

# **Safeguarding Firm Value: Unraveling the Role of Effective Boards in Preventing CSR Scandals**

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## **Abstract**

The relationship between board composition or attributes and corporate social responsibility (CSR) engagement has received considerable attention in the literature. In contrast, little research has focused on identifying board characteristics associated with non-socially responsible behaviour or CSR scandals. This study addresses this gap by examining specific board attributes and their association with CSR scandals in a comprehensive US sample spanning from 2002 to 2021. The results from instrumental variables regressions and entropy balancing approach imply that our findings are robust to accounting for endogeneity. Our findings highlight that certain board attributes help prevent CSR scandals when engaging in socially responsible practices over the long term, thereby protecting investors' long-term interests. In addition, the results underscore the importance of key board attributes, such as a diverse and experienced board, in shaping the "optimal" board composition that is effective in preventing CSR scandals and preserving firm value.

*Keywords:* Board of directors, Governance, Corporate social responsibility, Corporate social responsibility scandals, Firm value

## 1. Introduction

Non-socially responsible behavior or corporate social responsibility (CSR) scandals can have a substantial negative impact on the market value of a company or even threaten its survival (Kim et al., 2023). The Financial Times reports: “*Quarrels involving environmental, social and governance issues have wiped more than \$500bn off the value of large US companies over the past five years*”, and further: “*The hit to market value of an ESG controversy is significant and the impact is long-lasting. It can take a year for a stock to reach a trough following an ESG controversy*” (FT, 14.12.2019).

Since past corporate scandals such as Enron and Worldcom, board effectiveness has been a focal point of corporate governance mechanisms. It has received considerable attention from academic research and regulators, as evidenced by initiatives such as the Sarbanes-Oxley Act of 2002 (Adams et al., 2010). Despite this attention, surprisingly little work has been devoted to the question of what constitutes an effective board that can minimize or prevent CSR scandals. These scandals have been on the rise in recent years, driven by the increased prevalence of CSR activities and heightened media scrutiny (Kim et al., 2023).

In this paper, we analyze four board attributes that have received considerable attention in research, namely board gender diversity, independence, special skills, and experience, as well as their association with CSR scandals. Price and Sin (2017) point to the coexistence of CSR and corporate social irresponsibility (CSI) but emphasize that their study can only depict non-socially responsible behavior to a limited extent based on the data sources used. Since companies that engage in CSR also run the risk of creating scandals, or as the saying goes “where there’s wood, there are chips” (see Dorfleitner et al., 2020), we use the ratio of CSR controversies to CSR activities as our measure of CSR scandals. This unit measure of CSR scandals per a CSR activity

makes our study comparable between firms undertaken more CSR activities and those undertaken less CSR activities.

Using a large sample of 18,522 firm-year observations in the US from 2002 to 2021, we find that effective board attributes, such as board gender diversity, independence, special skills, and experience, are likely to reduce CSR-related scandals. The results are robust after controlling for board-specific variables and firm-related characteristics. The findings suggest that board attributes contribute to an effective board, are associated with less biased and superior decision-making, as well as continuous monitoring efforts (Wahid et al., 2019) of CSR corporate policy and the associated risks.

Next, we explore whether the impact of board attributes on CSR scandals is effective and persistent. If board attributes have a persistent impact on CSR scandals, then this impact would not only affect CSR scandals in the current period but also in one more forwarded period. We find that the negative relation between board attributes and CSR scandals is also notable for one-, two-, and three-year forwarded CSR scandals.

We further examine the impact of CSR scandals on firm value. Evidence on whether negative CSR events have a positive or negative impact on firm value is still inconclusive (Groening and Kanuri, 2013; Krüger, 2015; Aouadi and Marsat, 2018). We show that there is a positive relationship between our measure of CSR scandals and firm value. We also explore potential channels through which CSR scandals impact firm value. Specifically, our findings suggest that the positive relationship between CSR scandals in relation to CSR activities and firm value could be driven by the creation of social capital. This is in line with Lins et al. 2017, whose findings suggest that CSR can build trust with stakeholders and create social capital that can act as a protective shield. Employing two-stage instrumental-variables-liked tests (Liang and

Renneboog, 2017), we find that CSR scandals is likely to increase social capital, which in turn increase firm value.

It is possible that endogeneity arising from reverse causality remains. Specifically, one could argue that more CSR scandals might promote the firm to reform its board structure and composition. To eliminate this reverse causality concern, we conduct an instrumental variables analysis. To alleviate potential concerns of selection bias arising from firms with certain board characteristics that may experience specific CSR controversy events, we also conduct an entropy balancing approach. The results from both analyses continue to show that effective board attributes, such as board gender diversity, independence, special skills, and experience, tend to reduce CSR scandals.

Our findings contribute to the literature that examines a) effective governance mechanisms to prevent scandals and protect firm value and b) the determinants of CSR scandals. Previous studies (Webb, 2004; Harjoto et al., 2015; Shaukat et al., 2016) show that certain board attributes, such as board independence and board (gender) diversity, are associated with higher social responsibility. To the best of our knowledge, there is a notable scarcity of studies addressing CSR irresponsibility or negative CSR events. This observation is surprising, given the abundance of articles focusing on CSR and its positive outcomes (Margolis et al., 2009; Malik, 2015). We provide new evidence that effective board attributes, such as board gender diversity, independence, special skills, and experience, are likely to reduce CSR-related scandals.

Our study also extends the literature showing the effectiveness of board attributes. Prior work documents that the board plays an essential role in the alignment of CSR policy and strategy (Walls et al., 2012; Chang et al., 2017) and in corporate risk management (Bernile et al., 2018). The board of directors influences corporate CSR policy in a number of ways, for example by

directing the relationship with stakeholders, monitoring the behaviour of top managers, approving annual budgets for CSR-related activities, and setting up separate committees dealing with CSR (Walls et al., 2012; Chang et al., 2017). In addition to showing that board attributes influence CSR scandals, we show that the influence of board attributes is effective and persistent. Specifically, we show that the impact of board attributes on CSR scandals is not only for the current period but also for the consequent three periods.

Finally, our findings contribute to an ongoing debate whether CSR concerns impede or promote firm value (Groening and Kanuri, 2013; Price and Sun, 2017; Aouadi and Marsat, 2018). Previous research (e.g., Lin-Hi and Müller, 2013) notes a connection between high CSR and CSR irresponsibility. They highlight that companies with high social responsibility often generate CSR scandals and attract Public Eye Awards. Strike et al. (2006) find that U.S. companies operating internationally often engage in both responsible and irresponsible behaviors, which can be described as being both ‘good and bad’ MNEs face heightened visibility and an increased risk of negative media exposure. Thus, our paper related to work documenting that that negative CSR events are more likely to occur in companies that are more involved in CSR. Consistent with Aouadi and Marsat (2018), we find that there exists a direct positive effect of our CSR scandals measure on firm value. Our finding suggests that CSR scandals promotes firm value, in the form that generated scandals in relation to more intensive CSR activities drive the company value. In addition, we add to the debate by providing evidence on the social capital channel through which CSR scandals promote firm value.

The remainder of the paper is organized as follows. We develop the hypothesis in Section 2. In Section 3, we discuss the data and research design. We report the results in Section 4. In Section 5, we discuss endogeneity tests. We conclude in Section 6.

