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GENDER DIVERSITY AND BEYOND IN CORPORATE FINANCE:

WHERE DO WE STAND?

Sonia Falconieri, Maimuna Akter

Abstract

We review the most recent contributions to the literature on the role of diversity in corporate finance. We focus on gender diversity but also includes various other dimensions of diversity, and analyses its impact on different aspects of corporate life, including performance, CSR strategy and corporate policies. We include the papers that are collected in this special issue which contribute to further advancing our understanding of the benefits of diversity for corporations. We conclude with some suggested avenues for future research.

Keywords: Board of Directors, Gender diversity, Performance, Misconduct, Innovation

JEL Codes: G30, M14

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1. Introduction and regulatory framework

The lack of gender diversity on corporate boards has been at the forefront of intense public debate in the past decade, which has, in turn, triggered several regulatory interventions across the globe, specifically in Europe. In 2010, in the E.U., the average ratio of female directors in corporate boards was 11.9 percent, although the picture was very scattered, with good performances concentrated in a handful of countries. In 2011, the European Commission intervened by encouraging countries to adopt self-regulation. A very heterogeneous regulatory framework ensued with some countries leading the changes by imposing hard quotas similar to what Norway had done in 2005. Some opted for softer regulation on a "comply or explain basis," while others did nothing until very recently.

The emergence of mandated quotas was and still is, very controversial. Opponents of the quotas argued that owing to the lack of a sufficiently large talent pool, it compromised the effectiveness of the decision-making process of corporate boards and consequently hindered financial performance. This raised the question of whether a regulatory intervention was indeed needed, and if so, what was the most effective regulatory approach to encourage firms to achieve gender balance on their boards (Bennouri, De Amicis, and Falconieri, 2020).

The extent of the controversy has been reflected in difficulty for the European Commission to legislate on the matter. Despite putting forward a proposal for a directive in 2012, it is only this year that the so-called "Women on Boards" directive has finally received the approval of all member states. [1]While there has been substantial progress in the past decade, there is still a lot of heterogeneity across countries, and it is becoming clearer that those which have mandated quotas early on, such as France, Italy, and Norway, are doing much better than those who have adopted soft quotas or taken no action at all (Bennouri et al., 2020). It is in view of this that the new directive will require all publicly listed companies to give 40 percent of non-executive director positions to the under-represented sex. The mandatory nature of the directive implies that failure to comply will trigger penalties. The directive also aims at enhancing the transparency of the recruitment process with heightened disclosure.

The U.S. has been much more reluctant to take regulatory action to promote gender balance. In 2018, California mandated a minimum number of female directors on boards, depending in the board size. Failure to comply would trigger fines increasing the number of violations. However, the law recently suffered a substantial set back as a California judge ruled it unconstitutional in May 2022. In 2020,

[1] The directive mandates all large EU companies to have a 40 per cent representation of the underrepresented sex (usually women) among non-executive directors by 2026. Importantly, the directive also introduced a target of 33% of women in all senior roles including executive directors.

Washington state also introduced a law that requires boards to have at least 25% of female directors. While the law does not foresee penalties for non-compliant firms, it does require that the management delivers to all of its shareholders entitled to vote at its annual meeting a "board diversity discussion and analysis." The analysis needs to cover some statutory issues and has to be published on the companies' website or circulated in their proxy statement. (Oliver and Norris, 2020).

The table in Appendix 1 provides an overview of the current regulatory landscape worldwide.[2]

Recent regulation to improve female representation on boards often cites research documenting that more gender diversity positively impacts the decision-making process and, therefore, companies' results. Is it indeed the case? The question of whether a larger presence of female directors improves performances has been at the centre of extensive research in corporate finance. In the next section, we review the main evidence and contributions on this topic. Sections 3 to 5 will then review the literature that investigates the channels through which increasing female representation on boards might contribute to corporate performance. We also highlight, when appropriate, how gender diversity interacts with other dimensions of diversity, such as ethnicity, age and experience. Given the extensive existing literature, we choose to focus on the most recent contributions, including those collated in this special issue. The final section presents some conclusive remarks and suggests avenues for future research.

2. Gender diversity and firm's performance

Boards of directors are a fundamental corporate governance mechanism. Their role is to monitor the management on behalf of shareholders, thereby alleviating the agency problems between managers and shareholders that result from a widely dispersed ownership structure. An extensive empirical and theoretical literature has investigated what affects the effectiveness of the board and provided evidence that this depends on the size, independence, and composition of the board (John and Senbet, 1998), although the link between these board characteristics and firm's performance is challenging to prove due to the inevitable endogeneity of board composition (Hermalin and Weisback, 1998).

In the last decade or so, the research attention has shifted considerably to understand how more gender diversity on corporate boards is likely to impact board effectiveness and, as a result, firm's performance. While more gender diversity on boards can contribute to new, valuable skills and expand the range of expertise (Kim and Stark 2016), and break the influence of the "old boys" club (Adams

[2] Some countries have updated their regulation since inception, such as Italy which increased the ratio of women on board from 33% to 40% in 2018. Also, we have classified both Spain and Greece as voluntary because despite there being a legislation imposing quotas, in both cases the enforcement of the law is very weak and not clear.

and Ferreira, 2009), it is also possible that more diversity exacerbates internal conflicts thereby disrupting the board's decision-making process (Bernile et al. 2018).

The existing evidence provides a quite mixed picture. In their seminal work, using U.S. data, Adams and Ferreira (2009) document that more gender-diverse boards exercise more effective monitoring but do not find any significant evidence of a positive association between gender diversity and firm's performance. In fact, they show that more gender diversity can be detrimental to performance in well-governed firms.

In Adams and Ferreira (2009), 40 percent of firms in their sample have all-male boards. And of the remaining which have female directors in their boards, another 40 percent have only one female director. In such situations, female directors could represent mere *token,* and be too outnumbered to play any significant role in the board. There is some evidence in favor of the "critical mass theory" according to which for female directors to exercise a meaningful influence on corporate boards, a "critical mass" should be achieved. Using a sample of 151 listed German firms in the period 2000-2005, Joecks et al. (2013) document that the number of female directors is positively correlated to firm's performance only after having reached a critical mass which, they calculate to correspond to 30 percent of the board size in their sample. This is in line with more recent evidence by Schwartz-Ziv (2017), who, using board meeting minutes of a sample of Israeli firms between 2007 and 2009, finds that board meetings are more active when at least three women are present. She also finds that gender-balanced boards are more likely to replace underperforming CEOs.

