Corporate social responsibility misconduct and formation of board interlocks☆

Yujie Wang [a], Albert Tsang [b], Yi Xiang [c,*], Daifei (Troy) Yao [d]

[a] *School of Business, Central South University, China*
[b] *Business School, Southern University of Science and Technology, China*
[c] *School of Accounting and Finance, The Hong Kong Polytechnic University, Hong Kong*
[d] *Griffith Business School, Griffith University, Australia*

A B S T R A C T

Corporate social responsibility (CSR) misconduct often negatively impacts firms and damages their reputation. Using data on U.S. listed firms from 2002 to 2018, we demonstrate that firms are more likely to establish board interlocks with firms that have better CSR performance after a CSR-related violation than with other firms. Furthermore, this relationship is more pronounced in violating firms that have a greater incentive to maintain their reputation than in other firms. We also find that the capital market and the media react positively to board interlock announcements by violating firms. However, we find no improvement in future CSR performance or a reduced likelihood of future CSR misconduct after the formation of such board interlocks. Altogether, our findings suggest that establishing board interlocks with firms that have better CSR performance is an effective signaling strategy for reputation management for firms engaging in CSR misconduct.

1. Introduction

Corporations are strongly criticized for irresponsible behavior as witnessed in the cases of Enron, WorldCom and, more recently, Volkswagen, British Petroleum, and Wells Fargo. In the wake of such scandals, many studies attempt to deepen our understanding of corporate social responsibility (CSR) by extensively examining the incentives and consequences of CSR, also termed "doing good" (Orlitzky et al., 2011; Aguinis and Glavas, 2012; Becchetti et al., 2018; Jha et al., 2022). Unlike CSR, corporate social irresponsibility (CSI) is described by early studies as corporate activities that, intentionally or unintentionally, harm stakeholders and society (Scherer and Palazzo, 2007; Riera and Iborra, 2017; Becchetti and Manfredonia, 2022). Research consistently demonstrates that CSI behaviors negatively affect firms and their stakeholders through a considerable decrease in firm value (Karpoff et al., 2005; Karpoff et al., 2008), difficulty in attracting customers and investors (Sweetin et al., 2013), and reputational losses (Grappi et al., 2013). However, despite the negative consequences, we continue to see frequent irresponsible corporate behavior (Putrevu et al., 2012; Lin-Hi and Müller, 2013).

Given the severe consequences of CSR-related violations, several studies explore how firms protect or repair their reputation when violations are discovered. Recent studies find that firms with higher litigation risk due to misconduct invest more in CSR, such as charitable contributions (Koehn and Ueng, 2009; Shu and Wong, 2018; Xia et al., 2019). However, such investments are costly and are likely to affect a firm's reputation in the long term. Other studies on reputation repair focus on how firms minimize reputational damage using impression management and communication strategies, which include apologies, expressions of regret, promises of action, excuses, justifications, and denial (Bundy et al., 2021). Collectively, the findings of these studies suggest that firms are eager to find strategies to mitigate the negative consequences of CSR violations. However, our understanding of how firms respond to CSI remains limited. Therefore, we extend these studies by identifying an alternative corporate strategy for reputation management—establishing board interlocks after a CSR violation. This study contributes to the CSR and corporate governance literature by answering the following questions. (1) Are firms that commit CSR

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violations more likely to form board interlocks after a violation is discovered? (2) If so, what types of firms are they likely to connect with?

In this study, we posit that violating firms form board interlocks as a means of reputation management to signal their attempt to restore their reputation. The image of a firm is determined by the other firms with which it is connected. Research shows that when an interlocking director is affiliated with another firm that has a good reputation, this relationship positively affects the perceived quality of the focal firm (Certo, 2003). By establishing a well-connected board of directors, firms send a strong signal to investors and the public that they have a new and improved capacity for board monitoring (Carpenter and Westphal, 2001; Francis et al., 2012). Furthermore, interlocked directors help repair the focal firm's reputation by assuring investors and the public of their legitimacy, as a firm with networked directors indicates its connections with other legitimate organizations and that it will adhere to their ethical standards (Filatotchev et al., 2018). Thus, we expect firms to deliberately seek interlocking directorates with firms that are considered highly legitimate to influence investors, especially after a CSR violation is discovered. In the case of CSR violations, we expect violating firms to be more likely to connect with firms that have better CSR performance to divert stakeholders' attention from the negative event and/or to gain positive attributions from stakeholders.

We examine our research questions using data on U.S. listed firms from 2002 to 2018. We obtain data on CSR violations from Violation Tracker and measure such violations on three dimensions: incidence of violations, number of violations, and the severity of the violation. We first test whether firms that commit CSR violations are more likely to build new board connections than other firms. Next, we examine whether these violations are associated with the focal firms' decision to form an interlocking board with firms that have better CSR performance.

Our empirical tests yield two major findings. As hypothesized, we find that firms that commit CSR violations and firms with a greater incidence of or more severe violations are more likely to appoint directors from other listed firms. These findings are economically significant. For instance, a one standard deviation increase in the number of CSR-related violations leads to a 2.97% increase in the standard deviation of the number of new board connections. Furthermore, we find that firms with a greater incidence of or more severe CSR violations are more likely to appoint directors from other listed firms with better CSR performance. Regarding the economic significance of our results, firms with a one standard deviation increase in the number of CSR violations tend to connect with firms with an 11.21% higher standard deviation in CSR performance. We perform several tests, including a difference-in-differences (DID) analysis, entropy balance matching (EBM), and impact threshold for a confounding variable (ITCV), to address endogeneity. We also use alternative measures of CSR performance and alternative models to check the robustness of our results. The findings of these endogeneity and sensitivity tests support our main results that firms that commit CSR violations have a greater incentive to repair their damaged reputation by pairing with legitimate firms, especially firms with a good reputation for CSR performance, to signal their attempt to improve their CSR practices.

The results of the cross-sectional tests show that the documented relationship is more pronounced in (1) firms that are more committed to improving their CSR performance (proxied by the existence of a CSR committee, the willingness to provide external assurance on their CSR disclosures, the publication of a stand-alone CSR report, and the link between CSR performance and executive compensation); (2) firms with higher visibility (proxied by more analysts following the firms and greater coverage by the media and CSR rating agencies); and (3) firms with limited resources to invest in substantive CSR activities in the short term (proxied by greater financial constraints) than in other firms. We also find that violating firms are more likely to establish board interlocks with firms that have a better CSR reputation following a CSR violation than with other firms.

We perform several additional analyses. First, we find that both the capital market and the media react positively to the announcement of a board interlock, which supports the signaling effect of board interlocks. Second, we provide little evidence that a firm's bad reputation spills over to the interlocked firms. Indeed, our results show that firms interlocked with firms accused of CSR violations do not suffer reputational damage. Third, we do not find evidence that forming board interlocks with firms that have better CSR performance after a CSR violation is associated with better CSR performance and a decrease CSR misconduct by the focal firm in the future. However, we find that CEOs are less likely to be dismissed after forming a board interlock. All of these findings suggest that forming board interlocks is a reputation management strategy that has no real effect on the future CSR performance and CSR misconduct of the focal firms.

Our study contributes to the literature in several ways. First, conceptually, studies show that "doing good" (i.e., CSR) and "avoiding bad" (i.e., CSI) are distinct behaviors (Arora and Dharwadkar, 2011; Riera and Iborra, 2017). Research predominantly focuses on the implications of positive CSR practices (e.g., Greening and Turban, 2000; Orlitzky et al., 2003; Choi and Wang, 2009) and pays little attention to irresponsible corporate behaviors (Chiu and Sharfman, 2018). We respond to the increasing need to study CSI by examining the appointment of directors from listed firms that have better CSR performance following a CSR violation (Hoi et al., 2013; Dunbar et al., 2020).

Second, a growing body of literature explores how firms protect or repair their reputation following corporate misconduct (Bundy et al., 2021; Chahine et al., 2021). Several studies examine specific actions taken by firms to repair damaged stakeholder relationships, such as improving corporate governance (Farber, 2005), dismissing senior management (Wilson, 2008), redesigning executives' incentives, and strengthening external monitoring functions (Cheng and Farber, 2008). In the context of CSR violations, studies find that firms with higher litigation risk due to CSR-related misconduct invest more in CSR, such as charitable contributions (Koehn and Ueng, 2009; Shu and Wong, 2018; Xia et al., 2019). However, such investments are costly and are likely to affect a firm's reputation in the long term. We find that establishing board interlocks is a less expensive but effective alternative strategy for repairing a firm's reputation in the short term. Thus, this study helps to further understand the strategies that can be adopted to respond to corporate misconduct and rebuild a firm's reputation.

Third, we contribute to a growing stream of literature on board interlocks. To the best of our knowledge, few studies examine the signaling effect of board interlocks. The literature shows that firms have several incentives to form a board interlock, such as resource-seeking (Martin et al., 2015), increased monitoring capacity (Carpenter and Westphal, 2001), and better access to human capital (Lamb and Roundy, 2016). At the director level, studies find that board interlocks can advance directors' career opportunities (Hillman et al., 2009) and help them establish social ties with members of elite groups (Yue, 2012). In the context of CSR, recent studies find that forming board interlocks with firms that have superior CSR performance lead to improved CSR performance (Amin et al., 2020) and reduced greenhouse gas (GHG) emissions by focal firms (Lu et al., 2021b), which supports the resource dependence perspective. We extend this literature by showing that firms adopt board interlocks to conduct impression management and repair the reputational damage caused by a CSR violation or reduce their social pressures. However, there is minimal improvement in a focal firm's CSR performance after the formation of a board interlock. These results have important implications for stakeholders because board interlocks may only be a "symbolic" reputation repair strategy.

The remainder of this paper is organized as follows. Section 2 reviews the relevant literature and develops the hypotheses. Section 3 describes our study sample and research design. Section 4 presents our main results, and Section 5 discusses the robustness tests and additional analyses. Section 6 concludes the paper by discussing the implications of this study for investors, managers, and policymakers.

2. Literature review and hypothesis development

2.1. The consequences of CSR misconduct

In recent decades, firms have been expected to fulfill their social responsibilities while maximizing profits for their shareholders (Radhakrishnan et al., 2018). So far, research has focused predominantly on the implications of positive CSR practices (e.g., Greening and Turban, 2000; Orlitzky et al., 2003; Choi and Wang, 2009) and has paid little attention to the consequences of negative CSR practices (or CSI) (Chiu and Sharfman, 2018). CSI behaviors violate the law or a moral code at the expense of stakeholders (Scherer and Palazzo, 2007; Riera and Iborra, 2017). For example, man-made environmental disasters/industrial accidents, large-scale corruption, and corporate actions harm customers and/or employees.

Studies document that CSI has negative consequences for firms and their stakeholders. Karpoff et al. (2005) provide evidence that firms that violate environmental laws lose considerable firm value through legal and regulatory penalties. Rousseau (2009) identifies the political effects and monetary penalties for environmental law offenders. There is increased scrutiny of firms' CSI by various stakeholders. Firms' CSR performance is evaluated by third-party rating agencies, such as Morgan Stanley Capital International (i.e., the MSCI KLD Index), Dow Jones, and Thomson Reuters (i.e., Asset4). Investors rely on these ratings to make investment decisions; a negative rating can lead to strong investor reactions. For example, TIAA-CREF (an insurance and investment firm in the U.S.) divested over US\$ 50 million of its Coca-Cola stock because the firm was removed from the KLD Broad Market Social Index (Chatterji et al., 2009). Furthermore, there is evidence that firms that attract negative media coverage for their environmental, social, and governance (ESG) violations have higher credit risk (Kölbel et al., 2017), lower corporate bond ratings (Chiang et al., 2017), lower firm value (Frost et al., 2022a), and higher audit fees (Frost et al., 2022b) than other firms. Studies also examine the impact of CSI on managerial turnover and show that bad CSR practices increase the likelihood of executive turnover by antagonizing stakeholders and putting pressure on board members, who are responsible for balancing the interests of various stakeholders (Hung, 2011; Chiu and Sharfman, 2018).