## **2. Hypothesis development**

### *2.1. Board attributes and CSR scandals*

The board attribute of *gender diversity* has been particularly heavily researched (Adams and Ferreira, 2009). The participation of women as directors on boards can result in improved monitoring and reduced agency problems, thereby increasing shareholder value (Carter et al., 2003; Adams and Ferreira, 2009). Adams and Ferreira (2009) show that gender-diverse boards are associated with fewer agency problems, e.g., with improved monitoring activities, higher meeting attendance and higher stock-based compensation. In the context of CSR, Harjoto et al. (2015) demonstrate a positive association between diversity and overall CSR, as well as CSR strengths. Conversely, they find a negative association with CSR concerns. These findings align with the perspective that board diversity enhances a firm's capacity to identify and cater to diverse stakeholder groups, while also aiding in the prevention and resolution of conflicts with a broader stake.

Wahid (2019) examines the impact of board gender diversity on financial misconduct and suggests that firms with gender-diverse boards commit fewer financial reporting mistakes and engage in less fraud. Griffin et al. (2021) examine the relationship between board gender diversity and risk taking, and their findings support the idea that gender-diverse boards tend to engage in more balanced and prudent risk-taking behavior. They show that the presence of women on corporate boards was associated with a more moderate approach to risk, leading to better risk management and long-term performance. Bernile et al. (2018) find that companies with more pronounced board diversity adopt less risky financial policies. Their results indicate that board diversity leads to lower firm risk because of less erratic corporate policies.

Companies with diverse boards tend to adopt policies that are more stable and persistent, consistent with the board decisions being less subject to idiosyncrasies and in line with the view that diversity moderates decisions. Accordingly, it is hypothesized that higher gender diversity on boards is inversely correlated with the occurrence of CSR scandals. With greater gender diversity on corporate boards, it is expected that decision-making processes will be more inclusive, corporate policies will be more stable, CSR initiatives will be better aligned with societal needs, and ethical governance will prevail (Harjoto et al., 2015), thereby reducing the likelihood of CSR-related scandals.

**H1** The greater the proportion of female board members, the lower the probability of a CSR scandal occurring.

*Board independence* holds significant importance, as independent directors are widely believed to be more objective and offer more stringent monitoring (Jiraporn and Lee, 2018). Although the predicted positive relationship between board independence and firm value is empirically elusive (Masulis and Mobbs, 2014), numerous studies have demonstrated the effectiveness of independent directors in providing monitoring services and as a governance mechanism to mitigate excessive risk by managers (Jiraporn and Lee, 2018). In terms of director independence, numerous studies have demonstrated its efficacy in providing monitoring services and as a governance mechanism in curbing managers from undertaking excessive risks (Jiraporn and Lee, 2018). The results in Bernile et al. (2018) indicate that the heterogeneity added to the board by outside (independent) directors is of primary importance for the risk associated with corporate decisions.

**H2** The greater the proportion of independent board members, the lower the probability of a CSR scandal occurring.

Additionally, there is supporting evidence indicating that independent directors with *financial expertise* play a crucial role in enhancing monitoring effectiveness, contributing to overall improved governance and the prevention of specific governance scandals, such as earnings misstatements (Agrawal and Chadha, 2005). Similarly, the evidence in Wang et al. (2014) is consistent with the hypothesis that having relevant *industry expertise* enhances independent directors' ability to perform their monitoring function, for example by providing better oversight of corporate financial reporting. Industry expertise facilitates the identification of risks and opportunities of potential investments (Drobetz et al., 2018). A board with industry expertise is expected to be better able to assess the value and the risk (Drobetz et al., 2018) of CSR investments for shareholders, as industry experts are more familiar with the company's environment and also with industry-specific CSR issues. Drobetz et al. (2018) suggests that the industry experience of board members contributes to efficient corporate governance and is particularly valuable for projects whose risks are difficult to assess. These findings are consistent with Faleye et al. (2018), who document that directors with industry experience are better at evaluating and implementing innovative activities such as R&D investments. Therefore, we expect the monitoring of CSR activities, which are also predominantly innovative in nature, to be more effective:

**H3** The higher the proportion of board members with financial and industry experience, the lower the probability of a CSR scandal.

In addition, expertise, in the form of board members' *experience*, should also play a role in effective oversight and decision-making regarding CSR activities. Previous studies have emphasized the significance of director tenure (McNulty et al., 2013). For example, Vafeas (2003) argues for the 'expertise hypothesis', which suggests that long-term tenure improves board quality due to the experience, commitment and knowledge of the firm and its business environment that



it brings. We therefore expect that the risks of CSR activities can be assessed more comprehensively as the expertise of the board members increases:

**H4** The higher the proportion of experienced board members, the lower the probability of a CSR scandal.

## *2.2. CSR scandals and firm value*

Studies have shown that a strong CSR orientation, i.e. “doing good” through CSR activities, can lead to increased shareholder value. For example, CSR has been associated with increased employee motivation and satisfaction (Edmans, 2011), increased customer loyalty (Luo and Bhattacharya, 2006), reduced cost of capital (El Ghouli et al., 2011), and enhanced reputation, social capital and trust among stakeholders and investors (Lins et al., 2017). As a result, CSR can contribute to the enhancement of shareholder value through various channels. While there is an extensive literature on positive CSR outcomes, there is a limited number of papers on non-socially responsible behaviour or CSR scandals and their impact on firm value, and the results of these studies are mixed (Groening and Kanuri, 2013; Aouadi and Marsat, 2018). Several studies suggest that CSR scandals or negative CSR news can significantly damage shareholder value (Frooman, 1997; Krüger, 2015). CSR scandals can have substantial negative consequences including costly litigation, costs associated with a negative corporate reputation, lost sales, increased capital costs and increased financial risk (Price and Sun, 2017; Swaen Swaen et al. 2021).

Others, however, find mixed results. The study by Groening and Kanuri (2013) implies a non-uniform impact of both CSR and non-socially responsible behavior on company value. For example, they find that negative stock market reactions do not always follow negative CSR events. Instead, their research suggests that the impact of CSR scandals on firm value may be nuanced. Aouadi and Marsat (2018) show that there exists a direct positive effect of CSR controversies on

firm value. However, the relation disappears when CSR controversies are interacted with CSR. Price and Sun (2017) highlight the coexistence of CSR and corporate social irresponsibility (CSI), emphasizing that incorporating CSI into CSR performance is a crucial factor for corporate value.

Overall, there is evidence that negative CSR news or events can reduce shareholder or firm value (Frooman, 1997; Klassen and McLaughlin, 1996, Krüger, 2015). However, as Lins et al. (2017) show, CSR activities build trust with stakeholders and thus social capital, which has been shown to 'pay off' and act as a protective element in the event of negative events or crises. There is a lack of evidence on the impact of negative CSR events on firm value, taking into account the existing level of CSR activities. Given that companies that are highly engaged in CSR may experience both positive CSR activities and negative CSR events (Dorfleitner et al., 2020), it is important to examine the impact of CSR scandals on firm value in the presence of “doing good”.

**H5:** Taking into account the level of CSR activities, CSR scandals have a significant impact on firm value.

### **3. Data and research design**

#### *3.1. Data*

We collect the ESG (environmental, social, and corporate governance) controversy scores and ESG scores data from London Stock Exchange Group (LSEG) Data & Analytics, board characteristics data from LSEG Eikon (previously Refinitiv or Thomson Reuters, Eikon), and financial accounting data from LSEG Datastream. The ESG controversy score measures the number of ESG-based controversies (across all categories, for example lawsuits, legislation disputes or fines) a company encounters during a fiscal year (for details see LSEG, 2023). The ESG score measures the company's ESG performance based on verifiable reported data in the

public domain (see LSEG 2023 or appendix for details). We define CSR scandals (*Scandals*) as the ratio of the ESG controversy scores to the ESG scores, which reflects CSR scandals as measured per CSR performance. This metric acknowledges the relationship between the occurrence of CSR scandals (or non-socially responsible behavior) and the extent of CSR commitment demonstrated by a company (see the findings in Strike, 2006; Lin-Hi and Müller, 2013 and Price and Sun, 2017).