There is also some evidence that the impact of female directors on firm's performance crucially depends on whether they are effectively integrated in the board's decision-making process. Using a sample of the 100 largest European listed firms from 11 countries over the period 2006-2012, Green and Homroy (2018) present novel evidence that firm's performance displays a meaningful improvement only when female directors are appointed to key governance committees, e.g., Audit Committee, Nomination Committee, and Remuneration Committee, i.e., when they are given the opportunity to significantly influence corporate decisions. In contrast, , using a sample of 394 French firms between 2001-2010, Bennouri et al. (2018) show that the association between gender diversity and firm performance crucially depends on the attributes of female directors. After controlling for such attributes related to their monitoring ability as well as their overall reputation, they find that gender diversity positively affects accounting-based performance metrics (ROA and ROE) while there is no significant impact on market-based performance measures (Tobin's Q).

As for any board characteristics, demonstrating a causal link between gender diversity and firm's performance is made difficult by the obvious endogeneity of board composition. The introduction of mandated gender quotas has been seen by researchers as a way to resolve the identification problems plaguing previous studies and investigate the association using a treatment-based empirical approach.

The case of Norway, which is the first country to mandate quotas in 2006, has been intensely analysed. Initial evidence seemed to suggest that the increased female representation on Norwegian corporate boards forced by the law led to a drop in firm's profitability, arguably due to a lack of qualified female directors (Ahern and Dittmar, 2012, Bøhren and Staubo, 2015). In a recent paper, however, Eckbo et al. (2022) revisit the previous analysis, addressing some of the outstanding methodological challenges, and provide new compelling evidence that the effect of the quotas on the short-term (abnormal stock returns) as well as the long term returns (Tobin's Q) of firms affected by the law is never statistically significant. Their results are consistent with Bertrand et al. (2019), who document that the female directors appointed to the boards of Norwegian firms post-quotas are as qualified as their male counterparts as well as female directors appointed pre-quota. Subsequent evidence on other European countries that introduced laws on gender quotas on boards provides further consistent evidence. Reguera-Alvarado et al. (2017) provide some evidence of a positive impact of gender representation and economic results for a sample of 125 Spanish firms listed on the Madrid Stock Exchange. In a recent paper, Ferrari et al. (2021) look at data from Italy, which mandated a 33 percent female representation in 2011.[3] The authors exploit the staggered board elections as their identification strategy and show that, after the introduction of the quotas, boards exhibit a higher level of education and lower average age. They also found no significant impact of the quota on firms' performance as measured by Tobin's Q and ROA. Their findings are consistent with recent ones by Martines-Garcia et al. (2021), who attributes the lack of impact on firm's performance of the increased number of female directors to the advisory nature of the Spanish regulation.

More recently, a few papers have looked at the reaction to the introduction of gender quotas in California in 2018. Contrary to Norway (and other E.U. countries), there is an exact date for the introduction of the California bill, which offers an ideal setting for an event study analysis. [4] Green et al. (2020) document a negative market reaction following the introduction of the bill and interpret their results as the shareholders disapproved the introduction of a mandatory quota.

[3] The ratio of women of board have been later increased to 40% in 2019.
[4] The bill also allowed firms a very short period of time to comply.

However, Gertsberg et al. (2021) study shareholders' votes for individual director nominees and provide novel evidence that a. shareholders exhibit a high level of support for female post-quota nominees, and b. the market reacts negatively only towards firms that failed to replace the least supported male director with a new female director. Taken together, the evidence they provide suggests that shareholders in California did not oppose the quota.

In a very recent paper, Schmid and Urban (2022) shed more light on female directors' impact on firm performance by using directors' death as their identification strategy. Their analysis shows that the market reacts more negatively to the death of a female director than that of a male director. The authors also provide evidence that this negative reaction is most likely the consequence of firms finding it more challenging to replace a female director with another female director and that, in many cases, their search fails.

[Insert Table 1 here]

[Insert Table 2 here]

In conclusion, the currently available evidence overwhelmingly suggests that the increased presence of women in corporate boards neither causes any detriment to the board composition nor negatively impacts corporate performance.

3. Gender diversity and corporate policies

Drawing on gender socialization theories, extensive literature in psychology documents substantial behavioral differences between men and women.[5] Women appear to be more risk-averse, less overconfident, less competitive, and more selfless and caring (Fellner, G. and Maciejovsky, 2007; Croson and Gneezy, 2009). However, it is controversial whether such behavioral traits also characterize women in finance. Olsen and Cox (2001) survey a population of professional investors and confirm differences in risk perceptions between female and male investors, with women attributing greater weight to risk dimensions. In contrast, Adams and Funk (2011) find that women that have broken the glass ceiling are not more risk-averse than men. They also use survey data from the population of all resident directors of Swedish public firms in 2005.

[5] Gender socialization theories postulate that women are socialised mostly in communal values while men are socialised mostly into agentic values (Mason and Mudrack, 1996).

Relying on this evidence, numerous recent studies have investigated whether these intrinsic gender differences can contribute to explaining how gender diversity affects, if at all, corporate decision-making.

Adams and Ferreira (2009), for instance, provide evidence that gender diversity on boards affects the governance of the board. In their paper, they find that a larger female representation in boards improves board attendance and monitoring. Furthermore, boards with more female directors are more likely to hold CEOs accountable for poor performances.

The link between gender diversity in boards and firm's governance is supported by more recent studies that investigate firm's payout policy. Payout policy is considered a key tool of corporate governance as it can potentially mitigate agency conflicts between management and shareholders by reducing the free cash flow. Using data on S&P 1500 firms between 1997 and 2011, Chen et al. (2017) find that the payout ratio is positively correlated to the ratio of female directors. More recently, Ye et al., 2019 achieve similar findings on a sample of firms from 22 different countries in the period 2000-2013. Similarly, more gender-diverse boards have been shown to be more likely to announce share buyback programs (Evgeniou and Vermaelen, 2017).

Building on the assumption that men tend to be more overconfident than women, which generally refers to the tendency to systematically overestimate future returns (Malmendier and Tate, 2005), Levi et al. (2014) investigate how gender diversity in boards affects acquisition decisions.[6] They employ a sample of 458 deals from U.S. firms in the period 1997-2009 and find that firms with more diverse boards are associated with a smaller number of deals and pay lower premiums. Their findings are consistent with those of Huang and Kisgen (2013), who, using a diff-in-diff approach around CEO and CFO transitions, find that female CEOs and CFOs are less likely to undertake acquisitions and take on less debt. In line with Levi et al. (2014), they also interpret their results as suggesting that female managers are less overconfident than male executives.

The association between gender and leverage has been documented in other papers as well and is mostly attributed to female executives being less risk-taking and cautious in their decisions.