Similarly, other studies show that firms engaging in CSI suffer considerable reputational damage (Grappi et al., 2013). For example, using data on 585 firms that engaged in financial misrepresentation between 1978 and 2002, Karpoff et al. (2008) show that while legal actions against these firms led to approximately US\$24 million in penalties, their reputational losses were much higher. Lange and Washburn (2012) find that firms with CSR-related violations struggle to attract customers, investors, and employees, while attracting lawsuits and related financial losses. An experiment conducted with a large sample of consumers in the U.S. shows that consumers respond differently to a firm's failure to fulfill its social responsibilities depending on whether the violated standard is a government mandate or a voluntary commitment (Russell et al., 2016).

2.2. Business strategies and reputation repair

A growing body of literature explores how firms protect or repair their reputation after a violation is discovered (Bundy et al., 2021; Chahine et al., 2021), such as financial misconduct (i.e., financial restatements and fraudulent reporting) and non-financial misconduct (i.e., CSR-related violations). Several studies examine firms' actions to repair damaged stakeholder relationships in the context of financial misconduct. For instance, Farber (2005) finds that firms change their board composition after fraud is detected. Wilson (2008) shows that firms

engaging in financial restatements are more likely to dismiss their executives than other firms. Firms that engage in financial misreporting adopt strategies and policies to redesign their executives' incentives and strengthen external monitoring functions (Cheng and Farber, 2008). Chakravarthy et al. (2014) identify reputation-building actions taken by firms that specifically target customers, employees, and communities.

Given that CSR violations can lead to considerable penalties, it is not surprising that violators expend substantial resources to mitigate the reputational damage caused by their behavior. Some studies reveal that firms are likely to use CSR activities to divert stakeholder attention from negative events (e.g., CSR violations), which may reduce the damage to their corporate reputation. For example, studies show that firms with higher litigation risk due to irresponsible behavior increase their charitable contributions (Koehn and Ueng, 2009; Xia et al., 2019). Other studies argue that committing to substantive CSR activities leads to positive attributions by stakeholders, which tempers their negative judgments of corporate violations because of the goodwill generated (Godfrey et al., 2009). However, such investments are costly and are likely to affect a firm's reputation in the long term.

Another stream of research on reputation repair focuses on how firms minimize reputational damage by using impression management and communication strategies, such as apologies, expressions of regret, promises of action, excuses, justifications, and denial (Bundy et al., 2021). We extend these studies by identifying an alternative strategy used by firms for reputation management—establishing board interlocks after a CSR violation.

2.3. Hypothesis development: board interlocks following a CSR violation

Board interlocks are a controversial topic in corporate governance research. A board interlock is created when two firms share a director. Executives can join multiple boards as a way of building connections, which are considered social capital by the interlocking directors, and they can use these connections to advance their careers (Hillman et al., 2009; Lamb and Roundy, 2016). According to hegemony theory and social network theory, members of elite clubs sit on each other's boards and socialize together (Burris, 2005). Many studies examine board interlocks and the associated organizational outcomes and find that board interlocks are associated with better firm performance (Harris and Shimizu, 2004; Haniffa and Hudaib, 2006; Cai and Sevilir, 2012).

As board interlocks can lead to positive organizational outcomes, appointing interlocking directors has become common practice today. The literature states that a firm's external appearance sends signals to its current and prospective investors regarding its underlying performance (Certo, 2003; Higgins and Gulati, 2003). Many firms appoint celebrities as executives and managers to capture investor attention (Ferris et al., 2011). The literature also documents that firms prefer to establish ties with prestigious firms through board interlocks (Flickinger et al., 2016), which is especially common among young (Gulati and Higgins, 2003) and underperforming firms (Jiang et al., 2020).

Furthermore, interlocking directors can help signal a firm's reputation by assuring the public of its legitimacy. Investors become concerned about a firm's legitimacy when it is involved in CSR-related violations because the firm is perceived as not adhering to the "rules of the game." Firms that are seen as legitimate are less likely to fail and have favorable relationships with their shareholders and other stakeholders (Dacin et al., 2007). Filatotchev et al. (2018) show that an interlocking board of directors indicates that a firm is part of a network of other legitimate organizations and will follow their ethical standards. Therefore, firms may intentionally seek board interlocks with legitimate firms to influence investors' perceptions, especially after a CSR violation.

In the case of CSR violations, we posit that violating firms are more

likely to appoint interlocking directors after a violation is revealed. Consistent with this view, Bundy et al. (2021) find that firms often use impression management to cope with external threats and uncertainties. Studies find that board composition and structure, which are visible to stakeholders, are a common form of impression management to meet firms' legal requirements or mitigate social pressures (Fiss and Zajac, 2006; Higgins and Gulati, 2006). Thus, we argue that firms engaging in socially irresponsible or fraudulent behaviors are more likely than other firms to form board interlocks to signal their attempt to restore their reputation. Accordingly, we propose our first hypothesis as follows.

H1. : Firms that commit CSR violations have a higher propensity to hire interlocked directors than non-violating firms.

One stream in the board interlock literature states that interlocked firms adopt similar corporate policies and practices, which is known as "practice diffusion." The argument here is that firms can learn from other firms through board interlocks (Davis and Greve, 1997). As a result, corporate practices and policies between connected firms tend to be similar. Consistent with this argument, studies show that firms with interlocking directors are likely to implement similar employee stock option policies (Bizjak et al., 2009), tax shelter practices (Brown, 2011), auditor selection (Johansen and Pettersson, 2013), stock option expensing (Kang and Tan, 2008; Reppenhagen, 2010), earnings management (Chiu et al., 2013), and accounting policies (Han et al., 2017). Recent studies also find that board interlocks play an important role in shaping CSR practices (Amin et al., 2020; Lu et al., 2021a, 2021b; Bose et al., 2022; Wang et al., 2022).

We argue that the discovery of a CSR violation leads violating firms to form board interlocks with firms that have better CSR performance to repair their reputation. According to the concept of practice diffusion, board interlocks enable the transmission of CSR-related knowledge, information, and ideas between firms (Davis and Greve, 1997). In other words, we expect a spillover of CSR practices when the directors of a firm with good CSR performance connect with a firm that violates CSR regulations.

Furthermore, from a resource dependence perspective, scholars consider organizations to be open systems that procure critical resources from other firms through reciprocal exchanges. Board interlocks allow firms to access tangible and intangible resources. According to resource dependence theory, board interlocks provide several benefits to firms, such as a reduction in environmental uncertainty and dependence (Beckman et al., 2004), access to unique firm information, and the opportunity to learn new corporate practices (Shropshire, 2010). In the context of CSR, recent studies find that forming board interlocks with firms that have superior CSR performance lead to improved CSR performance (Amin et al., 2020) and a reduction in GHG emissions by the focal firms (Lu et al., 2021b), which supports the resource dependence perspective. Thus, forming board interlocks with other firms that have better CSR performance can be cost-effective and help the focal firm gain a sustainable competitive advantage.

In contrast, studies show that a firm's bad reputation spills over to the interlocked firms. For example, Kang (2008) finds that firms interlocked with firms accused of fraudulent financial reporting are more likely to suffer reputational damage than other firms. Therefore, from a signaling perspective, we argue that an interlocked firm enhances its own corporate image by connecting with firms that possess the image it desires. This can shape investors' perceptions of the focal firm. Indeed, anecdotal evidence shows that violating firms are more likely to connect with firms that have better CSR performance after a CSR violation. For instance, in late 2015, the U.S. Environmental Protection Agency and the Department of Justice announced that they had reached a settlement

with Duke Energy Corporation (Duke) to resolve long-standing claims that Duke had violated the federal Clean Air Act.[1] On February 29, 2016, Duke announced the appointment of Wick Moorman as a new board member.[2] Duke's CEO Lynn Good stated "*Wick's experience and strategic insights will be invaluable in helping us deliver results for our customers, shareholders and communities.*"[3] At the time, Wick Moorman also served on the board of Chevron Corp (an interlocked director). Accordingly, we propose our second hypothesis as follows.

H2. : Firms that commit CSR violations exhibit a higher propensity to hire interlocked directors from firms that have good CSR performance than non-violating firms.

3. Variable definitions and research design

3.1. Sample

We obtain data on firm directors, such as age, gender, education, and work experience, from the BoardEx database. This database provides rich and accurate data and is used in many studies (e.g., Cai et al., 2020; Ivanova and Prencipe, 2020; Fan et al., 2022). For our variables of interest, we obtain data on CSR violations from Violation Tracker, which is produced by the Corporate Research Project of Good Jobs. Violation Tracker collects data from more than 40 federal regulatory agencies and contains information on over 310,000 civil and criminal cases of corporate misconduct (Heese and Pérez-Cavazos, 2021). The CSR violation data contain the dates of CSR violations along with the penalty amounts. Violation Tracker complements enforcement agencies' records with settlement information disclosed in press releases.

For the control variables, we obtain firms' financial data from Compustat, stock price data from the Centre for Research in Security Prices (CRSP), CSR performance data from MSCI ESG Stats (formerly known as KLD),[4] auditor information data from Audit Analytics, analyst information data from I/B/E/S, and media coverage data from RepRisk and Ravenpack databases. Our sample period is from 2002 to 2018 because at the time of our investigation, the MSCI ESG Stats data were through 2018. This yields 30,885 firm-year observations as the first sample for H1 that examines the influence of CSR violations on forming new board connections. H2 examines the probability that violating firms connect with firms that have better CSR performance. Thus, our second sample is limited to firm-year observations with at least one new board connection; this yields 5334 firm-year observations with the available CSR scores.

3.2. Research design

We use the following model to test H1 that firms that commit CSR-related violations are more likely to build new board connections:

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[1] The announcement can be found here: https://www.epa.gov/enforcement/reference-news-release-duke-energy-corp-reduce-emissions-power-plants-north-carolina.

[2] https://news.duke-energy.com/releases/duke-energy-board-appoints-wick-moorman-as-new-board-member

[3] However, anecdotal evidence also suggests that Duke's CSR performance may not have improved after the appointment of the CSR expert, Wick Moorman. The company was found liable for various serious environmental violations in 2018 and 2021. We empirically assess whether the formation of board interlocks with firms that have better CSR performance after a CSR violation has a real effect on the focal firm's future CSR performance in Section 5.7.

[4] KLD provides comprehensive data on firms' social and environmental performance ratings, which are used in many studies to investigate the determinants and consequences of firm CSR performance (e.g., Deng et al., 2013; Chen et al., 2020; Tsang et al., 2021a; Park et al., 2023).

$$NEW\_CONNBD\_IND_{i,t} \quad or \quad NEW\_CONNBD\_NUM_{i,t} = \alpha_0 + \alpha_1 VIO\_IND_{i,t-1} \quad or \quad VIO\_NUM_{i,t-1} or VIO\_PENALTY_{i,t-1} + \sum_s \alpha_s Controls_{i,t-1}$$

$$+ \sum_y \alpha_y Year \quad FE + \sum_m \alpha_m Industry \quad FE + \varepsilon_{i,t}; \tag{1}$$

Then, we use the following model to test H2, which examines the association between CSR-related violations and the CSR performance of newly connected boards (connected firms):

sample of newly connected firms and their directors, we additionally control for the characteristics of newly connected firms and the connected directors: the average ROA (*CONNBD_ROA*), average

$$NEW\_CONNBD\_CSR\_SCORE_{i,t} \quad or \quad NEW\_CONNBD\_CSR\_SCORE\_DIFF_{i,t} = \beta_0 + \beta_1 VIO\_IND_{i,t-1} \quad or \quad VIO\_NUM_{i,t-1} or VIO\_PENALTY_{i,t-1}$$

$$+ \sum_s \beta_s Controls_{i,t-1} + \sum_y \beta_y Year \quad FE + \sum_m \beta_m Industry \quad FE + \varepsilon_{i,t}; \tag{2}$$

The two dependent variables in Model (1) capture the existence of board interlocks and the number of new board connections. Specifically, *NEW_CONNBD_IND* is an indicator variable that takes a value of 1 if a firm's newly appointed directors serve on the board of another listed firm in year *t*, and 0 otherwise. *NEW_CONNBD_NUM* denotes the total number of newly appointed directors who serve on the board of another listed firm (i.e., newly connected board) in year *t*. The two dependent variables in Model (2) capture the average CSR performance of newly connected boards. Specifically, *NEW_CONNBD_CSR_SCORE* denotes the average *CSR_SCORE* of newly connected boards in year *t*. We also measure the difference between the CSR performance of the newly connected board and the focal firm using *NEW_CONNBD_CSR_SCORE_DIFF*, which is measured as *NEW_CONNBD_CSR_SCORE* minus *CSR_SCORE* in year *t*.[5]

Our variables of interest are *VIO_IND* (an indicator variable that takes a value of 1 if a firm commits at least one CSR-related violation in year *t*, and 0 otherwise); *VIO_NUM* (the total number of CSR-related violations in year *t*); and *VIO_PENALTY* (the natural logarithm of 1 plus the total amount of penalties incurred for CSR-related violations in US\$ millions in year *t*, scaled by *FIRMSIZE*).