We exclude financial and utility firms when constructing variables. Our final sample consists of 18,522 U.S. firm-year observations over the period of 2002-2021. Table 1 shows that the average value of CSR scandals is 25.2%, suggesting that corporate CSR-related scandals are accompanied by a firm undertaking CSR activities. With regard to board attributes, on average, there are 9 members on board, about 18% female on the board, 78% of independent board members, 57% of board members who have either industry- or financial-specific background, and each board member has been on board over 8 years.

[Insert Table 1 about here]

### 3.2. Research design

To test the relationship between board characteristics and CSR scandals, we conduct the multivariate regression model as follows.

$$Scandals = \alpha + \beta \times BoardAttributes + \gamma \times Controls + Year\ FE + Industry\ FE + \varepsilon \quad (1)$$

where *Scandals* is defined as the ratio of LSEG's ESG controversy scores to ESG scores. By definition, *Scandals* measures the annual amount of a firm's negative CSR events scaled by CSR activities, which captures the notion that the more CSR activities are, the more controversy events might occur. *BoardAttributes* include board gender diversity (*Diversity*), independent board

members (*Independent*), board members' special skills (*SpecialSkill*), and experienced board members (*Experience*). Specifically, i) *Diversity* is the percentage of female on the board; ii) *Independent* is the percentage of independent board members; iii) *SpecialSkill* measures percentage of board members who have either an industry specific background or a strong financial background; and iv) *Experience* measures the average number of years each board member has been on the board.

We further examine the impact of CSR scandals on firm value. Using Tobin's Q which is defined as market capitalization of equity plus total debt divided by total assets to proxy for firm value (*FirmValue*), we run the following multivariate regression.

$$FirmValue = \alpha + \beta \times Scandal + \gamma \times Controls + Year\ FE + Industry\ FE + \varepsilon \quad (2)$$

*Controls* in Eq. (1) and (2) represent a set of control variables as reported in the Appendix. Our controls include board- and firm-specific variables commonly used in corporate governance and social responsibility literature (Harjoto et al., 2015; Aouadi and Marsat, 2018; Bernile et al., 2018). These variables include *BoardSize* defined as the number of board members, *ExecuDiversity* which is executive members gender diversity defined as the percentage of female within executive members of the company, *WomenManager* which measures number of women managers scaled by total number of managers of the company, *FirmSize* defined as natural logarithm of total assets, *BookMkt* which is the ratio of total assets to market capitalization of equity, *Leverage* which measures the ratio of total debt to total assets, *ROA* which is return on assets defined as the ratio of net income plus after-tax interest expenses to total assets, *Cash* defined as the ratio of cash to total assets, *RD* defined as the ratio of research and development expenses to total assets, *FreeFloatNosh* which is free float number of shares, represents the total amount of share capital freely available to ordinary investors, and is expressed as a percentage of total number of shares,

and *InvetHeld* which is free float investment company held defined as the percentage of shareholdings of 5% or more held as long-term strategic holdings by investment banks or institutions seeking a long-term return. Appendix presents detailed definitions for these variables. We use the Industry Classification Benchmark (ICB)<sup>1</sup> industry code provided by LSEG Datastream. All regressions include year- and industry-fixed effects to eliminate the concern of the heterogeneous effects of time and industry. The estimated standard errors are corrected for heteroskedasticity and are clustered at the firm level.

## 4. Empirical results

### 4.1. Baseline regression results

Table 3 presents the impact of board attributes on corporate CSR scandals. The coefficients on measures of board attributes (*Diversity*, *Independent*, *SpecificSkill* and *Experience*) are all significant and negative, indicating that more diversified board, independent board members, special skilled board members, and experienced board members tend to reduce a firm's CSR scandals. The effects of board attributes on CSR scandals are also economically significant. For example, a one standard deviation increase in board *Diversity* (11.812), *Independent* (14.596), *SpecialSkill* (21.927), and *Experience* (4.237) would imply a deduction of a firm's CSR controversy events by 2.4% ( $=11.812 \times 0.002$ ), 2.9% ( $=14.596 \times 0.002$ ), 4.4% ( $=21.927 \times 0.002$ ), and 3.8% ( $=4.237 \times 0.009$ ), respectively. This impact of board gender diversity, board independence, board special skills, and board experiences represents approximately 9.4% ( $=11.812 \times 0.002 \div 0.252$ ), 11.6% ( $=14.596 \times 0.002 \div 0.252$ ), 17.4% ( $=21.927 \times 0.002 \div 0.252$ ), and 15.1% ( $=4.237 \times 0.009 \div 0.252$ ) of the average CSR scandals across all firms in our sample,

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<sup>1</sup> [icb-structure-and-definitions.xlsx \(live.com\)](https://www.lseg.com/industry-classification-benchmark-icb-structure-and-definitions.xlsx)

respectively. Our results suggest that board attributes such as *Diversity*, *Independent*, *SpecificSkill* and *Experience* help to minimize CSR scandals and negative outcomes of “doing good” through CSR activities. These findings are consistent with Bernile et al. (2018) and Griffin et al. (2021) that (gender) diversity on boards is associated with enhanced risk monitoring and a more balanced approach to risk-taking, leading to less risky and more stable corporate policies. They also confirm the importance of board independence, skills, and experience for risk assessment and monitoring (Agrawal and Chadha, 2005; Drobetz et al., 2018).

In all models in Table 3, the resulting signs of other key control variables are consistent with the literature (Aouadi and Marsat, 2018). For example, the coefficients for the firm size variable are significantly positive, which confirms that larger companies, which have more visibility and public attention, also produce more scandals when undertaking their CSR activities (Strike et al., 2006). The firm cash holding variable *Cash* is economically and statistically significant. A positive relationship between CSR scandals and firm cash holdings implies that firms with more slack resources tend to invest more in CSR activities (Margolis et al., 2009), but tend to cause more CSR scandals. By contrast, the investment company held variable *InvestHeld* is economically and statistically significant. A negative relationship between CSR scandals and free float investment company held provides evidence that long-term strategic holdings by investment banks or institutions facilitate reducing CSR scandals.

[Insert Table 3 about here]

#### 4.2. Effectiveness of board attributes

The finding of a negative relationship between board attributes and CSR scandals suggests that board attributes could be solutions for preventing CSR scandals. To provide further evidence on whether the impact of board attributes is effective and persistent, we next examine the persistent

and effective effects of board attributes on CSR scandals. Specifically, we regress one-, two-, and three-year forwarded CSR scandals on our board attribute measures.

The results in Panel A of Table 4 show a negative relationship between board attributes and one-year forwarded CSR scandals. The coefficient estimate on *Diversity* in column (1) implies that 1% increase in a firm's board gender diversity decreases CSR scandals by 0.2% out of its total CSR activities. Given that the sample mean of the CSR scandals variable is 0.252, this finding indicates a 0.8% ( $=0.002/0.252$ ) deduction of CSR scandals relative to the sample mean. Columns (2)-(4) show a statistically and economically similar negative relationship between board attributes and CSR scandals. For instance, the coefficient estimates in column (2) imply that 1% increase of board members who have either an industry specific background or a strong financial background tend to lower CSR scandals by 0.1% out of a firm's total CSR activities. This finding translates into a 0.4% ( $=0.001/0.252$ ) deduction of CSR scandals relative to its sample mean of 0.252.

