership, family, and general firm characteristics on the decision of an AS firm to become an ASA and thereby become exposed to the gender balance law. The relationship is specified in model (4) of the main text. The predicted signs of the coefficients are shown in the second column. Model A classifies the AS firm as an entry firm every year before entry if it becomes an ASA during the sample period, while Model B assigns entry status to the AS firm only the year it actually enters. For each model, we report the coefficient estimates, the estimated logit ratios, and the p-value (in parenthesis) of the coefficient estimate's t-value. The odds ratio has the same p-value as the coefficient estimate. The dependent variable is 1 if the firm 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 millions of NOK. 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 per year 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. We censor financial constraints and performance at the +/- 2% tails. The sample is firms with AS organizational form that are entry candidates to the ASA organizatinal form during the period 2000–2009. To qualify as an entry candidate, the AS firm must have at least three board members and sales not smaller than the lowest sales among the ASA firms that year.

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

Regulation	Organizational form		
	Exposed listed (Public ASA)	Exposed non-listed (Private ASA)	Unexposed (AS)
1. Minimum share capital	1 million Norwegian kroner	1 million Norwegian kroner	0.1 million Norwegian kroner
2. Corporate governance code (comply-or-explain)	The annual report must specify, item by item, whether the firm complies with the corporate governance code of the OSE.	No corporate governance code	No corporate governance code
3. CEO-chair duality	Illegal	Illegal	Legal if share capital is below 3 million NOK.
4. Gender balance on	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 or voting rights must notify both the firm and the OSE no later than the next morning.	No flagging rule	No flagging rule
7. Mandatory tender offer	An investor passing the 1/3 ownership threshold must offer to buy all the remaining stock in the firm.	No tender offer requirement	No tender offer requirement
8. Reporting of trades by corporate insiders	Insiders (the firm's officers and directors) must report their trades 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 of their bonds.	Less detailed reporting requirements than for listed firms on compensation, ownership, and debt	Less detailed reporting requirements than for listed firms on compensation, ownership, and debt

* The minimum fraction of each gender varies between 33% and 50%, depending on board size. The minimum is 40% when the board has at least ten members.

This table shows regulatory differences between Norwegian limited liability firms with alternative organizational forms. An exposed firm is subject to the gender balance law, while an unexposed firm is not. OSE is the Oslo Stock Exchange. VPS is Verdipapirsentralen (The Securities Registry).

Appendix 2: Regulation of gender balance in corporate boards across the world

Country	Percentage of female directors	Gender quota	Regulatory activity	Comply or explain(ce)/ Mandatory(m)
Australia	8.4	no	Firms should adopt and publicly explain a diversity policy.	ce
Belgium*	7.7	yes	A draft for a law was filed in December 2009 requiring boards of listed firms and certain non-listed firms to choose 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	Parliament proposed a law in January 2011. The law requires a quota whereby 25% of the directors are female within 3 years and 40% within 6 years for firms employing at least 500 and with revenues over 50 million EUR. No sanction	ce
Germany*	11.2	no	The German Corporate Governance Code, which applies to listed firms, has recommendations aimed at promoting more women on boards.	ce
Iceland	3.8	yes	Law passed in March 2010; quota of 40%. No sanction	pending
Italy*	3.7	yes	A law was passed in December 2010 requiring one third of each gender on boards of listed firms and state-owned firms. The law needs Senate approval and will apply to new board nominations six months after such approval. No sanction	pending
Netherlands*	14.0	yes	A law on gender quotas for the executive and the supervisory boards received govermental approval in December 2009. The law proposes at least 30% of each gender for the board of listed firms and for the boards of non-listed firms that meet certain financial and employment criteria. No sanction	ce
New Zealand	7.5	no	The New Zealand Shareholders' Association will make board diversity one of three priorities.	pending
Norway	40.1	yes	A law passed in 2003 and implemented in 2008 mandates at least 40% of each gender on the board of listed firms and certain non-listed firms.** Non-complyers are liquidated.	m
Spain*	9.3	yes	Parliament passed the Law of Equality in 2007, which requires listed firms to appoint females to 40%–60% of the board positions. Firms are allowed until 2015 to comply. No sanction ***	ce
United Kingdom*	15.0	no	The Corporate Governance Code recommends gender diversity on boards. The Conservative Party has announced that it will require that females constitute at least 50% of the candidates on the long list of directorship candidates.	pending
United States	16.1	no	The SEC approved a rule in December 2009 requiring disclosure of whether and how board nomination committees consider 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 the board assesses the policy's effectiveness. The rule was implemented in February 2010.	ce

* A EU draft from November 2012 proposes a 40% target for each gender by 2020 on boards of listed firms with at least 250 employees. Each member state is supposed to decide whether the quota should be mandatory and what sanctions should be used for non-compliers.
** Boards with less than ten members have the quota stated as a minimum number of members per gender.
*** The government will take compliance into account when awarding state contracts to private firms.

This table shows the regulatory status on gender quotas and the actual fraction of females in boards across the world as of 2012. In addition to the countries specified above, Ireland, South Africa, and Switzerland have gender quotas for state-owned firms. Sources: Ahern and Dittmar (2012), *www.catalyst.org www.corpgov.deloitte.com,* and *www.nho.no.*

Appendix 3: The empirical variables

Variable	Definition
Exit	Dummy variable which equals 1 if the firm leaves the organizational form exposed to the gender balance law (ASA) during the sample period and 0 otherwise
Entry	Dummy variable which equals 1 if the firm (AS) enters the organizational form exposed to the gender balance law (ASA) during the sample period and
General firm characteristics	
Listed	Dummy variable which is 1 if the firm is listed on the Oslo Stock Exchange and 0 otherwise
Financial constraints	Total debt divided by total assets (leverage)
Growth	The average percentage increase in real sales per year from year t-3 to t
Performance	The average real return on assets (ROA) per year from year t-3 to t
Firm age	The number of years since the firm was founded
Firm size	Sales in constant 2009 millions of NOK. Log transformed in regressions
IPO	Dummy variable which is 1 if the firm becomes listed the same year it enters the exposed organizational form (ASA) and 0 otherwise
Ownership characteristics	
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
Board characteristics	
Female directors	The proportion of shareholder-elected board members who are women
Board size	The number of shareholder-elected board members
Family characteristics	
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 are based on ultimate (direct plus indirect) equity holdings.