Gender Diversity, Gender Quota, and Stock Price Crash Risk

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Abstract

Listed companies around the world have always valued gender diversity on the board. Many countries have introduced gender quota policies to ensure that the ratio of female directors on the board reaches an ideal level. We study the effect of gender diversity on the stock price crash risk of a firm and investigate if the gender quota policy significantly increases the proportion of female directors on the board and changes its effect on the crash risk of a company's stock price. The results show that a high proportion of female directors on the board significantly increases the crash risk of a company's stock price, but this effect is mitigated in listed companies in countries that have implemented mandatory gender quota policies. We test whether mandatory gender quota policies can significantly increase the proportion of women on the board. Still, only gender quota policies in Belgium, Italy, and France in 2011 and Germany in 2015 had a great impact. We also find that gender quota policies have spillover effects, and a gender quota policy implementation in one European country will drive listed companies in other European countries to follow suit. After Germany implemented the gender quota policy in 2015, the proportion of female directors on the board of European-listed companies was generally high. However, an excessively high gender ratio also provokes a higher risk of stock price crashes. The ideal ratio we obtained is 33%. In addition, the relation between the gender ratio on the board and the stock price crash risk is quadratic, and the turning point is around 33%. Our results suggest that the monitoring role of female directors is excellent, and the increased stock price crash risk comes more from the communication and collaboration between outside directors and firm insiders. To reach the required gender quotas more quickly in the limited human resources market, many listed companies choose to recruit women as outside directors who already serve as directors of their own or other boards and do consulting jobs. This also makes female directors overburdened, greatly reducing the original monitoring effect. Female directors with strong social network size and work experience can significantly reduce the stock price crash risk.

Key words: Stock Price Crash Risk Gender diversity Mandatory Gender Quota Female Director Outside Director Spillover Effect Quadratic Effect

1. Introduction

Research on gender diversity on corporate boards gender is a topic subject that continues to attract considerable research attention. Theoretical work on corporate board gender diversity emphasizes the potential benefits of a more diverse board in terms of improved decision-making, enhanced firm performance, and better representation of stakeholders. Gender diversity can lead to a broader range of perspectives, reducing groupthink and fostering innovation (Carter et al., 2003). The resource dependency theory suggests that diverse boards provide valuable networks and resources, while agency theory posits that diversity can improve monitoring and governance by introducing different viewpoints (Adams & Ferreira, 2009; Hillman et al., 2007). Empirical studies have shown mixed results on the direct impact of gender diversity on financial performance, with some studies suggesting that the benefits may be context-dependent and influenced by other corporate governance factors (Ahern & Dittmar, 2012; Post & Byron, 2015). Additionally, the critical mass theory indicates that a minimum number of women is necessary for significant changes in board dynamics (Kramer et al., 2006). Other studies highlight the role of institutional and regulatory pressures in shaping board diversity (Terjesen et al., 2009; Dezsö & Ross, 2012; Francoeur et al., 2008).

Women directors are under-represented, and several countries have enacted the gender quota legislation to mandate appointment of women directors on corporate boards. Agency theory (Jensen and Meckling, 1976) and women's independent attributes are the mainstream theories of gender diversity. Female directors tend to play better monitoring role and act as strict supervisors on the board (Baghdadi et al., 2023; Adams et al., 2011; Gul et al., 2011; Adams and Ferreira, 2009). Female directors improve the transparency and accuracy of financial reporting (Arnaboldi et al., 2021; Gupta et al., 2020; Gull et al., 2018; Lai et al., 2017; Srinidhi et al., 2011) improve the informativeness of stock prices (Gul et al., 2011), and firm value (Cardillo et al., 2021; Green and Homroy, 2018; Kim and Starks, 2016; Campbell and Minguez, 2010; Farrell and Hersch, 2005; Carter et al., 2003). US firms have promoted more female directors to key board positions since 2016, suggesting that corporate responses are no longer tokenistic but are instead aimed at increasing diversity by recognizing directors' existing networks and executive experience (Gormley et al., 2023). Kim and Starks (2016) show that female directors bring unique skills to

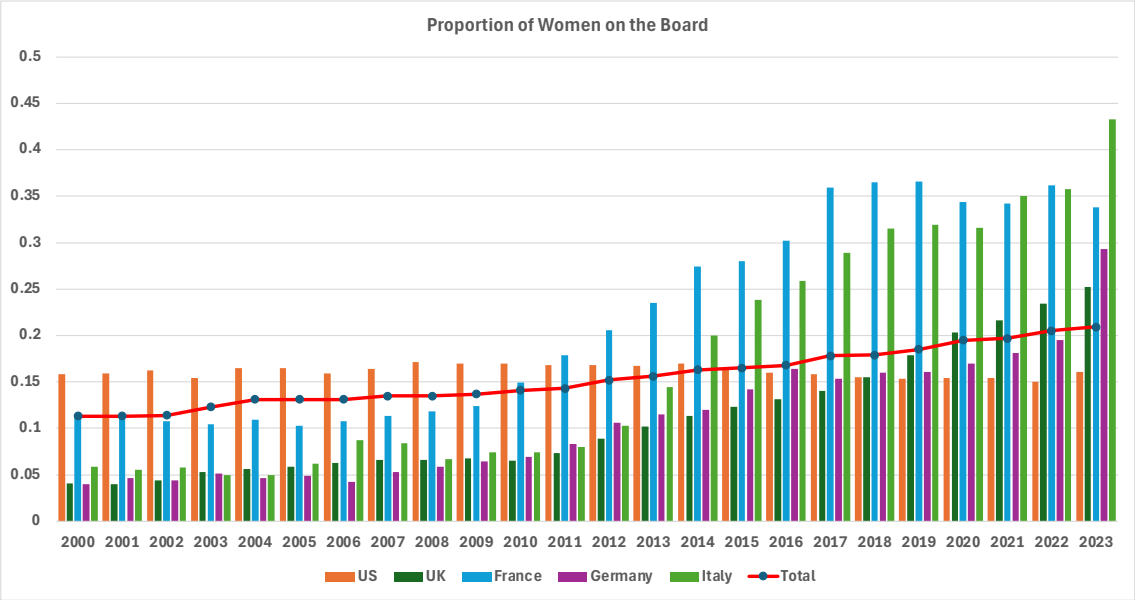
corporate boards and make boards more diverse in their expertise, which are particularly helpful with advisory function of directors. These are also the theoretical support that many governments use when implementing gender quotas. Baghdadi, Safiullah, and Heyden (2023) find that reaching a gender critical mass of female directors in monitoring roles is particularly beneficial for improving managerial ability, especially when they are in monitoring roles on the board. Boards with at least three women directors are at least 79% more active at board meetings than boards without such representation (Schwartz-Ziv, 2017). Cumming, Leung, and Rui (2015) suggest that women are more effective in reducing the frequency and severity of fraud in male-dominated industries.

Policymakers around the world are mandating gender quotas on public company boards. Mandating the appointment of women directors causes shareholders to value the added value of women directors more than that of men, and the appointment of women directors may help resolve stakeholder conflicts that reduce value (Greene et al., 2020; Adams et al., 2011). Firms are subject to regulatory requirements and social pressure to appoint female directors, not based on their merit, skills and business credentials (Torchia et al., 2011; Campbell and Minguez-Vera, 2008), but to meet gender quotas requirement (Farrell and Hersch, 2005). Increasing number of female directors on the boards have a positive effect on firm performance (Hwang et al., 2018; Adams and Ferreira, 2009), but this effect of gender diversity appears to be diminished in countries with higher female economic participation and empowerment (Low et al., 2015). Ahern and Dittmar (2012) find that gender quotas lead to a sharp drop in firm stock prices when the laws are announced, and a sharp drop in firms' Tobin's Q in the following years. They attribute this to the reason that gender quotas lead boards to select younger, less experienced female directors, which leads to increased leverage and acquisitions, and worse operating performance. Low, Robert, and Whiting (2015) suggest that forcing female directors' appointment or mandatory gender quotas can reduce firm performance in countries with strong culture resistance. The similar argument appears in Griffin, Li, and Xu (2021) study that boards are more likely to include women in countries with narrower gender gaps, higher female labor market participation, and less masculine culture. Joecks, Pull, and Vetter (2013) find whether the link between gender diversity and firm performance is U-shaped and that only

after reaching a “critical mass” of about 30% women does firm performance exceed that of boards composed entirely of men.

Chart 1

Average Proportion of Women on Board



Gender diversity on corporate boards increases female representation which affect corporate governance and transparency. Women on boards often bring different perspectives and more rigorous oversight, which can lead to improved monitoring and decision-making processes (Adams & Ferreira, 2009; Carter et al., 2003). Studies indicate that gender-diverse boards are associated with better disclosure practices and higher levels of transparency, which can reduce information asymmetry and improve investor confidence (Gul et al., 2011; Srinidhi et al., 2011; Terjesen et al., 2009). Furthermore, women are generally perceived as more risk-averse and ethical, which can foster a culture of accountability and integrity within the board (Bear et al., 2010; Nielsen & Huse, 2010). These factors contribute to more robust governance structures and a reduction in corporate misconduct (Liu, 2018). However, some studies argue that gender diversity on corporate boards can potentially weaken governance, increase information asymmetry, and heighten stock price crash risk. Board gender diversity might lead to conflicts, slower decision-making, and inefficiencies due to the varied backgrounds and perspectives of board members,

which could undermine board cohesion (Adams & Ferreira, 2009). Increased diversity may also lead to challenges in communication and consensus-building, potentially resulting in weaker oversight and governance (Aguilera et al., 2008). Furthermore, some researchers have found that gender-diverse boards might increase information asymmetry as diverse members may have varying levels of expertise and understanding of complex financial information, which could affect the board's effectiveness in reducing information gaps (Gul et al., 2011). Additionally, certain studies suggest that gender diversity may be linked to higher stock price crash risk due to increased uncertainty and unpredictability in the firm's strategic decisions, which might destabilize investor confidence (Qayyum et al., 2021).

Lai, Khedmati, Gul, and Mount (2023) find that dedicated institutional investors are more likely than casual institutional investors to appoint female directors to investee firms with all-male boards and that, by appointing female directors, dedicated institutional investors induce the hoarding of negative accounting information, thereby increasing the likelihood of stock price crash risk. Gul, Srinidhi, and Ng (2011) suggest that board gender diversity can improve stock price informativeness. The stock prices of firms with gender-diverse boards reflect more firm-specific information, which can serve as a proxy mechanism for corporate governance for firms with weaker corporate governance. Rau, Sandvik, and Vermaelen (2024) study of results show that IPOs with at least one female director experience significantly greater underpricing on the first trading day, with the underpricing effect being strongest after 2010. IPOs with gender-diverse boards achieve larger offer price revisions and final offer prices. Gender quotas also lead to a sharp drop in firm stock prices when the laws are announced (Ahern and Dittmar, 2012), but the supply of qualified female director candidates is high enough to avoid the negative effects of gender quotas (Eckbo et al., 2022). The composition and proportion of female directors on the board affect the company's stock price and return. We want to examine the effect of the proportion of board female directors on a firm's stock price crash risk. We use public companies listed on stock exchange in a total of 40 countries including the United States, the United Kingdom and other European countries from 1996 to 2023. From our sample, we can see that the proportion of female directors on the board has increased year by year, from 10% in 2000 to 20% in 2023. For example, France and Italy both enacted legal requirements for gender quotas on the board of directors in 2011, and the proportion of female directors in their board increased rapidly. Germany began to increase in 2015

because they enacted legal requirements for gender quotas on the board a bit later. The results show that the higher the proportion of female directors on the board, the higher the risk of stock price crash. This negative relation can be mitigated by external shocks or be a part of quadratic relation. We try to understand whether this negative relation can be moderated by mandatory gender quotas. Gender quotas not only change the proportion of female directors, but also the structure of the board, the composition of directors, and their responsibilities.

Table 1

Mandatory Gender Quotas for Listed Company Boards by 2023

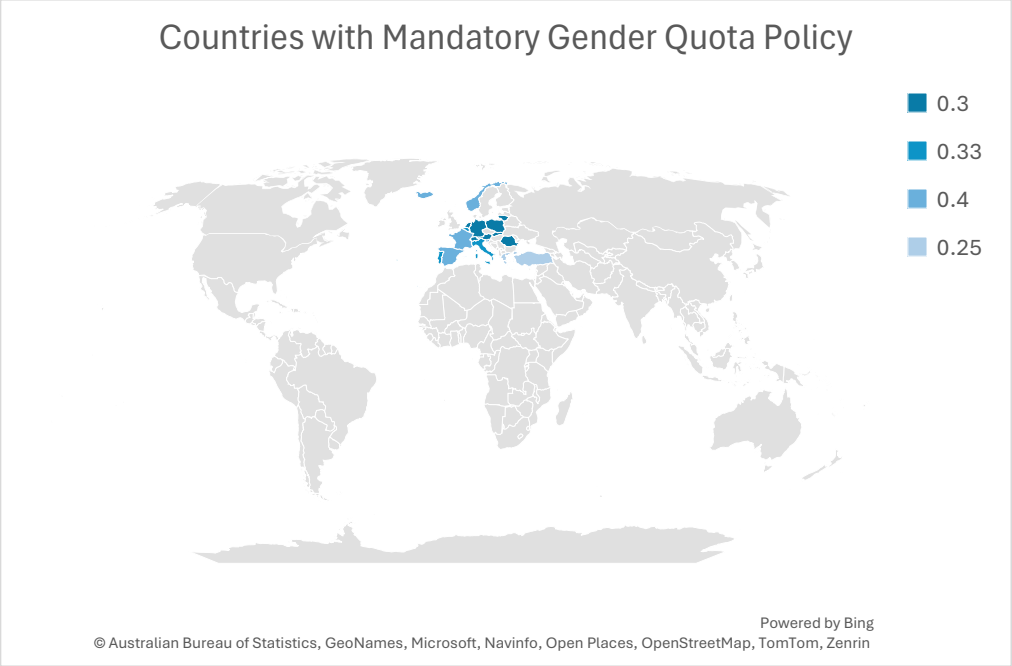
Countries	Gender Quota	Policy Implementation Year
Austria	30%	2018
Belgium	33%	2011
France	40%	2011
Germany	30%	2015
Greece	25%	2020
Iceland	40%	2019
Italy	33%	2011
Lithuania	30%	2021
Luxembourg	40%	2015
Malta	40%	2022
Netherlands	30%	2022
Norway	40%	2003
Poland	30%	2020
Portugal	33%	2017
Romania	30%	2019
Slovakia	30%	2021
Slovenia	40%	2016
Spain	40%	2018
Switzerland	30%	2021
Turkey	25%	2023

Many countries have introduced mandatory gender quota policies to ensure gender diversity on their listed company boards. Norway was the first to adopt a quota for female board members (40%) in 2003. This policy successfully increased women's representation on Norwegian boards

from 7% in 2002 to over 40% in 2008 (Ahern and Dittmar, 2012; Sjåfjell and Reiersen, 2008). Other countries have followed suit – either with mandatory quotas (Germany, France, Belgium, Iceland, Italy) or voluntary targets (Austria, Finland, Netherlands, Spain, Sweden, UK) with targets for female representation ranging from 25% to 40% (Carletti, 2019; Du Plessis et al., 2014; Choudhury, 2014). In Europe, Denmark is another exception. The largest companies must set targets for the number of women on their boards, but there are no clear guidelines for what that number should be. The United States is now one of the few advanced Western economies with neither voluntary nor mandatory targets. Below are the gender quotas and policy implementation year for each country.

Chart 2

Distribution of countries with mandatory gender quotas on public company boards



From the chart 2, we can see that most of the countries in our sample that have introduced mandatory gender quota policies are concentrated in Europe. A European Union law, adopted in November 2022, mandates that by mid-2026, corporate boards of listed companies must consist of at least 40% nonexecutive directors or 33% of all directors from the underrepresented gender.

California introduced a similar gender quota law in 2018, requiring a minimum number of female directors on company boards, depending on board size, but it was overturned in 2022 due to constitutional violations. Despite this, other U.S. states, like Washington and Illinois, have proposed or enacted similar laws. Meanwhile, the U.K.'s Financial Conduct Authority has set rules for board diversity, mandating at least 40% female representation and minority inclusion. Iowa already has a longstanding gender quota for government boards. Gender quota policies are not mandatory in all countries or regions. We test whether mandatory or voluntary gender quota policies can moderate the positive relation between the proportion of female directors on the board and the crash risk of stock price. The results show that gender quota policies, whether mandatory or not, can mitigate the increased crash risk of stock price caused by an increase in the proportion of female directors on the board. This suggests that gender quotas make boards more cautious about the skills, qualifications, and abilities of female directors, and that their board roles are more inclined toward monitoring.

We also want to know if gender quota policies have spillover effects across countries, where the implementation of such policies in one country influences listed companies in other nations to adopt similar practices. For instance, the introduction of mandatory gender quotas in Norway in 2003 prompted widespread discussions and subsequent policy adoptions in neighboring countries and beyond (Seierstad & Opsahl, 2011). Studies show that companies in countries without quotas often voluntarily increase female board representation to align with emerging European norms and avoid being perceived as lagging in gender diversity (Terjesen et al., 2015). The European Union's endorsement of gender diversity further amplifies this effect by creating a unified push towards greater gender representation across member states (Grosvold et al., 2007). This transnational influence reflects companies' strategic adaptation to shifting expectations and regulatory landscapes within the European market (Labelle et al., 2015; Kirsch, 2018). Our results show that gender quota policies have spillover effects, and the implementation of gender quota policies in one European country will lead listed companies in other European countries to follow suit.

Research on the relation between gender diversity on boards and corporate governance or transparency reveals non-linear, with the impact depending on the gender quota. Initially, a small

presence of women on boards may not significantly influence governance or transparency due to tokenism (Torchia et al., 2011; Kanter, 1977). However, once the number of women reaches a critical mass, improvements in governance practices and transparency become more evident, attributed to enhanced oversight and diverse perspectives (Joecks et al., 2013; Gul et al., 2011). Gender quota policies, which mandate a minimum level of female representation, help achieve this critical mass, thereby reinforcing the positive effects on governance and transparency (Labelle et al., 2015; Adams & Ferreira, 2009). On the other hand, some studies argue that quotas can initially lead to disruptions or tokenistic appointments, potentially weakening governance structures until boards adapt to the new composition (Ahern & Dittmar, 2012; Ferreira, 2015). Thus, the relation between board gender diversity and governance or transparency is complex and influenced by the proportion of women and the implementation of quota policies. We find that the relation of gender quota and stock price crash risk is an inverted U-shape and the ideal gender ratio is 33%.

This study contributes to the literature on the role of board gender diversity on a firm's stock price crash risk, and the moderator of gender quotas on this effect. We further answer the question of how gender quotas influence on the attributes and roles of female directors on the board and provide support for the government to set a 33% gender quota by referring our test results and the policies of most countries. Women serve as outside directors to increase the proportion of women on the board, making them tokenism. Women's independent roles allow them to perform well in monitoring, but overlapping responsibilities are more difficult to balance between different boards and committees. The identity of outside directors also makes it difficult for them to obtain inside information and provide better advisory advice to the boards. It seems that their role on the board is in a dilemma. This study provides further understanding of what role female directors play on the board and shows more evidence to support the prominent role of female directors in terms of connections and experience in monitoring efforts.