The results in Panel B show a negative relationship between board attributes and two-year forwarded CSR scandals. The coefficient estimate on *Independence* in column (6) implies that 1% increase in a firm's board independence decreases CSR scandals by 0.2% out of its total CSR activities. It shows that 1% increase in independent board members lead to lower CSR scandals by 0.2% out of a firm's total CSR activities. This finding implies a decrease in 0.8% ( $=0.002/0.252$ ) of CSR scandals relative to its sample mean of 0.252. The results in Panel C show a negative relationship between board attributes and three-year forwarded CSR scandals. For example, the coefficient estimate on *Experience* in column (12) implies that one more year which experienced board members stay on the board facilitates reducing CSR scandals by 0.8% out of a firm's total CSR activities. This finding represents a 3.2% ( $=0.008/0.252$ ) deduction of CSR scandals relative to its sample mean of 0.252.

As expected, Table 3 also shows that the signs on the estimated coefficients on the control variables are consistent with previous findings in the literature. The one-, two-, and three-year forwarded CSR scandals are positively related to firm size and cash holdings, but are negatively related to investment company held. It is noteworthy that board size is negative and statistically associated with the forwarded CSR scandal variables, suggesting that a larger board size facilitates reducing future CSR scandals.

Overall, our findings reveal that the coefficients of measures of board attributes are significantly negative, indicating that more diversified board, independent board members, special skilled board members, and experienced board members are more likely to persistently reduce a firm's CSR scandals for the consequent next three years.

[Insert Table 4 about here]

#### *4.3. Effects of corporate CSR scandals on firm value*

There is an ongoing debate about the extent to which CSR concerns affect shareholder value (Groening and Kanuri, 2013; Krüger, 2015). Aouadi and Marsat (2018) show that there exists a direct positive effect of CSR controversies on firm value. However, the relation disappears when CSR controversies are interacted with CSR. We build on prior work and add to the debate by providing evidence on the channel through which CSR scandals affect firm value.

We first test whether CSR scandals per CSR activities affect firm value. The result in column (1) of Table 5 shows a statistically and economically positive relationship between CSR scandals per CSR activities and firm value. The coefficient estimate on *Scandals* implies that 1% increase in CSR negative events out of a firm's total CSR activities leads to 10.3% increase in firm value. Given that the sample mean of firm value is 2.398, this finding represents a 4.3%



(=0.103/2.398) increase of firm value relative to the sample mean. This finding suggests that CSR scandals promotes firm value, in the form that generated scandals in relation to more intensive CSR activities drive the company value.

Next, we conduct two-stage instrumental-variables-liked tests (Liang and Renneboog, 2017) to explore the channel through which CSR scandals increase firm value. Specifically, in the first stage, we regress *Donations* (as a proxy for social capital) on *Scandals*. In the second stage, we regress *TobinQ* on *Predicted Donations* obtained from the first stage.<sup>2</sup> We also control for the same control variables for each stage, which is consistent with the main test in Table 3.

Columns (3) and (4) present the results. In the first stage, we find a positive relationship between CSR scandals and *Donations*, indicating that more CSR scandals in relation to CSR activities are associated with more Donations. In the second stage, the estimated *Predicted Donations* from the first stage is positively and significantly associated with firm value. The findings suggest that the positive relationship between CSR scandals in relation to CSR and firm value could be driven by the creation of social capital. This is in line with Lins et al. 2017, whose findings suggest that CSR can build trust with stakeholders and create social capital that can act as a protective shield. So long as the firm makes any improvement on preventing its CSR negative events, the efforts which the firm puts on will have a positive impact on its firm value. Overall, we

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<sup>2</sup> We use *Donations* as a proxy for social capital. Specifically, Donations is the total amount of all donations divided by net sales or revenue in millions. Total donations = cash donation + in-kind donation (cost of products donated, employees volunteer time cost) and includes donations by the company as well as by its foundations or trusts such as product donation, charity, philanthropy, sponsorship, grant and matching contribution

find that more CSR scandals per CSR activity can increase firm value, with social capital acquired through stakeholder-oriented investments playing a role in increasing firm value.

[Insert Table 5 about here]

## 5. Addressing potential endogeneity

### 5.1. Instrumental variables approach

It is plausible that more CSR scandals promote the firm to reform or reshape its board structure and composition. To alleviate this reverse causality concern, we conduct an instrumental variables analysis. Specifically, we include two-year-lagged industry average of each board attribute measure (*IndustryBoardAttributeMeasure<sub>t-2</sub>*) in our set of instrumental variables. We calculate industry averages based on the firm's ICB industry code and year and exclude itself's board attributes from this calculation. Another instrumental variable we select is the climate policy uncertainty (CPU) index (*ClimatePolicyUncertainty*)<sup>3</sup>, which is normalized to have a mean value of 100 for the period April 1987 to August 2022 (Gavriilidis, 2021). The CPU index is constructed through searching for articles in eight leading U.S. newspapers containing the terms of "uncertainty", climate risk", "greenhouse gas emissions", "CO2", "green energy" "renewable energy" or "environmental", etc. and "regulation" or "policy", etc.

Our selected IVs must satisfy two conditions: (i) the relevance condition, in which the instruments are correlated with our measures of board attributes after conditioning on the set of control variables in our main model specification, and (ii) the exclusion restriction, where the instruments are correlated with CSR scandals only through their correlation with measures of board attributes after controlling for the set of control variables in our main model specification.

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<sup>3</sup> [https://www.policyuncertainty.com/climate\\_uncertainty.html](https://www.policyuncertainty.com/climate_uncertainty.html)

The lagged average industry board attributes should meet the relevant conditions because it persistently represents industry board structure the firm belongs to and thus will be highly correlated with an individual firm's current structure of board attributes. Further, average industry board attributes are related to industry CSR standard and CSR activities are associated with industry CSR standard. With a lag and exclusion individual firm's own board attributes from this calculation of average industry board attributes, the lagged average industry board attribute is unlikely related to individual CSR scandals. Thus, lagged average industry board attribute measures likely satisfy the exclusion restriction. The CPU index should also satisfy the relevant conditions because uncertainty of climate policy is highly correlated with board attributes. Further, the CPU index can be considered exogenous, as it takes options from the public. Given that the CPU index is exogenous, it is unlikely to be directly related to the firm's CSR performance. Thus, the CPU index is likely to meet the exclusion criteria.

Table 6 reports the two-stage least squares (2SLS) regression results. In the first-stage, we regress measures of each board attribute on two selected IVs (*IndustryBoardAttributeMeasure<sub>t-2</sub>* and *ClimatePolicyUncertainty*) and control for the set of control variables in our main model specification. The dependent variables in Panel A are *Diversity*, *Independent*, *SpecilSkill*, and *Experience*, respectively. The selected IVs are the climate policy uncertainty index (*ClimatePolicyUncertainty*) and the lagged average industry value (*IndustryBoardAttributeMeasure<sub>t-2</sub>*), which is corresponding to lagged average industry value of each board attribute (i.e., *Diversity*, *Independent*, *SpecilSkill*, and *Experience*). Columns (1)-(4) in Panel A show that *IndustryBoardAttributeMeasure<sub>t-2</sub>* and *ClimatePolicyUncertainty* are positive and significantly related to each measure of board attributes. In the second stage, we regress *Scandals* on predicted *Diversity*, *Independent*, *SpecificSkill* and *Experience* from the first

stage, respectively, and on controls for the board- and firm-specific variables. Columns (1)-(4) in Panel B show that the coefficients on the predicted value of each board attribute are all negative and statistically significant, suggesting that board attributes causally reduce CSR scandals.

[Insert Table 6 about here]

### *5.2. Entropy balancing sample regressions*

To mitigate potential concerns of selection bias arising from firms with certain board characteristics that may experience specific CSR controversy events, we perform an entropy balancing approach. An entropy balance matched sample is constructed by matching each treated observation to a group of control firms on a set of observable variables including year and industry fixed effects. Our entropy balanced sample reweights the sample observation to ensure the treatment and control groups are from similar distributions (i.e., mean, variance, and skewness) and covariate balance between the treatment and control observations (Hainmueller, 2012; Heimer and Simsek, 2019).