Faccio et al. (2016) analyse a sample of private and public firms from 18 different countries over the period 1999-2009 and find that firms run by female CEOs exhibit lower leverage, less volatile earnings, and a higher survival rate compared to firms run by male CEOs. The authors go further to show that women allocate capital less efficiently than men. By looking at firms' net investment, they

[6] Overconfidence can also refer to the perceived precision of beliefs about the outcome of uncertain events.

argue that the women's excessive caution in corporate risk-taking can cause either *underinvestment*, to the extent that they can pass on positive NPV projects, or/and o*verinvestment*, as women might fail to divest poor performing investments, both of which would lead to suboptimal capital allocation.

More recently, using a sample of U.K. firms listed on the London Stock Exchange over the period 1999-2017, Schopohl et al. (2021) provide novel evidence that the linkage between female executives and debt policy crucially depends on the managerial environment they operate in. Specifically, they find that female CFOs are negatively correlated to leverage only in firms not run by a powerful CEO, with a highly diverse corporate board in terms of age, gender and nationality, and if they are externally appointed. Their findings are significant in that they highlight the importance of the whole managerial environment as well as the overall board diversity to enable female executives to shape corporate policies effectively.

[Insert Table 3 here]

4. Gender Diversity and C.S.R.

One of the implications of gender socialization theories is that women tend to be more other-regarding, less power-oriented, more benevolent, and overall more sensitive to ethical issues and law-abiding (Croson and Gneezy, 2009; Adam and Funk, 2011).

Women's ethicality is likely to be reflected in corporate compliance and corporate choices more widely.

For instance, early studies show that women are associated with better financial reporting quality (Krishnan and Parsons, 2008, Barua et al. 2010), although they rely on a relatively small sample size and/or sample period. Francis et al. (2015) extend Barua et al. (2008) by employing a much larger sample which includes all S&P 1500 firms in the period 1988 through to 2008, and also by looking at the changes of CFO gender in order to investigate the link between CFO gender and accounting practices. Their result shows that accounting conservatism significantly increases when a female CFO is appointed to replace a male CFO. The authors also document that the result seems to be due to female CFOs being more cautious and less inclined to expose themselves through risky corporate policies. Less evidence exists on European data. One exception to this is the paper by Lara et al. (2017), who employs a large sample of U.K. firms between 2003 and 2012. Contrary to previous papers, their findings suggest that only female independent directors, as opposed to female executives, have a significantly positive impact on financial reporting quality in terms of reducing earnings management.

However, this association only holds in firms that are likely to discriminate against women and disappears otherwise. The authors interpret this result as providing support to the hypothesis that women that have broken through the glass ceiling do not substantially differ from men in their monitoring effort.

If, indeed, a higher female representation in corporate boards improves financial reporting quality, we could also expect it to translate into a lower likelihood of lawsuits. Several studies have explored this link.

For instance, using a sample of Chinese firms between 2001 and 2010, Cumming et al. (2015) provide evidence that more gender diversity on board reduces the likelihood of securities fraud. Furthermore, they also find that the market reaction to the announcement of fraud is negatively correlated to the ratio of female directors. The authors interpret the finding as suggesting the market might consider frauds less severe if the board is more gender diverse.

In a recent paper, Joo et al. (2021) add to the findings of Cumming et al. (2015) by disentangling the effect of female inside and outside directors on securities litigation risk. Using an extensive sample of S&P 1500 firms between 1998 and 2017, the authors document that only independent female directors appear to significantly reduce the risk of securities litigation. They further provide some evidence that the lower risk of litigation is the result of a higher representation of independent female directors being associated with higher conditional accounting conservatism and better CSR policies.

Securities lawsuits are different from operation-related lawsuits, which concern operating decisions and are typically triggered by stakeholders other than shareholders. There is evidence that gender diversity also reduces the risk of operation-related lawsuits.

For instance, Liu (2018) shows that more gender-diverse boards are less likely to incur environmental infringements. More interestingly, the paper, which employs a sample of all S&P 1500 companies between 2000 and 2015, sheds some light on the interplay between female representation on boards and female CEOs in that it shows that female CEOs reduce the number of environmental infringements only in firms with low female board representation.

Adhikari et al. (2019) provide further support to the hypothesis of different roles played by female directors and female executives. In the first comprehensive study of all types of operation-related lawsuits for a sample of S&P 1500 firms between 2002-2011, the authors show that the gender diversity of the board does not matter for the risk of incurring in non- securities lawsuits. In contrast, they find that the risk of litigation is negatively correlated to the power of women in top management

roles. They further provide some evidence that this is the consequence of women adopting less risky and more conservative corporate policies that are less likely to trigger lawsuits but potentially at the expense of value creation.

Dimungu-Hewage and Poletti-Hughes (2022), in their contribution to this special issue, present similar findings for a sample of Latin American firms between 2008 and 2019. They show that firms with more gender-diverse boards exhibit a lower number of corporate frauds and that this effect is stronger in family firms that tend to be more likely to commit fraud in their sample. They find a similar effect also for education diversity.

The previous studies investigate the ex-ante effect of gender diversity on corporate misconduct. Sarkisyan et al. (2022), in their contribution to this special issue, take a novel approach by analyzing instead the response to corporate misconduct and how it is shaped by board characteristics. The authors employ sample banking sanctions issued to E.U. listed banks by U.S. regulatory bodies in the post-financial crisis period 2009-2018 and investigate the likelihood of CEO dismissal. Their findings interestingly show that gender diversity does not reinforce the board's disciplining role, whereas age diversity and the presence of foreign directors seem to be more effective in triggering "changes at the top" following a sanction. It could be possible that their results are specific to the banking sector, which is characterized by frequent cases of misconduct. More research is needed to understand if their findings apply to other industries as well.

Despite the available evidence on the link between gender diversity and corporate misconduct, the channel through which this link operates is less clear. In particular, some studies suggest that the link is more likely the consequence of to women being more risk averse than man, rather than more ethical.

However, a large body of research has also tested the association between board gender diversity and corporate social responsibility (CSR), which can be argued to stem from women being more sensitive to ethical issues.

There exist numerous studies on this matter which consider different countries and alternative measures of CSR. Boulouta (2013) employs data on 126 firms drawn from the S&P 1500 that have a KLD (Kinder Lydenberg Domini) rating over the period 1999-2003 and finds that board gender diversity significantly reduces the "concerns" component of the KLD rating but does not have any effect on the "strengths" component of the score. This could suggest that negative CSR practices contrast more strongly with women's empathic and ethical nature. McGuinness et al. (2017) provide evidence of a positive impact on CSR score for a sample of Chinese listed firms between 2009 and 2013, which received a CSR rating from *Rankins*, a leading CSR rating provider in China. Their

findings show that the rating is higher for firms with more gender-diverse boards and that this effect is stronger if the firm also has a female CEO or deputy CEO

ESG ratings are very heterogeneous depending on the provider and can diverge substantially (Berg et al., 2019). Consequently, research outcomes are likely to be sensitive to the specific rating used in the analysis. Some more recent papers partially overcome the problem by capturing CSR engagement with the firm's participation in the Carbon Disclosure Project, which is a voluntary reporting initiative for climate change-related disclosure. Liao et al. (2015) apply this measure to a sample of FTSE350 firms in 2011 and document that firms with more gender-diverse boards are more likely to answer the CDP questionnaire and also achieve a higher CDP score. They further document that the presence and independence of an environmental committee also have a positive impact on the likelihood of reporting GHG emissions.