2. Literature Review

2.1 Stock Price Crash Risk

Chen et al. (2001) explore the role of information asymmetry and managerial incentives in stock price crashes, finding that poor information transparency and misaligned managerial incentives can significantly increase crash risk. Hutton et al. (2009) examine the impact of financial reporting opacity on stock price crash risk, demonstrating that firms with opaque financial reporting are more prone to sudden price drops. Kim and Zhang (2016) investigate the relationship between tax avoidance and stock price crash risk, revealing that aggressive tax avoidance strategies can lead to higher crash risk due to the accumulation of hidden bad news. Additionally, Dang and Nguyen (2024) analyze the effect of corporate governance on crash risk, showing that strong governance mechanisms can mitigate the likelihood of stock price crashes. More recent studies include Chu et al. (2023), who examine the relationship between firm leverage and stock price crash risk in the Chinese real estate market, finding that high leverage is significantly associated with increased crash risk, particularly in regions with low social trust and economic growth. Chang et al. (2022) extend Jin and Myers' (2006) model to explore the impact of operating leverage on crash risk, finding that firms with higher crash risk tend to adopt more flexible cost structures to mitigate adverse outcomes. Srivastava et al. (2024) conducts a bibliometric review of crash risk literature, identifying emerging themes such as bad news hoarding, board characteristics, and corporate governance. Additionally, Tee et al. (2018) investigate the role of institutional investors in mitigating stock price crash risk, showing that active institutional investors can reduce crash risk by improving information transparency and monitoring managerial behavior. Chung and Wang (2020) analyze the impact of short selling on crash risk, finding that short selling constraints can exacerbate crash risk by allowing bad news to accumulate. Kim et al. (2020) find that the entrance of foreign investors is associated with a significant reduction in local firms' future crash risk. Finally, Wu et al. (2024) and Zhang et al. (2023) explore the relationship between corporate social responsibility (CSR) and crash risk, demonstrating that firms with strong CSR practices are less likely to experience stock price crashes due to enhanced transparency and stakeholder trust. These studies collectively underscore the importance of transparency, managerial incentives, tax strategies, corporate governance, leverage, cost structures, institutional investors, short selling, and CSR in understanding and managing stock price crash risk.

2.2 Board Gender Diversity

Board gender diversity has been extensively studied for its impact on corporate governance and financial performance. Research indicates that gender-diverse boards tend to have better attendance records and are more likely to hold CEOs accountable for poor stock performance (Adams and Ferreira, 2009). Firms with female directors also tend to make fewer acquisitions and pay less for those they do make, suggesting more cautious decision-making (Huang and Kisgen, 2013). Additionally, research shows that firms with more gender-diverse boards are less likely to experience severe financial distress, highlighting the potential risk mitigation benefits of board gender diversity (Faccio, Marchica, and Mura, 2016). Gender-diverse boards are also associated with higher quality financial reporting, which can enhance transparency and investor confidence (Gul, Srinidhi, and Ng, 2011). Furthermore, gender diversity on boards has been linked to increased innovation, as firms with gender-diverse boards tend to have more patents and higher innovative efficiency (Griffin, Li, and Xu, 2021). Studies also suggest that gender-diverse boards can improve financial stability, particularly in financial institutions (Dang, Ho, and Nguyen, 2023). Moreover, a systematic review of gender diversity and firm performance highlights the complex relationship between gender diversity and firm outcomes, emphasizing the need for more nuanced research (Reddy and Jadhav, 2019). Finally, evidence from international studies shows that gender-diverse boards can enhance corporate governance mechanisms and social disclosure practices (Zagorchev, 2024). Additional research indicates that gender-diverse boards can lead to better decision-making and improved firm performance in various contexts (Post and Byron, 2015; Liu, Wei, & Xie, 2014). Based on the above discussion, we expect increasing proportion of female directors on the board have a positive impact on firm stock price crash risk. Thus, we propose the following hypotheses:

H1: Boards have more female directors increase the crash risk of firm stock price.

2.3 Gender Quota Policies

Gender quotas have been implemented in various countries to address gender inequality on corporate boards and in political positions. Research indicates that gender quotas can lead to a greater presence of women on boards, which is associated with better market-based performance and enhanced board vigilance through a higher number of external directors (Atinc, Srivastava,

and Taneja, 2021). Studies also show that gender quotas can positively impact firm value and corporate governance practices, although the direct effects on accounting performance and innovativeness are less clear (Terjesen and Sealy, 2016; Carrasco and Francoeur, 2018). Additionally, gender quotas have been found to promote gender equality across various organizational levels and improve corporate social performance (Kavalieraki-Foka et al., 2024). However, the effectiveness of these quotas can vary depending on the specific context and implementation (Storvik and Teigen, 2010; Teigen, 2012). Ahern and Dittmar (2012) indicates that mandated female board representation can affect firm valuation. Huang and Kisgen (2013) suggest that gender quotas can lead to more cautious decision-making and fewer acquisitions. Faccio, Marchica, and Mura (2016) highlight that gender-diverse boards are less likely to experience severe financial distress, and Gul, Srinidhi, and Ng (2011) show that gender-diverse boards are associated with higher quality financial reporting. Furthermore, a systematic review of gender quotas and company financial performance underscores the complex relationship between gender diversity and firm outcomes, emphasizing the need for more nuanced research (Teodósio, Vieira, & Madaleno, 2021). Based on the above discussion, we expect the gender quota policies have moderate effect on the positive relation between proportion of female directors on the board and firm's stock price crash risk. Thus, we propose the following hypotheses:

H2: Gender Quota moderate the positive effect of proportion of board female directors on the firm's stock price crash risk.

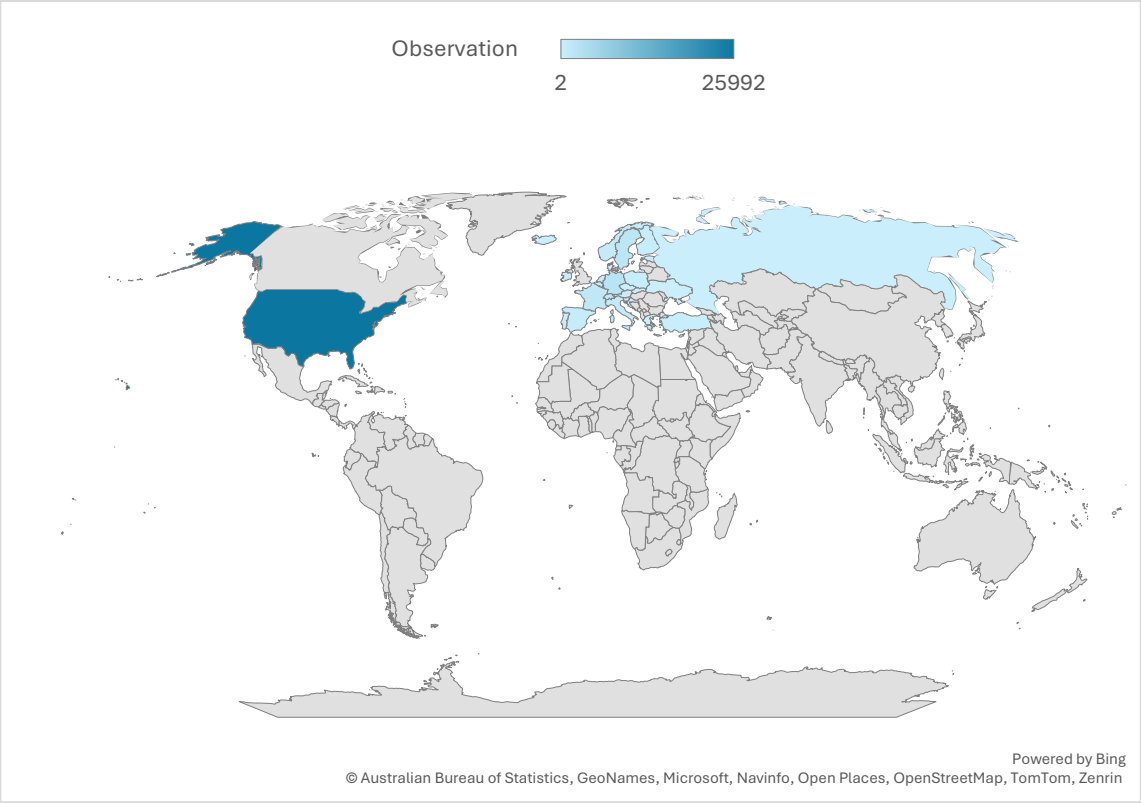
3. Methodology

3.1 Data

The panel dataset used in this study is collected from all public companies listed on Stock Exchange in a total of 40 countries including the United States, the United Kingdom and other European countries. Data on board committees and board directors' memberships are derived from BoardEx and available from 1996 to 2023, while corporate financial information is obtained from Compustat. Financial companies were excluded from this sample because their high leverage levels are not compatible with firms in other industries.

Figure 1

Country distribution of sample sources



We expect that gender quota policies, whether mandatory or voluntary, are most effective in promoting gender diversity on the board when the proportion of female directors on the board is low. Increasing public attention to gender equality is associated with increased gender diversity on boards of directors (Giannetti and Wang, 2023). Furthermore, in European listed companies that operate and trade in multiple European countries, the mandatory gender quota policies implemented in some European countries even have spillover effects to the other public listed firms in other European countries. To intuitively see the impact of mandatory gender quota policies on gender diversity on the boards of listed firms, we compared the average proportion of female directors on the board in the three years before the policy was implemented with the three years after the policy was implemented. If the implementation year is 2021, then we compare the two-year average before and after the policy was implemented. From Chart 3 and Table 2, the results

show that overall countries that implemented mandatory gender quota policies, the policies can significantly increase the proportion of female directors on the board of listed companies by an average of 8%. The impact is most significant in France, Portugal and Spain, and where their boards of list firms have a faster and stronger response to the mandatory gender quota policy. Listed companies in Belgium and Germany increased their proportion of female directors on the board by an average of 6% and significant at 0.05 significant level after the policy was introduced. This shows that a very small number of listed companies in these countries followed policy calls to rapidly increase the quotas of female directors, but most listed companies did not. Norway was the first to implement the policy, but the proportion of women on the boards of listed companies did not change significantly after the implementation of the policy. Similar results are seen in Austria, Italy, Luxembourg, and Switzerland. This may be because the proportion of female directors on the boards of listed companies is already high, at least that is what local listed companies think, so they do not react strongly to the policy. Poland where the proportion has even decreased.

Chart 3

Three Years Before and After Mandatory Gender Quota Policy was implemented

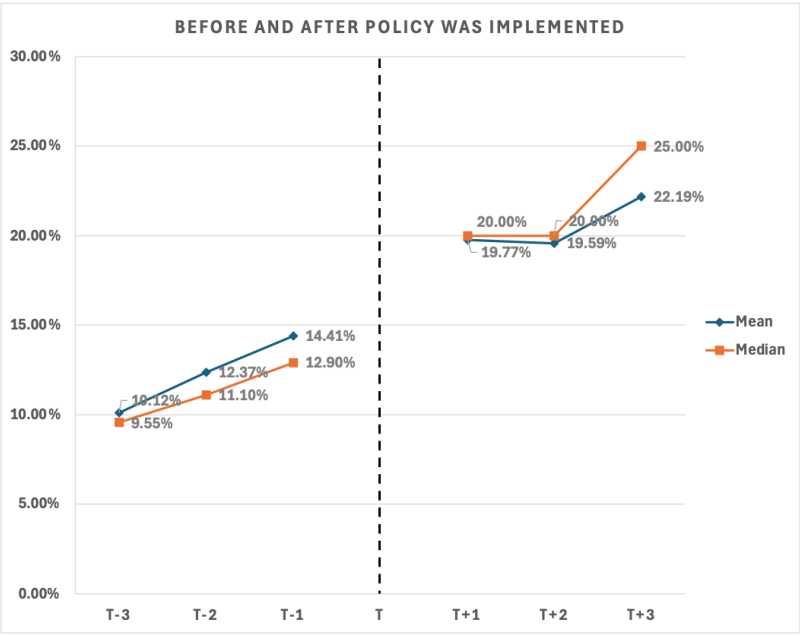


Table 2

Before and After the Mandatory Gender Quota Policy Applied

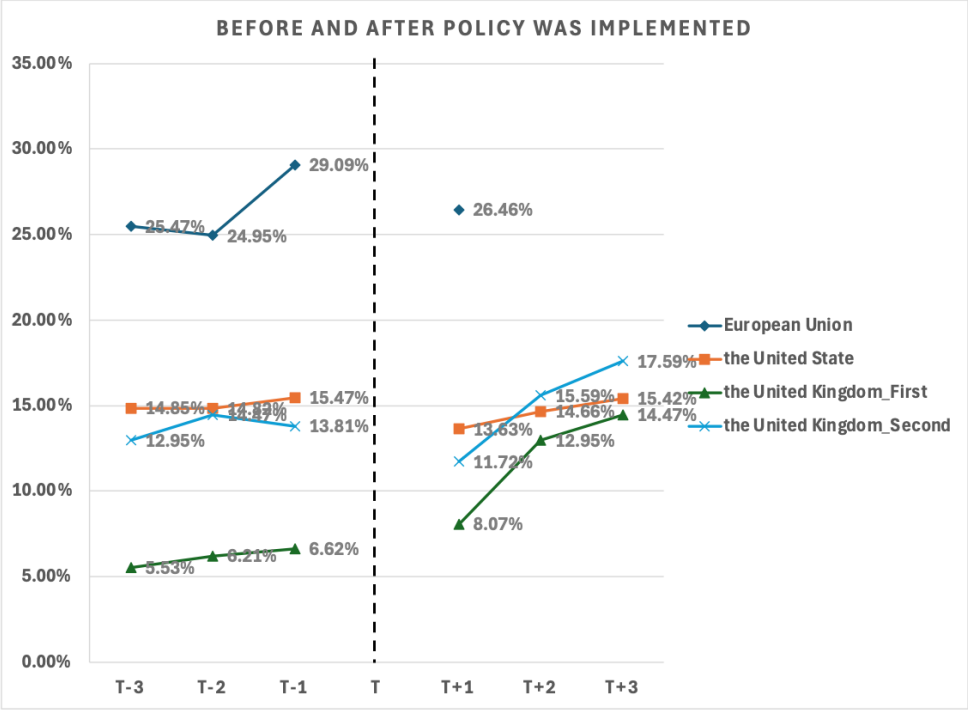
Country	Proportion of Women on Board			
	Before	After	Diff	t-value
Austria	11%	16%	5%	0.97
Belgium	10%	17%	7%**	2.63
France	8%	25%	17%***	8.74
Germany	12%	17%	5%**	2.27
Italy	9%	13%	4%	0.84
Luxembourg	10%	16%	6%	0.71
Norway	22%	27%	5%	0.43
Poland	7%	6%	-1%	-0.18
Portugal	8%	23%	16%*	2.08
Spain	16%	32%	16%***	4.07
Switzerland	19%	23%	4%	0.91
All	13%	21%	8%***	6.07

We also want to know the impact on gender diversity of listed companies' boards if the implementation of gender quota policy is soft. A European Union (EU) law requiring gender balance on corporate boards was adopted by the European Parliament on November 22, 2022. The directive requires that listed companies have 40 percent of nonexecutive directors, or 33 percent of all directors, be members of the underrepresented sex by the middle of 2026. We can see from the chart 4 and Table 3 that three years before the EU policy was implemented, EU countries that had never implemented a gender quota policy on boards of directors had a female director ratio of about average 25%, and in 2023, one year after the policy was implemented, this ratio has not changed much because it has been spillover affected by the mandatory gender quota policies in Belgium, France, and Italy since 2011, and public listed firms in other European countries have followed. Therefore, by 2022, most listed firms in European countries have a high proportion of female directors on their boards. Or because the average proportion of female directors on the boards in listed companies in these countries is already very high, so there is no mandatory gender quota policy implemented. The UK does not have a mandatory gender quota for corporate boards

but has adopted a voluntary, target-based approach to increasing gender diversity. In 2011, the Davies Review recommended that FTSE 100 companies (the largest companies on the London Stock Exchange) aim to have at least 25% women on their boards by 2015. In 2016, the Hampton-Alexander Review was launched. It set a target for FTSE 350 companies to have 33% female representation on boards and in senior leadership roles by the end of 2020. While these targets are not legally binding, they have driven significant progress, with many companies meeting or exceeding them.

Chart 4

Gender Quota Policy was implemented in EU and US



From the chart 4, the first implementation of the voluntary gender quota policy in the UK had a strong response, from about average 6% of female directors on the board three years before the implementation of the policy to about 15% three years later. However, the second implementation of the voluntary gender quota policy did not change the proportion of female directors of listed companies significantly, and it did not increase by about 2 percentage points until three years after

the implementation of the policy. The United States does not have a specific legal requirement for gender quotas in public listed firms. The closest thing to mandatory gender quota requirements is Washington passed a law in 2020 that "requires a public company to maintain a board of directors that is composed of at least 25% which self-identify as women". Nasdaq introduced its diversity requirements for companies listed on its exchange in December 2020. Under these rules, Nasdaq requires most companies to have at least two diverse directors, including one woman and one person from an underrepresented minority or LGBTQ+ background. Companies that do not meet these diversity requirements must explain why they do not. We compare the changes in the proportion of female directors on the boards of US listed companies three years before and after 2020, and the results show that local regional laws do not spillover the entire United States, the proportion of female directors on the boards of US listed companies is still around 15%.

Table 3

Before and After the Mandatory and Voluntary Gender Quota Policy Applied

Country	Proportion of Women on Board			
	Before	After	Diff	t-value
The European Union (Countries Never Implement Policy Before)	26%	26%	0%	-0.04
The United States	15%	14%	-1%	-1.49
The United Kingdom (First Implement)	6%	12%	6%***	3.82
The United Kingdom (Second Implement)	14%	15%	1%	0.84

3.2 Independent Variables

We follow the literature on boardroom gender diversity (e.g., Adams and Ferreira, 2009; Atif et al., 2021; Chen et al., 2017; Huang and Kisgen, 2013; Sila et al., 2016) and first define female director representation (Female Proportion) as the percentage of the number of female directors divided by total board size. We measure the board gender diversity by testing the proportion of female directors on a board, which is the ***ProWomen***. The higher proportion of female directors in a board, the larger the *Women*. If the board consists of only male directors, the *Women* is equal to 0. ***Treat***

is a dummy variable equal to 1 if the year is after the year in which the country introduced its gender quotas policy to the boards in listed firms. ***Quota*** is the gender ratio of the board in a country's gender quota policy, generally the proportion of female directors on the board of directors.

3.3 Dependent Variables

Following prior studies such as Chen et al. (2001), Hutton et al. (2009) and Kim et al. (2011b), we use two measures of stock price crash risk: (1) the negative coefficient of skewness of firm-specific weekly returns (NCSKEW) and (2) the down-to-up the volatility of firm-specific weekly stock returns (DUVOL). The firm-specific weekly return is estimated as the residuals from the market model, as in equation (1).

$$R_{i,j} = \alpha_i + \beta_1 R_{m,j-2} + \beta_2 R_{m,j-1} + \beta_3 R_{m,j} + \beta_4 R_{m,j+1} + \beta_5 R_{m,j+2} + \varepsilon_{i,j} \quad (1)$$

In this model, $R_{i,j}$ is the return on stock i in week j and $R_{m,j}$ is the market return based on the VN-Index in week j. Weekly returns are calculated based on the Wednesday-to-Wednesday adjusted closing prices to avoid the weekend effect. The lead and lag terms of market return are added to control for a non-trading phenomenon (Dimson, 1979). This regression requires at least 26 observations. As the residuals $\varepsilon_{i;j}$ are highly skewed, we use their natural logarithm transformation in equation (3) following Hutton et al. (2009).

$$W_{i,j} = \ln\left(1 + \varepsilon_{i,j}\right) \quad (2)$$

The NCSKEW for a given year t is computed as the negative of the third moment of firm- specific weekly returns, as in equation (3).

$$NCSKEW_{i,t} = -\frac{n(n-1)^{\frac{3}{2}} \sum W_{i,j}^3}{(n-1)(n-2)(\sum W_{i,j}^2)^{\frac{3}{2}}} \quad (3)$$

where n indicates the number of stock return observations in year t.

The DUVOL measures the fluctuation of weekly returns relative to the mean and is

calculated using equation (4).

$$DUVOL_{i,t} = ln\frac{(n_u - 1)\sum_{Down} W_{i,j}^2}{(n_d - 1)\sum_{Up} W_{i,j}^2} \quad (4)$$

For each firm i over a fiscal year t, firm-specific weekly returns are classified into two groups: "Down" weeks when the returns are lower than the annual mean and "Up" weeks when the returns are above the annual mean. The standard deviation of firm-specific weekly returns is calculated separately for each group. nu and nd are the number of weeks in the Down and Up groups, respectively (Chen et al., 2001).