Panel A of Table 7 reports the mean values of all covariates for treated and controlled groups, where firms with CSR controversy events are treatment group and firms without CSR controversy events are control groups. The entropy balanced sample implies that there are minimal observable differences in firm characteristics between treatment and control groups. Panel B presents the regression results using an entropy balancing sample. The finding shows that our measures of board attributes are associated with a less CSR scandals, which is consistent with our hypothesis. This result helps to alleviate the concerns of selection bias between the treated and control firms.

[Insert Table 7 about here]

## 6. Conclusion

The extant literature in corporate governance suggests that certain board characteristics provide effective monitoring services and act as a governance mechanism in curbing managers from undertaking excessive risks (Jiraporn and Lee, 2018; Bernile et al., 2018). In this paper, using 18,522 U.S. firm-year observations in 2002–2021, we find a negative relationship between board attributes (i.e., board gender diversity, independent board members, board member special skills, and experienced board) and CSR scandals. We also use one-, two-, and three-year forwarded CSR scandals to verify the effectiveness and persistence of the impact of board attributes. Further, the results from instrumental variables regressions and entropy balancing approach imply that our findings are robust to accounting for endogeneity. The findings are consistent with our hypothesis that certain board attributes facilitate reducing CSR scandals.

There is still on-going debate whether negative CSR events promote or impede firm value. For instance, Groening and Kanuri (2013) imply a non-uniform impact of both CSR and non-socially responsible behavior on company value. Aouadi and Marsat (2018) show that there exists a direct positive effect of CSR controversies on firm value. However, the relation disappears when CSR controversies are interacted with CSR. Price and Sin (2017) highlight the coexistence of CSR and CSI, emphasizing that incorporating CSI into CSR performance is a crucial factor for corporate value. We show that our measure of CSR scandals, which also take into account of CSR activities, is positively associated with firm value. Evidence from two-stage instrumental-variables-liked tests (Liang and Renneboog, 2017) reveals the social capital channel through which our measure of CSR scandals increases firm value. Overall, our findings imply that board attributes, such as

board gender diversity, independence, special skills, and experience, are effective in preventing CSR scandals and thus preserving firm value.

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## Appendix. Variable Definitions

Variables	Description	Data sources
<i>Scandals</i>	The ratio of LSEG's Environmental, Social, and Governance (ESG) controversies score to ESG score. The ESG score serves as an assessment of a company's ESG performance, drawing upon information reported within the ESG pillars.	London Stock Exchange Group (LSEG) Data & Analytics
<i>TobinQ</i>	Market capitalization of equity plus total debt divided by total assets	Datastream
<i>Diversity</i>	Board gender diversity is the percentage of female on the board	Eikon
<i>Independent</i>	Independent board members is percentage of independent board members as reported by the company	Eikon
<i>SpecialSkill</i>	Board specific skills is the percentage of board members who have either an industry specific background or a strong financial background	Eikon
<i>Experience</i>	Experienced board measures the average number of years each board member has been on the board	Eikon
<i>BoardSize</i>	The number of board members	Eikon
<i>ExecuDiversity</i>	Executive members gender diversity is the percentage of female within executive members of the company	Eikon
<i>WomenManager</i>	Percentage of women managers, which is number of women managers scaled by total number of managers of the company	Eikon
<i>FirmSize</i>	Natural logarithm of total assets	Datastream
<i>BookMkt</i>	The ratio of total assets to market capitalization of equity	Datastream
<i>Leverage</i>	The ratio of total debt to total assets	Datastream
<i>ROA</i>	The ratio of net income plus after-tax interest expenses to total assets	Datastream
<i>Cash</i>	The ratio of cash to total assets	Datastream
<i>RD</i>	The ratio of research and development expenses to total assets	Datastream
<i>FreeFloatNosh</i>	Free float number of shares, which represents the total amount of share capital freely available to ordinary investors and is expressed as a percentage of total number of shares.	Datastream

*InvestHeld* Free float investment company held. The percentage of share holdings of 5% or more held as long-term strategic holdings by investment banks or institutions seeking a long-term return. Datastream

Table 1. Summary statistics

This table reports the summary statistics for key variables used in the main regression analysis. The appendix provides detailed descriptions of the variables.

Variables	N	P25	Mean	Median	P75	S.D.
<i>Scandals</i>	18522	0.000	0.252	0.000	0.000	0.731
<i>TobinQ</i>	18522	1.007	2.398	1.523	2.628	5.012
<i>Diversity</i>	18522	10.000	17.596	16.670	25.000	11.812
<i>Independent</i>	18522	71.430	77.797	81.820	88.890	14.596
<i>SpecialSkill</i>	18522	42.860	57.021	57.140	71.430	21.927
<i>Experience</i>	18522	5.390	8.357	8.000	10.680	4.237
<i>BoardSize</i>	18522	8.000	9.215	9.000	11.000	2.863
<i>ExecuDiversity</i>	18522	0.000	13.807	12.500	22.220	13.637
<i>WomenManager</i>	18522	0.000	4.704	0.000	0.000	12.661
<i>FirmSize</i>	18522	13.518	14.705	14.819	15.930	1.885
<i>BookMkt</i>	18522	0.429	1.468	0.840	1.536	3.538
<i>Leverage</i>	18522	0.090	0.276	0.250	0.408	0.243
<i>ROA</i>	18522	-0.500	-1.558	4.980	9.170	42.064
<i>Cash</i>	18522	0.023	0.146	0.080	0.182	0.191
<i>RD</i>	18522	0.000	0.060	0.002	0.051	0.183
<i>FreeFloatNosh</i>	18522	73.000	79.546	85.000	93.000	19.887
<i>InvestHeld</i>	18522	0.000	10.822	9.000	16.000	10.156

Table 2. Sample distribution

This table reports sample distribution of key dependent and independent variables by year and industry.

Year/Industry	N	Scandals	TobinQ	Diversity	Independent	SpecificSkill	Experience
<i>Panel A: Sample distribution by year</i>							
2002	207	0.547	1.769	11.333	46.960	20.630	8.760
2003	207	0.510	2.053	12.120	67.038	47.007	8.637
2004	291	0.425	2.143	12.680	71.149	53.673	8.385
2005	331	0.397	2.032	13.109	75.948	63.365	8.548
2006	340	0.434	2.001	13.503	76.555	55.369	8.700
2007	371	0.367	2.014	13.754	78.012	52.730	8.520
2008	467	0.331	1.269	13.279	78.921	55.036	8.808
2009	529	0.387	1.630	13.120	78.005	58.271	9.002
2010	556	0.550	1.792	13.211	77.891	58.017	9.044
2011	571	0.503	1.612	13.804	78.824	57.279	9.101
2012	575	0.497	1.659	14.507	79.531	57.024	9.218
2013	582	0.440	1.954	15.227	80.059	57.064	9.388
2014	604	0.428	2.094	16.063	79.699	49.304	9.235
2015	1006	0.128	2.134	15.504	78.833	55.682	8.873
2016	1430	0.119	2.139	15.312	78.375	56.968	8.715
2017	1901	0.095	2.643	15.030	76.943	59.144	8.331
2018	2032	0.128	2.201	17.244	77.801	59.309	8.188
2019	2188	0.178	2.371	19.952	78.435	56.366	7.993
2020	2396	0.268	3.230	22.414	78.582	58.246	7.667
2021	1938	0.200	3.377	25.593	79.463	60.151	7.547
<i>Panel B: Sample distribution by industry</i>							
Technology	2272	0.231	3.337	16.857	78.077	60.051	8.370
Telecommunications	549	0.423	1.831	16.197	72.870	60.030	8.676
Health Care	3502	0.204	3.708	17.966	78.579	59.644	6.942
Real Estate	1469	0.074	1.551	16.751	76.505	61.925	8.790
Consumer Discretionary	3824	0.355	2.016	20.211	75.460	53.215	8.942
Consumer Staples	1055	0.360	2.222	21.360	75.093	51.450	8.936
Industrials	3616	0.194	1.795	16.803	80.951	54.272	8.972

