International Review of Financial Analysis 87 (2023) 102575

Contents lists available at ScienceDirect

International Review of Financial Analysis

journal homepage: www.elsevier.com/locate/irfa

Informative or distracting: CSR disclosure of peer firms and analyst forecast accuracy

Juan Ni [a], Shuchang Jin [b,*], Yi Hu [c], Lei Zhang [d]

[a] School of Public Finance and Taxation, Zhongnan University of Economics and Law, 182 Nanhu Avenue, East Lake High-tech Development Zone, Wuhan 430073, PR China
[b] School of Accounting, Nanjing University of Finance and Economics, 3 Wenyuan Road, Qixia District, Nanjing, PR China
[c] School of Finance & Key Laboratory of Financial Engineering, Nanjing Audit University, 86 West Yushan Rd., Pukou District, Nanjing, PR China
[d] School of Business, Lingnan University, 8 Castle Peak Road, Tuen Mun, Hong Kong

ARTICLE INFO

JEL:
G14
G24
M14

Keywords:
CSR disclosure
Peer firm
Analyst forecast accuracy

ABSTRACT

We investigate the relationship between the CSR disclosure of peer firms and the analyst forecast accuracy of the focal firm. We find a negative association between peer CSR disclosure and analyst forecast error of the focal firm, indicating that peer CSR disclosure is informative. This negative association is more pronounced when the information environment of the focal firm is worse, when the correlation in fundamentals between the focal firm and its peers is higher, when the business of the focal firm is less complex, when the focal firm has more expert analyst coverage, when the focal firm's financial performance is more sensitive to CSR engagement, or when the quality of peer CSR disclosure is higher. Overall, we show that peer CSR disclosure conveys value-relevant information about the focal firm. Our study enriches the literature on both analyst forecasts and peer information, and we also provide important implications for practitioners in understanding the role of CSR disclosure in capital markets.

1. Introduction

Previous studies on the value relevance of CSR disclosure focus on developed countries and find that CSR disclosure conveys value-relevant information (Dhaliwal, Radhakrishnan, Tsang, et al., 2012; Du & Yu, 2021). Can this finding extend to emerging markets with weak institutions and high information asymmetry like China? In recent years, as the largest emerging country, China has taken actions to improve CSR disclosure (i.e., the mandatory CSR disclosure regulation in 2008 and the revision of the Code of Corporate Governance for Listed Companies in China in 2018), which provides ideal pseudo-natural experiments for investigating the economic consequence of CSR disclosure (Chen, Hung, & Wang, 2018). During the past two decades, encouraged by regulators, more and more firms have issued stand-alone corporate social responsibility (CSR) reports in China. Specifically, fewer than 50 listed firms issued stand-alone CSR reports before 2008 in China, but this number surged to more than 1000 by 2020. Considering the rapid increase of CSR reporting in China, the findings in the context of China can provide important implications for other emerging countries to promote the disclosure of CSR-related information. Meanwhile, though the existing literature has extensively explored the economic consequence of CSR disclosure (Chen et al., 2018; Chen, Li, Zeng, et al., 2023; Dhaliwal et al., 2012; Dhaliwal, Li, Tsang, et al., 2011; Du & Yu, 2021), how does the CSR disclosure of peer firms affect the focal firm's information environment is less explored, especially in emerging markets. In the context of China, this paper investigates whether the accuracy of analysts' earnings forecasts for a firm is influenced by the CSR disclosure of its peers.

On the one hand, peer CSR disclosure may enhance the accuracy of analysts' earnings forecasts for the focal firm. CSR activities have significant impacts on firm value (Dhaliwal et al., 2011; Freund, Nguyen, & Phan, 2022; Lev, Petrovits, & Radhakrishnan, 2010; Sánchez & Benito-Hernández, 2015). Sell-side analysts will incorporate CSR information into earnings forecasts for a firm (Dhaliwal et al., 2012). Meanwhile, each firm's disclosure could affect economically related firms (Lambert, Leuz, & Verrecchia, 2007; Shroff, Verdi, & Yost, 2017). Petaibanlue, Walker, and Lee (2015) find that accounting information of foreign peer firms improves the accuracy of analysts' earnings forecasts for domestic firms. Hence, if peer CSR disclosure contains value-relevant information about the focal firm, we can predict that peer CSR disclosure improves the accuracy of analysts' earnings forecasts for the focal firm (information channel).

* Corresponding author.
E-mail address: jinsc@smail.nju.edu.cn (S. Jin).

https://doi.org/10.1016/j.irfa.2023.102575
Received 24 August 2022; Received in revised form 21 January 2023; Accepted 7 February 2023
Available online 10 February 2023

On the other hand, peer CSR disclosure may decrease the accuracy of analysts' earnings forecasts for the focal firm. From the behavioral view, analysts have limited attention (Hirshleifer & Teoh, 2003). Brokerage houses usually assign analysts to follow firms with similar fundamentals (Ramnath, 2002). Hence, peer CSR disclosure may distract analysts from analyzing the focal firm. From this perspective, we could expect that the accuracy of analysts' earnings forecasts for a firm will decrease when more peers issue CSR reports (attention channel).

Using panel data from 2006 to 2020 of all Chinese A-share listed firms, we document a negative association between peer CSR disclosure intensity (measured as the percentage of peer firms issuing stand-alone CSR reports) and analyst forecast error of the focal firm, supporting the information channel. Our results are robust to the model specifications, the sample selections, the definition of peer firms, and the measure of peer CSR disclosure intensity.

Furthermore, to mitigate the endogeneity concern, we conduct a difference-in-differences analysis. In December 2008, both the Shanghai Stock Exchange (SHSE) and the Shenzhen Stock Exchange (SZSE) mandated a subset of listed firms to disclose CSR reports. Using this mandatory CSR disclosure as an exogenous shock to the intensity of peer CSR disclosure, we find that firms experiencing a greater increase in the peer CSR disclosure intensity (treated firms) have relatively lower analyst forecast error than those experiencing less increase in the peer CSR disclosure intensity (control firms) after the shock, further confirming the information channel.

Next, we conduct several cross-sectional tests to further validate the effects of peer CSR disclosure on the analyst forecast error of the focal firm. First, we show that the negative association between the peer CSR disclosure intensity and the analyst forecast error is more pronounced for firms with a poor information environment, suggesting that the information provided by peer firms is more valuable to analysts when the firm-specific information of the focal firm is scarce. Second, we find that the reduction effect of peer CSR disclosure on analyst forecast error is stronger when the fundamental of the focal firm is more correlated to its peers. Third, we demonstrate that the negative association between the intensity of peer CSR disclosure and the analyst forecast error is more significant for firms with lower business complexity. Fourth, we manifest that peer CSR disclosure can far more significantly reduce analyst forecast error for firms that more expert analysts follow. In addition, we document that the reduction effect of peer CSR disclosure on analyst forecast error is more pronounced when the focal firm's financial performance is more sensitive to CSR engagement, and when the quality of peer CSR disclosure is higher.

Finally, we provide additional evidence that peer CSR disclosure contains information about the focal firm. First, we show that peer CSR disclosure contributes to the industry-wide information about the focal firm, further supporting the information channel. Second, we find that the current stock return of the focal firm incorporates more information about future earnings when peer CSR disclosure is more intensive. Third, we find that peer CSR disclosure decreases the dispersion of analysts' earnings forecasts.

Our study has several potential contributions to existing literature. First, we extend the literature on analyst forecasts. Prior studies mainly focus on the influence of financial information on analyst forecast accuracy (Demmer, Pronobis, & Yohn, 2019; Jiao, Koning, Mertens, et al., 2012; Tan, Wang, & Welker, 2011). However, whether sell-side analysts incorporate CSR information, a type of nonfinancial information, into their earnings forecasts is less explored. To our knowledge, the only such work is that of Dhaliwal et al. (2012), who find that firms issuing stand-alone CSR reports have lower analyst forecast errors. Our study complements Dhaliwal et al. (2012) by showing that besides the CSR information from the focal firm, peer CSR disclosure can also benefit analysts' earnings forecasts for the focal firm.