Following Fich and White (2005), Gagliolo et al. (2014), Withers et al. (2018), and Bloch et al. (2020), we include several control variables in the models: CSR performance (*CSR_SCORE*), firm size (*FIRM-SIZE*), book-to-market ratio (*BM*), leverage (*LEV*), return on assets (*ROA*), loss indicator (*LOSS*), firm age (*FIRM_AGE*), firm auditor (*BIGN*), past annual stock returns (*PRE_RETURN*), stock return volatility (*RETURN_VOLATILITY*), whether a firm belongs to a high litigation industry (*LIT_IND*), CEO turnover (*CEO_TURNOVER*), other directors' turnover (*DIRC_TURNOVER*), institutional ownership (*INSTI_OWNER*), media coverage (*MEDIA_COVERAGE*), analyst coverage (*ANALYST_COVERAGE*), level of diversification in business operations (*BUS_SEG*), board independence (*BOARD_IND*), board size (*BOARD_SIZE*), and the activity level of board members (*BOARD_BUSY*).

To isolate the effect of CSR-related violations on firms' incentive to repair their reputation through board interlocks, following Withers et al. (2020), we use Accounting and Auditing Enforcement Releases (*AAER*) and earnings restatements (*RESTATEMENT*) as a proxy to further control for non-CSR-related violations in our analysis. In Model (2), using a

book-to-market (*CONNBD_BM*), and average leverage (*CONNBD_LEV*) of newly connected firms; whether a connected director is the CEO and/or CFO in another firm (*CONNDIRC_CEOCFO*); connected directors' average tenure (*CONNDIRC_TENURE*) and number of network connections (*CONNDIRC_NETWORK*); whether a connected director is female (*CONNDIRC_FEMALE*); and whether a connected director is on the CSR committee (*CONNDIRC_CSR_EXP*).

Last, we include year and industry fixed effects to control for variations across years and industries, respectively. H1 (H2) posits that the coefficients on *VIO_IND*, *VIO_NUM*, and *VIO_PENALTY* will be positive in Model 1 (2). Robust standard errors are clustered at the industry and year levels. All of the continuous variables are winsorized at the 1st and 99th percentiles. Appendix A provides the definitions of all of the variables.

4. Empirical results

4.1. Descriptive statistics

Table 1 presents the annual distribution of our first sample and the annual average values of our key variables. Panel A shows that the annual sample distribution is generally stable between 2004 and 2018. There are fewer observations before 2004 due to the low CSR data coverage of MSCI ESG Stats. The annual averages of *NEW_CONNBD_NUM* and *NEW_CONNBD_CSR_SCORE* decrease between 2004 and 2009, and then increase until 2018. This trend is also generally consistent with the trend in the annual averages of *VIO_NUM* and *VIO_PENALTY*, which decrease between 2004 and 2009 and then increase between 2010 and 2018. This provides preliminary evidence of a positive relationship between CSR-related violations and new board connections and their CSR performance. Panel B presents the distribution of the number of CSR violations. The majority of the observations in our sample (79.19%) have no CSR violation and approximately 8.65% of the observations have one CSR violation. Furthermore, approximately 4.5% of the observations report frequent CSR violations (i.e., at least five).[6]

Table 2 provides the descriptive statistics of our key variables. Based on our first sample, the average *NEW_CONNBD_IND* is 0.248, which

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[6] The results of our correlation and univariate tests also support our argument that firms with CSR violations are more likely than other firms to form new board connections (untabulated).

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[5] *CSR_SCORE* is measured as the sum of the number of strengths minus the number of concerns on all of the six social categories of MSCI ESG Stats (i.e., community relations, diversity, employee issues, environmental matters, product safety, and human rights).

Table 1
Sample Distribution. This table presents our sample distribution for 30,885 firm-year observations from 2002 to 2018. Panel A reports the sample distribution by year. We also report the annual averages of *NEW_CONNBOARD_NUM*, *NEW_CONNBOARD_CSR_SCORE*, *VIO_NUM*, and *VIO_PENALTY*. Panel B reports the sample distribution by the number of CSR violations.

Panel A: Distribution by Year						
Year	Obs.	Percentage (%)	*NEW_CONNBD _NUM*	*NEW_CONNBD _CSR_SCORE*	*VIO _NUM*	*VIO _PENALTY*
2002	753	2.44	0.669	0.992	0.842	0.013
2003	808	2.62	0.854	0.756	0.934	0.018
2004	2104	6.81	0.579	0.427	0.443	0.009
2005	2329	7.54	0.572	-0.119	0.489	0.009
2006	2110	6.83	0.522	-0.139	0.502	0.011
2007	2068	6.70	0.467	0.137	0.525	0.012
2008	2073	6.71	0.432	-0.011	0.567	0.012
2009	2103	6.81	0.336	-0.044	0.583	0.012
2010	2067	6.69	0.306	0.188	0.589	0.013
2011	2143	6.94	0.369	0.068	0.674	0.015
2012	2006	6.50	0.391	0.702	0.762	0.015
2013	1961	6.35	0.482	1.030	0.760	0.014
2014	1817	5.88	0.511	1.779	0.840	0.020
2015	1638	5.30	0.591	2.154	0.830	0.019
2016	1690	5.47	0.601	1.339	0.959	0.023
2017	1618	5.24	0.516	1.777	0.994	0.021
2018	1597	5.17	0.557	2.349	1.009	0.022
Total	**30,885**	**100**	**0.492**	**0.623**	**0.693**	**0.015**
Mean						

Panel B: Distribution by the Number of CSR Violations		
Number of CSR Violations (1)	**Number of Observations (2)**	**Percentage (%) (3)**
0	24,457	79.19
1	2671	8.65
2	1208	3.91
3	699	2.26
4	464	1.50
> =5	1386	4.49

Table 2
Descriptive Statistics. This table reports the sample size, mean, percentiles, and standard deviations of our sample variables. All continuous variables are winsorized at the 1st and 99th percentiles. The variable definitions are provided in Appendix A.

	Obs.	Mean	Std. Dev.	Q1	Median	Q3
NEW_CONNBD_IND	30,885	0.248	0.432	0.000	0.000	0.000
NEW_CONNBD_NUM	30,885	0.492	1.048	0.000	0.000	0.000
NEW_CONNBD_CSR_SCORE	5334	0.623	2.501	-1.000	0.000	2.000
NEW_CONNBD_CSR_SCORE_DIFF	5334	0.271	3.086	-1.500	0.000	2.000
VIO_IND	30,885	0.208	0.406	0.000	0.000	0.000
VIO_NUM	30,885	0.693	2.077	0.000	0.000	0.000
VIO_PENALTY	30,885	0.015	0.061	0.000	0.000	0.000
VIO_PENALTY (untransformed, m$)	30,885	1.120	7.101	0.000	0.000	0.000
CSR_SCORE	30,885	0.073	2.106	-1.000	0.000	1.000
FIRMSIZE	30,885	7.517	1.727	6.273	7.433	8.614
BM	30,885	0.509	0.381	0.256	0.442	0.683
LEV	30,885	0.565	0.253	0.380	0.562	0.749
ROA	30,885	0.018	0.132	0.006	0.034	0.075
LOSS	30,885	0.207	0.405	0.000	0.000	0.000
FIRM_AGE	30,885	21.836	18.257	9.000	17.000	30.000
BIGN	30,885	0.873	0.333	1.000	1.000	1.000
PRE_RETURN	30,885	0.157	0.473	-0.116	0.110	0.347
RETURN_VOLATILITY	30,885	0.026	0.013	0.016	0.023	0.032
LIT_IND	30,885	0.266	0.442	0.000	0.000	1.000
CEO_TURNOVER	30,885	0.017	0.129	0.000	0.000	0.000
DIRC_TURNOVER	30,885	0.105	0.093	0.000	0.000	0.000
INSTI_OWNER	30,885	0.762	0.259	0.619	0.845	1.000
MEDIA_COVERAGE	30,885	3.496	2.710	0.000	4.682	5.775
ANALYST_COVERAGE	30,885	2.445	0.831	1.946	2.565	3.045
BUS_SEG	30,885	1.111	0.500	0.693	0.693	1.609
BOARD_IND	30,885	0.720	0.137	0.615	0.706	0.857
BOARD_SIZE	30,885	10.845	3.486	8.000	10.000	13.000
BOARD_BUSY	30,885	0.556	0.497	0.000	1.000	1.000
AAER	30,885	0.004	0.061	0.000	0.000	0.000
RESTATEMENT	30,885	0.078	0.267	0.000	0.000	0.000