We use the absolute value of discretionary accruals (***ABACC***) to measure the earnings management activities of the companies.

The first stage of the Jones model is to calculate the total accruals (TA) as follows:

$$TA_{i,t} = \Delta CA_{i,t} - \Delta CL_{i,t} - \Delta Cash_{i,t} + \Delta STD_{i,t} - Dep_{i,t} \ (5)$$

where ΔCA is the change in current assets, ΔCL is the change in current liabilities, ΔCash is the change in cash and cash equivalent, ΔSTD is the change in current maturities of long-term debt and Dep is the depreciation and amortisation expense.

Then, following prior studies (DeFond and Jiambalvo, 1991; Jones, 1991; Dechow et al., 1995), we use the absolute value of discretionary accruals, including ROA, estimated using an annual cross-sectional model for each industry (based on two-digit Global Industry Classification Standard codes) based on the Jones (1991) model (Kothari et al., 2005) as follows:

$$TA_{i,t}/AT_{i,t-1} = \alpha_i + \beta_{1i,t}\left[1/AT_{i,t-1}\right] + \beta_{2i,t}\left[\left(\Delta REVT_{i,t} - \Delta RECT_{i,t}\right)/AT_{i,t-1}\right] + \beta_{3i,t}\left[PPE_{i,t}/AT_{i,t-1}\right] + \beta_{4i,t}ROA_{i,t-1} + \varepsilon_{i,t} \ (6)$$

Where $AT_{i,t-1}$ is lagged total assets, ΔREVT is change in revenue, ΔRECT is change in accounts receivable, PPE is property, plant and equipment and ROE is return on asset.

I get the expected total accruals from equation 2 and the realized (actual)total accruals (*AA*) should be:

$$AA_{i,t} = NICON_{i,t} - OANCF_{i,t} \ (7)$$

Where the *NICON* is the net income and *OANCF* is the net cash flow from operating activities. So the absolute value of discretionary accruals, ***ABACC*** is

$$ABACC_{i,t} = \left|(AA_{i,t} - \widehat{TA_{i,t}})\right| / AT_{i,t-1} \quad (8)$$

We use the following indicators of financial reporting quality in this study: audit opinions and auditor choice (Becker et al., 1998; Azizkhani et al., 2023). We measure audit opinions using the dummy variable ***Unquilifi***, which takes a value of one if an external auditor issued an unqualified audit opinion to the companies, and zero otherwise. Audit opinions convey information about the quality of financial reporting to the users of the financial statements. Consequently, several authors proxy information quality using audit opinions (Bartov, Gul, and Tsui, 2000; Chen, Chen, and Su, 2001; Butler, Leone, and Willenborg, 2004; Pucheta-Martínez and de Fuentes, 2007). We measure auditor choice using the dummy variable ***Big4***, which takes a value of one if a company chose PwC, Deloitte, KPMG, or Ernst & Young as its external auditor, and zero otherwise.

3.4 Control Variables

lnNumberDirectors is the natural logarithm of the number of executive directors, the number of monitoring directors or the total number of the directors as of the selected annual reporting date. ***lnTimeBrd*** is the natural logarithm of the average board tenure of executive directors, supervisory directors, or all directors as of the selected annual reporting date. ***lnNoQuals*** is the natural logarithm of the average number of qualifications at the undergraduate level and above of executive directors, supervisory directors, or all directors as of the selected annual reporting date. ***BTM*** is the book-to-market ratio measuring firm growth. Callen and Fang (2015) document that growth stocks have a higher likelihood of price crash risk. ***SIGMA*** is the standard deviation of firm-specific weekly returns in a fiscal year (Zhang et al., 2018). Volatile stocks are more likely to experience stock price crashes (Chen et al., 2001). ***DTURN*** is the detrended stock trading volume, measuring heterogeneity in investors' opinions (Kim et al., 2011a; Chen et al., 2001). DTURN is a year's average monthly share turnover minus the average monthly share turnover of the previous year. The monthly share turnover is the monthly trading volume deflated by the total number of outstanding shares in that month. Stocks with high DTURN are more prone to crashes (Chen et al., 2001). ***RET*** is firm-specific return, calculated as the average firm-specific weekly return in the

fiscal year. Chen et al. (2001) report that price crashes happen in stocks with high past returns. ***ILLQ*** is the average ratio of absolute value of daily returns (dret) to daily volume (dvol) for firm i on day d in a given year T. D stands for the trading days in year T. It measures the illiquidity of an asset, and lower illiquidity means higher liquidity of a stock or vice versa. Hence, the value of ILLQ is multiplied by -1 to construct the variable for stock liquidity ***LIQ*** used for interpreting the impact of liquidity on crash risk more conveniently.

$$ILLQ_{i,T} = \frac{1}{D_{i,d}} \times \sum_{d=1}^{D} \frac{\left|RET_{i,d}\right|}{VOL_{i,d}} \quad (9)$$

InstOwn_HHI is to measure the ownership concentration, which is Herfindahl-Hirschman Index. The Herfindahl–Hirschman Index is defined as the sum of the square sums of all shareholders' voting rights. This measure fulfills the important property that concentration increases if the share of any shareholder increases at the expense of the shareholding of a smaller shareholder (Curry and George, 1983). ***GROWTH*** is total assets in the current year minus total assets in the previous year divided by total assets in the previous year. ***LIQUID*** is current assets divided by current liabilities. ***LEVERAGE*** is the ratio of total liabilities to total assets. ***CASHFLOW*** is the operating cash flows deflated by total assets. ***ARINV*** is accounts receivable plus inventory divided by total assets. ***ROA*** is the earnings before interest and taxes divided by total assets. ***SIZE*** is the natural logarithm of total assets. All control variables for company characteristics are winsorized at the 5th and 95th percentiles. All variables are defined in Appendix 1.

3.5 Models

To test whether having more female directors on the board increase the crash risk of firm's stock price, we use Model (1). Model (2) are used to examine whether the gender quota policies have moderate effect on the positive relation between the proportion of board female directors and firm's stock price crash risk.

$$\boldsymbol{NCSKEW}_{i,t+1} \text{ or } \boldsymbol{DUVOL}_{i,t+1} = \alpha_i + \boldsymbol{NCSKEW}_{i,t} + \beta_i \boldsymbol{ProWomen}_{i,t} + \gamma_i \boldsymbol{Control\,Variables}_{i.t} + \boldsymbol{\eta}_i + \boldsymbol{\varepsilon}_i + \boldsymbol{\mu}_i \quad (10)$$

$$\boldsymbol{NCSKEW}_{i,t+1} \text{ or } \boldsymbol{DUVOL}_{i,t+1} = \alpha_i + \boldsymbol{NCSKEW}_{i,t} + \beta_i \boldsymbol{ProWomen}_{i,t} + \theta_i \boldsymbol{Treat}_{i,t} + \delta_i \boldsymbol{ProWomen} * \boldsymbol{Treat}_{i,t} + \gamma_i \boldsymbol{ControlVariables}_{\boldsymbol{i,t}} + \boldsymbol{\eta}_i + \boldsymbol{\varepsilon}_i + \boldsymbol{\mu}_i \quad (11)$$

Where $\boldsymbol{NCSKEW}_{i,t}$ is the negative coefficient of skewness of firm-specific weekly returns in company i in year t. $\boldsymbol{DUVOL}_{i,t}$ is the down-to-up the volatility of firm-specific weekly stock returns in company i in year t. $\boldsymbol{ProWomen}_{i,t}$ is the proportion of female directors on a board in company i in year t. $\boldsymbol{Treat}_{i,t}$ is a dummy variable equal to 1 if the year is after the year in which the country introduced its gender quotas policy to the boards in listed firms in company i in year t. $\boldsymbol{\eta}_i$ is the year dummy, $\boldsymbol{\varepsilon}_i$ is the unobserved company-specific error term, and $\boldsymbol{\mu}_i$ is the idiosyncratic error term.

4. Baseline Results

4.1 Descriptive Statistics

The descriptive statistics of the main variables used in the study are presented in Table 4, and Table 5 shows their Pearson correlation coefficients.

[Insert Table 4&5 here]

4.2 Stock Price Crash Risk and Gender Diversity

Before we test the changes that gender quotas bring about on boards, we first test the impact of the proportion of female directors on the board on the company. Gender and non-local diversity matter for return volatility (Gormley et al., 2023; Bernile et al, 2018). To determine whether stock price crash risk increases with the proportion of female directors on firm's board, we use firm-year panel dataset to regress ***NCSKEW***, ***DUVOL*** on ***ProWomen***. The results show that the larger the proportion of female directors on the board, the greater the crash risk of a firm's stock price.

[Insert Table 6 here]

4.3 Earnings Management and Financial Reporting Quality

Lai, Srinidhi, Gul, and Tsui (2017) find that female directors on boards as a governance mechanism to improve the financial reporting quality of firms. Boards (audit committees) with female directors (members) are more likely to demand higher audit quality and choose a professional auditor. We also want to test the impact of board gender diversity on the firm's earnings management activities. The results show that the greater the proportion of female directors on the board, the less the company's earnings management activities can be, and the more likely it is to obtain unqualified audit opinions from external auditors. The proportion of female directors on the board does not have much impact on the selection of external auditors.

[Insert Table 7 here]

4.4 Policy Implementation

After we test the effects of board gender diversity on firms' stock price crash risk, earnings management, and financial reporting quality, we also want to know whether the effect of board gender diversity is consistent before and after the implementation of gender quota policies. ***Treat*** is a dummy variable equal to 1 if the year is after the year in which the country introduced its gender quotas policy to the boards in listed firms. The results show that there is no significant volatile on the stock price of listed firms during downturns after the implementation of gender quota policies but significantly increase extreme downside risk. Furthermore, the implementation of the gender quota policy mitigates the positive effect of the increase in the proportion of board female directors on the crash risk of stock price. The increase in the proportion of female directors on the board helps reduce the firm's earnings management activities and is more likely to receive unqualified audit opinions from auditors. This effect is stronger after the implementation of gender quota policies.

[Insert Table 8&9 here]

4.5 Gender Quota

Although countries have introduced gender quota policies almost every few years, the gender ratios required by each country on the board of directors are very different. We want to know what a good gender ratio on the boards is. In previous regression tests, we know that too high a proportion of female directors on the board will increase the risk of a company's stock price crash, so we directly test the impact of gender quotas on board performance. ***Quota*** is the gender ratio of the board in a country's gender quota policy, generally the proportion of female directors on the board of directors. From the results, the higher the gender ratio on the board in listed firms required by a country, the greater the crash risk of stock price of local listed companies, and the lower the quality of firms' financial reporting.

[Insert Table 10 here]

The European Parliament passed the European Union law on gender quotas in 2022, requiring that boards in listed companies have 33% female directors. From Table 2, we can also see that many European countries that implement gender quotas require that boards in listed companies also have 33% female directors. Therefore, we set up a dummy variable equal to 1 if a country requires that the proportion of female directors on the board of directors of listed companies is less than 33%. The results show that requiring the gender ratio to less than 33% can significantly reduce the crash risk of a firm's stock price and improve the quality of financial reporting.

[Insert Table 11 here]

4.6 Quadratic Effect

The gender ratio in the gender quota policy seems to have a quadratic effect on board performance from above results. To test our hypothesis, we plot the linear relation between the proportion of female directors on the board and stock price crash risk, earnings management, and financial reporting quality. From the chart 5, we can see that stock price down-to-up volatility and financial reporting quality have a clear quadratic effect on the gender ratio of the board. Negative coefficient of skewness of returns and earnings management have slight signs of quadratic functions. To test the quadratic effect of the gender ratio of the board, we run a quadratic regression. The results show that the gender ratio of the board has an inverted U-shaped linear relationship with each

measure. We can see from the chart that the turning point is also around 33% of the gender ratio. Since the quadratic linear relation is not significant, the subsequent test still uses the linear relation test.

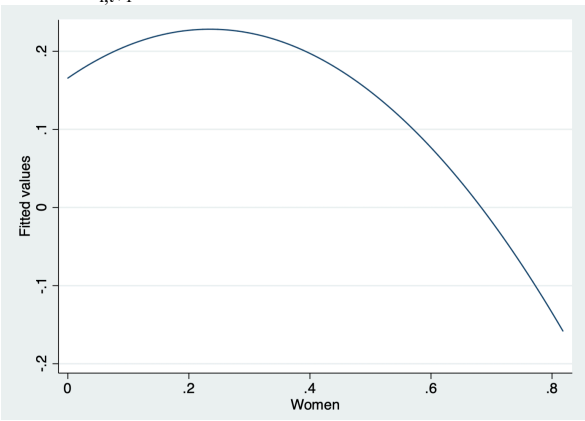
[Insert Table 12 here]

Chart 5

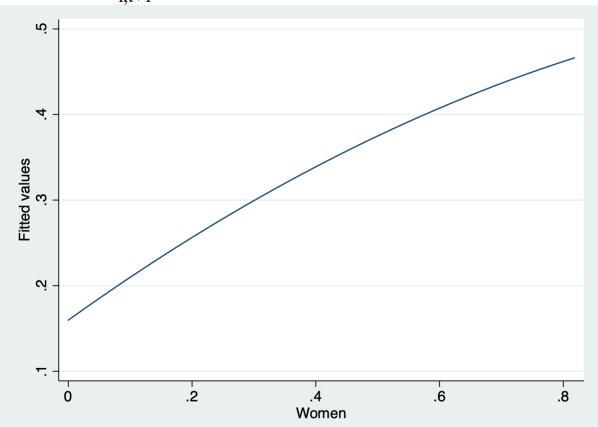
Panel A

Stock Price Crash Risk

$DUVOL_{i,t+1}$



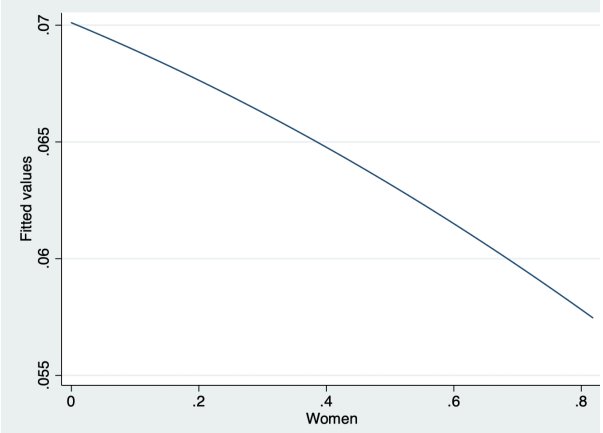
$NCSKEW_{i,t+1}$



Panel B

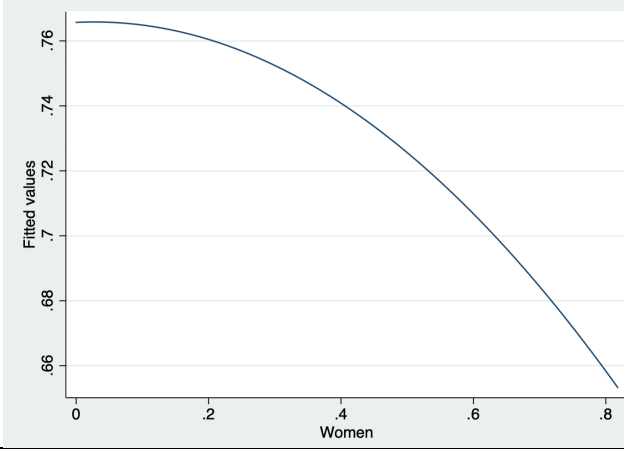
Earnings Management

$ABACC_{i,t+1}$



Financial Reporting Quality

$Unqualify_{i,t+1}$



5. Robustness Tests

Some studies (Ullah et al., 2018; Barros et al., 2020; Li et al., 2021) point out that even if researchers do not have good instrumental variables to externalize a model, the panel data estimation method based on the generalized method of moments (GMM) uses the sequential exogenous assumption of the regressor to overcome endogeneity problems related to independent variables and fixed effects. We use the system generalized method of moments (SYS-GMM) estimator proposed by Arellano and Bover (1995) and Blundell and Bond (1998) to test the validity of the results for dynamic panel data models. We combine moment conditions for the model in first differences with moment conditions for the model in levels as valid instruments for our lagged endogenous variable. To test the validity of these instruments and dynamic models, the Arrellano–Bond test and the Hansen (Sargan) overidentification test are used to analyze serial correlation in residuals and overidentification of instruments. The Arrellano–Bond test fails to reject the null hypothesis of no second-order serial correlation significant at the 10% level, and the Hansen (Sargan) overidentification test is robust. The results are aligned with the baseline results.

[Insert Table 13&14&15 here]

6. Spillover Effect

6.1 Gender Quota Policy Year

Regardless of whether they have implemented mandatory gender quota policies or not, the proportion of female directors in all European countries has increased since 2011. We want to know whether gender quota policies have spillover effects between countries around the world. Many European listed companies have business operations across multiple European countries, and trade between Europe and the United States is very frequent. Since Norway was the first to implement its gender quota policy in 2003, many European countries have followed. Although listed companies do not have mandatory gender quota policies in their home countries, they have implemented gender quota policies in many countries where they trade, and they also comply with the call for board diversity to maintain their company reputation. The culture between listed firms also has a spillover effect (Bao and Li, 2024). We test the effect of gender quota policy in each year on the relation between board diversity and board performance since 2011.

In 2011, Belgium, France, and Italy both introduced mandatory gender quotas. In the two years after France and Italy introduced of gender quotas, the positive effect of the proportion of women on stock price crash risk of European and US listed companies was significantly alleviated, financial reporting quality was significantly improved, and earnings management activities began to decline significantly in 2012. In 2015, Germany introduced a mandatory gender quota policy, and the quality of financial reporting of European and US listed companies improved significantly, and their stock price crash risk was mitigated again with the adjustment of the gender ratio of the board of directors. However, their stock price volatility was significantly higher during downturns from 2016 to 2018, and the risk did not significantly decrease until 2019. In 2019, Iceland and Romania introduced their mandatory gender quota policies. There was no significant change in earnings management activities until 2020, when they were significantly reduced, which may be related to the diversity requirements for companies listed in exchange of NYSE and Nasdaq.

[Insert Table 16 here]

6.2 Treated Firms

We also want to know the spillover effect of the gender quota policy year on firms that have already implemented mandatory gender quota policies in their own countries. The results show that the implementation of gender quota policies in other European countries still has a great effect on the positive effect of the proportion of female directors on the treated firms' stock price crash risk. The newly implemented gender quota policy from other European countries can significantly reduce the risk of extreme negative returns during the downturns brought by the high proportion of female directors on the board in firms that have already implemented gender quota policies. There is no significant effect on earnings management and financial reporting risks, but the policy proposals from 2018 to 2020 will significantly reduce the quality of financial reporting of treated firms if the proportion of female directors on the board of directors increases. We believe this is related to the campaign by the "Big Three" institutional investors to increase gender diversity on corporate boards (Gormley et al., 2023). Their campaign led US companies to add at least 2.5 times more female directors in 2019 than in 2016. The rapid increase in the number of female directors promoted to key board positions is hard to believe is a symbolic move by companies.

[Insert Table 17 here]

7. Female Directors on boards

7.1 Female Directors and Independence Directors

By analyzing the proportion of female directors on the board, we understand the role of gender quotas in affecting the crash risk of a firm's stock price by female directors. We also want to know the role of female directors at the director level in affecting the crash risk of a firm's stock price. We run the regression in director-board-year. We use ***NED*** to measure the effect of independent directors on the boards since the data about non-executive directors in BoardEx is available for us. The results show that individual female directors have no significant effect on the stock price crash risk, and although independent female directors can alleviate the crash risk of firm's stock price compared to executive female directors, it is not significant.