Second, we contribute to the literature on peer information. Prior studies provide evidence that peer firms' information disclosures have important economic consequences for the related firm, such as stock price (Foster, 1981), cost of capital (Shroff et al., 2017), corporate social responsibility (Cao, Liang, & Zhan, 2019), information environment (Seo, 2021). Meanwhile, corporate managers would make decisions based on public information about peer firms, such as accounting fraud (Beatty, Liao, & Yu, 2013), stock returns (Badertscher, Shanthikumar, & Teoh, 2019; Foucault & Fresard, 2014), investments (Leary & Roberts, 2014), taxes (Kubick, Lynch, Mayberry, et al., 2015), stock splits (Kaustia & Rantala, 2015), dividend announcements (Grennan, 2019) and MD&A narratives (Cho & Muslu, 2021). We extend this literature by exploring whether market participants, as represented by sell-side analysts, will use information from peer firms when making decisions.

Third, we enrich the CSR disclosure literature. Prior studies provide evidence that as a type of nonfinancial information, CSR disclosure contains value-relevant information. CSR information can influence firm value through various ways, such as sales (Lev et al., 2010), financing cost (Dhaliwal et al., 2011), productivity (Edmans, 2011; Sánchez & Benito-Hernández, 2015), and litigation risk (Freund et al., 2022). We shed light on the spillover effects of CSR information among firms with fundamental similarities. Specifically, we find peer CSR disclosure can increase the industry-wide information about the focal firm and improve analysts' forecast accuracy for the focal firm.

2. Related literature and hypothesis development

2.1. Information channel

CSR activities can influence firm value in various ways, such as sales (Lev et al., 2010), financing cost (Chen et al., 2023; Dhaliwal et al., 2011), productivity (Edmans, 2011; Sánchez & Benito-Hernández, 2015), and litigation risk (Freund et al., 2022). Lev et al. (2010) show that firms making charitable contributions have higher future revenue growth. Dhaliwal et al. (2011) provide evidence that firms initiating disclosure of CSR activities enjoy a reduced cost of equity capital. Chen et al. (2023) also find good ESG performance can reduce the cost of equity in China. Edmans (2011) shows that employee satisfaction is positively associated with shareholder returns. Sánchez and Benito-Hernández (2015) find that good CSR performance encourages labor productivities. Chen et al. (2018) demonstrate that mandatory CSR disclosure in China reduces firm profitability. Freund et al. (2022) claim that firms engage in CSR activities to reduce shareholder litigation risk. Hence, CSR information is value-relevant and useful for decision makers. Dhaliwal et al. (2012) provide evidence that the issuance of stand-alone CSR reports is positively associated with analyst forecast accuracy. By analyzing the market reaction to the readability and tone of CSR reports, Du and Yu (2021) conclude that CSR disclosure conveys value-relevant information.

Previous literature shows that firms having fundamental similarities or fundamental linkages will exhibit momentum spillover, namely, the past return of one firm can predict the returns of firms with fundamental similarities or linkages to it (Lee, Sun, Wang, et al., 2019; Moskowitz & Grinblatt, 1999). This literature suggests that the information spills over among firms with fundamental similarities. Ali and Hirshleifer (2020) further show that sell-side analysts will incorporate news about linked firms. Lambert et al. (2007) argue that each firm's disclosure could have an externality on economically related firms' cost of equity. Ma (2017) shows that higher earnings quality of economically linked firms decreases a firm's systematic risk. Petaibanlue et al. (2015) show that accounting information of foreign peer firms helps analysts improve earnings forecast accuracy for domestic firms that newly adopt International Financial Reporting Standards. From these views, if CSR information is value-relevant and such information spills over among firms with fundamental similarities, we could expect that peer CSR disclosure can reduce the error of analyst earnings forecasts for the focal firm. Motivated by the discussion above, we propose the following hypothesis:

H1 (Information channel): The analyst forecast error of the focal firm will decrease when more peer firms disclose CSR reports.

2.2. Attention channel

Market participants have limited attention (Hirshleifer & Teoh, 2003). Hirshleifer, Lim, and Teoh (2009) document that investors' reaction to earnings surprise is weaker, and the post-earnings announcement drift (PEAD) is stronger when other firms report more earnings announcements on the same day. Liu, Low, Masulis, et al. (2020) find that distracted institutional investors are less likely to monitor the directors, resulting in poor board performance. Gibbons, Iliev, and Kalodimos (2021) claim that analysts cannot pay attention to all companies, and they allocate more attention to companies with more information needs required by investors (e.g., large companies and companies with high uncertainty). Aslan (2022) shows that sell-side analysts make less accurate earnings forecasts when distracted by housing market distress.

Meanwhile, existing literature documents that sell-side analysts pay attention to firms' CSR reports (Dhaliwal et al., 2012). To minimize the cost of acquiring information, sell-side analysts usually follow firms with similar fundamentals (Ramnath, 2002). Hence, peer firms' CSR reports will attract analysts' attention and make them pay less attention to the focal firm, resulting in less accurate earnings forecasts of the focal firm. Based on the above analysis, we propose a competing hypothesis as follows:

H2 (Attention channel): The analyst forecast error of the focal firm will increase when more peer firms disclose CSR reports.

3. Data, sample, and variables

3.1. Data source and sample selection

We extract our data from two data sources. We obtain information about the disclosure of stand-alone CSR reports from the CESG database in the Chinese Research Data Services (CNRDS) Platform. The CESG database collects all Chinese A-share listed firms that disclose stand-alone CSR reports and includes information about the length (i.e., the number of pages) and comprehensiveness of the CSR reports. We obtain financial data, stock return data, and analyst forecast data from China Stock Market & Accounting Research (CSMAR) Database. CSMAR Database offers data on the China stock markets and the financial statements of China's listed companies, which is the most commonly used database for studies on China's listed firms.

Since the CSR-related data in CNRDS starts in 2006, our sample period begins in 2006 and ends in 2020. We remove firms in the financial industry, firms listed for less than one year, firms without analyst coverage, observations with negative book equity or sales, and observations with missing variables. Our final sample includes 18,485 firm-year observations for 2607 China's A-share listed firms.

3.2. Main variables

3.2.1. Dependent variable: Analyst forecast error

Following Dhaliwal et al. (2012), we use analyst forecast error (*FERROR*) as an inverse measure of analyst forecast accuracy. Specifically, *FERROR* is calculated as the average of the absolute errors for all earnings forecasts made in the year for a firm, scaled by the stock price at the beginning of the year:

$$FERROR(k) = \frac{1}{N}\sum_{j=1}^{N}|FEPS_{i,t,j}^{k} - EPS_{i,t}^{k}|/P_{i,t} \quad (1)$$

where subscripts i, t, and j index firm i, year t, and analyst j, respectively. The indicator k denotes the forecasting horizon, which takes three values, 0, 1, or 2. Specifically, $k = 0$, 1, or 2 denotes the forecast for the current year, one year ahead, or two years ahead, respectively. We distinguish among forecasts with different forecasting horizons because De Bondt and Thaler (1990) show that analyst forecast error increases with the forecast horizon. *FEPS* denotes analyst earnings forecasts; *EPS* represents the actual earnings per share; *P* is the stock price at the beginning of the year. *N* is the total number of forecasts made for the firm for a given forecast horizon in the year.

3.2.2. Independent variable: The intensity of peer CSR disclosure

The intensity of peer CSR disclosure (*PeerCSR*) is measured as the percentage of peer firms that issue stand-alone CSR reports in the year. Since firms in the same industry have similar fundamentals and are influenced by common factors, following Leary and Roberts (2014), we define peer firms as those in the same industry. Our industry classification is based on the 4-digit Wind industry code.[1]

3.2.3. Control variables

Following the analyst forecast literature (Demmer et al., 2019; Dhaliwal et al., 2012; Tan et al., 2011), we control a series of variables that may affect analyst forecast accuracy. *CSR* is a dummy variable equal to one for firms issuing stand-alone CSR reports in the year, and zero otherwise. *SIZE* is the natural logarithm of total assets in RMB at the end of the year. Earnings volatility (*VOLROA*) is measured as the standard deviation of ROA (EBIT scaled by total assets) within a rolling window of five years before the current year. *LOSS* is an indicator variable that equals one if the firm reports negative earnings in the year, and zero otherwise. *InstShr* represents institutional investor ownership, measured as the number of shares held by institutional investors scaled by total shares outstanding. *LEV* denotes the book leverage, measured as the total liability scaled by total assets. *Age* is the firm age measured as the number of years since listing. *TURN* is the stock turnover measured as the number of shares traded scaled by the total outstanding shares in the year. *MB* is the market value of equity scaled by the book value of equity at the end of the year. *STD* is the standard deviation of daily stock return in the year. *NUMPeer* is the number of peer firms. We also control the median forecast horizon and the number of analysts who make forecasts. Specifically, for each firm, *Fhorizon*(k) represents the median forecast horizon of analyst forecasts for earnings of year $t + k$, where k takes three values, 0, 1, or 2. The forecast horizon is calculated as the number of days between the forecast date and the earnings announcement date. For each firm, *N_Analyst*(k) denotes the number of analysts who make forecasts in year t for the earnings of year $t + k$, where k takes three values, 0, 1, or 2. All control variables are lagged one year, except *Fhorizon*(k) and *N_Analyst*(k).