Table 3

Main Results of H1. This table presents the results of the influence of CSR-related regulatory violations on new board connections. The dependent variable, *NEW_CONNBD_NUM*, is the number of newly appointed independent directors who work in another listed company (i.e., newly connected board) in year *t*. See Appendix A for variable definitions. Robust standard errors are clustered at the firm and year levels. The standard errors are reported in parentheses. * ** , * *, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dep Var =	NEW_CONNBD_IND			NEW_CONNBD_NUM		
	(1)	(2)	(3)	(4)	(5)	(6)
VIO_IND	0.076*			0.033*		
	(0.039)			(0.019)		
VIO_NUM		0.018**			0.015***	
		(0.007)			(0.004)	
VIO_PENALTY			1.010***			0.666***
			(0.204)			(0.132)
CSR_SCORE	0.022***	0.023***	0.022***	0.010**	0.010**	0.010**
	(0.008)	(0.008)	(0.008)	(0.004)	(0.004)	(0.004)
FIRMSIZE	0.208***	0.204***	0.201***	0.107***	0.102***	0.102***
	(0.017)	(0.016)	(0.016)	(0.008)	(0.008)	(0.008)
BM	-0.270***	-0.266***	-0.268***	-0.131***	-0.127***	-0.129***
	(0.045)	(0.045)	(0.045)	(0.020)	(0.019)	(0.020)
LEV	-0.058	-0.046	-0.048	-0.010	0.000	-0.003
	(0.069)	(0.069)	(0.069)	(0.033)	(0.033)	(0.033)
ROA	-0.247	-0.236	-0.243	-0.047	-0.038	-0.044
	(0.164)	(0.165)	(0.164)	(0.069)	(0.070)	(0.070)
LOSS	0.244***	0.244***	0.245***	0.106***	0.106***	0.106***
	(0.048)	(0.048)	(0.048)	(0.022)	(0.022)	(0.022)
FIRM_AGE	0.003***	0.003***	0.003***	0.001*	0.001*	0.001*
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
BIGN	0.388***	0.389***	0.390***	0.057***	0.058***	0.058***
	(0.055)	(0.055)	(0.055)	(0.015)	(0.015)	(0.015)
PRE_RETURN	-0.001	-0.001	-0.002	-0.023	-0.023	-0.024
	(0.036)	(0.036)	(0.036)	(0.014)	(0.014)	(0.014)
RETURN_VOLATILITY	3.322*	3.231*	3.152*	3.154***	3.075***	3.045***
	(1.844)	(1.846)	(1.843)	(0.800)	(0.802)	(0.798)
LIT_IND	0.025	0.025	0.027	0.002	0.003	0.004
	(0.083)	(0.083)	(0.082)	(0.038)	(0.038)	(0.038)
CEO_TURNOVER	0.332***	0.330***	0.332***	0.271***	0.270***	0.271***
	(0.096)	(0.096)	(0.096)	(0.061)	(0.061)	(0.061)
DIRC_TURNOVER	0.906***	0.907***	0.908***	0.212***	0.212***	0.213***
	(0.065)	(0.065)	(0.065)	(0.014)	(0.014)	(0.014)
INSTI_OWNER	0.121*	0.124*	0.130*	-0.010	-0.007	-0.004
	(0.068)	(0.068)	(0.068)	(0.027)	(0.027)	(0.027)
MEDIA_COVERAGE	-0.007	-0.006	-0.006	-0.003	-0.003	-0.003
	(0.006)	(0.006)	(0.006)	(0.003)	(0.003)	(0.003)
ANALYST_COVERAGE	0.115***	0.117***	0.115***	0.030***	0.031***	0.029***
	(0.028)	(0.028)	(0.028)	(0.011)	(0.011)	(0.011)
BUS_SEG	0.059*	0.062**	0.060**	0.033**	0.035**	0.034**
	(0.031)	(0.031)	(0.031)	(0.014)	(0.014)	(0.014)
BOARD_IND	0.067	0.061	0.065	0.027	0.021	0.026
	(0.134)	(0.134)	(0.134)	(0.054)	(0.053)	(0.054)
BOARD_SIZE	-0.024***	-0.024***	-0.024***	-0.006**	-0.007***	-0.006***
	(0.006)	(0.006)	(0.006)	(0.002)	(0.002)	(0.002)
BOARD_BUSY	0.231***	0.231***	0.230***	0.115***	0.114***	0.114***
	(0.030)	(0.030)	(0.030)	(0.011)	(0.011)	(0.011)
AAER	0.148	0.148	0.084	0.243*	0.239*	0.203
	(0.221)	(0.222)	(0.224)	(0.138)	(0.137)	(0.137)
RESTATEMENT	0.063	0.064	0.062	0.037	0.038	0.037
	(0.052)	(0.052)	(0.052)	(0.024)	(0.024)	(0.024)
Constant	-4.336***	-4.311***	-4.279***	-0.619***	-0.581***	-0.578***
	(0.400)	(0.400)	(0.398)	(0.165)	(0.165)	(0.164)
Observations	30,885	30,885	30,885	30,885	30,885	30,885
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted/Pseudo R^2	0.064	0.065	0.065	0.067	0.068	0.068

suggests that 24.8% of our observations have at least one new board connection. *NEW_CONNBD_NUM* has a mean of 0.492.[7] The average *VIO_IND* is 0.208, which suggests that approximately 20.8% of our observations report at least one CSR-related violation. The average *VIO_NUM* is 0.693, which indicates that the average number of CSR-related

violations in our sample is 0.693. The average *CSR_SCORE* is 0.073, which is comparable to the average value (0.079) reported by previous studies (e.g., Du and Yu, 2021). The average *CSR_SCORE* of violating firms is much lower than the average *NEW_CONNBD_CSR_SCORE* (0.623), which suggests that, on average, newly connected firms perform well on CSR. The distribution of the control variables is also consistent with that of previous studies (Fich and White, 2005; Gagliolo et al., 2014; Withers et al., 2018; Bloch et al., 2020).

[7] Untabulated results show that 11.84% of our firm-year observations appoint one new director from another listed firm and 6.46% (3.24%) appoint two (three) new directors from other listed firms. Less than 3% of our firm-year observations appoint four or five new directors during our sample period.

4.2. Main results: H1

Table 3 reports the results of Model 1, which investigates the association between CSR-related violations and the appointment of connected directors. The coefficients on *VIO_IND*, *VIO_NUM*, and *VIO_PENALTY* are all significant and positive, regardless of whether the dependent variable is *NEW_CONNBD_IND* in the logistic model or *NEW_CONNBD_NUM* in the ordinary least squares model. These results indicate that firms that commit more or more severe CSR violations are more likely to appoint directors from other listed firms. Thus, we conclude that H1 is supported.

The observed effects are economically significant. Column (5) shows that a one standard deviation increase in *VIO_NUM* leads to a 2.97% increase in the standard deviation of *NEW_CONNBD_NUM*.[8] Column (6) shows that a one standard deviation increase in *VIO_PENALTY* is associated with a 3.88% increase in the standard deviation of *NEW_CONNBD_NUM*.[9] Regarding the control variables, most of the coefficients have the expected signs. For example, *FIRMSIZE* is significantly positively associated with *NEW_CONNBD_NUM* because large firms tend to form more board interlocks than small firms (Chakravarty and Hegde 2022).

4.3. Main Results: H2

Table 4 presents the results of Model 2, which examines the association between CSR violations and the likelihood of connecting with firms that have better CSR performance through board interlocks. Table 4 shows that the coefficients on *VIO_IND*, *VIO_NUM*, and *VIO_PENALTY* are all significant and positive when *NEW_CONNBD_CSR_SCORE* and *NEW_CONNBD_CSR_SCORE_DIFF* are used as the dependent variables. These results indicate that firms that commit more or more severe CSR violations are more likely to appoint directors from listed firms that have better CSR performance. Thus, we conclude that H2 is supported. In terms of economic significance, the results presented in Columns (2) and (3) of Table 4 show that firms with a one standard deviation increase in *VIO_NUM* and *VIO_PENALTY* tend to connect with firms whose standard deviation of *CSR_SCORE* is 11.21% and 6.47% higher, respectively.[10]

4.4. Results of cross-sectional analyses

Thus far, our findings show that firms with CSR violations tend to establish board interlocks, especially with firms that have better CSR performance. We posit that establishing new board connections is a way to signal a firm's commitment to improving its CSR practices and avoiding future violations. We further posit that this signaling incentive is greater for firms that are more committed to improving their CSR performance than for less committed firms. In contrast, it is possible that firms that have already signaled their commitment to improving their CSR performance have less incentive to use board interlocks. These competing arguments lead us to conduct the first cross-sectional test.

Many studies show that forming a CSR committee, providing external assurance on CSR disclosures, issuing stand-alone CSR reports, and linking CSR performance to executive compensation help to signal

firms' commitment to improving their CSR practices (e.g., Ricart et al., 2005; Peters and Romi, 2015; Clarkson et al., 2019; Radu and Smaili, 2021; Tsang et al., 2021b).

Panels A and B of Table 5 present the results of the cross-sectional analyses using the above four proxies for firm commitment to improving CSR performance. Specifically, *CSR_COMMITTEE* is an indicator variable that takes a value of 1 if a firm has a CSR committee in year *t*-1, and 0 otherwise. *CSR_ASSURANCE* is an indicator variable that takes a value of 1 if external assurance is provided on a firm's CSR report in year *t*-1, and 0 otherwise. *CSR_REPORT* is an indicator variable that takes a value of 1 if firm *i* issues a stand-alone CSR report in year *t*-1, and 0 otherwise. *CSR_COMPENSA* is an indicator variable that takes a value of 1 if firm *i* links its CSR performance to executive compensation in year *t*-1, and 0 otherwise. Panel A shows that most of the coefficients on the interaction terms of *CSR_COMMITTEE*, *CSR_ASSURANCE*, *CSR_REPORT*, and *CSR_COMPENSA* with *VIO_IND*[11] are significant and positive when the dependent variables are *NEW_CONNBD_NUM* and *NEW_CONNBD_CSR_SCORE*.[12] Panel B shows similar results for the interaction terms of *CSR_COMMITTEE*, *CSR_ASSURANCE*, *CSR_REPORT*, and *CSR_COMPENSA* with *VIO_PENALTY*. Overall, these results support our conjecture that the signaling incentive is more pronounced for firms that are more committed to improving their CSR performance than for less committed firms.[13]

Next, we examine whether our results are stronger in firms with higher visibility, which would increase the benefits of signaling. We measure firm visibility using analyst and media coverage because Baker et al. (2002) show that greater analyst coverage increases public attention. Research also shows that the media exacerbate firms' reputational losses by focusing on their actions (McCarthy et al., 1996; King and Soule, 2007). Furthermore, firms that are evaluated by more CSR rating agencies are more inclined to prioritize their CSR reputation than firms evaluated by fewer rating agencies (Barnea and Rubin 2010). Accordingly, we use three proxies to measure firm visibility and present the results in Table 6. *ANA_COV_HIGH* (*MED_COV_HIGH*) is an indicator variable that takes a value of 1 if a firm's *ANALYST_COVERAGE* (*MEDIA_COVERAGE*) in year *t*-1 is higher than the sample mean, and 0 otherwise. *CSR_COV_HIGH* is an indicator that takes a value of 1 if the number of CSR rating agencies evaluating a firm in year *t*-1 is greater than the sample mean, and 0 otherwise. We consider four leading CSR rating agencies: KLD, ASSET4, IVA, and Sustainalytics. The cross-sectional test results in Panels A and B show that the coefficients on most of the interaction terms are positive and statistically significant.[14] Taken together, these results support that our main results are stronger in firms with higher visibility than in firms with less visibility.

Furthermore, we examine whether our results are more pronounced for firms facing greater financial constraints because, presumably, establishing a board interlock costs less than investing in substantial CSR activities. We use three proxies to measure financial constraints. The first proxy is the Kaplan–Zingales (KZ) index, the most popular measure of financial constraints (Kaplan and Zingales, 1997; Lamont et al., 2001) (*KZ_SCORE*). The second proxy is the text-based index for measuring

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[8] Economic significance is measured as the coefficient on *VIO_NUM* (0.015) multiplied by its standard deviation (2.077) and divided by the standard deviation of *NEW_CONNBD_NUM* (1.048).

[9] Economic significance is measured as the coefficient on *VIO_PENALTY* (0.666) multiplied by its standard deviation (0.061) and divided by the standard deviation of *NEW_CONNBD_NUM* (1.048).

[10] Economic significance is measured as the coefficient on *VIO_NUM* (0.135) multiplied by its standard deviation (2.077) and divided by the standard deviation of *NEW_CONNBD_CSR_SCORE* (2.501). Similarly, the economic significance of *VIO_PENALTY* is estimated as $2.654 \times 0.061 / 2.501 = 6.47\%$.

[11] Our results remain robust when we use *VIO_NUM* in the cross-sectional test section.

[12] For brevity, we only show the results for the interaction terms in our cross-sectional tests. The control variables include their separate terms.

[13] For brevity, we do not present the results for the control variables. The control variables for the tests of *NEW_CONNBD_NUM* (*NEW_CONNBD_CSR_SCORE*) are the same as in Table 3 (Table 4).

[14] The nonsignificant (significant) results on the interaction terms between *VIO_IND* and *CSR_COV_HIGH* when the dependent variable is *NEW_CONNBD_NUM* (*NEW_CONNBD_CSR_SCORE*) suggest that the coverage of CSR rating agencies is unlikely to affect the number of new board connections, but it is likely to affect the quality of the selection of a new board connection (i.e., the CSR performance of connected firms) once a focal firm decides to use board connections as a reputation management strategy.