[Insert Table 18 here]

We also want to know what roles these independent female directors play after joining the board and what are the differences in their effects on the crash risk of a firm's stock price. ***MonComm*** indicates that the board director serves as member in the three principal monitoring committees (audit, compensation, and nominating). ***AdvComm*** is dummy variable that equal to one if an independent director also serves as members in advisory committees. The results show that female directors who serve as independent directors on the board's three principal board monitoring committees (audit, compensation, and nominating) can alleviate the crash risk of a firm's stock price, especially the extreme negative returns during downside. However, if female directors going to the advisory committee on the board will significantly increase the crash risk of a firm's stock price. This suggests that the strong monitoring role of female directors is unquestionable, but there are still asymmetric information and obstacles in communication. As outside directors who also have monitoring roles, insiders such as CEOs dare not share too much inside information for fear that female directors will implement tighter monitoring based on this information. Our conjecture is that before the implementation of gender quotas, most female directors served as members of the advisory committee on the board, but after the implementation of gender quotas, most

independent directors on the three principal board monitoring committees (audit, compensation, and nominating) become women. This explains the negative effect of the proportion of female directors on the board on the crash risk of a firm's stock price after the implementation of gender quotas.

[Insert Table 19 here]

Faleye, Hoitash, and Hoitash (2011) find that when a majority of independent directors serve on at least two of the three key monitoring committees, monitoring quality improves, but at the expense of weaker strategic advisory competence and greater managerial myopia. We also want to know the effect of female directors serving as members of multiple committees on the same board on the crash risk of a firm's stock price. We use ***NumMonComm*** to measure the number of monitoring committees that a board director serves as their members. ***NumAdsMem*** to measure the number of advisory committees that a board director serves as their members. The results show that whether it is a monitoring committee or an advisory committee, the more overlapping committee members a female independent director serves on the same board, the greater the crash risk of a firm's stock price. Even female directors cannot take the overburden of board responsibility.

[Insert Table 20 here]

7.2 Female Directors and Overlapping Directors

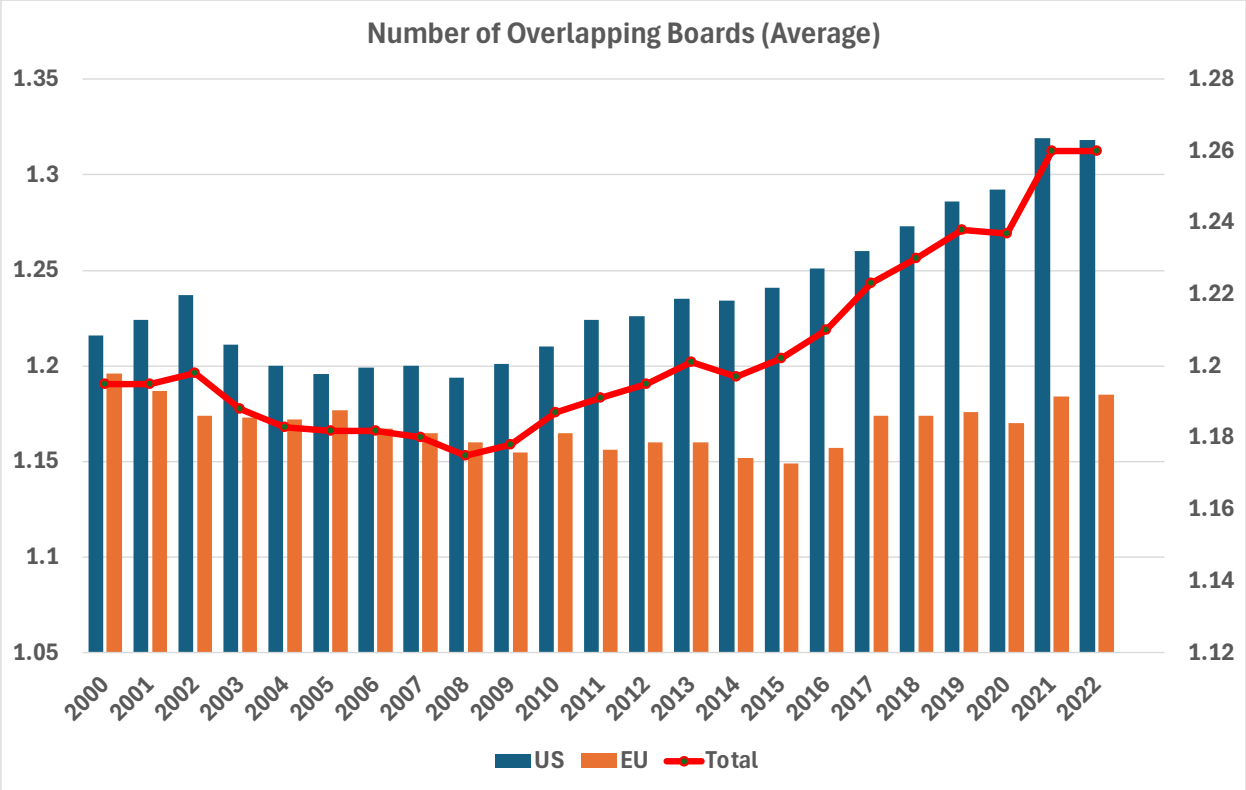
SOX (2002) increased directors' workload and risk, and increased demand by mandating that firms have more outside directors (Linck et al., 2009)). Board busyness can also be measured by the directors with multiple board appointments (Hauser, 2018; Field et al., 2013; Fich and Shivdasani, 2006; Ferris et al., 2003). Ferris et al. (2003) find that firm performance has a positive effect on the number of board appointments held by a director. Fich and Shivdasani (2006) Busy outside directors' departures generate positive abnormal returns. When directors become busy by acquiring additional directorships, other firms on which they serve as directors experience negative abnormal returns. We also want to know the effect of female directors serving on multiple boards on the crash risk of a firm's stock price. From our sample, we can see that the average boards that a director serve is more than one and this trend is increasing year by year for US listed companies.

For European listed companies, the average boards that a director serve has been decreasing since 2000 and has only started to increase slowly in 2015. We use ***NumOlap*** as proxy to measure the number of directorships that a director held for different boards. We find that the effect of female directors serving on multiple boards on the stock price crash risk is very different between the United States's and European listed firms. In the United States, female directors serving on the boards of multiple listed firms can significantly alleviate volatility and does not create extreme negative returns in downturns. However, among European listed companies, female directors serving on several boards significantly increases the crash risk of a firm's stock price.

[Insert Table 21 here]

Chart 6

Average Number of Boards A Director Serves



7.3 Female Directors and Social Network Size

Fang and Huang (2017) suggest that men benefit more than women from connections in both job performance and the subjective evaluation by others. Luong et al. (2023) show that directors with strong social network size are not conducive to gender equality in senior management, but this situation improves in companies with female directors with valuable attributes. We also want to know the role of directors with strong social network in the crash risk of a company's stock price. We use ***NetworkSize*** to measure the social network size (number of overlaps through employment, other activities, and education) of selected individual director. The results show that directors with strong social network size significantly increase the crash risk of a firm's stock price, but this effect is moderated by the attributes of female directors and significantly reduces the risk of extreme negative losses during downside.

[Insert Table 22 here]

7.4 Female Directors and Experienced Directors

The results show that directors' age has no significant effect on the crash risk of stock price. However, older female directors can significantly reduce the crash risk of a firm's stock price, which shows that the work experience of female directors plays an important role in the crash risk of a firm's stock price.

[Insert Table 23 here]

8. Board Structure and Female Directors

8.1 Independence and Monitoring Board

The implementation of gender quota policies by countries mitigates the positive effect of the increase in the proportion of board female directors on stock price crash risk and strengthens the monitoring of firm managers. Still, we want to know how gender quota policies affect the effect of female board directors on the firm's stock price crash risk. The first thing we think of is whether gender quota policies will increase the number of female independent and monitoring directors on the board and thus enhance corporate board monitoring strength. We use ***ProNumNEDDir*** and ***ProNumMonCommDir*** to measure the independence and monitoring strength of corporate boards.

ProNumNEDDir is the proportion of non-executive directors on a firm's board. Having more independent directors on the board can help improve the monitoring strength of the board. ***ProNumMonCommDir*** is the proportion of independent directors who serve as members on three principal board monitoring committees (audit, compensation, and nominating). Assigning more independent directors to the board's principal monitoring committees show firm attach great importance to board monitoring. From the results we can see that when the boards become more independent and the monitoring strength is stronger, the crash risk of a company's stock price decreases significantly.

[Insert Table 24 here]

8.2 Gender Quota and Independent Boards

When we also consider the gender diversity of the board, we can see that a higher proportion of female directors significantly increases the crash risk of a company's stock price, which is completely opposite to the effect of increasing the proportion of independent directors significantly reducing the crash risk of a company's stock price. This suggests that the increase in female directors does not seem to be joining the firm's board as outside directors. After the implementation of the gender quota policy, the stock price crash risk of more independent boards decreases as the proportion of female directors increase, significant in terms of volatility of stock price during the downside.

[Insert Table 25 here]

8.3 Gender Quota and Monitoring Boards

The same situation occurs for monitoring directors. We can see that a higher proportion of female directors significantly increases the crash risk of a firm's stock price, which is completely opposite to the effect of increasing the proportion of monitoring directors significantly reducing the crash risk of a company's stock price. However, after the implementation of the gender quota policy, the high proportion of female directors on the board with stricter supervision does not have a significant positive effect on stock price crash risk and reduces the chance of extreme negative stock prices. This suggests that after the implementation of the gender quota policy, the newly added female directors to the board of directors are all independent outside directors, who to a

certain extent restrain the female executive directors from manipulating firm's earnings and concealing information.

[Insert Table 26 here]

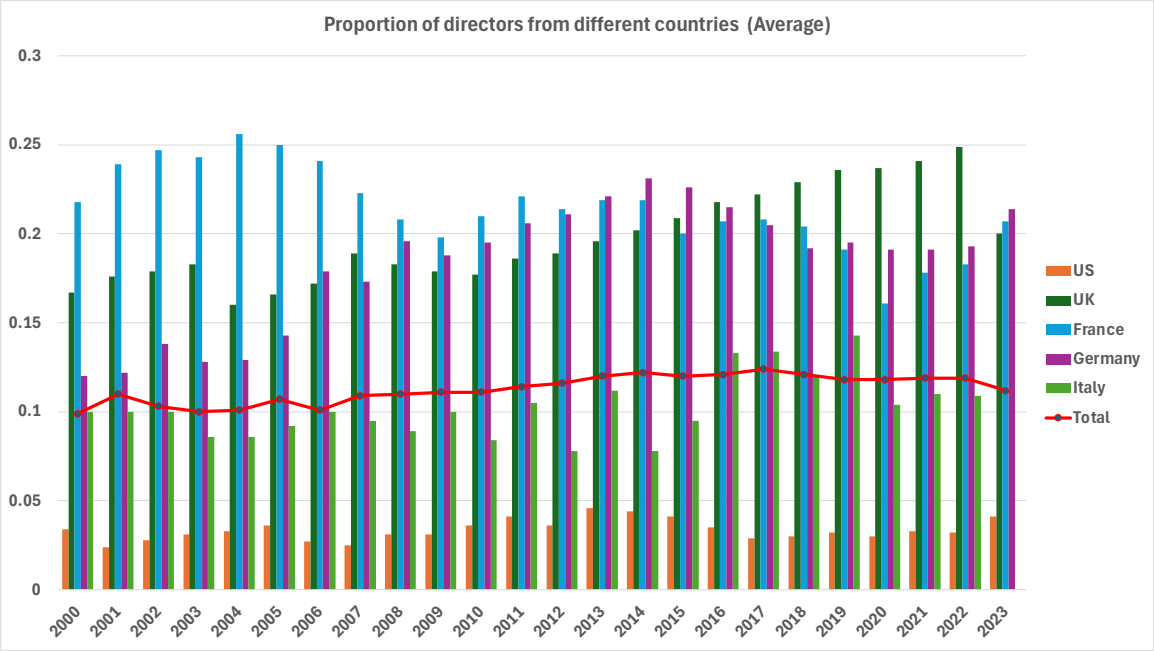
9. Gender, Diversity and Boards

9.1 Nationality Diversity

Gender and non-local diversity matter for return volatility (Gormley et al., 2023; Bernile et al, 2018). In our sample, we can see that the proportion of foreigners on the board is about 10%, while the proportion of foreigners on the US board is the lowest, less than 5%. We then test the effect of board nationality diversity on the risk of a firm's stock crash. To test the effect of board nationality diversity on the risk of a firm's stock crash, we measure the board nationality diversity by testing the proportion of directors from different countries in a board, which is ***NationalityMix***. If the board consists of only local directors, the *NationalityMix* is equal to 0. The results show that having more foreigners in a board would significantly increase stock price crash risk. And this effect is more significant if the proportion of female directors on the board is also large.

Chart 7

Average proportion of foreigners on board



[Insert Table 27 here]

Because a firm's stock price crash risk increases as the proportion of foreigners on the board increases, we want to know how this effect changes after the implementation of the gender quota policy. The results show that the gender quota policy did not curb the positive effect of foreigners on the board on the crash risk of stock price, but after the implementation of the gender quota policy, the increase in the proportion of female directors on the board alleviates the positive impact of foreigners on the crash risk of stock price, especially on the extreme negative stock return. This suggests that the intensity of board supervision has increased significantly after the implementation of the gender quota policy as the proportion of female directors increases.

[Insert Table 28 here]

9.2 Director Retirement

We also use ***Retirement*** as the measurement of the clustering of directors around retirement age in a board. We find that a board with a higher clustering of directors around retirement age can significantly reduce the risk of a corporate stock price crash. This may be because older directors are more experienced in coordinating with other directors, or they may be stricter in supervising managers because they want to leave a good reputation before retirement. They may have served on many boards before joining their current firm, and they may know the signs of a stock price crash and react to it faster than other younger directors. However, due to the positive effect of female directors on the crash risk of a firm's stock price, the results show that the negative effect of experienced elderly directors on the crash risk of a firm's stock price weakens when the proportion of female directors increases.

[Insert Table 29 here]

Compared with female directors, having more experienced elderly directors on the board can reduce the crash risk of a company's stock price. We want to know whether this effect will be maintained after the implementation of the gender quota policy. The results show that the negative effect of experienced elderly directors on the crash risk of a company's stock price has mitigated

after the implementation of the gender quota policy, and likelihood of large, negative returns of firms' stock has significantly increased. We purpose the reason for this result is that the policy of mandatory gender quotas forces the boards to let these elderly directors retire early to meet the gender quota requirements. Either to make room for new female directors to take office, or to reduce the size of the boards to meet the benchmark ratio of female directors on the board. We can see that the increase in the proportion of female directors on the board after the implementation of the gender quota policy significantly reduces the crash risk of a firm's stock price, which is consistent with our hypothesis that the newly added female directors are outside directors who enhance board monitoring. However, if the board of directors continues to maintain a high proportion of elderly directors after the implementation of the gender quota policy, it may alleviate the negative effect of the gender quota policy on the crash risk of a firm's stock price but is more susceptible to larger swings when it is declining, which could be a signal of potential instability and crash risk. We argue that the negative effect on the firm's stock price crash risk is mitigated because elderly directors hold the final decision-making power on the board. Therefore, the newly joined outside female directors lose passion on engaging the discussion of board meeting, same as the decision-making and monitoring role on the board, which causing a certain free-rider problem.

[Insert Table 30 here]

10. Conclusion

This study re-examines the impact of female directors on board performance over a 20-year period. The positive effect of the proportion of female directors on the crash risk of a company's stock price reflects that the effect of the proportion of female directors on the board is likely to be nonlinear. After a certain gender ratio, the monitoring role of female directors will be greatly alleviated. This study also provides a reference for the government to establish a suitable gender quota policy. After a long period of experience accumulation, most of the gender quotas established by various European countries are 33%, which is also the ideal setting value tested in this study. The human resource market for female directors is relatively scarce. If you want to quickly reach the predicted gender ratio in a short period of time, you may have immature, inexperienced, and tokenism female directors. This is the consistent conclusion of early studies. Due to the spillover effect of gender quotas, the proportion of female directors in listed companies in countries that do

not implement gender quota policies is also increasing. In our test, after 10 years since the implementation of gender quotas by Italy, Belgium and France in 2011, the proportion of female directors in most European and US listed companies has increased, and even the proportion of female directors in listed companies in some European countries has exceeded 40%. The problem facing listed companies currently is no longer the number of female directors on the board, but rather how to arrange the functions of female directors to better play their monitoring role, whether female directors can better overcome communication barriers when facing advisory duties, and whether they are competent for multiple responsibilities compared to male directors. The personality characteristics of female directors make the board stereotype when arranging responsibilities and set them as outside directors in a monitorng role, while female executives can also play important role on boards (Girardone et al., 2021).

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Appendix 1

Variables	Definitions
NCSKEW	The negative coefficient of skewness of firm-specific weekly returns.
DUVOL	The down-to-up the volatility of firm-specific weekly stock returns.
ProWomen	The proportion of female directors on a board
Treat	Equal to 1 if the year is after the year in which the country introduced its gender quotas policy to the boards in listed firms.
Quota	The gender ratio of the board in a country's gender quota policy, generally the proportion of female directors on the board of directors.
lnNumMonComm	The natural logarithm of the number of monitoring committees that a board director serves as their members.
lnNumOlap	The natural logarithm of the number of directorships that a director held for different boards.
NumAdsMem	The natural logarithm of the number of advisory committees that a board director serves as their members
ProAdsnMonDir	The number of directors on the board who serve both the monitoring committee and the advisory committee divided by the total number of directors on the board.
ProNumOverlapDir	The number of directors who have board seats on other board divided by the total number of directors on the current board.
MonComm	It indicates that the board director serves as member in the three principal monitoring committees (audit, compensation, and nominating).
AdvComm	Equal to one if an independent director also serves as members in advisory committees.
NED	Equal to 1 if board director is a non-executive director.

NationalityMix	The proportion of directors from different countries in a board.
Retirement	The measurement of the clustering of directors around retirement age in a board.
lnNumberDirectors	The natural logarithm of the number of executive directors, the number of supervisory directors, or the total number of directors as of the selected annual reporting date.
lnTimeBrd	The natural logarithm of the average board tenure of executive directors, supervisory directors, or all directors as of the selected annual reporting date.
lnNoQuals	The natural logarithm of the average number of qualifications at the undergraduate level and above of executive directors, supervisory directors, or all directors as of the selected annual reporting date.
lnNetworkSize	The natural logarithm of number of overlaps through employment, other activities, and education. The network size of selected individual director.
SIGMA	The standard deviation of firm-specific weekly returns in a fiscal year
DTURN	A year's average monthly share turnover minus the average monthly share turnover of the previous year. The monthly share turnover is the monthly trading volume deflated by the total number of outstanding shares in that month.
RET	The average firm-specific weekly return in the fiscal year
LIQ	The negative value of average ratio of absolute value of daily returns to daily volume for firm
InstOwn_HHI	The Herfindahl–Hirschman Index is defined as the sum of the square sums of all shareholders' voting rights.
ABACC	The absolute value of discretionary accruals.
Unqualify	One if an external auditor issued an unqualified audit opinion to the companies, and zero otherwise.
Big4	One if a company chose PwC, Deloitte, KPMG, or Ernst & Young as its auditor, and zero otherwise.

GROWTH	Total assets in the current year minus total assets in the previous year divided by total assets in the previous year.
LIQUID	Current assets divided by current liabilities.
LEVERAGE	Ratio of total liabilities to total assets.
CASHFLOW	Operating cash flows deflated by total assets.
ARINV	Accounts receivable plus inventory divided by total assets.
ROA	Earnings before interest and taxes divided by total assets.
SIZE	Natural logarithm of total assets
MTB	Market capitalization divided by book value of equity.