3.3. Summary statistics

Table 1 presents the summary statistics of our main variables.[2] To mitigate the influence of outliers, we winsorize all continuous variables at the 1st and 99th percentiles. Consistent with De Bondt and Thaler

[1] Wind is a leading provider of financial information services in China and Wind industry code is commonly used for Chinese companies in both academia and industry.

[2] In the Internet Appendix, we also report the summary statistics for the measures of analyst forecast error (i.e., *FERROR(0)*, *FERROR* (1), *FERROR* (2)) in the subsamples formed by an independent double sorting scheme. Specifically, first, we divide our sample into the low peer CSR disclosure intensity subsample and high peer CSR disclosure intensity subsample based on peer CSR disclosure intensity measured as the percentage of peer firms issuing stand-alone CSR reports. We further divide our sample into the reporter and non-reporter subsamples based on whether the firm provides a CSR report in a given year. Thus, based on the independent double sorting, we split our sample into four parts (i.e., low-intensity & non-reporter, low-intensity & reporter, high-intensity & non-reporter, and high-intensity & reporter). As shown in Table IA1, both the mean and the median of analyst forecast errors are higher in the low-intensity subsample than in the high-intensity subsample. These results hold no matter whether the focal firm itself provides a CSR report or not. Overall, Table IA1 provides preliminary evidence that peer CSR disclosure contains incremental value-relevant information about the focal firm.

Table 1
Summary statistics.

Variables	N	Mean	SD	Min	P25	P50	P75	Max
FERROR(0)	18,485	0.017	0.025	0.000	0.004	0.009	0.019	0.150
FERROR (1)	16,469	0.036	0.042	0.001	0.011	0.023	0.043	0.240
FERROR (2)	14,046	0.048	0.049	0.002	0.017	0.034	0.060	0.269
Fhorizon(0)	18,485	256.200	87.520	30.000	209.000	249.000	328.000	435.000
Fhorizon (1)	16,469	646.000	73.530	478.000	594.000	640.000	709.000	803.000
Fhorizon (2)	14,046	986.000	66.250	838.000	945.000	976.500	1031.000	1130.000
N_Analyst(0)	18,485	21.790	28.890	1.000	3.000	11.000	29.000	349.000
N_Analyst (1)	16,469	19.680	25.080	1.000	3.000	10.000	26.000	289.000
N_Analyst (2)	14,046	15.240	18.730	1.000	3.000	8.000	20.000	195.000
PeerCSR	18,485	0.243	0.094	0.000	0.205	0.247	0.293	0.446
CSR	18,485	0.319	0.466	0.000	0.000	0.000	1.000	1.000
SIZE	18,485	22.470	1.328	19.890	21.520	22.280	23.230	26.390
VOLROA	18,485	0.033	0.038	0.003	0.012	0.021	0.038	0.255
LOSS	18,485	0.062	0.242	0.000	0.000	0.000	0.000	1.000
InstShr	18,485	0.466	0.242	0.003	0.284	0.496	0.654	0.916
LEV	18,485	0.469	0.198	0.056	0.317	0.473	0.621	0.885
AGE	18,485	10.650	6.278	2.000	5.000	10.000	15.000	25.000
TURN	18,485	5.439	3.977	0.447	2.495	4.385	7.361	24.650
MB	18,485	3.598	2.905	0.651	1.741	2.721	4.407	17.430
STD	18,485	0.030	0.010	0.013	0.023	0.028	0.035	0.136
NUMPeer	18,485	186.200	140.300	13.000	62.000	120.000	345.000	461.000

This table reports the descriptive statistics of our main variables. *FERROR*(k) is measured by the absolute value of average analyst forecast errors of firm i for forecasts made in year t for the earnings of year $t + k$ ($k = 0, 1, 2$). *Fhorizon*(k) represents the median forecast horizon of analyst forecasts made in year t for the earnings of year $t + k$ ($k = 0, 1, 2$). *N_Analyst*(k) represents the number of analysts who make forecasts in year t for the earnings of year $t + k$ ($k = 0, 1, 2$). *PeerCSR* represents the percentage of peer firms that issued CSR reports in year *t-1*. *CSR* is a dummy variable equal to one for firms issuing the stand-alone CSR reports in year *t-1*, and zero otherwise. Other variables are defined in Table A1 in the Appendix.

(1990), the forecast error (*FERROR*) increases with the forecast horizon in our sample. Specifically, the mean of *FERROR*(*0*), *FERROR* (1), and *FERROR* (2) are 0.017, 0.036, and 0.048, respectively. The average forecast horizon of earnings forecasts for the current year (*Fhorizon*(*0*)), one year ahead (*Fhorizon* (1)), and two years ahead (*Fhorizon* (2)) are 256.2 days, 646.0 days, and 986.0 days, respectively. The average number of analysts who make forecasts for the current year (*N_Analyst* (*0*)), one year ahead (*N_Analyst* (1)), and two years ahead (*N_Analyst* (2)) are 21.79, 19.68, and 15.24, respectively, indicating that the number of analysts who make forecasts decreases with the forecast horizon. The percentage of peer firms that issue stand-alone CSR reports (*PeerCSR*) has an average of 24.3%, and about 31.9% of firms issue stand-alone CSR reports (*CSR*) in our sample.

4. Methodology

4.1. Panel regression

To investigate the influence of peer CSR disclosure on analyst forecast error of the focal firm, we conduct the following panel regression:

$$FERROR(k)_{i,t} = \beta PeerCSR_{i,t-1} + \gamma Control + Industry + Year + \varepsilon_{i,t} \quad (2)$$

where $FERROR(k)_{i,t}$ represents the absolute value of average analyst forecast errors of firm i for forecasts made in year t for the earnings of year $t + k$ ($k = 0, 1, 2$). A high value of analyst forecast error means low analyst forecast accuracy. *PeerCSR* is the intensity of peer CSR disclosure, measured as the percentage of peer firms that issue stand-alone CSR reports in year *t-1*. As descript in section 3.2.3, we control a series of variables that may affect analyst forecast error. All control variables are measured based on values at the end of year *t-1*, except forecast horizon (*Fhorizon*(k)) and analyst coverage (*N_Analyst*(k)). We also control the industry fixed effects to eliminate the influence of time-invariant industry-wide factors that may affect analyst forecast accuracy. In addition, we control the year fixed effects to absorb the aggregate shocks and common trends. If peer CSR disclosure conveys value-relevant information about the focal firm, we expect that the coefficient of *PeerCSR* is significantly negative. If peer CSR disclosure distracts sell-side analysts, we predict that the coefficient of *PeerCSR* is significantly positive.

To verify the robustness of the main results, we conduct a series of robustness tests. Specifically, we use alternative model specifications and alternative samples. In addition, we also change the definition of peer firms and the measure of peer CSR disclosure intensity.