Table 4
Main Results of H2. This table presents the results of the influence of CSR-related regulatory violations on the CSR performance of new board connections, using Model (2). See Appendix A for variable definitions. Robust standard errors are clustered at the firm and year levels. The standard errors are reported in parentheses. * ** , * *, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dep Var =	NEW_CONNBD_CSR_SCORE			NEW_CONNBD_CSR_SCORE_DIFF		
	(1)	(2)	(3)	(4)	(5)	(6)
VIO_IND	0.333***			0.305***		
	(0.087)			(0.085)		
VIO_NUM		0.135***			0.122***	
		(0.016)			(0.015)	
VIO_PENALTY			2.654***			2.661***
			(0.476)			(0.474)
CSR_SCORE	0.063***	0.075***	0.064***	-0.928***	-0.916***	-0.927***
	(0.017)	(0.017)	(0.017)	(0.017)	(0.016)	(0.016)
FIRMSIZE	0.125***	0.057	0.108***	0.118***	0.051	0.100**
	(0.040)	(0.041)	(0.040)	(0.039)	(0.040)	(0.039)
BM	-0.071	-0.018	-0.061	-0.114	-0.068	-0.102
	(0.118)	(0.116)	(0.118)	(0.113)	(0.111)	(0.113)
LEV	-0.153	0.004	-0.128	-0.199	-0.053	-0.170
	(0.181)	(0.181)	(0.180)	(0.171)	(0.171)	(0.171)
ROA	0.153	0.300	0.186	0.268	0.391	0.307
	(0.339)	(0.337)	(0.342)	(0.341)	(0.339)	(0.344)
LOSS	-0.006	-0.003	0.004	0.011	0.011	0.022
	(0.102)	(0.102)	(0.102)	(0.102)	(0.102)	(0.102)
FIRM_AGE	0.000	-0.001	0.000	-0.001	-0.001	-0.000
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
BIGN	0.124	0.125	0.129	0.183	0.176	0.190*
	(0.113)	(0.113)	(0.113)	(0.113)	(0.113)	(0.113)
PRE_RETURN	-0.121	-0.122	-0.125	-0.139*	-0.142*	-0.142*
	(0.078)	(0.077)	(0.078)	(0.079)	(0.078)	(0.079)
RETURN_VOLATILITY	-0.887	-1.764	-1.061	-2.338	-3.466	-2.530
	(3.598)	(3.606)	(3.601)	(3.478)	(3.507)	(3.477)
LIT_IND	0.092	0.113	0.112	0.100	0.088	0.093
	(0.155)	(0.157)	(0.158)	(0.093)	(0.091)	(0.093)
CEO_TURNOVER	-0.000	0.004	-0.014	0.019	0.021	0.004
	(0.202)	(0.201)	(0.199)	(0.204)	(0.203)	(0.201)
DIRC_TURNOVER	-0.158	-0.141	-0.147	-0.131	-0.105	-0.123
	(0.171)	(0.169)	(0.171)	(0.169)	(0.167)	(0.168)
INSTI_OWNER	-0.232	-0.172	-0.188	-0.272*	-0.227*	-0.230*
	(0.141)	(0.139)	(0.139)	(0.139)	(0.137)	(0.137)
MEDIA_COVERAGE	0.003	-0.003	0.008	0.006	0.000	0.010
	(0.013)	(0.012)	(0.012)	(0.013)	(0.012)	(0.012)
ANALYST_COVERAGE	0.173***	0.201***	0.171***	0.167***	0.189***	0.163***
	(0.059)	(0.058)	(0.059)	(0.056)	(0.056)	(0.056)
BUS_SEG	-0.043	-0.014	-0.029	-0.027	0.003	-0.013
	(0.070)	(0.070)	(0.070)	(0.068)	(0.068)	(0.068)
BOARD_IND	-0.295	-0.341	-0.302	-0.457*	-0.510*	-0.467*
	(0.276)	(0.273)	(0.275)	(0.270)	(0.268)	(0.269)
BOARD_SIZE	0.012	0.007	0.013	0.004	-0.001	0.004
	(0.015)	(0.014)	(0.015)	(0.014)	(0.014)	(0.014)
BOARD_BUSY	-0.036	-0.031	-0.033	-0.019	-0.012	-0.018
	(0.072)	(0.072)	(0.072)	(0.071)	(0.071)	(0.071)
AAER	0.223	0.179	-0.016	0.246	0.197	0.010
	(0.365)	(0.362)	(0.361)	(0.368)	(0.364)	(0.363)
RESTATEMENT	-0.054	-0.065	-0.053	-0.042	-0.049	-0.038
	(0.108)	(0.107)	(0.108)	(0.108)	(0.107)	(0.108)
NEW_CONNBOARD_NUM	-0.089***	-0.094***	-0.092***	-0.084***	-0.088***	-0.088***
	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)
CONNBD_ROA	1.675***	1.725***	1.647***	1.724***	1.767***	1.690***
	(0.306)	(0.308)	(0.305)	(0.304)	(0.305)	(0.304)
CONNBD_BM	-0.306***	-0.302***	-0.308***	-0.335***	-0.339***	-0.334***
	(0.109)	(0.109)	(0.109)	(0.109)	(0.109)	(0.109)
CONNBD_LEV	-0.247	-0.222	-0.254	-0.244	-0.225	-0.248
	(0.156)	(0.155)	(0.156)	(0.154)	(0.152)	(0.154)
CONNDIR_CEOCFO	-0.136*	-0.130	-0.131	-0.148*	-0.146*	-0.142*
	(0.082)	(0.082)	(0.082)	(0.083)	(0.082)	(0.082)
CONNDIR_TENURE	0.049***	0.048***	0.049***	0.049***	0.048***	0.049***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
CONNDIR_NETWORK	0.401***	0.388***	0.392***	0.414***	0.405***	0.406***
	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)
CONNDIR_FEMALE	1.003***	1.018***	1.019***	1.020***	1.036***	1.036***
	(0.087)	(0.086)	(0.087)	(0.085)	(0.085)	(0.085)
CONNDIR_CSR_EXP	0.081	0.070	0.082	-0.061	-0.062	-0.070
	(0.701)	(0.688)	(0.693)	(0.729)	(0.721)	(0.717)
Constant	-2.644***	-2.147***	-2.511***	-2.723***	-2.238***	-2.512***
	(0.781)	(0.784)	(0.772)	(0.527)	(0.525)	(0.520)
Observations	5334	5334	5334	5334	5334	5334

Table 4 (*continued*)

Dep Var =	NEW_CONNBD_CSR_SCORE			NEW_CONNBD_CSR_SCORE_DIFF		
	(1)	(2)	(3)	(4)	(5)	(6)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.239	0.251	0.224	0.280	0.287	0.283

Table 5

Cross-Sectional Results: Firm Commitment to CSR. This table presents the cross-sectional test examining whether our results are stronger for firms with greater commitment to CSR, which increases the need for signaling, using four proxies. *CSR_COMMITTEE* is an indicator variable with a value of one if firm *i* has a CSR committee in year *t*-1, and zero otherwise. *CSR_ASSURANCE* is an indicator variable with a value of one if firm *i*'s CSR report is issued with external assurance in year *t*-1, and zero otherwise. *CSR_REPORT* is an indicator variable with a value of one if firm i has issued a stand-alone CSR report in year *t*-1, and zero otherwise. *CSR_COMPENSA* is an indicator variable with a value of one if firm *i* has linked CSR performance to the executive compensation in year *t*-1, and zero otherwise. See Appendix A for variable definitions. Robust standard errors are clustered at the firm and year levels. The standard errors are reported in parentheses. * ** , * *, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: *VIO_IND*

Dep Var =	NEW_CONNBD_NUM				NEW_CONNBD_CSR_SCORE			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VIO_IND × CSR_COMMITTEE	0.159***				0.242***			
	(0.051)				(0.070)			
VIO_IND × CSR_ASSURANCE		0.183***				0.368**		
		(0.077)				(0.190)		
VIO_IND × CSR_REPORT			0.063**				0.149	
			(0.029)				(0.121)	
VIO_IND × CSR_COMPENSA				0.097*				0.170*
				(0.058)				(0.081)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	30,885	30,885	30,885	30,885	5334	5334	5334	5334
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.068	0.067	0.067	0.067	0.240	0.241	0.241	0.239

Panel B: VIO_PENALTY

Dep Var =	NEW_CONNBD_NUM				NEW_CONNBD_CSR_SCORE			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VIO_PENALTY × CSR_COMMITTEE	0.594**				0.938***			
	(0.294)				(0.258)			
VIO_PENALTY × CSR_ASSURANCE		0.913				0.756*		
		(0.566)				(0.380)		
VIO_PENALTY × CSR_REPORT			0.413*				0.513	
			(0.211)				(0.398)	
VIO_PENALTY × CSR_COMPENSA				0.225**				0.672***
				(0.090)				(0.238)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	30,885	30,885	30,885	30,885	5334	5334	5334	5334
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.069	0.069	0.068	0.068	0.244	0.244	0.244	0.244

financial constraints developed by Hoberg and Maksimovic (HM; 2015) (*HM_SCORE*). The third proxy is related to the constraints on CSR expenditure (*DONATION*). Studies show that socially irresponsible firms engage in higher charitable contributions (Koehn and Ueng 2010). Thus, if a firm faces financial constraints, it will have fewer resources to donate. Consequently, it may choose to form board interlocks with other firms as a cost-effective way to repair its reputation after a CSR violation. We measure charitable contributions (*DONATION*) as the average donation amount in the preceding 3 years. The cross-sectional test results presented in Table 7 show that most of the coefficients on the interaction terms of *VIO_IND* and *VIO_PENALTY* with *KZ_SCORE* and *HM_SCORE* are positive and statistically significant. However, most of the coefficients on the interaction terms between *VIO_IND* or *VIO_PEN-ALTY* and *DONATION* are significant and negative, which suggests that firms that engage in more philanthropy are less likely to use board

interlocks to repair their reputation. These results support that firms facing greater financial constraints are more likely to establish board interlocks after a CSR violation.

In addition, we examine whether our results are more pronounced in connected firms with a better CSR reputation that are more committed to CSR performance once a focal firm chooses to connect with other firms. In other words, as this study aims to examine the signaling effect of forming board interlocks after a CSR violation, we expect this effect to be stronger when the connected firms or their directors have a better CSR reputation. We first measure the CSR reputation of connected firms using the number of negative CSR reports they receive (Miller et al., 2020; Wong and Zhang, 2022). Next, we measure whether the connected firms have female directors because female directors are shown to care more about CSR reputation than male directors (Harjoto and Rossi, 2019). Then, we measure whether the connected firms have

Table 6

Cross-Sectional Results: Firm Visibility. This table presents the cross-sectional test examining whether our results are stronger for firms with greater visibility, which increases the benefits of signaling, using three proxies. *ANA_COV_HIGH* is an indicator with a value of one if *ANALYST_COVERAGE* of a firm in year *t*-1 is higher than the sample mean, and zero otherwise. *MED_COV_HIGH* is an indicator with a value of one if *MEDIA_COVERAGE* of a firm in year *t*-1 is higher than the sample mean, and zero otherwise. *CSR_COV_HIGH* is an indicator with a value of one if the number of CSR raters of a firm in year *t*-1 is greater than the sample mean, and zero otherwise. See Appendix A for variable definitions. Robust standard errors are clustered at the firm and year levels. The standard errors are reported in parentheses. * ** , * *, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: *VIO_IND*

Dep Var =	*NEW_CONNBD_NUM*			*NEW_CONNBD_CSR_SCORE*		
	(1)	(2)	(3)	(4)	(5)	(6)
VIO_IND × *ANA_COV_HIGH*	0.031			0.472***		
	(0.030)			(0.157)		
VIO_IND × *MED_COV_HIGH*		0.076*			0.454**	
		(0.044)			(0.186)	
VIO_IND × *CSR_COV_HIGH*			0.012			0.611***
			(0.034)			(0.140)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	30,885	30,885	30,885	5334	5334	5334
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.067	0.068	0.067	0.240	0.246	0.241