Basic Materials	911	0.245	1.529	15.884	79.893	56.348	8.172
Energy	1324	0.323	1.984	12.197	77.572	61.596	7.756

Table 3. The impact of board attributes on corporate scandals

This table presents the estimation results of regressing corporate scandals on four measures of board attributes, controls, as well as year- and industry-fixed effects. The appendix provides detailed descriptions of the variables. The industry controls are based on the ICB industry code. t-statistics based on robust standard errors with clustering at the firm level are reported in parentheses. \*\*\*, \*\*, and \* denote two-tailed statistical significance at the 1, 5, and 10% levels, respectively.

VARIABLES	(1) <i>Scandals</i>	(2) <i>Scandals</i>	(3) <i>Scandals</i>	(4) <i>Scandals</i>
<i>Diversity</i>	-0.002*** (-2.89)			
<i>Independent</i>		-0.002** (-2.24)		
<i>SpecialSkill</i>			-0.002*** (-4.79)	
<i>Experience</i>				-0.009*** (-4.61)
<i>BoardSize</i>	0.004 (0.91)	0.004 (0.87)	0.002 (0.52)	0.004 (0.88)
<i>ExecuDiversity</i>	-0.000 (-0.11)	-0.000 (-0.67)	-0.001 (-1.01)	-0.001 (-1.26)
<i>WomenManager</i>	-0.000 (-0.69)	-0.000 (-0.85)	-0.001 (-1.24)	-0.001 (-1.13)
<i>FirmSize</i>	0.087*** (11.97)	0.086*** (11.75)	0.085*** (11.73)	0.084*** (11.64)
<i>BookMkt</i>	0.002 (1.12)	0.002 (1.10)	0.002 (1.20)	0.002 (1.20)
<i>Leverage</i>	-0.053* (-1.85)	-0.051* (-1.77)	-0.053* (-1.86)	-0.066** (-2.29)
<i>ROA</i>	-0.000* (-1.65)	-0.000 (-1.57)	-0.000 (-1.55)	-0.000 (-1.37)
<i>Cash</i>	0.278*** (5.46)	0.280*** (5.47)	0.273*** (5.38)	0.250*** (4.89)
<i>RD</i>	0.041 (1.04)	0.042 (1.05)	0.043 (1.08)	0.043 (1.15)
<i>FreeFloatNosh</i>	-0.001** (-2.00)	-0.001 (-1.56)	-0.001** (-2.15)	-0.001* (-1.95)
<i>InvestHeld</i>	-0.004*** (-5.09)	-0.003*** (-4.52)	-0.003*** (-4.93)	-0.004*** (-5.24)
<i>Constant</i>	-0.787***	-0.736***	-0.721***	-0.673***

	(-6.47)	(-6.06)	(-5.93)	(-5.50)
<i>Year effects</i>	Yes	Yes	Yes	Yes
<i>Industry effects</i>	Yes	Yes	Yes	Yes
<i>N</i>	18,522	18,522	18,522	18,522
<i>R</i> <sup>2</sup>	0.083	0.083	0.084	0.084

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Table 4. The effectiveness of board attributes

This table presents the estimation results of regressing one-, two-, and three-year forward corporate scandals in Panels A, B, and C, respectively, on four measures of board attributes, controls, as well as year- and industry-fixed effects. The appendix provides detailed descriptions of the variables. The industry controls are based on the ICB industry code. t-statistics based on robust standard errors with clustering at the firm level are reported in parentheses. \*\*\*, \*\*, and \* denote two-tailed statistical significance at the 1, 5, and 10% levels, respectively.

VARIABLES	Panel A: One year forward				Panel B: Two years forward				Panel C: Three years forward			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	<i>Scandals<sub>t+1</sub></i>	<i>Scandals<sub>t+1</sub></i>	<i>Scandals<sub>t+1</sub></i>	<i>Scandals<sub>t+1</sub></i>	<i>Scandals<sub>t+2</sub></i>	<i>Scandals<sub>t+2</sub></i>	<i>Scandals<sub>t+2</sub></i>	<i>Scandals<sub>t+2</sub></i>	<i>Scandals<sub>t+3</sub></i>	<i>Scandals<sub>t+3</sub></i>	<i>Scandals<sub>t+3</sub></i>	<i>Scandals<sub>t+3</sub></i>
<i>Diversity</i>	-0.002*** (-2.98)				-0.002** (-2.15)				-0.002** (-2.24)			
<i>Independent</i>		-0.002** (-2.01)				-0.002** (-2.38)				-0.002** (-2.31)		
<i>SpecialSkill</i>			-0.001*** (-3.22)				-0.002*** (-4.29)				-0.002*** (-4.04)	
<i>Experience</i>				-0.009*** (-4.00)				-0.010*** (-4.14)				-0.008*** (-3.33)
<i>BoardSize</i>	-0.009* (-1.82)	-0.010* (-1.90)	-0.012** (-2.39)	-0.009* (-1.89)	-0.013** (-2.45)	-0.013** (-2.48)	-0.016*** (-3.09)	-0.013** (-2.48)	-0.014*** (-2.62)	-0.014*** (-2.68)	-0.017*** (-3.30)	-0.014*** (-2.68)
<i>ExecuDiversity</i>	0.000 (0.51)	-0.000 (-0.11)	-0.000 (-0.43)	-0.000 (-0.69)	0.000 (0.54)	0.000 (0.08)	-0.000 (-0.35)	-0.000 (-0.60)	0.001 (1.01)	0.000 (0.62)	0.000 (0.17)	-0.000 (-0.01)
<i>WomenManager</i>	-0.000 (-0.56)	-0.000 (-0.73)	-0.001 (-1.04)	-0.001 (-1.04)	-0.000 (-0.21)	-0.000 (-0.30)	-0.000 (-0.64)	-0.000 (-0.59)	-0.000 (-0.24)	-0.000 (-0.31)	-0.000 (-0.63)	-0.000 (-0.57)
<i>FirmSize</i>	0.100*** (12.99)	0.099*** (12.83)	0.099*** (13.07)	0.097*** (12.74)	0.098*** (11.40)	0.098*** (11.32)	0.098*** (11.46)	0.095*** (11.08)	0.106*** (11.03)	0.106*** (11.03)	0.105*** (11.09)	0.102*** (10.70)
<i>BookMkt</i>	0.000 (0.13)	0.000 (0.07)	0.001 (0.19)	0.000 (0.16)	0.003 (1.59)	0.003 (1.45)	0.003 (1.58)	0.003 (1.54)	-0.000 (-0.14)	-0.001 (-0.35)	-0.000 (-0.16)	-0.001 (-0.19)
<i>Leverage</i>	-0.042 (-1.26)	-0.039 (-1.18)	-0.041 (-1.23)	-0.053 (-1.60)	-0.082** (-2.36)	-0.080** (-2.30)	-0.082** (-2.35)	-0.096*** (-2.73)	-0.078* (-1.81)	-0.076* (-1.76)	-0.077* (-1.80)	-0.090** (-2.10)
<i>ROA</i>	-0.001** (-2.15)	-0.001** (-2.08)	-0.001** (-2.06)	-0.000* (-1.88)	-0.001 (-1.60)	-0.001 (-1.56)	-0.001 (-1.54)	-0.000 (-1.36)	-0.001** (-2.08)	-0.001** (-2.04)	-0.001** (-2.03)	-0.001** (-1.97)
<i>Cash</i>	0.267*** (5.19)	0.269*** (5.22)	0.265*** (5.15)	0.241*** (4.62)	0.207*** (3.58)	0.212*** (3.68)	0.207*** (3.60)	0.180*** (3.07)	0.252*** (3.59)	0.259*** (3.69)	0.254*** (3.62)	0.229*** (3.22)
<i>RD</i>	-0.018 (-0.42)	-0.019 (-0.43)	-0.019 (-0.43)	-0.011 (-0.26)	-0.007 (-0.11)	-0.008 (-0.12)	-0.009 (-0.13)	-0.002 (-0.03)	-0.049 (-0.86)	-0.049 (-0.86)	-0.052 (-0.91)	-0.045 (-0.80)
<i>FreeFloatNosh</i>	-0.001* (-1.80)	-0.001 (-1.41)	-0.001** (-1.97)	-0.001* (-1.78)	-0.001** (-1.99)	-0.001 (-1.47)	-0.001** (-2.14)	-0.001* (-1.91)	-0.001*** (-2.60)	-0.001** (-2.08)	-0.001*** (-2.74)	-0.001** (-2.52)
<i>InvestHeld</i>	-0.003*** (-4.70)	-0.003*** (-4.08)	-0.003*** (-4.63)	-0.004*** (-4.92)	-0.003*** (-4.11)	-0.003*** (-3.58)	-0.003*** (-3.92)	-0.003*** (-4.27)	-0.003*** (-2.80)	-0.002** (-2.30)	-0.003*** (-2.60)	-0.003*** (-2.90)
<i>Constant</i>	-0.884*** (-6.82)	-0.828*** (-6.39)	-0.821*** (-6.38)	-0.768*** (-5.87)	-0.813*** (-6.22)	-0.760*** (-5.89)	-0.745*** (-5.80)	-0.690*** (-5.21)	-0.955*** (-6.34)	-0.904*** (-5.99)	-0.879*** (-5.85)	-0.843*** (-5.49)
<i>Year effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Industry effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	16,033	16,033	16,033	16,033	13,644	13,644	13,644	13,644	11,478	11,478	11,478	11,478