Ben-Amar et al. (2017) find generally consistent results on a larger sample of 541 Canadian firms listed on the Toronto Stock Exchange over a longer period of time running from 2008 to 2014. However, their results show that the positive effect of board gender diversity on the likelihood of responding to the CDP questionnaire is conditional on female directors reaching a critical mass in the boardroom. Similarly, in their contribution to this special issue, Do et al. (2022) document that more diverse boards respond more strongly to regional voluntary climate reporting initiatives in the U.S., which in turn translates into better environmental performance.

This is in line with recent findings by Atif et al. (2021), who, for a sample of U.S. listed firms between 2008 and 2016, provide evidence that a higher female board representation increases the proportions of renewable energies used provided that there are at least two female (independent) directors in the board. Female executives do not, instead, have any significant impact.

While using granular loan data from the euro credit registry for 52 banks – equivalent to about 60% of banking total assets in the euro area – in 2019, Gambacorta et al. (2022) provide novel and compelling evidence that banks with more gender-diverse boards are "greener" in the sense that they reduce their lending to more polluting companies which are identified by their level of GHG emissions.

Novel evidence on the link between gender diversity and CSR is provided by Strøm et al. (2022) in their contribution to this special issue. The authors investigate the case of microfinance institutions (MFIs) using data from 87 developing countries spanning from 1998 to 2018 and show that female CEOs strengthen MFI's social mission to improve financial inclusion by extending more lending to the poorest customers than male CEOs. The results are shown to be robust to several tests that control

for the endogeneity of the CEO gender. The authors interpret this result as confirming that that women are more benevolent and altruistic than men.

[Insert Table 4 here]

Overall, the body of literature reviewed in this section supports the view that traits such as ethicality and being more caring have been shown to characterize the general female population extrapolates to a large extent also to women in the finance profession.

5. Diversity and Spillover Effects

In this last section, we review contributions to the literature on diversity that have broadly investigated other spillover effects triggered by increased diversity in corporations.

In Section 3, we have discussed the evidence that links (gender) diversity to corporate policies. A less investigated issue is whether diversity matters for innovation. Bernile et al. (2018) employ a sample of U.S. listed firms between 1996 to 2014 to study the effect of board diversity on several corporate policies, including innovation. Their measure of diversity consists of a multidimensional diversity index that includes six different director's characteristics- gender, age and ethnicity, college education, financial expertise, and other board experience. Their findings show that higher board diversity leads to lower firm risk, in line with other results. More interestingly, more diverse boards invest more in R&D and that results in more and higher quality innovation, measured respectively by the number of patents (in absolute value and per dollar spent in R&D), the number of citations, and originality of patents. The authors further show that there is no single dimension of diversity that dominates the others, which suggests that board dynamics are determined by the combined effect of multiple dimensions of diversity.

In a more recent paper, employing a sample of Chinese firms in the period 2008-2013, Cumming and Liung (2021) provide further evidence that diversity matters for innovation; however, they also show that the impact is very much context specific. Diversity matters in environments that exhibit low diversity. Hence, they find that more gender diversity facilitates innovation only in male-dominated industries. For instance, in high-tech and patent-intensive industries, scientific diversity matters the most.

A more contentious issue is whether more gender diversity in boards has had a positive spillover effect on the appointment of women to top executive positions or as board chair. Matsa and Miller (2011)

present evidence that more gender diversity in corporate boards increases the share of women in the companies' top management. Their paper employs U.S. firm data between 1997 through 2009. In contrast, using the introduction of gender balance initiatives in UK, France, and Italy as a quasi-natural experiment, Bennouri et al. (2020) do not find that introduction of quotas has affected the likelihood of appointing female CEOs or chairwomen.

Similarly, it remains unclear whether more gender diversity has contributed to reducing the gender pay gap. The evidence is limited in this respect. Carter et al. (2017) document that for a sample of S&P 1500 firms over the period 1996 and 2010, female executives are paid substantially less than male executives, ceteris paribus. The authors find that the gender pay gap is significantly reduced in firms with more gender-diverse boards. On the same issue, Flabbi et al. (2019) go further and shed some light on the effect of gender diversity at the top on female workers' wages within companies. They develop and test, on a sample of Italian data between 1982 and 1997, the predictions of a theoretical model that rests on the assumption that female CEOs are better at assessing the productivity of female workers. Their results show that the effect of female CEO on female workers' salaries is asymmetric. Female workers at the top of the wage distributions are paid more if appointed by a female CEO than a male CEO, but the opposite holds for female workers at the bottom of the wage distribution. Both these papers employ quite old data. It would thus be interesting to understand if the gender pay gap is closing and how fast.

Any spillover effect from an increased female representation on corporate boards would imply that female directors are ultimately able to shape corporate norms and behaviours. This conjecture is the focus of a recent paper by Boutchkova et al. (2020). The authors document a spillover effect that arises from male directors interacting with female directors across multiple boards. This heightened exposure to gender diversity, in turn, is reflected in the board attendance, the sensitivity of CEO turnover to performance, and the firm's risk profile. Their findings support the idea that an "expanded experience of working with women directors on boards facilitates a *normative legitimacy of gender diversity."*

A less investigated question is the extent to which gender diversity in corporations influences the style and/or content of corporate communication, despite there being a large amount of evidence suggesting that the style of corporate disclosures is associated with the quality and quantity of information disclosed and how investors react to these soft signals (Davis et al. 2015). De Amicis et al. (2021) presents the very first evidence on the existence of gender differences in corporate communication. Using a very large sample of earnings conference calls of U.S. listed firms between 2005 and 2018, the authors find that female executives tend to use a more positive and less vague tone in conference

calls. They interpret their findings as indicating different linguistic styles between male and female executives that are most likely the consequence of behavioural gender differences. De Amicis and Falconieri (2022), in their contribution to this special issue, expand on this issue by analyzing the impact of several managerial characteristics, including but not limited to gender, on the communication style of earnings conference calls in periods of crisis. Using data from 38,000 earnings conference calls of U.S. listed firms between 2006 and 2013, which include the global financial crisis (GFC), the authors find that, while the sentiment and "quantity" of information disclosed generally becomes more conservative during the GFC, managerial characteristics affect the style of corporate disclosures differently in periods of crisis. Specifically, gender appears to mostly affect the "tone" of the call as female executives remain, on average, more optimistic than their male colleagues during the crisis. Experience and overconfidence instead affect the length of the talk in both sections of the call. One of the novel contributions of the paper is to include ethnicity in the managerial characteristics considered. The analysis, however, suggests that CEO ethnicity, like age, does not play a significant role in shaping corporate communication.