Panel B: VIO_PENALTY

Dep Var =	*NEW_CONNBD_NUM*			*NEW_CONNBD_CSR_SCORE*		
	(1)	(2)	(3)	(4)	(5)	(6)
VIO_PENALTY × *ANA_COV_HIGH*	0.886***			1.681		
	(0.259)			(1.336)		
VIO_PENALTY × *MED_COV_HIGH*		0.512*				1.781*
		(0.282)				(0.940)
VIO_PENALTY × *CSR_COV_HIGH*			0.052			1.375*
			(0.287)			(0.717)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	30,885	30,885	30,885	5334	5334	5334
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.069	0.069	0.240	0.243	0.248	0.246

Table 7

Cross-Sectional Results: Financial Constraints. This table presents the cross-sectional test examining whether our results are more pronounced for firms with greater financial constraints, using three proxies, *KZ_SCORE*, *HM_SCORE* and *DONATION*. See Appendix A for variable definitions. Robust standard errors are clustered at the firm and year levels. The standard errors are reported in parentheses. * ** , * *, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: *VIO_IND*

Dep Var =	*NEW_CONNBD_NUM*			*NEW_CONNBD_CSR_SCORE*		
	(1)	(2)	(3)	(4)	(5)	(6)
VIO_IND × *KZ_SCORE*	0.001			0.002*		
	(0.001)			(0.001)		
VIO_IND × *HM_SCORE*		1.373***			1.691***	
		(0.270)			(0.482)	
VIO_IND × *DONATION*			-0.037**			-0.101***
			(0.015)			(0.037)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	24,397	15,757	2427	4631	3043	778
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.065	0.094	0.055	0.239	0.292	0.245

Panel B: VIO_PENALTY

Dep Var =	*NEW_CONNBD_NUM*			*NEW_CONNBD_CSR_SCORE*		
	(1)	(2)	(3)	(4)	(5)	(6)
VIO_PENALTY × *KZ_SCORE*	0.003*			0.008		
	(0.001)			(0.007)		
VIO_PENALTY × *HM_SCORE*		0.588***			1.562**	
		(0.215)			(0.836)	
VIO_PENALTY × *DONATION*			-0.020***			-0.084
			(0.008)			(0.076)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	24,397	15,757	2427	4631	3043	778
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.065	0.097	0.059	0.240	0.294	0.244

Table 8

Cross-Sectional Results: CSR Reputation/Preference of Connected Firms and Directors This table presents the cross-sectional test examining whether our results are more pronounced for connected firms with better CSR reputations and commitment using *CONNBD_NEGCSR, CONNDIR_FEMALE*, and *CONNDIR_CSR_EXP*. See Appendix A for variable definitions. Robust standard errors are clustered at the firm and year levels. The standard errors are reported in parentheses. * ** , * *, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: *VIO_IND*			
Dep Var =	*NEW_CONNBD_CSR_SCORE*		
	(1)	(2)	(3)
VIO_IND $\times$ *CONNBD_NEGCSR*	-1.670*		
	(0.956)		
VIO_IND $\times$ *CONNDIR_FEMALE*		0.325	
		(0.220)	
VIO_IND $\times$ *CONNDIR_CSR_EXP*			0.335**
			(0.170)
Controls	Yes	Yes	Yes
Observations	5334	5334	5334
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Adjusted R^2	0.239	0.239	0.239
Panel B: VIO_PENALTY			
Dep Var =	***NEW_CONNBD_CSR_SCORE***		
	(1)	(2)	(3)
VIO_PENALTY $\times$ *CONNBD_NESG*	-2.277		
	(1.302)		
VIO_PENALTY $\times$ *CONNDIR_FEMALE*		4.247***	
		(1.219)	
VIO_PENALTY $\times$ *CONNDIR_CSR_EXP*			1.837*
			(0.985)
Controls	Yes	Yes	Yes
Observations	5334	5334	5334
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Adjusted R^2	0.243	0.244	0.243

directors with experience serving on a CSR committee (Khoo et al., 2023). In general, the cross-sectional test results presented in Table 8 show that our main results are more pronounced when the connected firms receive fewer negative CSR reports, have more female directors, or when the connected directors have experience serving on a CSR committee than in other situations. Overall, the results reveal that firms are more likely to establish board interlocks with firms that have a better CSR reputation after a CSR violation.

5. Robustness tests and additional analyses

5.1. Endogeneity tests

We use three methods to address endogeneity concerns. We first perform a DID analysis. To improve the comparability between violating and non-violating firms, we match the treatment firms using propensity scores for the first year after a large-scale CSR violation with their comparable control firms. We choose large-scale CSR violations because firms that commit such CSR violations face serious reputational damage. Following previous studies (Fresard, 2010; Flammer, 2015), we select the treatment firms based on large changes in the variable of interest. *LARGE_VIOFIRM* is an indicator variable that takes a value of 1 if firm *i* commits a large-scale CSR violation (top 10% of *VIO_PENALTY*) during our sample period, and 0 otherwise. *POST_LARGE_VIO* is an indicator variable that takes a value of 1 if year *t* is the first year after a large-scale CSR violation is discovered, and 0 if a firm has not committed a CSR violation. For firms that do not commit CSR violations, the first year after a violation corresponds to that of their matched firms (i.e., pseudo-large CSR-related violation years). This yields 680 unique

matches, consisting of 17,631 firm-year observations. The results presented in Panel A of Table 8 show that the coefficients on *LARGE_-VIOFIRM* $\times$ *POST_LARGE_VIO* are significant and positive, which suggests that firms are more likely to establish new board connections and form connected boards with firms that have better CSR performance after a large-scale CSR-related violation.

Second, we conduct EBM to match firms that commit CSR violations and firms that do not commit CSR violations (Shroff et al., 2017; Ferri et al., 2018). EBM is often used when the treatment and control groups are unbalanced (Hainmueller, 2012). This method assigns weights to the characteristics of the control group to match the moments of the distribution of the matching variables (i.e., all of the control variables in our setting) with those of the treatment firms.[15] The results presented in Panel B of Table 8 show that the coefficients on *VIO_IND* remain positive and statistically significant. Overall, these results suggest that our main results are unlikely to be driven by endogeneity.

Panel C presents the results based on the approach of Frank (2000) and Larcker and Rusticus (2010). Column (1) shows the ITCV of *VIO_-IND*.[16] Column (2) presents the partial impact of each independent variable, which is measured as the partial correlation between the independent variables and *VIO_IND* and *NEW_CONNBD_NUM*. Impact is defined as the product of the partial correlation between the independent and control variables and the correlation between the dependent and control variables. We find that the ITCV of *VIO_IND* is 0.0194, which is much greater than the largest absolute coefficient on the control

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[15] For brevity, the results showing covariate balance after matching are excluded.

[16] The ITCV is the lowest product of the partial correlation between the dependent and confounding variables and the partial correlation between the independent and confounding variables (partialling out the effect of the other control variables).

Table 9

Endogeneity Tests. This table presents the endogeneity tests using the difference-in-differences model with a one-to-one matched sample of firms with large CSR violations and other firms. The results are reported in Panel A. We match these firms based on propensity scores in the first year of the large CSR violation. This yields 680 unique matches, consisting of 17,631 firm-year observations. *LARGE_VIOFIRM* is an indicator with a value of one if firm i has a large CSR-related violation (top 10% of *VIO_PENALTY*) in our sample period, and zero if a firm has no CSR violation. *POST_LARGE_VIO* is an indicator with a value of one starting the year in which the year t is after the first year of the large CSR violation, and zero otherwise. For firms without large CSR-related violations, the first year of CSR violation corresponds to their matched firms (i.e., pseudo-large CSR violation years). We further use the entropy balance approach with results reported in Panel B. Panel C presents the results based on the approach of Frank (2000) and Larcker and Rusticus (2010). Column (1) shows the impact threshold for a confounding variable (ITCV) for *VIO_IND*. Column (2) reports the partial impact of each independent variable that measures the partial correlations between the independent variables with *VIO_IND* and *NEW_CONNBD_NUM*. The impact is defined as the product of the partial correlation between the independent and control variables and the correlation between the dependent and control variables. See Appendix A for variable definitions. Robust standard errors are clustered at the firm and year levels. The standard errors are reported in parentheses. * ** , * *, and * indicate significance at 1%, 5%, and 10% levels, respectively.

Panel A: Difference-in-Difference Approach

Dep Var =	*NEW_CONNBD_NUM*		*NEW_CONNBD_CSR_SCORE*	
	(1)		(2)	
LARGE_VIOFIRM	-0.012	(0.022)	-0.203**	(0.091)
POST_LAR_VIO	0.047*	(0.024)	0.010	(0.110)
LARGE_VIOFIRM × *POST_LAR_VIO*	**0.065**	**(0.032)**	**0.411***	**(0.126)**
Controls	Yes		Yes	
Observations	17,631		3914	
Industry FE	Yes		Yes	
Year FE	Yes		Yes	
Adjusted R^2	0.055		0.202	

Panel B: Entropy Balance Approach

Dep Var =	*NEW _CONNBD _IND*	*NEW _CONNBD _NUM*	*NEW _CONNBD _CSR_SCORE*	*NEW _CONNBD _CSR_SCORE_DIFF*
	(1)	(2)	(3)	(4)
VIO_IND	**0.031****	**0.018***	**0.289****	**0.277***
	(0.012)	**(0.009)**	**(0.123)**	**(0.125)**
Controls	Yes	Yes	Yes	Yes
Observations	30,885	30,885	5334	5334
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Adjusted R^2	0.067	0.081	0.285	0.341

Panel C: ICTV Method

Variables	(1) ITCV	(2) Impact	Variables (Continued)	Impact (Continued)
VIO_IND	0.0194			
FIRMSIZE		0.0085	*AAER*	0.0001
FIRM_AGE		0.0046	*RESTATEMENT*	0.0001
BM		0.0030	*ROA*	0.0000
BUS_SEG		0.0022	*PRE_RETURN*	0.0000
ANALYST_COVERAGE		0.0017	*BOARD_IND*	-0.0001
BIGN		0.0009	*CEO_TURNOVER*	-0.0001
LEV		0.0009	*RETURN_VOLATILITY*	-0.0002
BOARD_BUSY		0.0009	*BOARD_SIZE*	-0.0003
DIRC_TURNOVER		0.0008	*CSR_SCORE*	-0.0008
INSTI_OWNER		0.0002	*LIT_IND*	-0.0013

variables (i.e., *FIRMSIZE*, with a value of 0.0085); this shows that, to overturn the results, the omitted variables should have a more substantial effect than *FIRMSIZE*. We believe that the identification of such omitted variables is very unlikely.

5.2. Alternative measures of CSR performance and alternative model specifications

We also use alternative measures of CSR performance and alternative model specifications to check the robustness of our results. Panel A of Table 10 presents the results using three alternative measures of CSR performance. First, following Lins et al. (2017), we use *NEW_CONNBD_CSR_SCALED*, which is measured as the net CSR score (the number of strengths minus the number of concerns in all six KLD social categories) based on the scaled strengths and scaled concerns. Scaled strengths (concerns) are measured by dividing the number of strengths (concerns) by the maximum possible strengths (concerns) in that category for each firm-year. Second, *NEW_CONNBD_CSR_A4* denotes the

average environmental and social performance scores of a firm provided by ASSET4 in year t-1. Third, *NEW_CONNBD_CSR_AWARD* is an indicator variable that takes a value of 1 if ASSET4 records show that firm i won an external CSR award in year t-1, and 0 otherwise. Using these alternative proxies as dependent variables,[17] we find that all of the coefficients on *VIO_IND*, *VIO_NUM*, and *VIO_PENALTY* continue to be positive and that most of the coefficients are statistically significant.