Table 4

Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
BoardID	44451	741355.92	1039199.2	205	3701600
DirectorID	44451	685698.08	672417.06	27	2795838
Year	44451	2014.303	6.263	1996	2023
Country Code	44451	6.973	11.197	1	40
GICsector	43726	30.864	14.127	0	60
gvkeyx	44451	150136.26	687.003	115118	153430
ProWomen	44450	.165	.14	0	.857
Treat	44451	.217	.413	0	1
Quota	41914	.041	.112	0	.4
Female	358643	.167	.373	0	1
Age	343200	68.693	10.938	22	111
NetworkSize	343638	1427.364	1926.279	1	23910
Overlap	374225	.168	.374	0	1
NED	257664	.929	.257	0	1
NumMonComm	374215	.723	.754	0	6
MonComm	374215	.58	.494	0	1
NumAdsComm	184473	.345	.601	0	6
AdvComm	184473	.293	.455	0	1
NCSKEW	38134	.22	1.636	-7.329	7.412
DUVOL	37608	.201	.286	-2.855	2.146
Big4	43111	.726	.446	0	1
Unqualify	43327	.763	.425	0	1
InstOwn_HHI	22743	.204	.287	.016	1
Ret	38954	.221	.709	-6.476	3.135
Sigma	38502	.481	.451	.001	5.421
MTB	38778	3.173	3.251	.162	13.175
LIQ	39704	0	.004	-.18	0
NationalityMix	41950	.118	.236	0	1
Retirement	44451	.341	.175	0	2.1
NumDir	44451	8.321	3.398	1	38
TimeBrd	44386	7.122	7.449	0	70.2
NoQuals	44451	1.954	1.246	0	15
DTURN	35145	0	68.692	-9105.751	9105.751
ROA	43358	.015	.171	-.498	.216
GROWTH	39233	.095	.215	-.236	.691
LIQUID	40275	2.646	2.302	.609	9.697
LEVERAGE	43358	.499	.234	.087	.933
CASHFLOW	43358	-.199	.335	-1.1	.196
ARINV	43358	.55	.314	.003	1.063
SIZE	43358	6.581	2.281	2.293	10.498
ABACC	38743	.069	.056	0	.225
ProNumNEDDir	41945	1.363	1.438	.038	28
ProNumMonCommDir	36584	1.14	1.166	.042	20

Table 5 (a) Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) NCSKEW	1.000												
(2) DUVOL	0.534	1.000											
	(0.000)												
(3) ProWomen	0.043	0.018	1.000										
	(0.000)	(0.001)											
(4) Female	-0.004	0.007	0.188	1.000									
	(0.491)	(0.156)	(0.000)										
(5) Quota	-0.019	0.086	-0.022	-0.009	1.000								
	(0.000)	(0.000)	(0.000)	(0.077)									
(6) Treat	-0.007	0.030	-0.006	-0.007	0.666	1.000							
	(0.149)	(0.000)	(0.185)	(0.156)	(0.000)								
(7) NumDir	0.058	0.060	0.037	0.053	-0.043	-0.011	1.000						
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.024)							
(8) TimeBrd	-0.005	0.043	-0.010	-0.130	0.003	0.014	-0.006	1.000					
	(0.284)	(0.000)	(0.039)	(0.000)	(0.507)	(0.002)	(0.246)						
(9) NoQuals	-0.011	0.087	0.008	0.055	0.019	0.007	0.020	-0.087	1.000				
	(0.033)	(0.000)	(0.106)	(0.000)	(0.000)	(0.135)	(0.000)	(0.000)					
(10) Big4	0.045	0.064	0.057	0.053	-0.017	-0.016	0.324	-0.038	0.086	1.000			
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)				
(11) Unqualify	-0.032	-0.059	-0.016	-0.009	-0.006	-0.006	0.020	0.008	-0.011	0.083	1.000		
	(0.000)	(0.000)	(0.001)	(0.081)	(0.200)	(0.176)	(0.000)	(0.111)	(0.022)	(0.000)			
(12) InstOwn_HHI	0.076	-0.205	0.135	0.003	-0.050	-0.018	0.026	-0.065	-0.039	-0.113	0.078	1.000	
	(0.000)	(0.000)	(0.000)	(0.677)	(0.000)	(0.007)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
(13) Ret	-0.531	0.171	-0.025	0.031	0.072	0.026	-0.037	0.024	0.062	-0.045	0.015	-0.121	1.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.003)	(0.000)	
(14) Sigma	0.267	0.534	-0.020	-0.033	0.146	0.052	-0.001	0.063	0.121	0.059	-0.130	-0.333	-0.127
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.786)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
(15) LIQ	-0.012	0.031	-0.072	-0.022	0.025	0.004	-0.086	0.010	0.006	-0.013	-0.028	-0.129	0.030
	(0.019)	(0.000)	(0.000)	(0.000)	(0.000)	(0.384)	(0.000)	(0.038)	(0.247)	(0.011)	(0.000)	(0.000)	(0.000)
(16) ROA	0.005	-0.026	0.053	0.019	-0.054	-0.013	0.234	0.147	-0.068	0.237	0.159	-0.100	-0.068
	(0.350)	(0.000)	(0.000)	(0.000)	(0.000)	(0.008)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
(17) GROWTH	-0.089	0.001	-0.001	-0.009	0.008	0.010	-0.040	-0.035	0.001	-0.020	0.010	-0.045	0.130
	(0.000)	(0.805)	(0.828)	(0.097)	(0.114)	(0.057)	(0.000)	(0.000)	(0.789)	(0.000)	(0.043)	(0.000)	(0.000)
(18) LIQUID	-0.074	0.087	-0.043	-0.029	0.066	0.028	-0.229	-0.017	0.067	-0.148	0.060	-0.058	0.169
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
(19) LEVERAGE	0.050	-0.007	0.040	0.043	-0.027	-0.011	0.273	-0.039	-0.014	0.159	-0.103	0.016	-0.076
	(0.000)	(0.159)	(0.000)	(0.000)	(0.000)	(0.023)	(0.000)	(0.000)	(0.003)	(0.000)	(0.000)	(0.016)	(0.000)
(20) CASHFLOW	0.041	-0.078	0.055	0.030	-0.068	-0.026	0.252	0.076	-0.070	0.214	0.057	0.018	-0.131
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.007)	(0.000)
(21) ARINV	-0.021	0.020	-0.020	-0.031	0.014	0.014	-0.101	0.024	-0.028	-0.140	0.008	-0.023	0.051
	(0.000)	(0.000)	(0.000)	(0.000)	(0.004)	(0.005)	(0.000)	(0.000)	(0.000)	(0.000)	(0.104)	(0.001)	(0.000)
(22) SIZE	0.061	0.123	0.130	0.110	-0.037	-0.002	0.620	0.007	0.073	0.514	0.055	-0.092	-0.008
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.695)	(0.000)	(0.152)	(0.000)	(0.000)	(0.000)	(0.000)	(0.096)
(23) MTB	-0.075	0.047	0.013	0.032	0.030	0.020	-0.035	-0.076	0.047	0.009	-0.008	-0.008	0.163
	(0.000)	(0.000)	(0.009)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.077)	(0.113)	(0.250)	(0.000)
(24) ABACC	0.022	0.028	-0.037	-0.021	0.025	0.000	-0.131	-0.074	0.017	-0.074	-0.087	0.040	-0.005
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.941)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.349)

Table 5 (b) Pairwise correlations

Variables	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
(1) NCSKEW											
(2) DUVOL											
(3) ProWomen											
(4) Female											
(5) Quota											
(6) Treat											
(7) NumDir											
(8) TimeBrd											
(9) NoQuals											
(10) Big4											
(11) Unqualify											
(12) InstOwn_HHI											
(13) Ret											
(14) Sigma	1.000										
(15) LIQ	0.060	1.000									
	(0.000)										
(16) ROA	-0.080	-0.025	1.000								
	(0.000)	(0.000)									
(17) GROWTH	-0.007	-0.002	0.118	1.000							
	(0.188)	(0.651)	(0.000)								
(18) LIQUID	0.151	0.034	-0.298	0.112	1.000						
	(0.000)	(0.000)	(0.000)	(0.000)							
(19) LEVERAGE	-0.041	-0.025	0.095	-0.064	-0.646	1.000					
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)						
(20) CASHFLOW	-0.166	-0.041	0.675	0.023	-0.690	0.401	1.000				
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)					
(21) ARINV	0.060	0.021	-0.158	0.021	0.366	-0.117	-0.588	1.000			
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)				
(22) SIZE	0.040	-0.079	0.468	0.010	-0.348	0.348	0.500	-0.326	1.000		
	(0.000)	(0.000)	(0.000)	(0.052)	(0.000)	(0.000)	(0.000)	(0.000)			
(23) MTB	0.014	-0.022	-0.094	0.094	0.047	0.093	-0.134	0.132	-0.077	1.000	
	(0.006)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
(24) ABACC	0.089	0.017	-0.361	-0.162	-0.027	0.083	-0.241	0.050	-0.225	0.113	1.000
	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	

Table 6

Baseline Results – Stock Price Crash Risk

VARIABLES	(1) FE $DUVOL_{i,t+1}$	(2) FE $NCSKEW_{i,t+1}$
$NCSKEW_{i,t}$	0.0037***	0.0729***
	(0.0011)	(0.0065)
$ProWomen_{i,t}$	**0.0294*** **	**0.2243*** **
	(0.0113)	**(0.0686)**
$DTURN_{i,t}$	-0.0000*	-0.0002*
	(0.0000)	(0.0001)
$LIQ_{i,t}$	-1.2098***	-2.9742
	(0.4020)	(2.4528)
$Sigma_{i,t}$	0.0848***	-0.3498***
	(0.0072)	(0.0430)
$Ret_{i,t}$	0.0203***	-1.0475***
	(0.0033)	(0.0201)
$LEVERAGE_{i,t}$	-0.0239***	-0.2071***
	(0.0072)	(0.0439)
$SIZE_{i,t}$	0.0132***	0.0417***
	(0.0009)	(0.0052)
$ROA_{i,t}$	-0.0180	-0.4260***
	(0.0110)	(0.0669)
$MTB_{i,t}$	0.0000	-0.0000
	(0.0000)	(0.0000)
$ABACC_{i,t}$	0.0163	0.1456
	(0.0289)	(0.1750)
Constant	0.1304***	0.9949***
	(0.0335)	(0.2042)
Observations	27,951	28,187
R-squared	0.030	0.188
Year-fixed effects	Yes	Yes
Firm-fixed effects	Yes	Yes
Country-fixed effects	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 7

Baseline Results – Earnings Management and Reporting Quality

VARIABLES	(1) FE $ABACC_{i,t+1}$	(2) FE $Unqualify_{i,,t+1}$	(3) FE $Big4_{i,,t+1}$
$ABACC_{i,t}$	0.3315***		
	(0.0086)		
$Unqualify_{i,t}$		1.2857***	
		(0.0230)	
$Big4_{i,t}$			3.4054***
			(0.0354)
$ProWomen_{i,t}$	**-0.0098*** **	**0.1588** **	**-0.1435**
	(0.0034)	**(0.0778)**	**(0.1296)**
$lnNumDir_{i,t}$	-0.0034	0.1898***	0.2183***
	(0.0022)	(0.0426)	(0.0653)
$lnTimeBrd_{i,t}$	-0.0025***	0.0225***	-0.0481***
	(0.0004)	(0.0085)	(0.0143)
$lnNoQuals_{i,t}$	-0.0027***	-0.0393*	0.0197
	(0.0009)	(0.0213)	(0.0346)
$LIQUID_{i,t}$	-0.0015***	0.0256***	-0.0028
	(0.0003)	(0.0073)	(0.0118)
$CASHFLOW_{i,t}$	-0.0331***	0.3139***	-0.2392***
	(0.0026)	(0.0472)	(0.0767)
$LEVERAGE_{i,t}$	0.0043*	-0.1490**	-0.0619
	(0.0026)	(0.0588)	(0.0985)
$SIZE_{i,t}$	-0.0030***	-0.0193**	0.1923***
	(0.0004)	(0.0077)	(0.0133)
$MTB_{i,t}$	0.0007***	-0.0008	0.0221***
	(0.0001)	(0.0032)	(0.0055)
$InstOwn\_HHI_{i,t}$	-0.0007		
	(0.0028)		
$GROWTH_{i,t}$	0.0077***		
	(0.0020)		
$ARINV_{i,t}$	-0.0238***		
	(0.0021)		
Constant	0.0856***	0.5619	-2.1514***
	(0.0174)	(0.5994)	(0.3643)
Observations	13,965	27,406	27,236
R-squared	0.225		
Year-fixed effects	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 8

Stock Price Crash Risk and Quota Policy

VARIABLES	(1) FE $DUVOL_{i,t+1}$	(2) FE $DUVOL_{i,t+1}$	(3) FE $NCSKEW_{i,t+1}$	(4) FE $NCSKEW_{i,t+1}$
$NCSKEW_{i,t}$	0.0037***	0.0037***	0.0714***	0.0714***
	(0.0011)	(0.0011)	(0.0065)	(0.0065)
$ProWomen_{i,t}$	**0.0295*** **	**0.0179**	**0.1953*** **	**0.2533*** **
	(0.0113)	**(0.0136)**	**(0.0687)**	**(0.0825)**
$Treat_{i,t}$	**-0.0010**	**-0.0066**	**0.2198*** **	**0.2479*** **
	(0.0056)	**(0.0066)**	**(0.0339)**	**(0.0404)**
$ProWomen*Treat_{i,t}$		**0.0364**		**-0.1837**
		(0.0238)		**(0.1444)**
$DTURN_{i,t}$	-0.0000*	-0.0000*	-0.0002*	-0.0002*
	(0.0000)	(0.0000)	(0.0001)	(0.0001)
$LIQ_{i,t}$	-1.2088***	-1.2065***	-3.1877	-3.2000
	(0.4020)	(0.4020)	(2.4513)	(2.4513)
$Sigma_{i,t}$	0.0848***	0.0846***	-0.3467***	-0.3454***
	(0.0072)	(0.0072)	(0.0430)	(0.0430)
$Ret_{i,t}$	0.0203***	0.0202***	-1.0452***	-1.0449***
	(0.0033)	(0.0033)	(0.0201)	(0.0201)
$LEVERAGE_{i,t}$	-0.0239***	-0.0238***	-0.1975***	-0.1980***
	(0.0072)	(0.0072)	(0.0439)	(0.0439)
$SIZE_{i,t}$	0.0131***	0.0130***	0.0420***	0.0427***
	(0.0009)	(0.0009)	(0.0052)	(0.0053)
$ROA_{i,t}$	-0.0180	-0.0182*	-0.4270***	-0.4260***
	(0.0110)	(0.0110)	(0.0669)	(0.0669)
$MTB_{i,t}$	0.0000	0.0000	-0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
$ABACC_{i,t}$	0.0161	0.0153	0.1870	0.1910
	(0.0289)	(0.0289)	(0.1750)	(0.1750)
Constant	0.1303***	0.1324***	1.0076***	0.9972***
	(0.0335)	(0.0335)	(0.2040)	(0.2042)
Observations	27,951	27,951	28,187	28,187
R-squared	0.030	0.030	0.189	0.189
Year-fixed effects	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 9

Financial Reporting Quality and Quota Policy

VARIABLES	(1) FE $ABACC_{i,t+1}$	(2) FE $ABACC_{i,t+1}$	(3) Probit $Unqualify_{i,,t+1}$	(4) Probit $Unqualify_{i,,t+1}$
$ABACC_{i,t}$	0.3320***	0.3318***		
	(0.0086)	(0.0086)		
$Unqualify_{i,t}$			1.2841***	1.2810***
			(0.0231)	(0.0231)
$ProWomen_{i,t}$	**-0.0101*** **	**-0.0074** **	**0.1703** **	**-0.0044**
	(0.0034)	**(0.0037)**	**(0.0782)**	**(0.0908)**
$Treat_{i,t}$	**0.0058** **	**0.0091*** **	**-0.0657**	**-0.1667*** **
	(0.0029)	**(0.0034)**	**(0.0441)**	**(0.0515)**
$ProWomen*Treat_{i,t}$		**-0.0178***		**0.6735*** **
		(0.0096)		**(0.1790)**
$lnNumDir_{i,t}$	-0.0033	-0.0033	0.1883***	0.1789***
	(0.0022)	(0.0021)	(0.0426)	(0.0427)
$lnTimeBrd_{i,t}$	-0.0026***	-0.0025***	0.0227***	0.0224***
	(0.0004)	(0.0004)	(0.0085)	(0.0085)
$lnNoQuals_{i,t}$	-0.0027***	-0.0027***	-0.0393*	-0.0397*
	(0.0009)	(0.0009)	(0.0213)	(0.0213)
$LIQUID_{i,t}$	-0.0014***	-0.0015***	0.0256***	0.0256***
	(0.0003)	(0.0003)	(0.0073)	(0.0073)
$CASHFLOW_{i,t}$	-0.0331***	-0.0330***	0.3150***	0.3175***
	(0.0026)	(0.0026)	(0.0472)	(0.0472)
$LEVERAGE_{i,t}$	0.0044*	0.0044*	-0.1526***	-0.1557***
	(0.0026)	(0.0026)	(0.0588)	(0.0588)
$SIZE_{i,t}$	-0.0030***	-0.0030***	-0.0192**	-0.0199***
	(0.0004)	(0.0004)	(0.0077)	(0.0077)
$MTB_{i,t}$	0.0007***	0.0007***	-0.0008	-0.0008
	(0.0001)	(0.0001)	(0.0032)	(0.0032)
$InstOwn\_HHI_{i,t}$	-0.0010	-0.0007		
	(0.0028)	(0.0028)		
$GROWTH_{i,t}$	0.0077***	0.0076***		
	(0.0020)	(0.0020)		
$ARINV_{i,t}$	-0.0238***	-0.0237***		
	(0.0021)	(0.0021)		
Constant	0.0876***	0.0867***	0.5376	0.6050
	(0.0174)	(0.0174)	(0.5969)	(0.5984)
Observations	13,965	13,965	27,406	27,406
R-squared	0.226	0.226		
Year-fixed effects	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 10

Gender Ratio on Boards

VARIABLES	(1) FE $DUVOL_{i,t+1}$	(2) FE $NCSKEW_{i,t+1}$	(3) FE $ABACC_{i,t+1}$	(4) Probit $Unqualify_{i,,t+1}$	(5) Probit $Big4_{i,,t+1}$
$NCSKEW_{i,t}$	0.0037***	0.0716***			
	(0.0011)	(0.0065)			
$ABACC_{i,t}$	0.0185	0.1946	0.3322***		
	(0.0289)	(0.1749)	(0.0086)		
$Unqualify_{i,t}$				1.2804***	
				(0.0231)	
$Big4_{i,t}$					3.4041***
					(0.0354)
$Quota_{i,t}$	**0.0298***	**0.7701***	**0.0090**	**-0.4864***	**-0.1072**
	(0.0159)	**(0.0965)**	**(0.0089)**	**(0.1243)**	**(0.1851)**
$DTURN_{i,t}$	-0.0000*	-0.0002*			
	(0.0000)	(0.0001)			
$LIQ_{i,t}$	-1.2426***	-3.2761			
	(0.4018)	(2.4495)			
$Sigma_{i,t}$	0.0858***	-0.3430***			
	(0.0071)	(0.0429)			
$Ret_{i,t}$	0.0204***	-1.0415***			
	(0.0033)	(0.0201)			
$LEVERAGE_{i,t}$	-0.0236***	-0.1953***	0.0044*	-0.1613***	-0.0613
	(0.0072)	(0.0439)	(0.0026)	(0.0588)	(0.0985)
$SIZE_{i,t}$	0.0134***	0.0437***	-0.0030***	-0.0188**	0.1918***
	(0.0009)	(0.0052)	(0.0004)	(0.0077)	(0.0133)
$ROA_{i,t}$	-0.0167	-0.4208***			
	(0.0110)	(0.0668)			
$MTB_{i,t}$	0.0000	-0.0000	0.0007***	-0.0009	0.0221***
	(0.0000)	(0.0000)	(0.0001)	(0.0032)	(0.0055)
$lnNumDir_{i,t}$			-0.0032	0.1890***	0.2144***
			(0.0022)	(0.0426)	(0.0652)
$lnTimeBrd_{i,t}$			-0.0026***	0.0234***	-0.0480***
			(0.0004)	(0.0085)	(0.0143)
$lnNoQuals_{i,t}$			-0.0027***	-0.0393*	0.0190
			(0.0009)	(0.0213)	(0.0346)
$LIQUID_{i,t}$			-0.0014***	0.0255***	-0.0026
			(0.0003)	(0.0073)	(0.0118)
$CASHFLOW_{i,t}$			-0.0332***	0.3208***	-0.2396***
			(0.0026)	(0.0472)	(0.0767)
$InstOwn\_HHI_{i,t}$			-0.0010		
			(0.0028)		
$GROWTH_{i,t}$			0.0077***		
			(0.0020)		
$ARINV_{i,t}$			-0.0239***		
			(0.0021)		
Constant	0.1301***	1.0096***	0.0860***	0.4901	-2.1550***
	(0.0335)	(0.2040)	(0.0174)	(0.5916)	(0.3645)