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$R^2$	0.085	0.085	0.085	0.087		0.085	0.085	0.086	0.087		0.091	0.092	0.093	0.092
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Table 5. The impact of corporate CSR scandals on firm value

This table presents estimation results of corporate CSR scandals on firm value, as well as the two-stage instrumental-variables-liked estimation results testing the channel through which corporate scandals are associated with firm value. Column (1) reports the results of regressing firm value (*TobinQ*) on corporate CSR scandals (*Scandal*). Column (2) presents regression results from the first stage obtained by regressing *Donations* on corporate scandals (*Scandals*), controls, as well as year- and industry-fixed effects. Column (3) shows regression results from the second stage obtained by regressing firm value (*TobinQ*) on the predicted donations (*Predicted Donations*) obtained from the first stage. The appendix provides detailed descriptions of the variables. The industry controls are based on the ICB industry code. t-statistics based on robust standard errors with clustering at the firm level are reported in parentheses. \*\*\*, \*\*, and \* denote two-tailed statistical significance at the 1, 5, and 10% levels, respectively.

VARIABLES	(1)	(2)	(3)
	<i>TobinQ</i>	First-stage results <i>Donations</i>	Second-stage results <i>TobinQ</i>
<i>Scandals</i>	0.216*** (4.31)	187.138* (1.85)	
<i>Predicted Donations</i>			0.001* (1.72)
<i>BoardSize</i>	0.035 (1.40)	25.958 (1.04)	0.005 (0.12)
<i>ExecuDiversity</i>	-0.004 (-1.06)	3.369 (1.02)	-0.007 (-1.23)
<i>WomenManager</i>	0.015*** (3.05)	30.674*** (3.29)	-0.020 (-0.77)
<i>FirmSize</i>	-0.419*** (-2.87)	338.656*** (3.58)	-0.809*** (-2.94)
<i>BookMkt</i>	-0.103*** (-2.70)	-19.150 (-1.10)	-0.081** (-2.13)
<i>Leverage</i>	0.531* (1.69)	344.205 (1.12)	0.135 (0.33)
<i>ROA</i>	-0.004 (-0.48)	2.075 (1.57)	-0.006 (-0.78)
<i>Cash</i>	1.832*** (3.43)	240.894 (0.47)	1.555* (1.92)
<i>RD</i>	2.595 (1.51)	575.293 (1.53)	1.933 (1.05)
<i>FreeFloatNosh</i>	0.003 (0.92)	7.896 (1.53)	-0.006 (-1.00)
<i>InvestHeld</i>	-0.008 (-1.62)	-0.684 (-0.12)	-0.007 (-0.89)
<i>Constant</i>	8.466*** (3.97)	-6,007.359*** (-3.10)	15.385*** (3.40)
<i>Year effects</i>	Yes	Yes	Yes
<i>Industry effects</i>	Yes	Yes	Yes
<i>N</i>	18,522	18,522	18,522
<i>R</i> <sup>2</sup>	0.087	0.028	N/A



Table 6. Endogeneity: Instrumental variables approach

This table presents the results from two-stage least squares (2SLS) regressions. Panel A presents the first-stage result, where we regress the measures of board attributes (*Diversity*, *Independence*, *SpecialSkill*, and *Experience*) on industry average of its corresponding measures of board attributes (*IndustryBoardAttributeMeasure<sub>t-2</sub>*) at the period of *t-2* and climate policy uncertainty (*ClimatePolicyUncertainty*), controls, as well as year- and industry-fixed effects. Panel B reports the second-stage results, where we regress corporate scandals (*Scandals*) on the predicted value (*Predicted Diversity*, *Predicted Independence*, *Predicted SpecialSkill*, and *Predicted Experience*) from the first stage, respectively. The appendix provides detailed descriptions of the variables. The industry controls are based on the ICB industry code. t-statistics based on robust standard errors with clustering at the firm level are reported in parentheses. \*\*\*, \*\*, and \* denote two-tailed statistical significance at the 1, 5, and 10% levels, respectively.

<i>Panel A: First stage results</i>				
VARIABLES	(1)	(2)	(3)	(4)
	<i>Diversity</i>	<i>Independent</i>	<i>SpecificSkill</i>	<i>Experience</i>
<i>IndustryBoardAttributeMeasure<sub>t-2</sub></i>	0.190** (2.13)	0.290*** (3.95)	0.159** (2.07)	0.473*** (5.89)
<i>ClimatePolicyUncertainty</i>	0.075*** (11.53)	0.019*** (3.49)	0.038*** (3.84)	0.004** (2.22)
<i>BoardSize</i>	0.199*** (2.73)	0.195** (2.09)	-0.783*** (-3.47)	0.032 (1.14)
<i>ExecuDiversity</i>	0.191*** (14.56)	0.060*** (4.82)	-0.064*** (-3.02)	-0.022*** (-4.42)
<i>WomenManager</i>	0.086*** (7.90)	0.056*** (4.54)	-0.056** (-2.50)	-0.004 (-0.92)
<i>FirmSize</i>	1.289*** (10.60)	1.066*** (6.79)	0.700** (2.52)	-0.051 (-0.89)
<i>BookMkt</i>	-0.258*** (-4.13)	-0.314*** (-2.89)	-0.102 (-1.56)	-0.016 (-0.66)
<i>Leverage</i>	-0.925 (-1.36)	0.232 (0.27)	-1.699 (-1.43)	-1.618*** (-4.64)
<i>ROA</i>	-0.004 (-1.14)	0.005 (1.28)	0.009 (1.44)	0.010** (1.99)
<i>Cash</i>	-0.198 (-0.22)	0.577 (0.55)	-3.288* (-1.92)	-2.896*** (-6.74)
<i>RD</i>	0.591 (0.53)	1.089 (0.75)	1.926 (1.01)	0.288 (0.37)
<i>FreeFloatNosh</i>	0.056*** (5.77)	0.191*** (11.89)	0.030* (1.87)	0.014*** (3.69)
<i>InvestHeld</i>	0.084*** (5.43)	0.265*** (13.24)	0.169*** (6.15)	0.006 (0.98)
<i>Constant</i>	-23.155*** (-11.90)	16.412*** (2.63)	40.886*** (6.24)	3.759*** (3.25)
<i>Year effects</i>	Yes	Yes	Yes	Yes
<i>Industry effects</i>	Yes	Yes	Yes	Yes
<i>N</i>	18,108	18,108	18,108	18,108