Panel B of Table 10 presents the results using alternative fixed effects, that is, firm and year fixed effects. We find that the results are

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[17] Our main analysis is based on the aggregate number of CSR-related violations and the CSR performance of newly connected firms. We also examine whether our findings are robust across different CSR dimensions (i.e., safety, environment, employment, consumer protection, government contracting, healthcare, and miscellaneous). We rerun our main regressions using these variables and find that the results (untabulated) are quantitatively similar to the main results.

Table 10

Alternative Measure of CSR Performance and Alternative Models. Panel A of this table presents the results using alternative measures of CSR performance. *NEW_CONNBD_CSR_SCALED* is the sum of the number of strengths minus the number of concerns in all six KLD social categories in year *t*-1, where we minus the number of strengths (concerns) by the maximum possible strengths (concerns) in that category for each firm-year. *NEW_CONNBD_CSR_A4* is the average scores of environmental and social performances provided by ASSET4 in year *t*-1. *NEW_CONNBD_CSR_AWARD* is an indicator variable with a value of one if firm *i* has an external CSR award recorded in ASSET4 in year *t*-1, and zero otherwise. In Panel B, we use alternative fixed effects: i.e., firm and year fixed effect. See Appendix A for variable definitions. Robust standard errors are clustered at the firm and year levels. Panel B presents the main results using firm fixed effect with standard errors clustered at the firm level. The standard errors are reported in parentheses. * ** , * *, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Alternative Measures of CSR performance									
Dep Var =	*NEW_CONNBD_CSR_SCALED*			*NEW_CONNBD_CSR_A4*			*NEW_CONNBD_CSR_AWARD*		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VIO_IND	0.050*			0.073			0.778***		
	(0.029)			(0.086)			(0.162)		
VIO_NUM		0.028***			0.057***			0.087**	
		(0.006)			(0.017)			(0.035)	
VIO_PENALTY			0.675***			0.964**			1.669*
			(0.174)			(0.486)			(0.935)
Observations	5334	5334	5334	5334	5334	5334	5334	5334	5334
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted/Pseudo R^2	0.232	0.233	0.233	0.238	0.241	0.239	0.185	0.187	0.189

Panel B: Alternative Models												
Dep Var =	*NEW_CONNBD_IND*			*NEW_CONNBD_NUM*			*NEW_CONNBD_CSR_SCORE*			*NEW_CONNBD_CSR_SCORE_DIFF*		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VIO_IND	0.013*			0.024			0.271***			0.271***		
	(0.006)			(0.022)			(0.097)			(0.097)		
VIO_NUM		0.003*			0.009*			0.146***			0.146***	
		(0.002)			(0.005)			(0.019)			(0.019)	
VIO_PENALTY			0.200***			0.541***			2.344***			2.344***
			(0.054)			(0.153)			(0.585)			(0.585)
Observations	30,885	30,885	30,885	30,885	30,885	30,885	5334	5334	5334	5334	5334	5334
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted/Pseudo R^2	0.101	0.101	0.101	0.103	0.103	0.103	0.237	0.238	0.238	0.481	0.482	0.481

quantitatively similar to the main results. Overall, these results suggest that our main results are robust to alternative measures of CSR performance and alternative model specifications.

5.3. Market and media reactions to the announcement of newly appointed directors

Next, we examine whether the signaling effect of board interlocks influences the capital market and media news reports. Regarding the market reaction, the dependent variable, *CAR_FORCAL*, denotes cumulative abnormal returns in the days $(-1, +1)$ immediately preceding and following the announcement of a new independent director in year *t*. *CONN_DIRECTOR* is an indicator variable that takes a value of 1 if the newly appointed director is connected with another listed firm in year *t*, and 0 otherwise. *CONN_DIRECTOR_CSR* denotes the average *CSR_SCORE* of the other firm(s) in which the connected director works in year *t*. The first sample consists of 8686 director-firm-year observations for which the announcement dates are available during our sample period. The second sample further requires the first sample to have available data for *CONN_DIRECTOR_CSR*; hence, this yields only 2977 director-firm-year observations. The results presented in Panel A of Table 11 show that the coefficients on the interaction terms of *CONN_DIRECTOR* and *CONN_DIRECTOR_CSR* with *VIO_IND* and *VIO_NUM* are significant and positive.

Regarding the media reaction, the dependent variable, *MEDIA_NEGCSR*, denotes the number of negative CSR reports received by firm *i* in year *t*. *MEDIA_TONE* denotes the average sentiment of all of the media

reports on firm *i* in year *t*. The results in Panel B of Table 11 show that most of the coefficients on the interaction terms of *CONN_DIRECTOR* and *CONN_DIRECTOR_CSR* with *VIO_IND* and *VIO_NUM* are significant and negative. These results suggest that the capital market and the media react positively to the announcement of board interlocks, which supports the signaling role of board interlocks.

5.4. Market reaction to the announcement of new independent directors in connected firms

Our main argument is that, for firms engaging in CSR misconduct, establishing board interlocks with firms that have better CSR performance is an effective signaling strategy for reputation management. Thus, it would be interesting to examine whether and how the reputation of the connected firms is affected. It is possible that a firm's bad reputation spills over to the interlocked firms. Firms interlocked with firms accused of fraudulent financial reporting may also suffer reputational damage. We further examine whether the reputation of the connected firms is damaged by such board interlocks. The dependent variable, *CAR_CONN*, denotes the cumulative abnormal returns of the connected firms in the days $(-1, +1)$ immediately preceding and following the announcement date of the new board connection. *NEW_CONNECTION_VIO* is an indicator variable that takes a value of 1 if the new board connection is with a firm that committed at least one CSR violation 1 year before the connection, and 0 otherwise. *NEW_CONNECTION_NUM* denotes the number of CSR violations committed by the focal firm 1 year before the connection. *HIGH_CSR* is an indicator

Table 11

Market and Media Reaction to the Announcement of New Independent Directors in Focal Firms This table presents the results of whether the market or media reaction to the announcement of new independent directors is more positive for connected directors than for non-connected directors after a CSR violation and for connected directors from firms with better CSR performance. The dependent variable, *CAR_FORCAL*, is the cumulative abnormal return over the days (−1, +1) preceding and following the announcement date of the new independent director. *CONN_DIRECTOR* is an indicator variable with a value of one if the new independent director is a connected director who works in another listed firm, and zero otherwise. *CONN_DIRECTOR_CSR* is the average *CSR_SCORE* of the other firm(s) that the connected director works for in year *t*. See Appendix A for variable definitions. Robust standard errors are clustered at the firm and year levels. The standard errors are reported in parentheses. * ** , * *, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Market Reactions to the Announcement of New Independent Directors				
Dep Var = *CAR_FOCAL*	(1)	(2)	(3)	(4)
CONN_DIRECTOR × VIO_IND	0.144* (0.080)			
CONN_DIRECTOR × VIO_NUM		0.014** (0.006)		
CONN_DIRECTOR_CSR × VIO_IND			0.083* (0.057)	
CONN_DIRECTOR_CSR × VIO_NUM				0.015*** (0.004)
Controls	Yes	Yes	Yes	Yes
Observations	8686	8686	2977	2977
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Adjusted R^2	0.369	0.369	0.228	0.230

Panel B: Media Reactions to the Announcement of New Independent Directors								
Dep Var =	*MEDIA_NEGCSR*				*MEDIA_TONE*			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CONN_DIRECTOR × VIO_IND	-1.264*** (0.380)				-0.831* (0.462)			
CONN_DIRECTOR × VIO_NUM		-0.614*** (0.206)				-0.524 (0.341)		
CONN_DIRECTOR_CSR × VIO_IND			-0.283* (0.151)				-0.483* (0.251)	
CONN_DIRECTOR_CSR × VIO_NUM				-0.115 (0.078)				-0.214*** (0.078)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13,412	13,412	13,412	13,412	22,377	22,377	22,377	22,377
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.369	0.369	0.230	0.228	0.230	0.228	0.228	0.228

variable that takes a value of 1 if the connected firm has a higher CSR score than the focal firm, and 0 otherwise. The first sample consists of 10,932 director-firm-year observations for which the announcement dates are available during our sample period. The second sample further requires the first sample to have available data for *HIGH_CSR*; hence, this yields 3897 director-firm-year observations. Table 12 shows that the coefficients on *NEW_CONNECTION_VIO* and *NEW_CONNECTION_NUM,* as well as their interaction terms with *HIGH_CSR*, are all nonsignificant, which suggests that board interlocks are unlikely to damage the reputation of the connected firms.

5.5. Consequences of Board Interlocks After a CSR Violation

Last, we examine whether board connections with firms that have better CSR performance increases the CSR performance of the focal firm and decreases its CSR misconduct and threat of CEO turnover in the future. In Panel A of Table 13, we regress the future CSR performance of the focal firm in years $t + 1$, $t + 2$, and $t + 3$ (i.e., *CSR_SCORE* $_{t+1}$, *CSR_SCORE* $_{t+2}$, and *CSR_SCORE* $_{t+3}$, respectively) on *NEW_CONNBD_CSR_SCORE* in year *t*. The coefficients on *NEW_CONNBD_CSR_SCORE* in all three columns are positive but nonsignificant. In Panel B, we regress *VIO_NUM* in years $t + 1$, $t + 2$, and $t + 3$ on *NEW_CONNBD_CSR_SCORE* in year *t*; we find that the coefficients on *NEW_CONNBD_CSR_SCORE* are nonsignificant. These results strongly support the signaling perspective that forming board interlocks with firms that have better CSR performance is only a reputation management strategy and has little real effect on the future performance and CSR misconduct of the focal firm. Furthermore, in Panel C,

we regress future forced CEO turnover (i.e., *TURNOVER* $_{t+1}$, *TURNOVER* $_{t+2}$, and *TURNOVER* $_{t+3}$) on *NEW_CONNBD_CSR_SCORE* in year *t*. We find weak evidence that forming board connections with firms that have better CSR performance after a CSR violation decreases the threat of CEO turnover for the focal firm in the future.

6. Conclusion

We examine the effect of CSR-related violations on a firm's decision to establish board interlocks. Using data on U.S. listed firms from 2002 to 2018, we demonstrate that firms that commit CSR violations are more likely to connect with other firms through board interlocks, especially with firms that have better CSR performance. The results of further analyses show that although the formation of board interlocks with firms that have better CSR performance leads to favorable market and media reactions, such board interlocks have little real effect on the focal firm's future CSR performance and CSR misconduct. These results support our argument that firms that commit CSR violations establish board interlocks to signal their willingness to improve their CSR performance in the hope of repairing the reputational losses caused by the violation.

The results of the cross-sectional tests confirm this signaling effect of board interlocks. We find that the documented effect of CSR violators forming board interlocks is more pronounced in firms that are more committed to improving their CSR performance, firms with higher visibility, and firms facing greater financial constraints than in firms less committed to CSR, less visible firms, and firms with more financial resources.

This study has some limitations, which leave room for further

Table 12

Market Reaction to the Announcement of New Independent Directors in Connected Firms This table presents the results documenting the market reaction to the connected firms' announcement of new connections with the focal firms. The dependent variable, *CAR_CONN*, is the cumulative abnormal return to the connected firms, over the days (−1, +1) preceding and following the announcement date of the new board connection. *NEW_CONNECTION_VIO* is an indicator variable with a value of one if the new board connection is with the focal firm that has at least one CSR violation one year prior to the connection, and zero otherwise. *NEW_-CONNECTION_NUM* is the number of CSR violations of the focal firm one year prior to the connection. *HIGH_CSR* is an indicator variable with a value of one if the connected firm has a higher CSR score than the focal firm, and zero otherwise. The first sample consists of 10,932 director-firm-year observations when the announcement dates are available in our sample period. The second sample further requires the first sample to have available *HIGH_CSR* data, which leads to 3897 director-firm-year observations. See Appendix A for variable definitions. Robust standard errors are clustered at the firm and year levels. The standard errors are reported in parentheses. * ** , * *, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dep Var = CAR_CONN	(1)	(2)	(3)	(4)
NEW_CONNECTION_VIO	0.093			
	(0.061)			
NEW_CONNECTION_NUM		0.009		
		(0.006)		
NEW_CONNECTION_VIO × HIGH_CSR			0.056	
			(0.041)	
NEW_CONNECTION_NUM × HIGH_CSR				0.008
				(0.005)
Controls	Yes	Yes	Yes	Yes
Observations	10,932	10,932	3897	3897
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Adjusted R^2	0.416	0.418	0.253	0.255

Table 13

Consequences of the Board Interlock After CSR Violations. This table presents results examining whether board connections with higher CSR performance indeed increase CSR performance, reduce CSR misconduct, and mitigate the CEO turnover threat in the future. See Appendix A for variable definitions. Robust standard errors are clustered at the firm and year levels. The standard errors are reported in parentheses. * ** , * *, and * indicates p-values of 1%, 5%, and 10%, respectively.