Finally, we might ask if female representation has progressed at a similar pace in other professional environments as it has in the corporate world in the past decade. A recent body of research has been looking at female representation in the academic finance profession. Using a sample of finance faculty at the top 100 U.S. business schools from 2009 to 2017, Sherman and Tookes (2022) present some novel evidence of gender disparities among finance academics. Firstly, they document that women represent only 16% of finance academics. Most importantly, after controlling for research productivity, they find that women hold positions at lower-ranked institutions, are less likely to have tenure than men, to be full professors, and are paid less. They further show that female academics publish fewer papers and have a smaller network of co-authors, which generally privileges women. Interestingly, while they find that the gender gap substantially reduces over their sample period, this does not apply to differences in publication outputs between female and male academics and among full professors. This latter result is in line with the findings of Adams and Xu (2022) in their contribution to this special issue which indicate that thought leadership in academic finance (top 2% of scientists in the field) is more unequal in terms of gender and geography than in other fields. This is also true when compared to the closest fields, such as Economics and other STEM subjects. The authors collect their data on the top 2% of scientists based on Scopus citations from Ioannidis et al. (2019, 2020) for the year 2019. Their analysis further shows that, while being less represented among thought finance leaders than in other academic fields, finance females publish more and are more influential than female academics in other fields. Finally, using the ability belief score proposed by Leslie et al. (2015), the authors find

that male ability beliefs prove to be a significant barrier to entry for top female academics in finance. Overall, their findings are consistent with those by Sherman and Tookes (2022) in that they show that supply-side factors cannot alone explain these gender disparities.

[Insert Table 5 here]

6. Conclusion

This paper reviews some of the most recent contributions in the literature on diversity in corporate finance, including those that are compiled in this special issue. The largest part of this literature focuses on gender diversity which has attracted a lot of attention on the back of the extensive regulatory interventions worldwide aiming at increasing female representation on corporate boards.

This has allowed to better understand of how gender diversity contributes to shaping the corporate decision-making process and board dynamics. Taken together, the existing evidence provides a strong business case for increased female representation in boards.

A large part of the existing literature on these topics precedes the introduction of gender balance initiatives in many countries, and in the future, it would be important to understand whether the impact of gender diversity on corporate policies remains stable over time as diversity becomes gradually intrinsically embedded in the corporate culture. More research is also needed to gain better insights into cross-country differences. Data show that countries worldwide have progressed at a very different speed, absent specific regulatory requirements, which has motivated the E.U. to pass the revised Women on Board directive in 2022. Why this is the case remains an open question which needs to be addressed to steer future policy.

More recently, regulators have extended their attention to diversity more broadly in board composition, beyond gender diversity. For instance, in February 2021, the SEC has approved the new listing requirements on board diversity proposed by the Nasdaq. According to these new rules, which apply on a "comply or explain" basis, firms listed on the Nasdaq will have to appoint two diverse directors (one female and one from underrepresented groups). Disclosure requirements on diversity have also been heightened. Research that explores other dimensions of diversity remains however quite limited. It is particularly important to understand more clearly how different dimensions of diversity interact with each other and what their combined effect is on corporate policies and performance (Bernile et al. 2018; Giannetti and Zhao, 2019).

Finally, the vast majority of papers, because of data availability, consider public companies. We lack meaningful evidence on the progress made, if at all, on diversity, including and beyond gender, in the universe of private firms.

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Appendix 1: Summary of Gender Balance Initiatives Worldwide

Country	**Gender Balance Initiative/Type**	**Date of the Gender balance Initiative**	**Target Ratio ofomen on Board**
Greece	yes - voluntary	2020	25%
Australia	No		
Canada	No		
France	Yes - mandatory	2011	40%
Portugal	yes -mandatory	2018	33%
Spain	yes - voluntary	2007	40%
Germany	Yes - mandatory	2015	30%
Italy	Yes - mandatory	2011	40%
Japan	No		
Netherlands	Yes - mandatory	2021	33%
Austria	Yes -mandatory	2017	30%
Belgium	yes -mandatory	2011	33%
Sweden	no		
Switzerland	Yes - voluntary	2021	30%
United Kingdom	Yes - voluntary	2011	33%
U.S. - California	yes - mandatory	2018	min 40%
U.S. - Washington State	yes - voluntary	2020	25%

Table 1: Gender Diversity on Boards and Firm's Performance

This table summarises research on board diversity and firm performance. The main findings column contains phrases and/or partial quotes from the original sources without using quotations for ease of presentation.

Authors	**Data Sources**	**Country Samples**	**Time period**	**Dependent Variables**	**Main explanatory variables**	**Main Findings**
Lara, Osma, Mora, and Scapin, 2017	BoardEx, BvD Osiris accounting and stock prices information	U.K. firms	2003-2012	The absolute value of discretionary accruals estimated using the Dechow et al. (1995) model	percentage of women among independent directors, number of independent directors, board size, director qualification, ROA, firm size, and market to book	A larger percentage of women among independent directors is significantly associated with lower earnings management practices. However, this relation disappears if it focuses on firms that do not discriminate against women in the access to directorships.

Jebran, Chen, and Zhang, 2021 RIBF	CSMAR	China	2003-2015	Stock Price Crash Risk	Board gender diversity, firm specific controls, market controls	By classifying board diversity into relation-oriented diversity (gender and age) and task-oriented diversity (tenure and education), greater diversity on board can lower the risk of future stock crash. Additional analyses show that the effect of board diversity on future crash risk is stronger for firms with high information opacity and low institutional ownership. Overall, the findings provide new insights and suggest for more diverse boards to improve corporate governance practices.
Karavitis, Kokas and Tsoukas, 2021	Thomson Reuters L.P.C.'s DealScan, Call reports from FRB, Compustat an d BoardEx	US firms	1999-2013	cost of lending	Number and percentage of total female directors in the board. The number and fraction of executive and non-executive female directors	Firms with female directors command lower loan spreads. In addition, female independent directors have a stronger impact on lowering spreads compared to female directors' other attributes.