4.2. Difference-in-differences analysis

To mitigate the endogeneity concern, we conduct a difference-in-differences analysis using the mandatory CSR disclosure of selected firms in 2008 as an exogenous shock to the intensity of peer CSR disclosure. Specifically, on December 30, 2008, the SHSE announced that firms included in the SHSE Corporate Governance Index, firms with shares listed overseas, and firms in the financial industry were required to issue CSR reports henceforth. On December 31, 2008, the SZSE also issued an announcement that required all firms included in the Shenzhen 100 Index to release CSR reports since then. Before 2008, <3% of listed firms issued stand-alone CSR reports, and this number increased to about 27% by 2009, the year immediately after the mandatory CSR disclosure regulation. Accordingly, the annual average of peer CSR disclosure intensity increased from 2.5% in 2007 to 26.9% in 2009. To construct the treatment group and control group, we first calculate the change in peer CSR disclosure intensity ($\triangle PeerCSR$) from 2007 (the year immediately before the shock) to 2009 (the year immediately after the shock). We then sort firms into terciles based on the $\triangle PeerCSR$. We classify firms in the top tercile into the treatment group, as these firms experience a relatively large increase in the peer CSR disclosure intensity after the shock. The control group contains firms in the bottom tercile, which undergo a relatively small increase in the peer CSR disclosure intensity after the shock. We then use a four-year window surrounding the mandatory CSR disclosure regulation (from 2006 to 2010, excluding 2008) to conduct the DiD analysis as follows:

$$FERROR_{i,t} = \alpha Treat_i + \beta Treat_i{}^{*}After_t + \gamma Control + Industry + Year + \varepsilon_{i,t} \quad (3)$$

where *Treat* is a dummy variable equal to one for treated firms and zero for control firms; *After* is an indicator equal to one for years after the shock and zero for years before the shock. We do not include the time indicator variable *After* alone in eq. (3), since it is absorbed by the year

fixed effects. If peer CSR disclosure can reduce the analyst forecast error, we expect the coefficient of the interaction term (β) to be negative and significant. If peer CSR disclosure increases the analyst forecast error, we predict that the coefficient of the interaction term (β) is positive and significant.

4.3. Additional tests

We further investigate the influence of peer CSR disclosure on the information environment of the focal firm from other perspectives.

4.3.1. Peer CSR disclosure and price synchronicity

A rise in the industry- or market-wide information will increase stock return comovement (Piotroski & Roulstone, 2004). If CSR information is value-relevant and peer CSR disclosure contains industry- or market-wide information, we expect that peer CSR disclosure increases the stock price synchronicity of the focal firm. To test this conjecture, we regress the price synchronicity (*SYNCH*) on the *PeerCSR* measure. Inspired by Piotroski and Roulstone (2004), we calculate the price synchronicity based on the following regression:

$$Ret_{i,w} = \alpha + \beta_1 MktRet_{w-1} + \beta_2 MktRet_w + \beta_3 IndRet_{i,w-1} + \beta_4 IndRet_{i,w} + \varepsilon_{i,w} \quad (4)$$

where $Ret_{i,w}$ is the stock return of firm i in week w; *MktRet* is the value-weighted market return; *IndRet* is the value-weighted average of weekly return of firms with the same 4-digit Wind industry code as the firm i. To be noticed, the return of firm i is omitted when calculating the corresponding industry return (*IndRet*) for firm i. For each firm each year, we calculate the coefficient of determination (R^2_{MI}) from the estimation of eq. (4) using weekly stock return data in the year and defining price synchronicity as $\log(R^2_{MI}/(1\text{-}R^2_{MI}))$.

To differentiate the type of information incorporated in the price through peer CSR disclosure, we further calculate the price synchronicity induced by industry-wide information (*SYNCH_IND*) and market-wide information (*SYNCH_MKT*) and test the influence of peer CSR disclosure on each of them, separately. Inspired by Piotroski and Roulstone (2004), we first calculate the price synchronicity as the logarithmic transformation of R^2, based on the following regression:

$$Ret_{i,w} = \alpha + \beta_1 MktRet_{w-1} + \beta_2 MktRet_w + \varepsilon_{i,w} \quad (5)$$

For each firm each year, we calculate the coefficient of determination (R^2_M) from the estimation of eq. (5) and measure price synchronicity induced by market-wide information as $\log(R^2_M/(1\text{-}R^2_M))$. Then, we define price synchronicity induced by industry-wide information (*SYNCH_IND*) as the difference between *SYNCH* and *SYNCH_MKT*.

4.3.2. Peer CSR disclosure and future earnings response coefficient

In addition, if peer CSR disclosure contains information about the future earnings of the focal firm and sell-side analysts communicate the information to investors through their earnings forecasts, we expect that the current stock return of a firm incorporates more information about future earnings when more peer firms disclose CSR information. To test this argument, we follow Dhaliwal et al. (2012) and estimate the following model:

$$\begin{aligned} Ret_{i,t} = {} & \beta_1 E_{i,t-1} + \beta_2 E_{i,t} + \beta_3 E_{i,t3} + \beta_4 Ret_{i,t3} + \beta_5 CSR_{i,t-1} \\ & + \beta_6 CSR_{i,t-1} * E_{i,t-1} + \beta_7 CSR_{i,t-1} * E_{i,t} + \beta_8 CSR_{i,t-1} * E_{i,t3} \\ & + \beta_9 CSR_{i,t-1} * Ret_{i,t3} + \beta_{10} PeerCSR_{i,t-1} + \beta_{11} PeerCSR_{i,t-1} * E_{i,t-1} \\ & + \beta_{12} PeerCSR_{i,t-1} * E_{i,t} + \beta_{13} PeerCSR_{i,t-1} * E_{i,t3} \\ & + \beta_{14} PeerCSR_{i,t-1} * Ret_{i,t3} + \beta_{15} Ctrl_{i,t-1} + \beta_{16} Ctrl_{i,t-1} * E_{i,t-1} \\ & + \beta_{17} Ctrl_{i,t-1} * E_{i,t} + \beta_{18} Ctrl_{i,t-1} * E_{i,t3} + \beta_{19} Ctrl_{i,t-1} * Ret_{i,t3} \\ & + Industry + Year + \varepsilon_{i,t} \end{aligned} \quad (6)$$

where $Ret_{i,t}$ is the one-year buy-and-hold return for firm i in year t; $Ret_{i,t3}$ is the three-year buy-and-hold return for firm i over the period from year $t+1$ to year $t+3$; $E_{i,t}$ denotes the scaled net income, measured as the net income scaled by the market value of equity of firm i in year t; $E_{i,t3}$ represents the total scaled net income over the three years from year $t+1$ to year $t+3$. Following Dhaliwal et al. (2012), we separately control for several variables that may have an influence on the returns-earnings relationship, including firm size (*SIZE*), the number of analysts (*N_Analyst*), and dividend payout dummy (*DIV*). If our prediction holds, we expect the coefficient of $PeerCSR_{i,t-1}{*}E_{i,t3}$ (β_{13}) to be positive and significant.

4.3.3. Peer CSR disclosure and analyst forecast dispersion

Furthermore, the increase in public information can reduce disagreement (Hong & Stein, 2007). If peer CSR disclosure contains value-relevant information about the focal firm, we expect a negative association between peer CSR disclosure and analyst forecast dispersion. To test this argument, we estimate the following model:

$$FDISP(k)_{i,t} = \beta PeerCSR_{i,t-1} + \gamma Control + Industry + Year + \varepsilon_{i,t} \quad (7)$$

where *FDISP* is calculated as the standard deviation of all earnings forecasts for a firm, scaled by the stock price at the beginning of the year. Specifically, *FDISP*(*0*), *FDISP* (1), and *FDISP* (2) represent the dispersion of analyst forecasts for forecasts made in year t for the earnings of year t, $t+1$, and $t+2$, respectively. *PeerCSR* is the intensity of peer CSR disclosure. Control variables in eq. (2) are included.

5. Empirical results

5.1. Main results

Table 2 tests the effects of peer CSR disclosure intensity on analyst forecast error based on eq. (2). In columns (1), (2), and (3), the dependent variables are forecast error for earnings forecasts of the current year (*FERROR* (1)), one year ahead (*FERROR* (1)), and two years ahead (*FERROR* (2)), respectively. The coefficient of *PeerCSR* is negative and significant in each column, indicating that peer CSR disclosure can reduce analyst forecast error of the focal firm in both short- and long-horizon forecasts.[3] Taking column (1) as an example, the coefficient of *PeerCSR* is −0.0149 ($t = -2.71$), suggesting that a one-standard-deviation increase in the intensity of peer CSR disclosure (0.094, from Table 1) leads to a 0.0014 (0.094*0.0149) decrease in the analyst forecast error of the focal firm. Such a decrease is sizable, which is about 8.2% (0.0014/0.017) of the sample average of the analyst forecast error. In addition, we find the coefficient of *CSR* is negative and significant in each column, indicating that firms issuing stand-alone CSR reports have lower analyst forecast errors, consistent with the findings of Dhaliwal et al. (2012). Overall, the results in Table 2 suggest that peer CSR disclosure can improve the analyst forecast accuracy of the focal firm, supporting the information channel (H1).