$R^2$	0.297	0.179	0.055	0.089
<i>Panel B: Second stage results</i>				
VARIABLES	(1) <i>Scandals</i>	(2) <i>Scandals</i>	(3) <i>Scandals</i>	(4) <i>Scandals</i>
<i>Predicted Diversity</i>	-0.005*** (-2.71)			
<i>Predicted Independent</i>		-0.021*** (-2.94)		
<i>Predicted SpecialSkill</i>			-0.013* (-1.83)	
<i>Predicted Experience</i>				-0.044** (-2.30)
<i>BoardSize</i>	0.007 (1.51)	0.009* (1.86)	-0.005 (-0.53)	0.007 (1.56)
<i>ExecuDiversity</i>	0.001 (0.90)	0.001 (1.18)	-0.001** (-2.00)	-0.002** (-2.28)
<i>WomenManager</i>	0.000 (0.13)	0.001 (0.99)	-0.001** (-2.24)	-0.001** (-2.47)
<i>FirmSize</i>	0.099*** (13.57)	0.115*** (11.46)	0.101*** (11.57)	0.096*** (13.09)
<i>BookMkt</i>	0.004 (1.24)	-0.002 (-0.54)	0.003 (1.13)	0.003 (0.94)
<i>Leverage</i>	-0.096*** (-3.29)	-0.081** (-2.46)	-0.117*** (-3.30)	-0.166*** (-3.94)
<i>ROA</i>	-0.000** (-2.09)	-0.000 (-1.35)	-0.000 (-1.30)	0.000 (0.28)
<i>Cash</i>	0.299*** (5.83)	0.310*** (5.67)	0.248*** (4.08)	0.141* (1.79)
<i>RD</i>	0.019 (0.46)	0.043 (0.86)	0.049 (1.03)	0.052 (1.27)
<i>FreeFloatNosh</i>	-0.001 (-1.24)	0.003** (1.98)	-0.001 (-0.90)	-0.000 (-0.59)
<i>InvestHeld</i>	-0.003*** (-4.51)	0.002 (0.74)	-0.002 (-1.03)	-0.004*** (-5.04)
<i>Constant</i>	-1.149*** (-12.92)	-0.219 (-0.69)	-0.358 (-0.84)	-0.781*** (-4.09)
<i>Year effects</i>	Yes	Yes	Yes	Yes
<i>Industry effects</i>	Yes	Yes	Yes	Yes
<i>N</i>	18,108	18,108	18,108	18,108
$R^2$	0.064	n/a	n/a	0.028

Table 7. Endogeneity: Entropy balancing analyses

This table presents the estimation results of regressing corporate scandals on four measures of board attributes using entropy balancing analyses. Panel A reports the mean values of all covariates for treated and controlled groups, where firms with CSR controversy events are treatment group and firms without CSR controversy events are control groups. Panel B reports the regression results using an entropy balancing analyses. Year- and industry-fixed effects are included in all regressions. The appendix provides detailed descriptions of the variables. The industry controls are based on the ICB industry code. t-statistics based on robust standard errors with clustering at the firm level are reported in parentheses. \*\*\*, \*\*, and \* denote two-tailed statistical significance at the 1, 5, and 10% levels, respectively.

<i>Panel A: Differences in covariates</i>				
Variables	Treatment	Control		
		Before matching	After matching	
<i>BoardSize</i>	10.740	8.837	10.740	
<i>ExecuDiversity</i>	15.270	13.440	15.270	
<i>WomenManager</i>	9.812	3.437	9.812	
<i>FirmSize</i>	16.310	14.310	16.310	
<i>BookMkt</i>	1.603	1.435	1.603	
<i>Leverage</i>	0.284	0.274	0.284	
<i>ROA</i>	4.261	-3.002	4.260	
<i>Cash</i>	0.108	0.155	0.108	
<i>RD</i>	0.035	0.066	0.035	
<i>FreeFloatNosh</i>	84.940	78.210	84.940	
<i>InvestHeld</i>	7.859	11.560	7.859	
<i>Panel B: Entropy balancing sample regressions</i>				
VARIABLES	(1)	(2)	(3)	(4)
	<i>Scandals</i>	<i>Scandals</i>	<i>Scandals</i>	<i>Scandals</i>
<i>Diversity</i>	-0.007*** (-3.57)			
<i>Independent</i>		-0.004** (-2.30)		
<i>SpecialSkill</i>			-0.004*** (-4.54)	
<i>Experience</i>				-0.023*** (-3.47)
<i>BoardSize</i>	-0.003 (-0.61)	-0.003 (-0.75)	-0.004 (-0.97)	-0.001 (-0.22)
<i>ExecuDiversity</i>	-0.001 (-0.89)	-0.002 (-1.58)	-0.003** (-2.07)	-0.003** (-2.36)
<i>WomenManager</i>	-0.002** (-2.01)	-0.002** (-2.47)	-0.003*** (-2.82)	-0.002** (-2.52)
<i>FirmSize</i>	-0.117*** (-6.37)	-0.123*** (-6.51)	-0.131*** (-6.88)	-0.130*** (-6.74)
<i>BookMkt</i>	0.006 (1.46)	0.006 (1.38)	0.007 (1.55)	0.006 (1.36)
<i>Leverage</i>	-0.073	-0.057	-0.060	-0.090

	(-0.79)	(-0.62)	(-0.64)	(-0.95)
<i>ROA</i>	-0.001**	-0.001**	-0.001**	-0.001**
	(-2.24)	(-2.14)	(-2.22)	(-2.28)
<i>Cash</i>	0.296	0.281	0.281	0.226
	(1.62)	(1.53)	(1.54)	(1.22)
<i>RD</i>	-0.368***	-0.369***	-0.387***	-0.378***
	(-3.74)	(-3.89)	(-4.26)	(-4.30)
<i>FreeFloatNosh</i>	-0.004**	-0.003**	-0.004***	-0.003**
	(-2.56)	(-2.20)	(-2.79)	(-2.22)
<i>InvestHeld</i>	-0.007***	-0.007**	-0.007***	-0.007***
	(-2.78)	(-2.57)	(-2.85)	(-2.72)
<i>Constant</i>	3.211***	3.358***	3.492***	3.495***
	(9.60)	(9.87)	(10.11)	(10.20)
<i>Year effects</i>	Yes	Yes	Yes	Yes
<i>Industry effects</i>	Yes	Yes	Yes	Yes
<i>N</i>	18,522	18,522	18,522	18,522
<i>R</i> <sup>2</sup>	0.065	0.064	0.067	0.068

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