					in the board. Bank and borrower relationship, loan maturity	
Reguera-Alvarado, Fuentes, and Laffarga, 2017	The Madrid Stock Exchange General Index, Osiris database	Spain	2005-2009	Tobin's q	Percentage of women in the boardroom, total number of directors, total asset	Compulsory legislation offers an efficient framework to execute the recommendation of Spanish codes of good governance by means of the increase in the number of women in the boards of firms. The increase in the number of women in the boards is positively related to higher economic results.
Eckbo et al., 2022	Database constructed by Berner et al. (2013), Norwegian tax authority,	Norway	1998-2013	The equal-weighted portfolio of industry-matched returns	Participation of female members in board and firm level control variables	At the time of the Norwegian quota, the supply of qualified female director candidates was high enough to avoid the negative consequences of the quota highlighted previously in the literature.
Green and Homroy, 2018	BoardEx,	European firms (EuroTop 100)	2004-2015	ROA	Proportion of female on board and committee,	Positive effect of female board representation on firm performance. Moreover, there is an economically

					sales, stock price, board size, volatility	meaningful positive effects on performance of female representation on board committees.
Schmid and Urban, 2022						Female directors (FDs) affect firm value in the absence of mandatory gender quotas. Stock prices decrease approximately 2% more when an FD passes away, compared with a male director.
Bennouri et al., 2018	Factiva, Thomson DataStream, Orbis database	French firms	2001-2010	Tobin's Q, ROA, and R.O.E.	Dummy representing the presence of female in the board and also variables indicating nine different attributes of female directors, governance variables, ownership	Female directorship increases firm's accounting performance. However, it decreases market-based performance. The relationship is affected by the attributes of female directors.

					variables, firm specific variables	
Terjesen, Couto, and Francisco, 2016	Bloomberg database,	U.S. public firms	2010	Tobin’s Q and ROA	Percentage of independent directors, percentage of female directors, board characteristics, firm level characteristics	Firms with more female directors have higher performance by market and accounting measures.

Table 2 – Board gender diversity and negative impact on performance

This table summarises research on board diversity and negative impacts on firm performance. The main findings column contains phrases and/or partial quotes from the original sources without using quotations for ease of presentation.

Authors	**Data Sources**	**Country Samples**	**Time period**	**Dependent Variables**	**Main explanatory variables**	**Main Findings**
Hambrick, Cho, and Chen, 1996	Aviation daily	United States	1979-1986	Action propensity	Board heterogeneity	Heterogenous teams are slower in their actions and responses and less likely than homogeneous teams to respond to competitors' initiatives.
Greene, Intintoli, and Kahle, 2020	I.S.S., C.R.S.P., Compustat, hand collected data	United States	Period prior to 2018 till 2019	Abnormal return	Compliance of SB 826 (event- 2018)	Investors react negatively to California's corporate board gender diversity mandate. Returns are more negative for firms that are required to add more female directors.
Gertsberg, Mollerstrom, and Michaela, 2021	Hand collected longitudinal voting	Publicly held domestic or foreign	2016-2018	Support for nominee	Dummy for gender's nominee, post enactment	Pre-2018 California gender quota, new female nominees received

	data, S.E.C.'s Electronic Data,	corporation whose principal executive offices, according to the corporation's S.E.C. 10-K form, are located in California			period, dummy for a new versus incumbent nominee	greater support than new male nominees, consistent with women being held to a higher standard. Post-quota, as the number of women increased, support for new (mandated) female nominees decreased to the same level of, but not lower than, the support that new male nominees enjoy. Share prices reacted negatively to the quota.
Ahern and Dittmar, 2012	Firm's annual report, Compustat global, and C.R.S.P.	Norway	2001-2009	Industry adjusted Q (abnormal return)	Participation of female in board and firm level control variables.	Quota caused a significant drop in the stock price at the announcement of the law and a large decline in Tobin's Q over the following years, consistent with the idea that firms choose boards to maximize value.
Bøhren and Staubo, 2015	C.C.G.R. database	Norwegian firms	2003-2008	Performance	Board independence, outside directors, board size, female directors, female age, male age, ownership characteristics,	Forcing radical gender balance on corporate boards is associated with increased board independence and reduced firm value. A mandatory 40% gender quota shifts the average fraction of independent directors from 46% to 67% because female directors are much more

						often independent directors than males are. The effect is stronger for small, young, profitable, non-listed firms with powerful stockholders and few female directors.
Meyerinck et al., 2019	Compustat, BoardEx	US firms	2017-2018	Daily abnormal return	a post dummy, a California dummy, and an interaction term between the two	Negative announcement returns to the adoption of the quota for Californian firms, but also large negative spillover effects on a matched group of non-Californian firms, particularly those located in states that followed California’s legislative lead in the past by raising minimum wages or legalizing cannabis.

Table 3 – Gender diversity and Corporate Strategy/Governance

This table summarises research on board diversity and impacts on corporate strategy and governance. The main findings column contains phrases and/or partial quotes from the original sources without using quotations for ease of presentation.

Authors	Data Sources	Country Samples	Time period	Dependent Variables	Main explanatory variables	Main Findings
Adams, R. B., & Ferreira, D. (2009)	I.R.R.C. annual publication (Board Practices/Board Pay: The Structure and Compensation of Boards of Directors at S&P 1,500 Companies), Compustat, C.R.S.P.	director-level data for Standard & Poor's (S&P) 500, USA	1996-2003	Attendance problem	Female dummy, Fraction of female directors, meeting fee, total compensation, board meetings, board size, fraction of independent directors, tenure, age, retired dummy, Tobin's q, ROA, Volatility, Sales	Female directors have better attendance records than male directors, male directors have fewer attendance problems the more gender-diverse the board is, and women are more likely to join monitoring committees. Directors receive more equity-based compensation in firms with more gender-diverse boards.
Chen, J., Leung, W. S., & Goergen, M. (2017)	RiskMetrics, Compustat, Execucomp.	U.S. firms	1997-2011	Dividend payout	Fraction of female directors, leverage, R&D to sales, tobin's q, ROA, return volatility, cash to net assets, P.P.E. to asset, asset, board size	Firms with a larger fraction of female directors on their board have greater dividend payout.

Ye et al., 2019	Boardex and Worldscope	22 countries	2000-2013	Dividend dummy, level of dividend payment	Gender diversity index, corporate gov index, asset, leverage, tobins q, ROA, retained earnings to total equity, cash holdings, market to book, number of independent directors scaled by board size,	Board gender diversity facilitates corporate governance and consequently promotes dividend payouts. However, a good institutional environment may weaken the effect of board gender diversity on dividend payouts.
Evgeniou and Vermaelen, 2017	Boardex, SDC US M&A, S.D.C. repurchase data, compustat, CRSP	US firms	1999-2015	Repurchase dummy	Gender diversity, market cap, book to market, prior returns, percentage of independent directors, total payout, leverage, profitability, operating income, non operating income, dividend payout ratio, price to earnings ratio, cap exp, institutional holdings, board size	Board gender diversity increases the likelihood that firms announce a buyback but long-term excess returns are significantly smaller when there is larger female representation in the board.