5.2. Robustness tests

So far, we find that there is a significantly negative association between peer CSR disclosure intensity and analyst forecast error in Table 2. However, the results may be affected by the model specifications, the sample selections, the definition of peer firms, and the measures of peer CSR disclosure intensities. To ensure the reliability of the findings, before moving to the rest of the analysis, we should first confirm that our main results are robust. Thus, we further conduct a series of robustness

[3] In Table IA6, we also test the non-linear association between peer CSR disclosure intensity and analyst forecast error. We find there is a critical mass of disclosure intensity needed to have an impact on forecast accuracy. Specifically, the results in Table IA6 indicate that only when peer CSR disclosure intensity is >0.226 (i.e., the 40th percentile of *PeerCSR*), it can have significant effects on analyst forecast accuracy.

Table 2
Main regression.

Variables	(1)	(2)	(3)
	FERROR(0)	*FERROR* (1)	*FERROR* (2)
PeerCSR	−0.0149***	−0.0361***	−0.0439***
	(−2.71)	(−3.88)	(−2.97)
Fhorizon(k)	0.0001***	0.0001***	0.0001***
	(19.01)	(10.40)	(9.09)
Ln(1 + N_Analyst(k))	−0.0041***	−0.0035***	0.0002
	(−15.01)	(−7.40)	(0.31)
CSR	−0.0025***	−0.0070***	−0.0082***
	(−3.33)	(−5.60)	(−5.56)
SIZE	0.0042***	0.0071***	0.0050***
	(10.52)	(9.89)	(4.69)
VOLROA	−0.0000	−0.0001	−0.0000***
	(−1.17)	(−1.35)	(−3.84)
LOSS	0.0150***	0.0164***	0.0163***
	(6.56)	(5.78)	(4.60)
InstShr	−0.0084***	−0.0129***	−0.0161***
	(−6.37)	(−6.11)	(−6.29)
LEV	0.0026	0.0059	0.0272***
	(1.32)	(1.59)	(3.08)
AGE	0.0001	0.0001	−0.0000
	(1.38)	(1.23)	(−0.35)
TURN	−0.0001	0.0000	−0.0001
	(−0.92)	(0.03)	(−0.63)
MB	0.0000	0.0000	−0.0000
	(0.47)	(1.28)	(−0.18)
STD	−0.0026	0.0034	−0.0086
	(−1.00)	(0.45)	(−1.00)
NUMPeer	−0.0000*	−0.0001***	−0.0001***
	(−1.90)	(−3.03)	(−5.08)
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	18,485	16,489	14,065
Adj.R^2	0.098	0.088	0.122

This table reports the results of our main regression. The dependent variable is *FERROR*(*k*), measured by the absolute value of average forecast errors of firm *i* for forecasts made in year *t* for the earnings of year $t + k$ ($k = 0, 1, 2$). The independent variable *PeerCSR* is calculated as the percentage of peer firms that issued stand-alone CSR reports in year *t-1*. *Fhorizon*(*k*) represents the median forecast horizon of analyst forecasts for earnings of year $t + k$; *Ln*(*1 + N_Analyst*(*k*)) denotes the natural logarithm of the number of analysts that made forecasts in year *t* for the earnings of year $t + k$, where *k* takes the values, 0, 1 and 2 in columns (1), (2) and (3), respectively. Other control variables are defined in Table A1. Industry and year fixed effects are included. Robust t-statistics are in parentheses. ***, **, and * represent the significance at 1%, 5%, and 10% levels, respectively.

Table 3
Robustness tests.

Variables	(1)	(2)	(3)
	FERROR(0)	*FERROR* (1)	*FERROR* (2)
Panel A: Controlling firm fixed effects			
	−0.0151**	−0.0486***	−0.0404***
PeerCSR	(−2.34)	(−4.33)	(−3.00)
Panel B: Controlling Province*Year fixed effects			
	−0.0146***	−0.0357***	−0.0426***
PeerCSR	(−2.68)	(−3.79)	(−2.83)
Panel C: Excluding firms that issue stand-alone CSR reports			
	−0.0169***	−0.0375***	−0.0320**
PeerCSR	(−2.61)	(−3.15)	(−2.21)
Panel D: Excluding firms with the delayed earnings announcements			
	−0.0143***	−0.0353***	−0.0441***
PeerCSR	(−2.61)	(−3.78)	(−2.96)
Panel E: Removing observations during the periods of stock market crashes			
	−0.0191***	−0.0225**	−0.0446**
PeerCSR	(−2.80)	(−2.09)	(−2.26)
Panel F: *Re*-defining peer firms based on CSRC primary industry code			
	−0.0134**	−0.0322**	−0.0337**
PeerCSR	(−2.16)	(−2.36)	(−2.21)
Panel G: Re-defining peer firms according to firm size and industry			
	−0.0066***	−0.0136***	−0.0114**
PeerCSR	(−3.16)	(−3.03)	(−2.01)
Panel H: Alternative measure of *PeerCSR*			
	−0.0001***	−0.0002***	−0.0002***
PeerCSR	(−3.09)	(−4.08)	(−4.33)

This table reports the results of robustness tests. In all panels, the dependent variable is *FERROR*(*k*), measured by the absolute value of average analyst forecast errors of firm *i* for forecasts made in year *t* for the earnings of year $t + k$ ($k = 0, 1, 2$). In Panel A, we control firm fixed effects in addition. In Panel B, we control Province*Year fixed effects additionally. In Panel C, we exclude firms that issue stand-alone CSR reports. In Panel D, we remove firms with delayed earnings announcements. In Panel E, we drop observations during the periods of stock market crashes (2007–2008 and 2015). In Panel F, the independent variable *PeerCSR* is measured by the percentage of peer firms that issue stand-alone CSR reports in year *t-1*, where peer firms indicate firms with the same CSRC primary industry code as the focal firm. In Panel G, peer firms are defined as the top ten firms with the closest book assets to the focal firm in the same industry according to the 4-digit Wind industry code. In Panel H, the independent variable *PeerCSR* represents the total number of peer firms that issue stand-alone CSR reports in year *t-1*. All control variables in Table 2 are included in each panel. Industry fixed effects are controlled in all panels except in Panel A. Year fixed effects are controlled in all panels except Panel B. Robust t-statistics are in parentheses. ***, **, and * represent the significance at 1%, 5%, and 10% levels, respectively.

tests in this subsection. Table 3 shows the results of robustness tests. All control variables in Table 2 are included. For conciseness, we only report the coefficients of *PeerCSR*.

First, we adopt alternative model specifications. In Panel A, we control firm fixed effects additionally to mitigate the influence of time-invariant firm characteristics. As shown in Panel A, the coefficient of *PeerCSR* is negative and significant in each column. In addition, the local traffic conditions will affect analysts' site visits (Chen, Ma, Martin, et al., 2022), and local economic conditions will affect corporate operations (Agrawal & Matsa, 2013). In Panel B, we include Province*Year fixed effects to control the influence of local traffic conditions and local economic conditions. As shown in Panel B, the results are similar to those in Table 2.

Second, we show our main results are robust to the sample selections. In Panel C, we exclude firms that issue stand-alone CSR reports to isolate the influence of self-report CSR information. We obtain similar results in Panel C as those in Table 2. In Panel D, we remove firms with delayed earnings announcements and get similar findings. Since the measure of analyst forecast error is scaled by stock price, our results may be affected by the stock market turmoil. In Panel E, we drop observations during the periods of stock market crashes (2007–2008 and 2015). As shown in Panel E, the coefficient of *PeerCSR* is still negative and significant in each column.

Third, we show our main results are robust to the definition of peer firms. In our main analysis, we define peer firms as those in the same industry, where industry classification is based on the 4-digit Wind industry code. In Panel F, we define peer firms as those having the same primary industry code proposed by The China Securities Regulatory Commission (CSRC) in 2012. The results in Panel F are very similar to those in Table 2. In Panel G, we define a firm's peers as those in the same industry and with comparable assets. Specifically, for each firm, we choose the ten firms with the closest book assets in the same industry as the peers. As shown in Panel G, the coefficient of *PeerCSR* remains negative and significant in each column.

Fourth, we change the measure of the peer CSR disclosure intensity. In Panel H, for each firm, we measure the intensity as the total number of its peers that issue stand-alone CSR reports instead of the percentage. As shown in Panel H, in all columns, the coefficients of *PeerCSR* are negative and significant, indicating that our main results are robust to the definition of peer CSR disclosure intensity.