Observations	27,951	28,187	13,965	27,406	27,236
R-squared	0.030	0.189	0.225		
Year-fixed effects	Yes	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes	No	No
Country-fixed effects	Yes	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 11

One-third of the board

VARIABLES	(1) FE $DUVOL_{i,t+1}$	(2) FE $NCSKEW_{i,t+1}$	(3) FE $ABACC_{i,t+1}$	(4) Probit $Unqualify_{i,,t+1}$	(5) Probit $Big4_{i,,t+1}$
$NCSKEW_{i,t}$	0.0037***	0.0723***			
	(0.0011)	(0.0065)			
$ABACC_{i,t}$	0.0195	0.1757	0.3318***		
	(0.0289)	(0.1748)	(0.0086)		
$Unqualify_{i,t}$				1.2741***	
				(0.0231)	
$Big4_{i,t}$					3.4066***
					(0.0354)
$Quota33_{i,t}$	**-0.0372*** **	**-0.3654*** **	**0.0055**	**0.3547*** **	**0.1258* **
	(0.0067)	**(0.0408)**	**(0.0042)**	**(0.0505)**	**(0.0757)**
$DTURN_{i,t}$	-0.0000*	-0.0002*			
	(0.0000)	(0.0001)			
$LIQ_{i,t}$	-1.2333***	-3.1338			
	(0.4016)	(2.4488)			
$Sigma_{i,t}$	0.0850***	-0.3500***			
	(0.0071)	(0.0429)			
$Ret_{i,t}$	0.0216***	-1.0339***			
	(0.0033)	(0.0201)			
$ROA_{i,t}$	-0.0175	-0.4243***			
	(0.0110)	(0.0668)			
$LEVERAGE_{i,t}$	-0.0224***	-0.1919***	0.0043	-0.1692***	-0.0643
	(0.0072)	(0.0439)	(0.0026)	(0.0589)	(0.0986)
$SIZE_{i,t}$	0.0134***	0.0436***	-0.0030***	-0.0198**	0.1911***
	(0.0009)	(0.0052)	(0.0004)	(0.0077)	(0.0133)
$MTB_{i,t}$	0.0000	-0.0000	0.0007***	-0.0012	0.0220***
	(0.0000)	(0.0000)	(0.0001)	(0.0032)	(0.0055)
$lnNumDir_{i,t}$			-0.0033	0.1928***	0.2177***
			(0.0022)	(0.0426)	(0.0652)
$lnTimeBrd_{i,t}$			-0.0025***	0.0245***	-0.0473***
			(0.0004)	(0.0085)	(0.0143)
$lnNoQuals_{i,t}$			-0.0027***	-0.0382*	0.0187
			(0.0009)	(0.0213)	(0.0346)
$LIQUID_{i,t}$			-0.0014***	0.0253***	-0.0027
			(0.0003)	(0.0073)	(0.0118)
$CASHFLOW_{i,t}$			-0.0332***	0.3273***	-0.2384***
			(0.0026)	(0.0473)	(0.0767)
$InstOwn\_HHI_{i,t}$			-0.0005		
			(0.0028)		
$GROWTH_{i,t}$			0.0077***		
			(0.0020)		
$ARINV_{i,t}$			-0.0239***		
			(0.0021)		
Constant	0.1697***	1.3844***	0.0777***	0.0550	-2.3042***
	(0.0342)	(0.2087)	(0.0182)	(0.5859)	(0.3763)

Observations	27,951	28,187	13,965	27,406	27,236
R-squared	0.031	0.190	0.225		
Year-fixed effects	Yes	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes	No	No
Country-fixed effects	Yes	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 12

Quadratic Effect

VARIABLES	(1) FE $DUVOL_{i,t+1}$	(2) FE $NCSKEW_{i,t+1}$	(3) FE $ABACC_{i,t+1}$	(4) Probit $Unqualify_{i,,t+1}$
$NCSKEW_{i,t}$	0.0037***	0.0728***		
	(0.0011)	(0.0065)		
$ABACC_{i,t}$	0.0161	0.1439	0.3315***	
	(0.0289)	(0.1750)	(0.0086)	
$Unqualify_{i,t}$				1.2856***
				(0.0231)
$ProWomen_{i,t}$	**0.0487***	**0.5018*****	**0.0047**	**0.2029**
	(0.0274)	**(0.1666)**	**(0.0086)**	**(0.1912)**
$ProWomen*ProWomen_{i,t}$	**-0.0470**	**-0.6758***	**-0.0358***	**-0.1094**
	(0.0608)	**(0.3697)**	**(0.0194)**	**(0.4328)**
$DTURN_{i,t}$	-0.0000*	-0.0002*		
	(0.0000)	(0.0001)		
$LIQ_{i,t}$	-1.2074***	-2.9398		
	(0.4020)	(2.4528)		
$Sigma_{i,t}$	0.0848***	-0.3506***		
	(0.0072)	(0.0430)		
$Ret_{i,t}$	0.0203***	-1.0478***		
	(0.0033)	(0.0201)		
$ROA_{i,t}$	-0.0183*	-0.4303***		
	(0.0110)	(0.0670)		
$LEVERAGE_{i,t}$	-0.0239***	-0.2074***	0.0043*	-0.1488**
	(0.0072)	(0.0439)	(0.0026)	(0.0588)
$SIZE_{i,t}$	0.0131***	0.0412***	-0.0030***	-0.0193**
	(0.0009)	(0.0052)	(0.0004)	(0.0077)
$MTB_{i,t}$	0.0000	-0.0000	0.0007***	-0.0008
	(0.0000)	(0.0000)	(0.0001)	(0.0032)
$lnNumDir_{i,t}$			-0.0034	0.1892***
			(0.0021)	(0.0426)
$lnTimeBrd_{i,t}$			-0.0026***	0.0225***
			(0.0004)	(0.0085)
$lnNoQuals_{i,t}$			-0.0027***	-0.0393*
			(0.0009)	(0.0213)
$LIQUID_{i,t}$			-0.0015***	0.0256***
			(0.0003)	(0.0073)
$CASHFLOW_{i,t}$			-0.0331***	0.3135***
			(0.0026)	(0.0472)
$InstOwn\_HHI_{i,t}$			-0.0006	
			(0.0028)	
$GROWTH_{i,t}$			0.0077***	
			(0.0020)	
$ARINV_{i,t}$			-0.0238***	
			(0.0021)	
Constant	0.1300***	0.9894***	0.0850***	0.5604
	(0.0335)	(0.2042)	(0.0174)	(0.5993)

Observations	27,951	28,187	13,965	27,406
R-squared	0.030	0.188	0.226	
Year-fixed effects	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes	No
Country-fixed effects	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 13

Two Step System GMM – Gender Diversity

VARIABLES	(1) GMM $DUVOL_{i,t+1}$	(2) GMM $NCSKEW_{i,t+1}$	(3) GMM $ABACC_{i,t+1}$
$NCSKEW_{i,t}$	0.0051***	0.1074***	
	(0.0015)	(0.0112)	
$ABACC_{i,t}$	0.1975	1.9928**	0.1260***
	(0.1225)	(0.9034)	(0.0011)
$ProWomen_{i,t}$	**0.3370*** **	**2.1595*** **	**-0.0141*** **
	(0.0705)	**(0.4181)**	**(0.0003)**
$DTURN_{i,t}$	-0.0000***	-0.0001***	
	(0.0000)	(0.0000)	
$LIQ_{i,t}$	-9.9865***	-84.4035***	
	(2.1756)	(15.5702)	
$Sigma_{i,t}$	-0.2041***	-2.8470***	
	(0.0401)	(0.2581)	
$Ret_{i,t}$	-0.0895***	-1.9909***	
	(0.0173)	(0.1121)	
$ROA_{i,t}$	0.0244	-0.1215	
	(0.1209)	(0.8092)	
$MTB_{i,t}$	0.0000	0.0000	
	(0.0000)	(0.0000)	
$SIZE_{i,t}$	0.0649***	0.1939	-0.0045***
	(0.0235)	(0.1547)	(0.0001)
$LEVERAGE_{i,t}$	-0.3705***	-1.1719**	0.0039***
	(0.0881)	(0.5539)	(0.0007)
$lnNumDir_{i,t}$			-0.0021***
			(0.0004)
$lnTimeBrd_{i,t}$			0.0004***
			(0.0000)
$lnNoQuals_{i,t}$			-0.0027***
			(0.0001)
$InstOwn\_HHI_{i,t}$			-0.0006
			(0.0004)
$GROWTH_{i,t}$			0.0089***
			(0.0002)
$LIQUID_{i,t}$			0.0002***
			(0.0001)
$CASHFLOW_{i,t}$			-0.0258***
			(0.0007)
$ARINV_{i,t}$			-0.0264***
			(0.0006)
$MTB_{i,t}$			0.0006***
			(0.0000)
Constant	0.1920	3.3614***	0.0964***
	(0.1695)	(1.0798)	(0.0010)
Observations	27,951	28,187	13,965
Number of Boards	2,783	2,785	1,648

Year-fixed effects	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 14

Two Step System GMM – Policy Implementation

VARIABLES	(1) GMM $DUVOL_{i,t+1}$	(2) GMM $NCSKEW_{i,t+1}$	(3) GMM $ABACC_{i,t+1}$
$NCSKEW_{i,t}$	0.0054***	0.1025***	
	(0.0015)	(0.0108)	
$ABACC_{i,t}$	0.2640**	3.0477***	0.1266***
	(0.1279)	(0.9391)	(0.0010)
$ProWomen_{i,t}$	**0.2033****	**2.1451*****	**-0.0110*****
	(0.0861)	**(0.5397)**	**(0.0003)**
$Treat_{i,t}$	**-0.0403***	**0.3823****	**0.0131*****
	(0.0238)	**(0.1529)**	**(0.0002)**
$ProWomen*Treat_{i,t}$	**0.2970****	**-0.1745**	**-0.0116*****
	(0.1343)	**(0.8768)**	**(0.0010)**
$DTURN_{i,t}$	-0.0000***	-0.0001***	
	(0.0000)	(0.0000)	
$LIQ_{i,t}$	-10.3903***	-101.6377***	
	(2.2814)	(16.1919)	
$Sigma_{i,t}$	-0.1902***	-2.6829***	
	(0.0393)	(0.2457)	
$Ret_{i,t}$	-0.0779***	-1.8726***	
	(0.0164)	(0.1023)	
$ROA_{i,t}$	0.0060	-0.5645	
	(0.1134)	(0.7434)	
$MTB_{i,t}$	0.0000	0.0000*	
	(0.0000)	(0.0000)	
$SIZE_{i,t}$	0.0543**	0.0552	-0.0048***
	(0.0230)	(0.1473)	(0.0001)
$LEVERAGE_{i,t}$	-0.3360***	-0.8606	0.0048***
	(0.0875)	(0.5433)	(0.0005)
$lnNumDir_{i,t}$			-0.0004
			(0.0003)
$lnTimeBrd_{i,t}$			-0.0002***
			(0.0000)
$lnNoQuals_{i,t}$			-0.0025***
			(0.0000)
$InstOwn\_HHI_{i,t}$			-0.0004
			(0.0005)
$GROWTH_{i,t}$			0.0089***
			(0.0002)
$LIQUID_{i,t}$			0.0003***
			(0.0001)
$CASHFLOW_{i,t}$			-0.0239***
			(0.0005)
$ARINV_{i,t}$			-0.0259***
			(0.0004)
$MTB_{i,t}$			0.0005***
			(0.0000)
Constant	0.2319	3.6951***	0.0965***

	(0.1662)	(1.0116)	(0.0009)
Observations	27,951	28,187	13,965
Number of Boards	2,783	2,785	1,648
Year-fixed effects	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 15

Two Step System GMM – Gender Quota

VARIABLES	(1) GMM $DUVOL_{i,t+1}$	(2) GMM $NCSKEW_{i,t+1}$	(3) GMM $ABACC_{i,t+1}$	(4) GMM $DUVOL_{i,t+1}$	(5) GMM $NCSKEW_{i,t+1}$	(6) GMM $ABACC_{i,t+1}$
$NCSKEW_{i,t}$	0.0031**	0.0845***		0.0033**	0.1038***	
	(0.0015)	(0.0106)		(0.0015)	(0.0107)	
$ABACC_{i,t}$	0.4744***	4.4936***	0.1278***	0.5005***	2.1886**	0.1102***
	(0.1245)	(0.9389)	(0.0007)	(0.1250)	(0.9028)	(0.0088)
$Quota_{i,t}$	**0.0177**	**1.3221*** **	**0.0217*** **			
	(0.0425)	**(0.2748)**	**(0.0008)**			
$Quota33_{i,t}$				**-0.0328**	**-1.0327*** **	**0.0009**
				(0.0277)	**(0.1984)**	**(0.0032)**
$DTURN_{i,t}$	-0.0000***	-0.0002***		-0.0000***	-0.0002***	
	(0.0000)	(0.0000)		(0.0000)	(0.0000)	
$LIQ_{i,t}$	-12.2836***	-107.5658***		-12.0249***	-86.0225***	
	(2.0156)	(15.3103)		(2.0787)	(14.6794)	
$Sigma_{i,t}$	-0.1896***	-2.5208***		-0.1793***	-2.7960***	
	(0.0379)	(0.2432)		(0.0378)	(0.2441)	
$Ret_{i,t}$	-0.0913***	-1.9362***		-0.0845***	-1.9588***	
	(0.0166)	(0.1095)		(0.0167)	(0.1088)	
$ROA_{i,t}$	0.0287	-0.4625		0.0222	-0.5435	
	(0.1292)	(0.8381)		(0.1256)	(0.7970)	
$SIZE_{i,t}$	0.0600**	0.1065	-0.0040***	0.0629***	0.1550	-0.0050***
	(0.0234)	(0.1630)	(0.0001)	(0.0229)	(0.1589)	(0.0010)
$LEVERAGE_{i,t}$	-0.3969***	-2.1232***	0.0060***	-0.4091***	-1.5098**	0.0024
	(0.0831)	(0.5808)	(0.0005)	(0.0838)	(0.5934)	(0.0047)
$MTB_{i,t}$	0.0000	0.0000	0.0005***	0.0000	0.0000	0.0014***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0002)
$lnNumDir_{i,t}$			-0.0038***			-0.0056
			(0.0003)			(0.0042)
$lnTimeBrd_{i,t}$			0.0000			-0.0018***
			(0.0000)			(0.0003)
$lnNoQuals_{i,t}$			-0.0022***			-0.0021**
			(0.0000)			(0.0009)
$InstOwn\_HHI_{i,t}$			0.0091***			0.0116***
			(0.0004)			(0.0034)
$GROWTH_{i,t}$			0.0094***			0.0064***
			(0.0002)			(0.0019)
$LIQUID_{i,t}$			0.0005***			-0.0002
			(0.0001)			(0.0005)
$CASHFLOW_{i,t}$			-0.0232***			-0.0280***
			(0.0006)			(0.0047)
$ARINV_{i,t}$			-0.0247***			-0.0317***
			(0.0005)			(0.0051)
Constant	0.2693*	4.2924***	0.0941***	0.2679*	5.0553***	0.1071***
	(0.1617)	(1.0803)	(0.0010)	(0.1593)	(1.0640)	(0.0100)

Observations	27,951	28,187	13,965	27,951	28,187	13,965
Number of Boards	2,783	2,785	1,648	2,783	2,785	1,648
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 16

Gender Diversity and Gender Quota Policy Year

	(1) FE $DUVOL_{i,t+1}$	(2) FE $NCSKEW_{i,t+1}$	(3) FE $ABACC_{i,t+1}$	(4) Probit $Unqualify_{i,,t+1}$
$ProWomen_{i,t}$*2011	0.0280	-0.1649	-0.0098	0.4987***
	(0.0240)	(0.1454)	(0.0078)	(0.1627)
$ProWomen_{i,t}$*2012	0.0276	-0.055	-0.0160**	0.4014**
	(0.0231)	(0.1401)	(0.0074)	(0.1604)
$ProWomen_{i,t}$*2013	0.0427*	0.1733	-0.0138*	0.3260**
	(0.0224)	(0.1360)	(0.0071)	(0.1582)
$ProWomen_{i,t}$*2014	0.0377*	0.2273*	-0.0075	0.3086**
	(0.0219)	(0.1328)	(0.0069)	(0.1553)
$ProWomen_{i,t}$*2015	0.0351	0.1879	-0.0085	0.5147***
	(0.0215)	(0.1306)	(0.0098)	(0.1534)
$ProWomen_{i,t}$*2016	0.0398*	0.1933	-0.0056	0.4458***
	(0.0213)	(0.1295)	(0.0067)	(0.1526)
$ProWomen_{i,t}$*2017	0.0446**	0.1413	-0.0052	0.3619**
	(0.0215)	(0.1307)	(0.0068)	(0.1552)
$ProWomen_{i,t}$*2018	0.0716***	0.3133**	-0.0041	0.1256
	(0.0224)	(0.1362)	(0.0072)	(0.1655)
$ProWomen_{i,t}$*2019	0.0341	0.0098	-0.0082	-0.0005
	(0.0245)	(0.1494)	(0.0079)	(0.1863)
$ProWomen_{i,t}$*2020	0.0589**	-0.0831	-0.0251**	-0.0780
	(0.0300)	(0.1825)	(0.0098)	(0.2268)
$ProWomen_{i,t}$*2021	-0.0535	-0.6380	-0.0141	-0.6045
	(0.0723)	(0.4297)	(0.0260)	(0.7458)
Observations	27,951	28,187	13,965	27,406
Year-fixed effects	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes	No
Country-fixed effects	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 17

Gender Quota Policy and Treated Firms

	(1) FE $DUVOL_{i,t+1}$	(2) FE $NCSKEW_{i,t+1}$	(3) FE $ABACC_{i,t+1}$	(4) Probit $Unqualify_{i,,t+1}$
$ProWomen_{i,t}$* $Treat_{i,t}$ *2011	0.0456	0.3634	0.1955	2.5322
	(0.1833)	(1.1175)	(0.2776)	(1.8718)
$ProWomen_{i,t}$* $Treat_{i,t}$ *2012	0.0180	-0.2697*	0.0177	-0.4300
	(0.0267)	(0.1626)	(0.0904)	(0.7263)
$ProWomen_{i,t}$* $Treat_{i,t}$ *2013	0.0237	-0.2825*	0.0457	-0.8650
	(0.0275)	(0.1674)	(0.0653)	(0.5899)
$ProWomen_{i,t}$* $Treat_{i,t}$ *2014	0.0150	-0.3952**	-0.0171	-0.1745
	(0.0285)	(0.1733)	(0.0521)	(0.4812)
$ProWomen_{i,t}$* $Treat_{i,t}$ *2015	0.0320	-0.3207*	-0.0280	0.2619
	(0.0297)	(0.1806)	(0.0448)	(0.4181)
$ProWomen_{i,t}$* $Treat_{i,t}$ *2016	0.0132	-0.4510**	-0.0071	-0.3010
	(0.0314)	(0.1910)	(0.0375)	(0.3537)
$ProWomen_{i,t}$* $Treat_{i,t}$ *2017	0.0177	-0.3873*	-0.0037	-0.3592
	(0.0341)	(0.2070)	(0.0298)	(0.3136)
$ProWomen_{i,t}$* $Treat_{i,t}$ *2018	0.0061	-0.5706**	-0.0054	-0.7122**
	(0.0386)	(0.2346)	(0.0256)	(0.2921)
$ProWomen_{i,t}$* $Treat_{i,t}$ *2019	0.0403	-0.6334**	-0.0077	-0.7545***
	(0.0471)	(0.2873)	(0.0228)	(0.2843)
$ProWomen_{i,t}$* $Treat_{i,t}$ *2020	0.0344	-0.8140	-0.0142	-0.7715***
	(0.0857)	(0.5225)	(0.0211)	(0.2926)
$ProWomen_{i,t}$* $Treat_{i,t}$ *2021	0.3447	1.7935	-0.0016	-0.9217
	(0.3093)	(1.8858)	(0.0276)	(0.7877)
Observations	27,951	28,187	13,965	27,406