Levi, Li, and Zhang, 2014	RiskMetrics, Compustat, CRSP	S&P 500 companies	1997-2009	Bid initiation is the number of acquisition bids made within a fiscal year	Fraction of female directors, board size, fraction of independent directors, CEO of C.O.B., sales growth, tobin's q, ROA, book leverage, cash holdings, firm size	Firms with female directors are less likely to make acquisitions and if they do, pay lower bid premia.
Huang and Kisgen, 2013	ExecuComp, Hand collected data on firms having more than $500 million and book assets, EDGAR	US firms	1993-2005	Three-day cumulative abnormal announcement return (C.A.R.) around announcements of acquisitions, equity issuance, and debt issuance	Board size, independence, female representation, compensation, executive age, market to book, ppe, cap exp, return volatility	Male executives undertake more acquisitions and issue debt more often than female executives. Further, acquisitions made by firms with male executives have announcement returns approximately 2% lower than those made by female executive firms, and debt issues also have lower announcement returns for firms with male executives. Overall, men exhibit relative overconfidence in significant corporate decision making compared with women.
Schopohl, Urquhart, and Zhang, 2021	Boardex and Thomson Reuters DataStream	U.K. firms	1999-2017	Leverage	Female CFO, board diversity (gender, nationality, and age diversity)	Female CFOs significantly reduce the leverage of the firm; however, a female CFO's ability to influence corporate leverage is moderated by the senior

						decision-making environment in the firm. Female CFOs are more effective in reducing leverage in firms with boards that are diverse with respect to gender, nationality and age, and in firms where the Chief Executive Officer (CEO) is not overly powerful.
Faccio, Marchica, and Mura, 2016	Amadeus Top 250,000 and WorldScope	European privately held and publicly traded company	1999-2009	Leverage, volatility of firm's ROA, firm survival over a 5 year period	Female CEO, CEO ownership, cash flow rights, leverage, ROA, sale growth, size, age, tangibility, private firms,	Firms run by female CEOs have lower leverage, less volatile earnings, and a higher chance of survival than otherwise similar firms run by male CEOs. Transitions from male to female CEOs (or vice versa) are associated with economically and statistically significant reductions (increases) in corporate risk-taking.
De Amicis, C., Falconieri, S., and Tastan, M., 2021	Execucomp, BoardEx, FactSet, and Bloomberg	U.S. incorporated and listed companies	2004-2018	Tone and vagueness of management discussion and question & answer session,	Gender of CFO and CEO, managers controls, firm-level controls	Female executives employ more positive and less vague tone than their male colleagues in the earnings conference calls. Financial analysts exhibit a gender bias in conference calls as they are less positive and more vague while dealing with a female executive.

Table 4 – Gender diversity and C.S.R.

This table summarises research on the impact of board diversity on Corporate Social Responsibility. The main findings column contains phrases and/or partial quotes from the original sources without using quotations for ease of presentation.

Authors	Data Sources	Country Samples	Time period	Dependent Variables	Main explanatory variables	Main Findings
Litigation and misconduct						
Liu (2018)	Compustat, S&P Executive Compensation ("Execucomp"), I.S.S. Director and Corporate Governance Databases, Public Access to Court Electronic Records (PACER) Database	U.S. firms	2000-2015	Environmental Lawsuits; K.L.D. Environmental Ratings	Board diversity, financial and firm-specific controls, industry, year, market conditions	Firms with greater board gender diversity are less often sued for environmental infringements. In contrast, CEO gender is linked to reduced environmental litigation only in firms with low female board representation

Cumming, Leung, and Rui, 2015	China Securities Regulatory Commission, China Securities Markets and Accounting Research	China	2001-2010	Frequency and Severity of Fraud	Female diversity, board diversity, leverage, firm size, S.O.E., age	Gender diversity on boards reduces the frequency and severity of securities fraud.
Joo, Lawrence and Parhizgari, 2021	Analytics-Legal Case and Legal Parties, Institutional Shareholder Service Directors (I.S.S.D.), Compustat, C.R.S.P.	United States	1998-2017	If a security lawsuit is filed or not	Gender diversity, board diversity, and firm control variables	Litigation risk is inversely related to the fraction of female independent directors on a firm's board.

Sarkisyan et al., 2022	Violation Tracker, BoardEx, Orbis Bank Focus and Thomson Eikon.	Listed E.U. banks	2009-2018	CEO turnover	Misconduct proxy, CEO characteristics, board diversity	CEO dismissals are more likely following regulatory fines, but not during the investigation process. Board gender diversity does not seem to impact on boards' decision to fire the CEO, nor reinforce boards' disciplining effect in the presence of misconduct.
Dimungu-Hewage et al., 2022	DataStream, BoardEx	Argentina, Brazil, Chile, Colombia, Mexico, and Peru	2008-2019	Fraud dummy	Gender diversity, tenure and experience, firm financial and governance characteristics	Family firms are more likely to commit fraud than non-family firms possibly because of the aim to preserve socioemotional wealth and the weakness of regulatory systems. Family firms can offset such frailties by diversifying the board of directors.

Adhikari, Agrawal, and Malm 2019	Audit Analytics, CRSP, Compustat, ISS	United States	2002-2011	Lawsuits	Female directors, firm, industry, and market condition control variables	Firms where women have more power in the top management team, measured by female executives' plurality and pay slice, face fewer operations-related lawsuits. This effect is robust to several treatments of endogeneity and does not appear to be driven by female executives' greater willingness to settle the cases. Evidence from a simultaneous equations approach suggests that firms where women executives have more power avoid lawsuits partly by avoiding some risky but value-increasing firm policies, such as more aggressive R&D, intensive advertising, and policies inimical to other parties.
Accounting practices						
Lara, Osma, Mora, and Scapin, 2017	Boardex, BvD Osiris accounting and stock prices information	U.K. firms	2003-2012	The absolute value of discretionary accruals estimated using the Dechow et al. (1995) model	percentage of women among independent directors, number of independent directors, board size, director qualification, ROA, firm	A larger percentage of women among independent directors is significantly associated with lower earnings management practices. However, this relation disappears when it focuses on firms that do not discriminate against women in the access to directorships.

					size, and market to book	
Francis et al., 2015	ExecuComp, EDGAR, business websites, Compustat	S&P 1500 companies	1988-2007	Market based measure and earnings based measure of conservatism.	Female CFO appointment dummy, profitability, leverage, sales growth, R&D, cash holdings.	Hiring a female CFO significantly increases the degree of accounting conservatism. The relationship is strong for the firms that have high litigation risk, default risk, systematic risk, and management turnover risk.
Corporate Social Responsibilities						
Atif, Hossain, Alam, and Goergen, 2021	Bloomberg, BoardEx, and Factset	US firms in the Standard & Poor's (S&P) 1500 index	2008-2016	Renewable energy consumption, firm performance	Board gender diversity, firm level characteristics	There is a positive relationship between board gender diversity and renewable energy consumption. Moreover, boards require two or more women for women to have a significant impact on renewable energy consumption, consistent with the critical mass theory.