5.3. Difference-in-differences analysis

Though we document a negative and significant association between

peer CSR disclosure and analyst forecast error, such an association may be biased due to endogeneity problems. In Table 4, we further conduct difference-in-differences regressions as described in eq. (3). Panel A of Table 4 shows the results. As shown in Panel A, consistent with the information channel, the coefficients of *Treat*After* are negative and significant in all columns, indicating that firms with a larger increase in peer CSR disclosure intensity experience a larger decrease in analyst forecast error surrounding the shock.[4]

To mitigate the concern of selection on observables (Roberts & Whited, 2013), we conduct the DiD analysis based on a matched sample in Panel B. We apply the propensity score matching approach for each treated firm to find a matched firm in the control group with similar firm characteristics. Specifically, we first estimate a probit model based on our sample firms in 2007, namely, the year immediately preceding the mandatory CSR disclosure regulation. The dependent variable equals one for firms in the original treatment group, and zero otherwise. We include all the control variables from eq. (2) in the probit model.[5] Then, we use the propensity score, namely, the predicted probability from the probit model, to conduct nearest-neighbor matching and obtain the matched sample.[6] Based on the matched sample, we re-conduct the DiD regressions in Panel B. As shown in Panel B, we achieve similar findings to those in Panel A. Overall, the results in Table 4 suggest that our main results in Table 2 still hold when mitigating the endogeneity concern.

Table 4
Difference-in-differences analysis.

Panel A: Difference-in-differences tests without matching

Variables	(1)	(2)	(3)
	FERROR(0)	*FERROR* (1)	*FERROR* (2)
Treat	−0.0034	0.0076	0.0283***
	(−0.96)	(0.89)	(3.66)
*Treat*After*	−0.0103***	−0.0124***	−0.0155***
	(−3.22)	(−3.44)	(−3.60)
Observations	2095	2024	1810
Control variables	YES	YES	YES
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	2095	2024	1810
Adj.R^2	0.075	0.148	0.242

Panel B: Difference-in-differences tests based on the matched sample

Variables	(1)	(2)	(3)
	FERROR(0)	*FERROR* (1)	*FERROR* (2)
Treat	−0.0047	−0.0009	0.0051
	(−0.74)	(−0.08)	(0.31)
*Treat*After*	−0.0058**	−0.0091**	−0.0130**
	(−2.23)	(−2.19)	(−2.13)
Control variables	YES	YES	YES
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	1060	1026	936
Adj.R^2	0.114	0.224	0.243

This table reports the regression results of DiD analysis. In both panels, the dependent variable is *FERROR*(*k*), measured by the absolute value of average analyst forecast errors of firm *i* for forecasts made in year *t* for the earnings of year $t + k$ ($k = 0, 1, 2$). The independent variable is *Treat*After*, while *Treat* is a dummy variable equal to one for treated firms and zero for control firms, and *After* is an indicator equal to one for years after the 2008 mandatory CSR disclosure regulation and zero for years before the regulation. The event window is four years surrounding the shock (from 2006 to 2010, excluding 2008). In Panel A, we conduct the DiD analysis without matching. In Panel B, we conduct the DiD analysis based on a matched sample. All control variables in Table 2 are included in each panel. Industry and year fixed effects are included. Robust t-statistics are in parentheses. ***, **, and * represent the significance at 1%, 5%, and 10% levels, respectively.

5.4. Cross-sectional tests

To further validate the effects of peer CSR disclosure on analyst forecast error, we conduct several cross-sectional tests in this part.

5.4.1. Information environment of the focal firm

Prior literature finds that peer information substitutes for firm information, and peer information plays a more important role when the firm information environment is more opaque (Shroff et al., 2017). Hence, we predict that the negative association between peer CSR disclosure and analyst forecast error is more pronounced among opaque firms. In Table 5, we divide firms into poor and rich information environment subsamples and conduct subsample analyses. In Panel A, we use the idiosyncratic volatility defined as the standard deviation of residuals from the Fama-French three-factor model based on daily stock returns in the previous year (Ang, Hodrick, Xing, et al., 2006) to measure the quality of the information environment of the focal firm. The idiosyncratic volatility captures the information asymmetry between insiders and outsiders (Krishnaswami & Subramaniam, 1999). High idiosyncratic volatility indicates great information asymmetry between insiders and outsiders. Hence, in Panel A, the poor information environment subsample contains firms with idiosyncratic volatility above the annual median, and the rich information environment subsample comprises the rest. As shown in Panel A, consistent with our prediction, we find that the negative association between peer CSR disclosure and analyst forecast error is only significant in the poor information environment subsample. Taking columns (1) and (2) as examples, the coefficient of *PeerCSR* in column (1) (the poor information environment subsample) is negative ($\beta = -0.0484$) and significant ($t = -5.14$), indicating that a one-standard-deviation increase in the intensity of peer CSR disclosure leads to a 0.0045 (0.094*0.0484) decrease in the analyst forecast error for firms with poor information environment, which is about 26.5% (0.0045/0.017) of the sample average of the analyst forecast error. In contrast, the corresponding coefficient is not significant in column (2) (the rich information environment subsample). In untabulated results, we also test the differences in coefficient estimators of other variables besides *PeerCSR*. We find the coefficients of *Fhoziron(k)* are more positive and significant in the poor information environment subsample, indicating that analyst forecast error increases with forecast horizon and poor information environment amplifies this effect. In addition, we document that the coefficients of *Ln(1 + N_Analyst (k))* are more negative and significant in the poor information environment subsample, which is consistent with Becchetti, Ciciretti, and Giovannelli (2013). Furthermore, we find that the coefficients of the *CSR* dummy are less negative and significant in the poor information

[4] In the Internet Appendix, we also use the revision of the Code of Corporate Governance for Listed Companies in China in 2018 as an exogenous shock to the value relevance of peer CSR disclosure and conduct the difference-in-differences analysis. The China Securities Regulatory Commission revised the Code of Corporate Governance for Listed Companies in China in 2018. Compared with the previous version (2002 version), it added a separate chapter "Stakeholders, Environmental Protection and Social Responsibility", and emphasized that listed companies should follow the requirements of relevant departments to disclose environmental information and corporate social responsibility, which further improves the quality of CSR disclosure. Table IA2 shows the results. We find the coefficients of *Treat*After* are negative and significant in all columns for both the unmatched sample and the matched sample. Overall, the results in Table IA2 suggest that the results of our DiD analysis still hold when using a more recent natural experiment.

[5] The probit regression estimators are reported in column (1) of Table A2, Panel A, in the appendix. The results show that before matching, treated firms are significantly different from control firms in many aspects.

[6] We conduct several matching diagnostic tests in Table A2 in the appendix. The results suggest that we successfully eliminate the observable differences between treated and control firms.

Table 5
Information environment and the effects of peer CSR disclosure.

Panel A: Information environment measured by the idiosyncratic volatility

Variables	*FERROR(0)*		*FERROR* (1)		*FERROR* (2)	
	(1)	(2)	(3)	(4)	(5)	(6)
	Poor	Rich	Poor	Rich	Poor	Rich
PeerCSR	−0.0484***	0.0049	−0.0793***	−0.0142	−0.0873***	−0.0231
	(−5.14)	(0.84)	(−5.00)	(−1.21)	(−3.75)	(−1.42)
Control	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	8799	9686	7801	8668	6561	7485
Adj.R^2	0.104	0.111	0.081	0.118	0.126	0.130
p-value	<0.001		<0.001		<0.001	

Panel B: Information environment measured by the absolute value of discretionary accruals

Variables	*FERROR(0)*		*FERROR* (1)		*FERROR* (2)	
	(1)	(2)	(3)	(4)	(5)	(6)
	Poor	Rich	Poor	Rich	Poor	Rich
PeerCSR	−0.0398***	0.0072	−0.0574***	−0.0149	−0.0763***	−0.0147
	(−4.48)	(1.16)	(−3.47)	(−1.35)	(−2.87)	(−0.99)
Control	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	9196	9289	8198	8271	6936	7110
Adj.R^2	0.095	0.111	0.080	0.108	0.126	0.121
p-value	<0.001		<0.001		<0.001	

This table reports the results of the influence of peer CSR disclosure on analyst forecast error in subsamples formed on the basis of the information environment of the focal firm. The poor information environment subsample contains firms with the quality of information environment below the annual median, and the rich information environment subsample comprises the rest. In both panels, the dependent variable is *FERROR*(k), measured by the absolute value of average analyst forecast errors of firm i for forecasts made in year t for the earnings of year $t + k$ ($k = 0, 1, 2$). The independent variable *PeerCSR* is computed as the percentage of peer firms that issued stand-alone CSR reports in year *t-1*. In Panel A, we use the idiosyncratic volatility defined as the standard deviation of residuals from the Fama-French three-factor model based on daily stock returns in the previous year to measure the quality of the information environment of the focal firm. In Panel B, we use the absolute value of discretionary accruals in the previous fiscal year to measure the quality of the information environment of the focal firm. All control variables in Table 2 are included in each panel. Industry and year fixed effects are controlled. Robust t-statistics are in parentheses. ***, **, and * represent the significance at 1%, 5%, and 10% levels, respectively. *P*-values for the permutation tests of the difference in coefficient estimators of the *PeerCSR* between the two subsamples are reported at the bottom of each panel.

environment subsample, indicating that firms with higher financial opacity may also disclose less informative CSR reports.