Year-fixed effects	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes	No
Country-fixed effects	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 18

Independent Female Directors and Stock Price Crash Risk

	(1) FE	(2) FE	(3) FE	(4) FE
VARIABLES	$DUVOL_{i,t+1}$	$DUVOL_{i,t+1}$	$NCSKEW_{i,t+1}$	$NCSKEW_{i,t+1}$
$NCSKEW_{i,t}$	0.0038***	0.0037***	0.0787***	0.0955***
	(0.0004)	(0.0005)	(0.0025)	(0.0031)
$Female_{i,d,t}$	**0.0014**	**0.0110**	**0.0133**	**0.0817**
	(0.0015)	**(0.0115)**	**(0.0089)**	**(0.0684)**
$NED_{i,d,t}$		**0.0038**		**0.0254***
		(0.0024)		**(0.0143)**
$Female*NED_{i,d,t}$		**-0.0097**		**-0.0731**
		(0.0116)		**(0.0691)**
$DTURN_{i,t}$	-0.0000***	-0.0000***	-0.0002***	-0.0002***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
$LIQ_{i,t}$	-0.8338***	-1.2416***	-1.5093*	-2.7847***
	(0.1268)	(0.1562)	(0.7716)	(0.9298)
$Sigma_{i,t}$	0.0867***	0.0807***	-0.2775***	-0.3294***
	(0.0026)	(0.0028)	(0.0154)	(0.0166)
$Ret_{i,t}$	0.0193***	0.0184***	-1.0348***	-1.0179***
	(0.0012)	(0.0013)	(0.0072)	(0.0079)
$ROA_{i,t}$	-0.0088*	-0.0043	-0.4499***	-0.4273***
	(0.0049)	(0.0057)	(0.0298)	(0.0340)
$MTB_{i,t}$	0.0000*	0.0000**	-0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
$LEVERAGE_{i,t}$	-0.0184***	-0.0161***	-0.1845***	-0.1608***
	(0.0028)	(0.0033)	(0.0173)	(0.0196)
$SIZE_{i,t}$	0.0114***	0.0091***	0.0365***	0.0227***
	(0.0003)	(0.0004)	(0.0020)	(0.0023)
$ABACC_{i,t}$	0.0011	-0.0012	0.0597	0.0243
	(0.0119)	(0.0138)	(0.0719)	(0.0818)
Constant	0.2130***	0.0693***	1.4850***	0.3759***
	(0.0105)	(0.0184)	(0.0638)	(0.1096)
Observations	194,442	136,123	196,166	137,531
R-squared	0.028	0.023	0.215	0.255
Year-fixed	Yes	Yes	Yes	Yes

effects				
Firm-fixed effects	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 19

Female Committee Members and Stock Price Crash Risk

	(1) FE	(2) FE	(3) FE	(4) FE
VARIABLES	$DUVOL_{i,t+1}$	lead1DUVOL	$NCSKEW_{i,t+1}$	$NCSKEW_{i,t+1}$
$NCSKEW_{i,t}$	0.0037***	0.0045***	0.0954***	0.0866***
	(0.0005)	(0.0007)	(0.0031)	(0.0041)
$Female_{i,d,t}$	**0.0117**	**0.0205**	**0.0864**	**0.1513**
	(0.0115)	**(0.0154)**	**(0.0684)**	**(0.0936)**
$NED_{i,d,t}$	**-0.0015**	**-0.0018**	**0.0016**	**-0.0141**
	(0.0035)	**(0.0040)**	**(0.0208)**	**(0.0241)**
$Female*NED_{i,d,t}$	**-0.0090**	**-0.0210**	**-0.0294**	**-0.1500**
	(0.0125)	**(0.0157)**	**(0.0740)**	**(0.0951)**
$MonComm_{i,d,t}$	**-0.0121****		**-0.0964*****	
	(0.0048)		**(0.0285)**	
$MonComm*NED_{i,d,t}$	**0.0137*****		**0.0885*****	
	(0.0053)		**(0.0312)**	
$Female*MonComm*NED_{i,d,t}$	**-0.0015**		**-0.0543***	
	(0.0050)		**(0.0299)**	
$AdvComm_{i,d,t}$		**-0.0153****		**-0.1539*****
		(0.0069)		**(0.0419)**
$AdvComm*NED_{i,d,t}$		**0.0143****		**0.1331*****
		(0.0073)		**(0.0441)**
$Female*AdvComm*NED_{i,d,t}$		**0.0137*****		**0.0617***
		(0.0053)		**(0.0320)**
$DTURN_{i,t}$	-0.0000***	-0.0000***	-0.0002***	-0.0002**
	(0.0000)	(0.0000)	(0.0000)	(0.0001)
$LIQ_{i,t}$	-1.2420***	-1.1767***	-2.7890***	-1.5150
	(0.1562)	(0.1958)	(0.9298)	(1.1909)
$Sigma_{i,t}$	0.0806***	0.0940***	-0.3297***	-0.2539***
	(0.0028)	(0.0044)	(0.0166)	(0.0261)
$Ret_{i,t}$	0.0184***	0.0233***	-1.0179***	-1.0778***
	(0.0013)	(0.0021)	(0.0079)	(0.0128)
$ROA_{i,t}$	-0.0041	0.0115	-0.4256***	-0.4476***
	(0.0057)	(0.0097)	(0.0340)	(0.0584)
$MTB_{i,t}$	0.0000**	0.0001**	-0.0000	-0.0001
	(0.0000)	(0.0000)	(0.0000)	(0.0002)
$LEVERAGE_{i,t}$	-0.0160***	-0.0204***	-0.1615***	-0.1805***

	(0.0033)	(0.0052)	(0.0196)	(0.0313)
$SIZE_{i,t}$	0.0090***	0.0104***	0.0218***	0.0302***
	(0.0004)	(0.0006)	(0.0023)	(0.0034)
$ABACC_{i,t}$	-0.0008	-0.0430**	0.0272	-0.1678
	(0.0138)	(0.0212)	(0.0818)	(0.1280)
Constant	0.0742***	0.0032	0.4162***	0.2331
	(0.0185)	(0.0236)	(0.1102)	(0.1436)
Observations	136,123	68,330	137,531	68,933
R-squared	0.023	0.030	0.255	0.218
Year-fixed effects	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 20

Multiple Committee Memberships and Stock Price Crash Risk

VARIABLES	(1) FE $DUVOL_{i,t+1}$	(2) FE $DUVOL_{i,t+1}$	(3) FE $NCSKEW_{i,t+1}$	(4) FE $NCSKEW_{i,t+1}$
$NCSKEW_{i,t}$	0.0036***	0.0045***	0.0944***	0.0866***
	(0.0006)	(0.0007)	(0.0033)	(0.0041)
$Female_{i,d,t}$	**-0.0083**	**0.0206**	**0.0323**	**0.1522**
	(0.0183)	**(0.0154)**	**(0.1087)**	**(0.0936)**
$NED_{i,d,t}$	**0.0060**	**-0.0014**	**0.0738*** **	**-0.0114**
	(0.0048)	**(0.0039)**	**(0.0285)**	**(0.0238)**
$Female*NED_{i,d,t}$	**0.0042**	**-0.0205**	**-0.0592**	**-0.1472**
	(0.0184)	**(0.0157)**	**(0.1093)**	**(0.0951)**
$lnNumMonComm_{i,d,t}$	**-0.0145**		**0.0702**	
	(0.0118)		**(0.0700)**	
$lnNumMonComm*NED_{i,d,t}$	**0.0151**		**-0.0451**	
	(0.0121)		**(0.0717)**	
$Female*lnNumMonComm*NED_{i,d,t}$	**0.0315*** **		**0.1782*** **	
	(0.0049)		**(0.0292)**	
$lnNumAdsComm_{i,d,t}$		**-0.0175** **		**-0.1808*** **
		(0.0086)		**(0.0520)**
$lnNumAdsComm*NED_{i,d,t}$		**0.0168***		**0.1592*** **
		(0.0090)		**(0.0548)**
$Female*lnNumAdsComm*NED_{i,d,t}$		**0.0151** **		**0.0641**
		(0.0067)		**(0.0404)**
$DTURN_{i,t}$	-0.0000***	-0.0000***	-0.0002***	-0.0002**
	(0.0000)	(0.0000)	(0.0000)	(0.0001)
$LIQ_{i,t}$	-1.4016***	-1.1766***	-2.7048***	-1.5081
	(0.1762)	(0.1958)	(1.0484)	(1.1909)
$Sigma_{i,t}$	0.0770***	0.0940***	-0.3608***	-0.2539***
	(0.0031)	(0.0044)	(0.0180)	(0.0261)
$Ret_{i,t}$	0.0161***	0.0233***	-1.0231***	-1.0779***
	(0.0015)	(0.0021)	(0.0086)	(0.0128)
$ROA_{i,t}$	-0.0082	0.0116	-0.4308***	-0.4464***
	(0.0061)	(0.0097)	(0.0358)	(0.0584)
$MTB_{i,t}$	0.0000*	0.0001**	-0.0000	-0.0001
	(0.0000)	(0.0000)	(0.0000)	(0.0002)
$LEVERAGE_{i,t}$	-0.0137***	-0.0204***	-0.1488***	-0.1797***
	(0.0035)	(0.0052)	(0.0209)	(0.0313)
$SIZE_{i,t}$	0.0089***	0.0104***	0.0190***	0.0301***
	(0.0004)	(0.0006)	(0.0025)	(0.0034)
$ABACC_{i,t}$	-0.0058	-0.0429**	-0.0192	-0.1678
	(0.0149)	(0.0212)	(0.0880)	(0.1280)
Constant	0.0988***	0.0026	0.5114***	0.2292
	(0.0218)	(0.0236)	(0.1299)	(0.1436)
Observations	115,177	68,330	116,378	68,933
R-squared	0.023	0.030	0.252	0.218
Year-fixed effects	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes	Yes

Country-fixed effects	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 21

Overlapping Directors and Stock Price Crash Risk

VARIABLES	(1) FE1 $DUVOL_{i,t+1}$	(2) FE2 $NCSKEW_{i,t+1}$	(3) OLS $DUVOL_{i,t+1}$	(4) OLS $NCSKEW_{i,t+1}$
	US		European (Including UK)	
$NCSKEW_{i,t}$	0.0026***	0.2126***	0.0024***	0.0022
	(0.0008)	(0.0042)	(0.0006)	(0.0038)
$Female_{i,d,t}$	**0.0027**	**-0.0092**	**-0.0008**	**-0.0012**
	(0.0019)	**(0.0101)**	**(0.0027)**	**(0.0174)**
$Overlap_{i,d,t}$	**0.0007**	**0.0013**	**-0.0013**	**-0.0150**
	(0.0016)	**(0.0082)**	**(0.0029)**	**(0.0191)**
$Female*Overlap_{i,d,t}$	**-0.0092****	**0.0043**	**0.0126****	**0.0777***
	(0.0037)	**(0.0191)**	**(0.0064)**	**(0.0415)**
$DTURN_{i,t}$	-0.0001	-0.1007	-0.0000***	-0.0002***
	(0.0205)	(0.1072)	(0.0000)	(0.0001)
$LIQ_{i,t}$	6.5995***	15.0124*	0.3606**	0.2730
	(1.5175)	(7.9267)	(0.1475)	(0.9643)
$Sigma_{i,t}$	0.0538***	-0.4896***	0.2569***	0.6963***
	(0.0024)	(0.0125)	(0.0090)	(0.0587)
$Ret_{i,t}$	0.0138***	-0.8416***	0.0033	-5.5625***
	(0.0013)	(0.0069)	(0.0201)	(0.1314)
$LEVERAGE_{i,t}$	0.0006	-0.1586***	-0.0077	-0.0698**
	(0.0030)	(0.0154)	(0.0051)	(0.0336)
$ROA_{i,t}$	0.0002	-0.4168***	0.0117	-0.3714***
	(0.0048)	(0.0250)	(0.0093)	(0.0605)
$SIZE_{i,t}$	-0.0004	0.0034*	0.0195***	0.0794***
	(0.0004)	(0.0020)	(0.0005)	(0.0036)
$MTB_{i,t}$	0.0000*	0.0000	-0.0000	-0.0004***
	(0.0000)	(0.0000)	(0.0000)	(0.0001)
$ABACC_{i,t}$	-0.0319**	0.1320**	-0.0077	0.0181
	(0.0125)	(0.0647)	(0.0206)	(0.1344)
Constant	0.3642***	2.1595***	0.0049	0.7972***
	(0.0139)	(0.0689)	(0.0123)	(0.0807)
Observations	119,570	121,392	86,628	86,650
R-squared	0.013	0.452	0.071	0.076
Year-fixed effects	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	No	No
Country-fixed effects	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 22

Social Network Size and Stock Price Crash Risk

VARIABLES	(1) FE $DUVOL_{i,t+1}$	(2) FE $DUVOL_{i,t+1}$	(3) FE $NCSKEW_{i,t+1}$	(4) FE $NCSKEW_{i,t+1}$
$NCSKEW_{i,t}$	0.0037***	0.0037***	0.0783***	0.0783***
	(0.0004)	(0.0004)	(0.0026)	(0.0026)
$lnNetworkSize_{i,d,t}$	**0.0021*** **	**0.0023*** **	**0.0106*** **	**0.0131*** **
	(0.0004)	**(0.0004)**	**(0.0025)**	**(0.0026)**
$Female_{i,d,t}$		**0.0091**		**0.1338*** **
		(0.0066)		**(0.0401)**
$Female*lnNetworkSize_{i,d,t}$		**-0.0013**		**-0.0187*** **
		(0.0010)		**(0.0059)**
$DTURN_{i,t}$	-0.0000***	-0.0000***	-0.0002***	-0.0002***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
$LIQ_{i,t}$	-0.8348***	-0.8340***	-1.5084*	-1.4974*
	(0.1275)	(0.1275)	(0.7784)	(0.7784)
$Sigma_{i,t}$	0.0895***	0.0895***	-0.2719***	-0.2722***
	(0.0026)	(0.0026)	(0.0159)	(0.0159)
$Ret_{i,t}$	0.0190***	0.0190***	-1.0324***	-1.0321***
	(0.0012)	(0.0012)	(0.0074)	(0.0074)
$LEVERAGE_{i,t}$	-0.0165***	-0.0165***	-0.1756***	-0.1752***
	(0.0029)	(0.0029)	(0.0176)	(0.0176)
$ROA_{i,t}$	-0.0063	-0.0063	-0.4440***	-0.4445***
	(0.0051)	(0.0051)	(0.0307)	(0.0307)
$SIZE_{i,t}$	0.0111***	0.0111***	0.0341***	0.0340***
	(0.0003)	(0.0003)	(0.0021)	(0.0021)
$MTB_{i,t}$	0.0000*	0.0000*	-0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
$ABACC_{i,t}$	-0.0040	-0.0041	0.0332	0.0318
	(0.0121)	(0.0121)	(0.0736)	(0.0736)
Constant	0.1948***	0.1936***	1.4063***	1.3910***
	(0.0112)	(0.0112)	(0.0683)	(0.0686)
Observations	186,646	186,646	188,264	188,264
R-squared	0.029	0.029	0.212	0.212
Year-fixed effects	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 23

Director Age and Stock Price Crash Risk

VARIABLES	(1) FE $DUVOL_{i,t+1}$	(2) FE $DUVOL_{i,t+1}$	(3) FE $NCSKEW_{i,t+1}$	(4) FE $NCSKEW_{i,t+1}$
$NCSKEW_{i,t}$	0.0035***	0.0035***	0.0800***	0.0800***
	(0.0004)	(0.0004)	(0.0026)	(0.0026)
$lnAge_{i,d,t}$	**0.0026**	**0.0062**	**-0.0324**	**-0.0092**
	(0.0040)	**(0.0043)**	**(0.0240)**	**(0.0258)**
$Female_{i,d,t}$		**0.0818****		**0.5042****
		(0.0398)		**(0.2409)**
$Female*lnAge_{i,d,t}$		**-0.0192****		**-0.1175****
		(0.0095)		**(0.0577)**
$DTURN_{i,t}$	-0.0000***	-0.0000***	-0.0002***	-0.0002***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
$LIQ_{i,t}$	-0.8028***	-0.8015***	-1.2320	-1.2239
	(0.1270)	(0.1270)	(0.7707)	(0.7706)
$Sigma_{i,t}$	0.0844***	0.0843***	-0.2955***	-0.2955***
	(0.0026)	(0.0026)	(0.0154)	(0.0154)
$Ret_{i,t}$	0.0182***	0.0183***	-1.0376***	-1.0375***
	(0.0012)	(0.0012)	(0.0072)	(0.0072)
$LEVERAGE_{i,t}$	-0.0171***	-0.0170***	-0.1794***	-0.1790***
	(0.0029)	(0.0029)	(0.0174)	(0.0174)
$ROA_{i,t}$	-0.0065	-0.0068	-0.4346***	-0.4361***
	(0.0050)	(0.0050)	(0.0300)	(0.0300)
$SIZE_{i,t}$	0.0109***	0.0109***	0.0337***	0.0335***
	(0.0003)	(0.0003)	(0.0020)	(0.0020)
$MTB_{i,t}$	0.0000**	0.0000**	0.0000	0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
$ABACC_{i,t}$	-0.0017	-0.0017	0.0465	0.0465
	(0.0121)	(0.0121)	(0.0727)	(0.0727)
Constant	0.1900***	0.1744***	1.5031***	1.4039***
	(0.0207)	(0.0217)	(0.1250)	(0.1315)
Observations	188,726	188,726	190,440	190,440
R-squared	0.027	0.027	0.220	0.220
Year-fixed effects	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 24

Independent Directors and Monitoring Committee Members on Boards

VARIABLES	(1) FE $DUVOL_{i,t+1}$	(2) FE $NCSKEW_{i,t+1}$	(3) FE $DUVOL_{i,t+1}$	(4) FE $NCSKEW_{i,t+1}$
$NCSKEW_{i,t}$	0.0040***	0.0725***	0.0042***	0.0679***
	(0.0011)	(0.0067)	(0.0012)	(0.0072)
$ProNumNEDDir_{i,t}$	**-0.0024****	**-0.0169****		
	(0.0011)	**(0.0069)**		
$ProNumMonCommDir_{i,t}$			**-0.0037****	**-0.0232****
			(0.0015)	**(0.0091)**
$DTURN_{i,t}$	-0.0000*	-0.0002*	-0.0000	-0.0000
	(0.0000)	(0.0001)	(0.0000)	(0.0002)
$LIQ_{i,t}$	-1.1304***	-2.7327	-0.9506**	-4.1821
	(0.4085)	(2.4917)	(0.4538)	(2.7641)
$Sigma_{i,t}$	0.0839***	-0.3493***	0.0805***	-0.3078***
	(0.0074)	(0.0442)	(0.0080)	(0.0477)
$Ret_{i,t}$	0.0200***	-1.0591***	0.0192***	-1.0500***
	(0.0034)	(0.0208)	(0.0037)	(0.0224)
$LEVERAGE_{i,t}$	-0.0243***	-0.2043***	-0.0187**	-0.1576***
	(0.0075)	(0.0453)	(0.0080)	(0.0486)
$SIZE_{i,t}$	0.0130***	0.0397***	0.0126***	0.0421***
	(0.0009)	(0.0055)	(0.0010)	(0.0059)
$ROA_{i,t}$	-0.0171	-0.4094***	-0.0211*	-0.4542***
	(0.0114)	(0.0691)	(0.0123)	(0.0742)
$MTB_{i,t}$	0.0000	-0.0000	0.0000	-0.0000
	(0.0000)	(0.0001)	(0.0000)	(0.0001)
$ABACC_{i,t}$	0.0001	0.1274	-0.0112	0.0741
	(0.0299)	(0.1811)	(0.0322)	(0.1947)
Constant	0.1082***	0.8950***	0.1391***	1.0075***
	(0.0357)	(0.2177)	(0.0392)	(0.2390)
Observations	26,495	26,720	23,031	23,225
R-squared	0.029	0.187	0.029	0.186
Year-fixed effects	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 25