McGuinness et al., 2017	Rankins	Chinese joint-stock companies	2009-2013	Corporate Social Responsibility reporting rating score	Dummy indicating if the CEO and chairman is female. Duality, percentage of female directors, board size, managerial size, state ownership.	Greater gender balance in top-management supports stronger C.S.R. performance. Female leadership thus appears to be just as important as gender mix in driving C.S.R. change.
Ben-Amar, W., Chang, M., & McIlkenny, P., 2017	Corporate governance data in the Canadian Spencer Stuart Board Index (C.S.S.B.I.), Stock-Guide, Spencer Stuart Canadian	Canadian firms	2008-2014	Dummy indicating response to the disclosure decision	Board gender diversity variables, firm controls,	The likelihood of voluntary climate change disclosure increases with the percentage of women in the board.

	Board Index, C.D.P. reports					
Boulouta, 2013	Socrates K.L.D. database, RiskMetrics, Mergent, Datastream	S&P 500 companies	1999-2003	Dummy indicating the concerns or strengths on K.L.D. dimensions of community, products, employees, environment	Ratio of female representation on board, firm performance measure,	Board gender diversity significantly exerts strong influence on corporate social performance focusing on negative business practices,
Liao, Luo, and Tang, 2015	CDP FTSE350 report, DataStream	FTSE350 UK companies	2011	Dummy indicating the participation of the firm in the Carbon Disclosure Project	The percentage of female directors, board governance measures, and firm level variable	There is a positive association between gender diversity and propensity to disclose greenhouse gas emission

Do, Cao, Gounopoulos, and Newton, 2022	ISS, IBES and BoardEx, CRSP, and Compustat	U.S. firms	1995-2013	Environmental performance score	Board diversity measures and characteristic, firm characteristic, and dummy to indicate exposure to SOX and RAC	There is a positive association between the Regional Climate Action Plan Initiative (RAC) and environmental CSR for enterprises with a diverse board of directors. Therefore, the diverse board leads to an improvement in a firm's environmental performance following the RAC period.
Strøm, D'Espallier, & Mersland, 2022	M-CRIL, Microfinanza and Microrate.	87 developing countries	1998-2018	Average loan, female borrowers, female bias, rural bias	Female CEO, operating income, deposits, operation costs, assets, M.F.I. age, competition	Female CEOs have an impact upon the intensive margin (smaller average loans, more gender bias), but no evidence of greater inclusion on the extensive margin (credit client growth) is found.

Table 5 - Gender diversity, Spillover effects and others

This table summarises research on board diversity and spillovers and other effects. The main findings column contains phrases and/or partial quotes from the original sources without using quotations for ease of presentation.

Authors	Data Sources	Country Samples	Time period	Dependent Variables	Main explanatory variables	Main Findings
Bernile, G., Bhagwat, V., & Yonker, S. (2018)	ExecuComp, RiskMetrics, Compustat, NBER patent database, K.L.D. database, C.R.S.P.	all nonfinancial, non-utility U.S. firm	1996-2014	Return volatility	Board diversity index, assets, market to book, leverage, tangibility, cash to asset, dividend, roa, R$D to asset, firm age, board age, CEO tenure, county per capita income, population growth	Greater board diversity leads to lower volatility and better performance. The lower risk levels are largely due to diverse boards adopting more persistent and less risky financial policies. Firms with greater board diversity also invest persistently more in research and development (R&D) and have more efficient innovation processes.

Cumming and Leung (2021 CGIR)	C.S.M.A.R.	China	2008-2013	Patents, Patent Citations	Education Diversity, Gender Diversity, Age Diversity, Science Profession Diversity, Business Expert Diversity, Independent Directors, Directors with Multiple Directorships	Using regional demographics in China (there are in fact differences in the proportion of females by region) to instrument board characteristics, gender diversity is more pertinent in facilitating innovation in male-dominated industries, not female-dominated industries. In low-tech and nonpatent intensive industries, all types of diversity facilitate innovation, whereas in high-tech and patent intensive industries, scientific experience matters more than types of diversity. Age diversity results in lower-quality patents, while boards with science expertise have higher-quality patents.
Boutchkiva, Gonzalez, Main, and Sila, 2020	RiskMetrics database, Compustat, and C.R.S.P.	United States	1998-2012	CEO turnover, director absenteeism, equity risk	Gender diversity and firm level control variables	Directors exert an influence on the actions of their fellow male directors that extends beyond the focal board to other boards through a spillover effect.
Matsa and Miller, 2011	S&P Execucomp database, RiskMetrics	United States	1997-2009	Female share of top five executives	Female share on board and year fixed effects	Female representation on corporate boards affects the gender composition of the companies' top management.

Flabbi, Macis, Moro, and Schivardi, 2019	'Bank of Italy's annual survey, National Social Security Institute, Company Accounts Data Service	Italian manufacturing firms	1982-1997	Workers' wage distribution and firm performance	Female leadership, time-varying firm characteristics, workforce characteristics	Female leadership has a positive impact at the top of the female wage distribution and a negative impact at the bottom. The impact of female leadership on firm performance increases with the share of female workers.
Adams and Xu, 2022	Scopus citations, Ioannidis et al. (2019, 2020)	150 countries	2019	Various metrics of academic productivity	Female dummy	The set of top scientists in finance is less diverse in terms of gender and geography than in economics and other STEM fields. However, top female scientists in finance have relatively more impact than they do in economics and other STEM fields.
Sherman, M.G. and Tookes, H.E., 2022.	Academic Analytics database, U.S.	Any business school that appears in the U.S. News and World Report's list of top-100 U.S. business schools.	2009-2017	Institution's ranking, tenure and full professorship of faculty, total publications, publications in top journals	Female faculty, citations, top publications, tenure status of faculties	After controlling for research productivity, women are less likely to be full professor and to publish papers. They are typically hold positions in the lower ranked universities and are paid less.

De Amicis and Falconieri, 2022	38,000 conference calls	US public firms	2006-2013	Length and tone of the call	Managerial characteristics including gender, ethnicity and overconfidence	Female executives display a more positive tone than male executives. Overconfident and more experienced CEOs talk less during crisis. Ethnicity does not have a significant impact on the style of the calls.