In Panel B, we use the absolute value of discretionary accruals in the previous fiscal year (Fang, Huang, & Karpoff, 2016) to measure the quality of the information environment of the focal firm, where the discretionary accruals are calculated from the modified Jones model (Dechow, Sloan, & Sweeney, 1995). The absolute value of discretionary accruals reflects the manipulation of earnings by managers, and the earnings manipulation will mislead outsiders. A high absolute value of discretionary accruals indicates more manipulation in earnings. Hence, in Panel B, the poor information environment subsample includes firms with the absolute value of discretionary accruals above the annual median, and the rich information environment subsample comprises the rest. As shown in Panel B, we find the reduction effect of peer CSR disclosure on analyst forecast error is only significant in the poor information environment subsample, which is similar to those in Panel A.

5.4.2. Correlation in fundamentals

The peer disclosure contains more information about the firm's future cash flows when the fundamentals of a firm and its peers are more correlated (Foucault & Fresard, 2014). Hence, we expect that peer CSR disclosure is more useful to predict earnings for a firm when the correlation in fundamentals between the firm and its peers is high. In Table 6, we split our sample into the high- and low-correlation subsamples. The high-correlation subsample contains the firm whose correlation in fundamentals to its peers is above the annual median, and the low-correlation subsample comprises the rest. Following Foucault and Fresard (2014), we use two different proxies for the correlation in fundamentals between a firm and its peers. First, in Panel A, we use the correlation in sales between a firm and its peers based on the quarterly sales over the previous three years to proxy the fundamental similarity. As shown in Panel A, we find the negative association between peer CSR disclosure and analyst forecast error is only significant in the high-correlation subsample, supporting our argument. Taking columns (1) and (2) as examples, the coefficient of *PeerCSR* in column (1) is −0.038 ($t = -3.90$), indicating that a one-standard-deviation increase in the intensity of peer CSR disclosure leads to a 0.0036 (0.094*0.038) decrease in the analyst forecast error for firms in the high-correlation subsample, which is about 21.2% (0.0036/0.017) of the sample average of the analyst forecast error. In contrast, the corresponding coefficient is insignificant in column (2) (the low-correlation subsample). Second, in Panel B, we use the correlation in monthly returns between a firm and its peers over the previous three years to proxy the fundamental similarity. The results in Panel B are very similar to those in Panel A, confirming our argument further.

5.4.3. Firm complexity

Firms with complex businesses (e.g., multi-industry firms) are difficult to find valid peers (Dess & Robinson Jr, 1984). Meanwhile, information processing is complicated for high-complexity firms and requires high research capacity (Cohen & Lou, 2012). Decision makers have difficulty in extracting useful information about a firm from public information disclosed by other firms when its business is complex (Dessein & Santos, 2021). Hence, we predict that the reduction effect of peer CSR

Table 6
Correlation in fundamentals and the effects of peer CSR disclosure.

Panel A: Fundamental similarity measured by the correlation in quarterly sales

Variables	*FERROR(0)*		*FERROR* (1)		*FERROR* (2)	
	(1)	(2)	(3)	(4)	(5)	(6)
	High	Low	High	Low	High	Low
PeerCSR	−0.0380***	−0.0022	−0.0741***	−0.0121	−0.0855***	−0.0103
	(−3.90)	(−0.35)	(−5.16)	(−0.98)	(−3.58)	(−0.68)
Control	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	9102	9383	8176	8293	7064	6982
Adj.R^2	0.105	0.098	0.093	0.094	0.147	0.110
p-value	<0.001		<0.001		<0.001	

Panel B: Fundamental similarity measured by the correlation in monthly returns

Variables	*FERROR(0)*		*FERROR* (1)		*FERROR* (2)	
	(1)	(2)	(3)	(4)	(5)	(6)
	High	Low	High	Low	High	Low
PeerCSR	−0.0470***	0.0068	−0.0754***	−0.0117	−0.0805***	−0.0163
	(−4.77)	(1.21)	(−4.80)	(−0.99)	(−3.94)	(−1.03)
Control	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	9374	9111	8321	8148	7054	6992
Adj.R^2	0.113	0.093	0.113	0.078	0.135	0.122
p-value	<0.001		<0.001		<0.001	

This table reports the results of the influence of peer CSR disclosure on analyst forecast error in subsamples formed on the basis of the correlation in fundamentals between a firm and its peers. The high-correlation subsample contains firms whose correlation in fundamentals to its peers is above the annual median, and the low-correlation subsample comprises the rest. The dependent variable is *FERROR*(k), measured by the absolute value of average analyst forecast errors of firm i for forecasts made in year t for the earnings of year $t + k$ ($k = 0, 1, 2$). The independent variable *PeerCSR* is computed as the percentage of peer firms that issued stand-alone CSR reports in year *t-1*. In Panel A, we use the correlation in sales between a firm and its peers based on the quarterly sales over the previous three years to proxy the fundamental similarity. In Panel B, we use the correlation in monthly returns between a firm and its peers over the previous three years to proxy the fundamental similarity. All control variables in Table 2 are included in each panel. Industry and year fixed effects are controlled. Robust t-statistics are in parentheses. ***, **, and * represent the significance at 1%, 5%, and 10% levels, respectively. P-values for the permutation tests of the difference in coefficient estimators of the *PeerCSR* between the two subsamples are reported at the bottom of each panel.

disclosure on analyst forecast error is more pronounced for firms with low complexity. In Table 7, we divide our sample into the low- and high-complexity subsamples. Following Bushman, Chen, Engel, et al. (2004), we use within-firm industry and geographic concentration as the inverse measures of firm complexity in Panel A and B, respectively. Specifically, within-firm industry (geographic) concentration is calculated as the sum of the squares of sales in each industry (area) as a percentage of the total firm sales. The low-complexity subsample contains firms whose segment concentration is below the annual median, and the high-complexity subsample comprises the rest.[7] As shown in Panel A, the negative association between peer CSR disclosure and analyst forecast error is only significant in the low-complexity subsample, supporting our argument. Taking columns (1) and (2) as examples, the coefficient of *PeerCSR* in column (1) is −0.0336 (t = −3.74), indicating that a one-standard-deviation increase in the intensity of peer CSR disclosure leads to a 0.0032 (0.094*0.0336) decrease in the analyst forecast error for low-complexity firms, which is about 18.8% (0.0032/0.017) of the sample average of the analyst forecast error. In contrast, the corresponding coefficient is insignificant in column (2) (the high-complexity subsample). In Panel B, the results are very similar to those in Panel A. Overall, Table 7 suggests that the negative association between peer CSR disclosure and analyst forecast error is more significant for low-complexity firms, supporting our prediction.

5.4.4. Expert analyst coverage

Expert analysts are better at information acquisition and processing (Bradley, Gokkaya, Liu, et al., 2017; Palmon & Yezegel, 2012). Hence, we expect that expert analysts can better utilize information from peer CSR discourse to improve earnings forecast accuracy. To validate this argument, we split our sample into two subsamples: firms with more expert analyst coverage (the more-expert subsample) and firms with less expert analyst coverage (the less-expert subsample). Following Bradley et al. (2017), we measure expert analyst coverage as the number of expert analysts that made forecasts for the firm in the year. Specifically, the more-expert subsample includes firms with expert analyst coverage above the annual median, and the less-expert subsample comprises the rest.[8] In Panel A, we define expert analysts as those selected by The New Fortune as one of the best analysts (star analysts) of the year (Xu, Chan,

[7] As the information environment will be correlated to the complexity, In Table IA4 in the Internet Appendix, we also construct the high-complexity and low-complexity subsamples using dependent double sorting. Specifically, we first sort our sample firms into halves based on their information environment measured by *IVOL* each year. Then, we split firms into low-complexity and high-complexity groups based on the annual median of firm complexity measure in each *IVOL* group. Our results in Table 7 still hold when splitting samples based on dependent double sorting.