Gender Quota and Independent Directors on Boards

VARIABLES	(1) FE $DUVOL_{i,t+1}$	(2) FE $DUVOL_{i,t+1}$	(3) FE $NCSKEW_{i,t+1}$	(4) FE $NCSKEW_{i,t+1}$
$NCSKEW_{i,t}$	0.0040***	0.0040***	0.0723***	0.0709***
	(0.0011)	(0.0011)	(0.0067)	(0.0067)
$ProNumNEDDir_{i,t}$	**-0.0023****	**-0.0020**	**-0.0168****	**-0.0146***
	(0.0011)	**(0.0014)**	**(0.0069)**	**(0.0083)**
$ProWomen_{i,t}$	**0.0328*****	**0.0234***	**0.2384*****	**0.2852*****
	(0.0116)	**(0.0140)**	**(0.0707)**	**(0.0850)**
$Treat_{i,t}$		**-0.0099**		**0.2327*****
		(0.0085)		**(0.0519)**
$ProWomen*Treat_{i,t}$		**0.0597****		**-0.1209**
		(0.0302)		**(0.1833)**
$ProNumNEDDir*Treat_{i,t}$		**0.0028**		**0.0065**
		(0.0031)		**(0.0191)**
$ProNumNEDDir*ProWomen*Treat_{i,t}$		**-0.0171***		**-0.0636**
		(0.0099)		**(0.0601)**
$DTURN_{i,t}$	-0.0000*	-0.0000*	-0.0002*	-0.0002*
	(0.0000)	(0.0000)	(0.0001)	(0.0001)
$LIQ_{i,t}$	-1.0976***	-1.1087***	-2.4901	-2.7333
	(0.4086)	(0.4088)	(2.4922)	(2.4912)
$Sigma_{i,t}$	0.0827***	0.0822***	-0.3575***	-0.3539***
	(0.0074)	(0.0074)	(0.0443)	(0.0443)
$Ret_{i,t}$	0.0201***	0.0200***	-1.0582***	-1.0554***
	(0.0034)	(0.0034)	(0.0208)	(0.0208)
$LEVERAGE_{i,t}$	-0.0239***	-0.0240***	-0.2016***	-0.1931***
	(0.0075)	(0.0075)	(0.0453)	(0.0453)
$SIZE_{i,t}$	0.0127***	0.0126***	0.0379***	0.0388***
	(0.0009)	(0.0009)	(0.0055)	(0.0055)
$ROA_{i,t}$	-0.0189*	-0.0193*	-0.4220***	-0.4221***
	(0.0114)	(0.0114)	(0.0692)	(0.0692)
$MTB_{i,t}$	0.0000	0.0000	-0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0001)	(0.0001)
$ABACC_{i,t}$	-0.0007	-0.0011	0.1219	0.1688
	(0.0299)	(0.0299)	(0.1811)	(0.1811)
Constant	0.1097***	0.1115***	0.9057***	0.9020***
	(0.0357)	(0.0357)	(0.2177)	(0.2177)
Observations	26,495	26,495	26,720	26,720
R-squared	0.030	0.030	0.187	0.189
Year-fixed effects	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 26

Gender Quota and Monitoring Committee Members on Boards

VARIABLES	(1) FE $DUVOL_{i,t+1}$	(2) FE $DUVOL_{i,t+1}$	(3) FE $NCSKEW_{i,t+1}$	(4) FE $NCSKEW_{i,t+1}$
$NCSKEW_{i,t}$	0.0042***	0.0042***	0.0676***	0.0663***
	(0.0012)	(0.0012)	(0.0072)	(0.0072)
$ProNumMonCommDir_{i,t}$	**-0.0037****	**-0.0040****	**-0.0226****	**-0.0211***
	(0.0015)	**(0.0018)**	**(0.0091)**	**(0.0109)**
$ProWomen_{i,t}$	**0.0286****	**0.0235**	**0.2238*****	**0.3010*****
	(0.0126)	**(0.0152)**	**(0.0763)**	**(0.0917)**
$Treat_{i,t}$		**-0.0097**		**0.2651*****
		(0.0093)		**(0.0564)**
$ProWomen*Treat_{i,t}$		**0.0303**		**-0.3462***
		(0.0327)		**(0.1984)**
$ProNumMonCommDir*Treat_{i,t}$		**0.0029**		**-0.0085**
		(0.0041)		**(0.0252)**
$ProNumMonCommDir*ProWomen*Treat_{i,t}$		**-0.0088**		**0.0091**
		(0.0130)		**(0.0794)**
$DTURN_{i,t}$	-0.0000	-0.0000	-0.0000	-0.0001
	(0.0000)	(0.0000)	(0.0002)	(0.0002)
$LIQ_{i,t}$	-0.9216**	-0.9259**	-3.9515	-4.1888
	(0.4539)	(0.4541)	(2.7648)	(2.7642)
$Sigma_{i,t}$	0.0795***	0.0793***	-0.3155***	-0.3114***
	(0.0080)	(0.0080)	(0.0477)	(0.0477)
$Ret_{i,t}$	0.0192***	0.0192***	-1.0493***	-1.0466***
	(0.0037)	(0.0037)	(0.0224)	(0.0224)
$LEVERAGE_{i,t}$	-0.0183**	-0.0185**	-0.1545***	-0.1453***
	(0.0080)	(0.0080)	(0.0486)	(0.0486)
$SIZE_{i,t}$	0.0124***	0.0124***	0.0405***	0.0418***
	(0.0010)	(0.0010)	(0.0059)	(0.0059)
$ROA_{i,t}$	-0.0229*	-0.0229*	-0.4680***	-0.4697***
	(0.0123)	(0.0123)	(0.0744)	(0.0743)
$MTB_{i,t}$	0.0000	0.0000	-0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0001)	(0.0001)
$ABACC_{i,t}$	-0.0120	-0.0128	0.0684	0.1159
	(0.0322)	(0.0322)	(0.1947)	(0.1947)
Constant	0.1403***	0.1415***	1.0167***	1.0053***
	(0.0392)	(0.0393)	(0.2390)	(0.2390)
Observations	23,031	23,031	23,225	23,225
R-squared	0.029	0.029	0.186	0.187
Year-fixed effects	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 27

Gender and Nationality Diversity

VARIABLES	(1) FE $DUVOL_{i,t+1}$	(2) FE $DUVOL_{i,t+1}$	(3) FE $NCSKEW_{i,t+1}$	(4) FE $NCSKEW_{i,t+1}$
$NCSKEW_{i,t}$	0.0040***	0.0040***	0.0743***	0.0744***
	(0.0011)	(0.0011)	(0.0067)	(0.0067)
$ProWomen_{i,t}$	**0.0247****	**0.0083**	**0.2111*****	**0.1475***
	(0.0118)	**(0.0131)**	**(0.0714)**	**(0.0797)**
$NationalityMix_{i,t}$	**0.0306*****	**0.0089**	**0.1770*****	**0.0926**
	(0.0069)	**(0.0103)**	**(0.0418)**	**(0.0628)**
$ProWomen*NationalityMix_{i,t}$		**0.1218*****		**0.4745***
		(0.0434)		**(0.2639)**
$DTURN_{i,t}$	-0.0000*	-0.0000*	-0.0002*	-0.0002*
	(0.0000)	(0.0000)	(0.0001)	(0.0001)
$LIQ_{i,t}$	-1.0643***	-1.0156**	-2.2495	-2.0593
	(0.4066)	(0.4069)	(2.4822)	(2.4844)
$Sigma_{i,t}$	0.0848***	0.0843***	-0.3637***	-0.3654***
	(0.0074)	(0.0074)	(0.0448)	(0.0448)
$Ret_{i,t}$	0.0203***	0.0204***	-1.0554***	-1.0550***
	(0.0035)	(0.0035)	(0.0209)	(0.0209)
$LEVERAGE_{i,t}$	-0.0229***	-0.0230***	-0.1975***	-0.1976***
	(0.0075)	(0.0075)	(0.0454)	(0.0454)
$SIZE_{i,t}$	0.0126***	0.0125***	0.0369***	0.0363***
	(0.0009)	(0.0009)	(0.0055)	(0.0055)
$ROA_{i,t}$	-0.0137	-0.0144	-0.4206***	-0.4233***
	(0.0115)	(0.0115)	(0.0695)	(0.0695)
$MTB_{i,t}$	0.0000	0.0000	-0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
$ABACC_{i,t}$	0.0290	0.0284	0.1348	0.1325
	(0.0299)	(0.0299)	(0.1814)	(0.1814)
Constant	0.1278***	0.1333***	1.0181***	1.0393***
	(0.0337)	(0.0337)	(0.2056)	(0.2059)
Observations	26,581	26,581	26,802	26,802
R-squared	0.031	0.031	0.185	0.185
Year-fixed effects	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 28

Gender Quota and Nationality Diversity

	(1) FE	(2) FE	(3) FE	(4) FE	(5) FE	(6) FE
VARIABLES	$DUVOL_{i,t+1}$	$DUVOL_{i,t+1}$	$DUVOL_{i,t+1}$	$NCSKEW_{i,t+1}$	$NCSKEW_{i,t+1}$	$NCSKEW_{i,t+1}$
$NCSKEW_{i,t}$	0.0040***	0.0040***	0.0041***	0.0744***	0.0744***	0.0731***
	(0.0011)	(0.0011)	(0.0011)	(0.0067)	(0.0067)	(0.0067)
$NationalityMix_{i,t}$	**0.0312*** **	**0.0175** **	**0.0148***	**0.1821*** **	**0.0947** **	**0.1362*** **
	(0.0069)	**(0.0079)**	**(0.0081)**	**(0.0418)**	**(0.0482)**	**(0.0491)**
$NationalityMix*Treat_{i,t}$		**0.0450*** **	**0.0265**		**0.2903*** **	**0.0783**
		(0.0131)	**(0.0210)**		**(0.0801)**	**(0.1283)**
$ProWomen_{i,t}$			**0.0152**			**0.2494*** **
			(0.0142)			**(0.0861)**
$Treat_{i,t}$			**-0.0111**			**0.2253*** **
			(0.0076)			**(0.0465)**
$ProWomen*Treat_{i,t}$			**0.0028**			**-0.2523**
			(0.0283)			**(0.1721)**
$ProWomen*NationalityMix*Treat_{i,t}$			**0.1286***			**0.2023**
			(0.0750)			**(0.4574)**
$DTURN_{i,t}$	-0.0000*	-0.0000*	-0.0000*	-0.0002*	-0.0002*	-0.0002*
	(0.0000)	(0.0000)	(0.0000)	(0.0001)	(0.0001)	(0.0001)
$LIQ_{i,t}$	-1.0868***	-1.0137**	-0.9487**	-2.4451	-1.9692	-2.2417
	(0.4065)	(0.4070)	(0.4075)	(2.4817)	(2.4846)	(2.4866)
$Sigma_{i,t}$	0.0856***	0.0848***	0.0833***	-0.3568***	-0.3616***	-0.3615***
	(0.0074)	(0.0074)	(0.0074)	(0.0447)	(0.0447)	(0.0448)
$Ret_{i,t}$	0.0202***	0.0205***	0.0204***	-1.0567***	-1.0550***	-1.0524***
	(0.0035)	(0.0035)	(0.0035)	(0.0209)	(0.0209)	(0.0209)
$LEVERAGE_{i,t}$	-0.0231***	-0.0220***	-0.0222***	-0.1992***	-0.1919***	-0.1871***
	(0.0075)	(0.0075)	(0.0075)	(0.0454)	(0.0455)	(0.0455)
$SIZE_{i,t}$	0.0128***	0.0127***	0.0123***	0.0383***	0.0375***	0.0376***
	(0.0009)	(0.0009)	(0.0009)	(0.0055)	(0.0055)	(0.0055)
$ROA_{i,t}$	-0.0123	-0.0126	-0.0141	-0.4091***	-0.4109***	-0.4207***
	(0.0114)	(0.0114)	(0.0114)	(0.0694)	(0.0694)	(0.0694)
$MTB_{i,t}$	0.0000	0.0000	0.0000	-0.0000	-0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
$ABACC_{i,t}$	0.0295	0.0288	0.0251	0.1382	0.1338	0.1738
	(0.0299)	(0.0299)	(0.0299)	(0.1814)	(0.1813)	(0.1815)
Constant	0.1269***	0.1303***	0.1337***	1.0107***	1.0327***	1.0250***
	(0.0337)	(0.0337)	(0.0337)	(0.2056)	(0.2056)	(0.2057)
Observations	26,581	26,581	26,581	26,802	26,802	26,802
R-squared	0.031	0.031	0.031	0.185	0.185	0.186
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 29

Gender and Director Retirement

VARIABLES	(1) FE $DUVOL_{i,t+1}$	(2) FE $DUVOL_{i,t+1}$	(3) FE $NCSKEW_{i,t+1}$	(4) FE $NCSKEW_{i,t+1}$
$NCSKEW_{i,t}$	0.0037***	0.0037***	0.0729***	0.0730***
	(0.0011)	(0.0011)	(0.0065)	(0.0065)
$Retirement_{i,t}$	**-0.0162***	**-0.0225***	**-0.1359****	**-0.2316*****
	(0.0087)	**(0.0122)**	**(0.0528)**	**(0.0744)**
$ProWomen_{i,t}$	**0.0293*****	**0.0152**	**0.2239*****	**0.0113**
	(0.0113)	**(0.0222)**	**(0.0686)**	**(0.1351)**
$ProWomen*Retirement_{i,t}$		**0.0401**		**0.6035***
		(0.0543)		**(0.3306)**
$DTURN_{i,t}$	-0.0000*	-0.0000*	-0.0002*	-0.0002*
	(0.0000)	(0.0000)	(0.0001)	(0.0001)
$LIQ_{i,t}$	-1.2072***	-1.2090***	-2.9518	-2.9784
	(0.4019)	(0.4020)	(2.4526)	(2.4525)
$Sigma_{i,t}$	0.0846***	0.0846***	-0.3518***	-0.3521***
	(0.0072)	(0.0072)	(0.0430)	(0.0430)
$Ret_{i,t}$	0.0203***	0.0203***	-1.0477***	-1.0474***
	(0.0033)	(0.0033)	(0.0201)	(0.0201)
$LEVERAGE_{i,t}$	-0.0237***	-0.0236***	-0.2051***	-0.2046***
	(0.0072)	(0.0072)	(0.0439)	(0.0439)
$SIZE_{i,t}$	0.0131***	0.0131***	0.0413***	0.0413***
	(0.0009)	(0.0009)	(0.0052)	(0.0052)
$ROA_{i,t}$	-0.0181	-0.0183*	-0.4267***	-0.4297***
	(0.0110)	(0.0110)	(0.0669)	(0.0669)
$MTB_{i,t}$	0.0000	0.0000	-0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
$ABACC_{i,t}$	0.0165	0.0163	0.1479	0.1436
	(0.0289)	(0.0289)	(0.1750)	(0.1750)
Constant	0.1360***	0.1384***	1.0419***	1.0780***
	(0.0336)	(0.0338)	(0.2049)	(0.2059)
Observations	27,951	27,951	28,187	28,187
R-squared	0.030	0.030	0.188	0.188
Year-fixed effects	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.

Table 30

Gender Quota and Director Retirement

	(1) FE	(2) FE	(3) FE	(4) FE	(5) FE	(6) FE
VARIABLES	$DUVOL_{i,t+1}$	$DUVOL_{i,t+1}$	$DUVOL_{i,t+1}$	$NCSKEW_{i,t+1}$	$NCSKEW_{i,t+1}$	$NCSKEW_{i,t+1}$
$NCSKEW_{i,t}$	0.0037***	0.0037***	0.0037***	0.0731***	0.0722***	0.0715***
	(0.0011)	(0.0011)	(0.0011)	(0.0065)	(0.0065)	(0.0065)
$Retirement_{i,t}$	**-0.0162***	**-0.0149**	**-0.0124**	**-0.1363*****	**-0.2470*****	**-0.1483****
	(0.0087)	**(0.0093)**	**(0.0102)**	**(0.0528)**	**(0.0564)**	**(0.0620)**
$Retirement*Treat_{i,t}$		**-0.0048**	**-0.0508***		**0.4089*****	**-0.1095**
		(0.0120)	**(0.0268)**		**(0.0729)**	**(0.1630)**
$ProWomen*Retirement*Treat_{i,t}$			**0.1768***			**0.8991**
			(0.0917)			**(0.5588)**
$ProWomen_{i,t}$			**0.0178**			**0.2499*****
			(0.0136)			**(0.0825)**
$Treat_{i,t}$			**0.0106**			**0.2825*****
			(0.0114)			**(0.0697)**
$ProWomen*Treat_{i,t}$			**-0.0257**			**-0.5041****
			(0.0409)			**(0.2488)**
$DTURN_{i,t}$	-0.0000*	-0.0000*	-0.0000*	-0.0002*	-0.0002*	-0.0002*
	(0.0000)	(0.0000)	(0.0000)	(0.0001)	(0.0001)	(0.0001)
$LIQ_{i,t}$	-1.2372***	-1.2356***	-1.2097***	-3.1845	-3.3165	-3.2162
	(0.4018)	(0.4018)	(0.4020)	(2.4520)	(2.4508)	(2.4511)
$Sigma_{i,t}$	0.0856***	0.0857***	0.0844***	-0.3443***	-0.3451***	-0.3477***
	(0.0071)	(0.0071)	(0.0072)	(0.0429)	(0.0429)	(0.0430)
$Ret_{i,t}$	0.0201***	0.0201***	0.0202***	-1.0488***	-1.0465***	-1.0447***
	(0.0033)	(0.0033)	(0.0033)	(0.0201)	(0.0201)	(0.0201)
$LEVERAGE_{i,t}$	-0.0240***	-0.0241***	-0.0236***	-0.2075***	-0.1995***	-0.1955***
	(0.0072)	(0.0072)	(0.0072)	(0.0439)	(0.0439)	(0.0439)
$SIZE_{i,t}$	0.0133***	0.0133***	0.0130***	0.0430***	0.0430***	0.0423***
	(0.0009)	(0.0009)	(0.0009)	(0.0052)	(0.0052)	(0.0053)
$ROA_{i,t}$	-0.0165	-0.0165	-0.0187*	-0.4148***	-0.4165***	-0.4285***
	(0.0110)	(0.0110)	(0.0110)	(0.0668)	(0.0668)	(0.0669)
$MTB_{i,t}$	0.0000	0.0000	0.0000	-0.0000	-0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
$ABACC_{i,t}$	0.0171	0.0167	0.0152	0.1519	0.1846	0.1937
	(0.0289)	(0.0289)	(0.0289)	(0.1750)	(0.1750)	(0.1750)
Constant	0.1348***	0.1342***	0.1367***	1.0332***	1.0789***	1.0477***
	(0.0336)	(0.0336)	(0.0337)	(0.2050)	(0.2050)	(0.2052)
Observations	27,951	27,951	27,951	28,187	28,187	28,187
R-squared	0.030	0.030	0.030	0.188	0.189	0.189
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors are shown in parentheses. Values in bold indicate coefficients that are statistically significant at 90% or higher confidence levels. Levels of significance are indicated by *, **, and *** for 10%, 5%, and 1%, respectively.