Panel A: Future CSR Performance

	(1) CSR_SCORE_{t+1}		(2) CSR_SCORE_{t+2}		(3) CSR_SCORE_{t+3}	
NEW_CONNBD_CSR_SCORE	0.018	(0.012)	0.009	(0.013)	0.006	(0.015)
CSR_SCORE_{t-1}	0.745***	(0.054)	0.639***	(0.019)	0.544***	(0.022)
Constant	-1.071*	(0.580)	-3.008***	(0.886)	-4.081***	(1.243)
Controls	Yes		Yes		Yes	
Observations	4811		4227		3711	
Industry FE	Yes		Yes		Yes	
Year FE	Yes		Yes		Yes	
Adjusted R^2	0.737		0.609		0.540	

Panel B: Future CSR Misconduct

	(1) VIO_NUM_{t+1}		(2) VIO_NUM_{t+2}		(3) VIO_NUM_{t+3}	
NEW_CONNBD_CSR_SCORE	0.028	(0.042)	0.030	(0.055)	0.033	(0.044)
CSR_SCORE_{t-1}	-0.367***	(0.061)	-0.391***	(0.097)	-0.384***	(0.082)
Constant	-6.994***	(1.281)	-7.313***	(1.888)	-7.187***	(1.941)
Controls	Yes		Yes		Yes	
Observations	4811		4227		3711	
Industry FE	Yes		Yes		Yes	
Year FE	Yes		Yes		Yes	
Adjusted R^2	0.193		0.197		0.230	

Panel C: Future Forced CEO Turnover

	(1) $TURNOVER_{t+1}$		(2) $TURNOVER_{t+2}$		(3) $TURNOVER_{t+3}$	
NEW_CONNBD_CSR_SCORE	-0.006**	(0.003)	-0.004*	(0.002)	-0.004*	(0.002)
CSR_SCORE_{t-1}	0.005	(0.003)	0.004	(0.003)	0.006	(0.003)
Constant	0.248***	(0.035)	-0.223***	(0.031)	0.334***	(0.037)
Controls	Yes		Yes		Yes	
Observations	4811		4227		3711	
Industry FE	Yes		Yes		Yes	
Year FE	Yes		Yes		Yes	
Adjusted R^2	0.029		0.024		0.025	

exploration by future research. Firms can use different strategies to respond to CSR violations. Board interlocks may be only one of them. Future studies could explore other reputation repair strategies used after a CSR violation. Furthermore, we only focus on the association between CSR violations and the character reputation of focal firms. Future studies could explore the reputation repair strategies for other types of

reputational damage, such as capability reputation.

Data Availability

Data will be made available on request.

Appendix A. Variable Measurement

Key Variables of Interest	Definition
NEW_CONNBD_IND	An indicator variable with a value of one if a firm's newly appointed independent director works in another listed company in year t, and zero otherwise.
NEW_CONNBD_NUM	The number of newly appointed independent directors who work in another listed company (i.e., newly connected board) in year t.
NEW_CONNBD_CSR_SCORE	The average *CSR_SCORE* of newly connected boards in year t.
NEW_CONNBD_CSR_SCORE_DIFF	*NEW_CONNBD_CSR_SCORE* minus *CSR_SCORE* (defined below)
VIO_IND	An indicator with a value of one if a firm has at least one CSR violation in year t, and zero otherwise.
VIO_NUM	The number of CSR violations in year t.
VIO_PENALTY	The natural logarithm of one plus the total amount of violation penalties in $ millions in year t, scaled by *FIRMSIZE*.
Home Firm-level Control Variables	
CSR_SCORE	The sum of the number of strengths minus the number of concerns in all six KLD social categories in year t-1. These categories are community relations, diversity, employee issues, environmental matters, product safety, and human rights.
FIRMSIZE	The natural logarithm of total assets in year t-1.
BM	The year-end ratio of the book value of equity to the market value of equity in year t-1.
LEV	The year-end ratio of the sum of current liabilities and long-term debt to total assets in year t-1.
ROA	Income before extraordinary items divided by total assets in year t-1.
LOSS	An indicator with a value of one if the firm's ROA in year t-1 is negative, and zero otherwise.
FIRM_AGE	The number of years since a firm's listing in year t-1.
BIGN	An indicator with a value of one if the firm's auditor in year t-1 is a Big N audit firm, and zero otherwise.
PRE_RETURN	Cumulative abnormal daily stock returns in year t-1.
RETURN_VOLATILITY	The standard deviation of daily stock returns in year t-1.
LIT_IND	An indicator variable with a value of one if firm i is in a high-litigation industry, and zero otherwise. High-litigation industries are biotech (SIC codes 2833–2836 and 8731–8734), computers (3570–3577 and 7370–7374), electronics (3600–3674), and retail (5200–5961).
CEO_TURNOVER	An indicator with a value of one if there is a forced CEO departure in year t-1, and zero otherwise.
DIRC_TURNOVER	An indicator with a value of one if there is a non-CEO director departure in year t-1, and zero otherwise.
INSTI_OWNER	The percentage of institutional ownership in year t-1.
MEDIA_COVERAGE	The natural logarithm of one plus unique media reports for a firm in year t-1.
ANALYST_COVERAGE	The natural logarithm of one plus the number of analysts covering the firm in year t-1.
BUS_SEG	The number of business segments in year t-1.
BOARD_IND	The percentage of independent directors on the board in year t-1.
BOARD_SIZE	The total number of directors on the board in year t-1.
BOARD_BUSY	An indicator with a value of one if at least half of the directors on a board serve on three or more boards (including publicly listed firms, private firms, and others), and zero otherwise.
AAER	An indicator variable with a value of one if the SEC issues an Accounting and Auditing Enforcement Release (AAER) for the company in year t-1, and zero otherwise.
RESTATEMENT	An indicator variable with a value of one if firm i files an earnings restatement with the SEC in year t-1, and zero otherwise.
Newly Connected Boards and Directors Control Variables	
CONNBD_ROA	The average *ROA* of a newly connected board in year t-1.
CONNBD_BM	The average *BM* of a newly connected board in year t-1.
CONNBD_LEV	The average *LEV* of a newly connected board in year t-1.
CONNDIRC_CEOCFO	An indicator with a value of one if firm i appoints an independent director who is a CEO or CFO of a listed company in year t-1, and zero otherwise.
CONNDIRC_TENURE	The average years of the newly connected director(s)' tenure in year t-1.
CONNDIRC_NETWORK	The average years of newly connected director(s)' network in year t-1.
CONNDIRC_FEMALE	An indicator with a value of one if the newly connected director(s) have at least one female director.
CONNDIRC_CSR_EXP	An indicator with a value of one if the newly connected director(s) have taken a role in a CSR committee.
Variables for Cross-sectional Tests	
CSR_COMMITTEE	An indicator variable with a value of one if firm i has a CSR committee in year t-1, and zero otherwise.
CSR_ASSURANCE	An indicator variable with a value of one if firm i's CSR report is issued with external assurance in year t-1, and zero otherwise.
CSR_REPORT	An indicator variable with a value of one if firm i has issued a stand-alone CSR report in year t-1, and zero otherwise.
CSR_COMPENSA	An indicator variable with a value of one if firm i has linked CSR performance to the executive compensation in year t-1, and zero otherwise.
ANA_COV_HIGH	An indicator with a value of equal to one if *ANALYST_COVERAGE* of a firm in year t-1 is greater than the sample mean, and zero otherwise.
MED_COV_HIGH	An indicator with a value of one if *MEDIA_COVERAGE* of a firm in year t-1 is greater than the sample mean, and zero otherwise.
CSR_COV_HIGH	An indicator with a value of one if the number of CSR raters of a firm in year t-1 is greater than the sample mean, and zero otherwise. We include four leading CSR raters: i.e., KLD, ASSET4, IVA, and Sustainalytics.
KZ_SCORE	The KZ index, as reported by Lamont et al. (2001). It is a linear function of the accounting variables including cash flow, long-term debt, dividend-to-asset ratio, and Tobin's q. A higher value indicates greater financial constraints.
HM_SCORE	The HM index, as reported by Hoberg and Maksimovic (2015). A higher value indicates greater financial constraints. The index is based on textual analysis of the Management Discussion and Analysis (MD&A) sections. It relies on lists of keywords that refer to the delay in investment projects or issuance of equity and debt. The argument is that if investment is delayed because of difficulties in issuing securities (i.e., financing problems), the MD&A sections might contain keywords that refer to these delays and should show up in close proximity to keywords that refer to security issuance.
DONATION	Total average amount of all donations divided by net sales or revenue in thousand for firm i from t-3 to t-1.
CONNBD_NEGCSR	The number of negative CSR news of a newly connected board in year t-1.
Variables for Endogeneity Tests (Table 9)	
LARGE_VIOFIRM	An indicator with a value of one if firm i has a large CSR-related violation (top 10% of *VIO_PENALTY*) in our sample period, and zero if a firm has no CSR violation.
POST_LARGE_VIO	An indicator with a value of one starting the year in which the year t is after the first year of large CSR-related violation, and zero otherwise. For firms without any large CSR violations, the first year of CSR violation corresponds to that of their matched firms (i.e., pseudo-large CSR violation years).
Variables for Alternative Measures of CSR Performance (Table 10)	
NEW_CONNBD_CSR_SCALED	The sum of the number of strengths minus the number of concerns in all six KLD social categories in year t-1, where we minus the number of strengths (concerns) by the maximum possible strengths (concerns) in that category for each firm-year.
NEW_CONNBD_CSR_A4	The average scores of environmental and social performances provided by ASSET4 in year t-1.

(*continued*)

Key Variables of Interest	Definition
NEW_CONNBD_CSR_AWARD	An indicator variable with a value of one if firm *i* has an external CSR award recorded in ASSET4 in year *t*-1, and zero otherwise.
Variables for Additional Tests (Tables 11 to 13)	
CAR_FOCAL	Cumulative abnormal return over the days (−1, +1) preceding and following the announcement of a new independent director in the *focal* firm in year *t*. Daily cumulative abnormal return is calculated as the raw stock return minus CRSP's equally weighted market portfolio return.
MEDIA_NEGCSR	The number of negative CSR reports for firm *i* in year *t*.
MEDIA_TONE	The average media sentiments of all media reports for firm *i* in year *t*.
CAR_CONN	Cumulative abnormal return over the days (−1, +1) preceding and following the announcement of a new independent director in the *connected* firm in year *t*. Daily cumulative abnormal return is calculated as the raw stock return minus CRSP's equally weighted market portfolio return.
NEW_CONNECTION_VIO	An indicator variable with a value of one if the new board connection is with the focal firm that has at least one CSR violation one year prior to the connection, and zero otherwise
NEW_CONNECTION_NUM	The number of CSR violations of the focal firm one year prior to the connection.
HIGH_CSR	An indicator variable with a value of one if the connected firm has a higher CSR score than the focal firm, and zero otherwise.
TURNOVER	An indicator variable with a value of one if firm *i* has a forced CEO turnover, and zero otherwise. The data is collected from Peters and Wagner (2014).

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