[8] As the information environment will be correlated to the expert following, in Table IA5 in the Internet Appendix, we also construct the more- and less-expert subsamples using dependent double sorting. Specifically, we first sort our sample firms into halves based on their information environment measured by *IVOL* each year. Then, we split firms into the more-expert subsample and the less-expert subsample based on the annual median of expert analyst coverage in each *IVOL* group. Our results in Table 8 still hold when constructing subsamples based on dependent double sorting.

Table 7
Firm complexity and the effects of peer CSR disclosure.

Panel A: Firm complexity measured as the within-firm industry diversification

Variables	*FERROR(0)*		*FERROR* (1)		*FERROR* (2)	
	(1)	(2)	(3)	(4)	(5)	(6)
	Low	High	Low	High	Low	High
PeerCSR	−0.0336***	−0.0035	−0.0881***	0.0015	−0.0697***	−0.0236
	(−3.74)	(−0.52)	(−5.26)	(0.13)	(−3.23)	(−1.46)
Control	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	8932	9553	7972	8497	6834	7212
Adj.R^2	0.099	0.105	0.091	0.111	0.135	0.115
p-value	<0.001		<0.001		0.004	

Panel B: Firm complexity measured as the within-firm geographic diversification

Variables	*FERROR(0)*		*FERROR* (1)		*FERROR* (2)	
	(1)	(2)	(3)	(4)	(5)	(6)
	Low	High	Low	High	Low	High
PeerCSR	−0.0339***	0.0034	−0.0635***	−0.0137	−0.0763***	−0.0004
	(−3.97)	(0.47)	(−4.41)	(−0.95)	(−4.01)	(−0.02)
Control	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	9481	9004	8468	8001	7210	6836
Adj.R^2	0.084	0.128	0.075	0.122	0.125	0.127
p-value	<0.001		<0.001		<0.001	

This table reports the results of the influence of peer CSR disclosure on analyst forecast error in subsamples formed on the basis of firm complexity. The low-complexity subsample contains firms whose segment concentration is below the annual median, and the high-complexity subsample comprises the rest. The dependent variable is *FERROR*(k), measured by the absolute value of the average analyst forecast errors of firm i for forecasts made in year t for the earnings of year $t + k$ ($k = 0, 1, 2$). The independent variable *PeerCSR* is computed as the percentage of peer firms that issued stand-alone CSR report in year *t-1*. In Panel A, we use within-firm industry concentration as the inverse measure of firm complexity, calculated as the sum of the squares of sales in each industry as a percentage of the total firm sales. In Panel B, we use geographic concentration as the inverse measure of firm complexity, calculated as the sum of the squares of sales in each area as a percentage of the total firm sales. All control variables in Table 2 are included in each panel. Industry and year fixed effects are controlled. Robust t-statistics are in parentheses. ***, **, and * represent the significance at 1%, 5%, and 10% levels, respectively. P-values for the permutation tests of the difference in coefficient estimators of the *PeerCSR* between the two subsamples are reported at the bottom of each panel.

Jiang, et al., 2013). As shown in Panel A, the negative association between peer CSR disclosure and analyst forecast error is only significant in the more-expert subsample. In Panel B, we define expert analysts as those who issue research reports about the CSR topic in the year. We obtain similar findings in Panel B to those in Panel A. As a whole, the results in Table 8 provide evidence that expert analysts can better utilize information from peer CSR discourse, supporting our prediction.

5.4.5. The sensitivity of financial performance to CSR engagement

If peer CSR disclosure is value-relevant, we can expect that peer CSR disclosure is more useful to predict earnings for firms whose financial performances are more sensitive to CSR information. Cai, Jo, and Pan (2012) show that financial performance is more sensitive to CSR engagement for firms in controversial industries (i.e., industries involved with environmental problems, social issues, moral debates, or political pressures). Following Cai et al. (2012), in our study, controversial industries include energies (wind industry code: 1010), optional consumer products (wind industry code: 2510–2550), alcohol and tobacco (wind industry code: 3020), bio-tech (wind industry code: 3520), telecommunication service (wind industry code: 5010), utilities (wind industry code: 5050), and real estates (wind industry code: 6010). We then compare the effects of peer CSR disclosure on analyst forecast error for firms in the CSR-sensitive industries (i.e., the abovementioned controversial industries) and the non-CSR-sensitive industries (i.e., the rest) in Table 9. In columns (1)–(2), (3)–(4), and (5)–(6), the dependent variables are forecast errors for earnings forecasts of the current year (*FERROR(0)*), one year ahead (*FERROR* (1)), and two years ahead (*FERROR* (2)), respectively. As shown in Table 9, consistent with our prediction, we find that the negative association between peer CSR disclosure and analyst forecast error is only significant in the CSR-sensitive industries. Taking columns (5) and (6) as examples, the coefficient of *PeerCSR* in column (5) is negative ($\beta = -0.0615$) and significant ($t = -2.81$), indicating that a one-standard-deviation increase in the intensity of peer CSR disclosure leads to a 0.0058 (0.094*0.0615) decrease in the analyst forecast error for firms in the CSR-sensitive industries, which is about 12.1% (0.0058/0.048) of the sample average of the analyst forecast error *FERROR* (2). In contrast, the corresponding coefficient is positive but not significant in column (6). These results suggest that in CSR-sensitive industries, the informative effect (i.e., information channel) of peer CSR disclosure dominates the distractive effect (i.e., attention channel), while in non-CSR-sensitive industries these two effects may offset each other.

5.4.6. The quality of peer CSR disclosure

The quality of disclosure might influence its value relevance (Dai, Du, Young, et al., 2018). Thus, we expect that the negative association between peer CSR disclosure intensity and analyst forecast error is more pronounced when the quality of peer CSR disclosure is higher. To test this conjecture, we split our sample into two subsamples based on the quality of peer CSR disclosure. Specifically, following Dai et al. (2018), we use the rating scores awarded by RANKINGS (RKS) to measure the disclosure quality of CSR reports. RKS is an independent rating agency that assesses the quality of stand-alone CSR reports. RKS rating is based on 13 indicators and 44 sub-indicators across three dimensions (i.e., the content, comprehensiveness, and technique of CSR reports). Thus, the RKS rating is an objective and comprehensive measure of the quality of

Table 8
Expert analyst coverage and the effect of peer CSR disclosure.

Panel A: Expert analysts defined as star analysts selected by The New Fortune

Variables	*FERROR(0)*		*FERROR* (1)		*FERROR* (2)	
	(1)	(2)	(3)	(4)	(5)	(6)
	More	Less	More	Less	More	Less
PeerCSR	−0.0330***	−0.0017	−0.0774***	−0.0056	−0.0955***	−0.0059
	(−4.26)	(−0.23)	(−5.85)	(−0.42)	(−3.85)	(−0.37)
Control	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	8281	10,204	7579	8890	6695	7351
Adj.R^2	0.143	0.087	0.115	0.085	0.154	0.111
p-value	<0.001		<0.001		<0.001	

Panel B: Expert analysts defined as analysts issuing research reports about the CSR topic

Variables	*FERROR*(0)		*FERROR* (1)		*FERROR* (2)	
	(1)	(2)	(3)	(4)	(5)	(6)
	More	Less	More	Less	More	Less
PeerCSR	−0.0270***	−0.0033	−0.0567***	−0.0208	−0.0818***	−0.0057
	(−4.09)	(−0.41)	(−4.90)	(−1.42)	(−3.63)	(−0.33)
Control	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	8872	9613	8090	8379	7219	6827
Adj.R^2	0.142	0.082	0.111	0.087	0.144	0.122
p-value	<0.001		0.003		<0.001	

This table reports the results of the influence of peer CSR disclosure on analyst forecast error in subsamples formed on the basis of expert analyst coverage. Expert analyst coverage is measured as the number of expert analysts that made forecasts for the firm in the year. The more-expert subsample includes firms with expert analyst coverage above the annual median, and the less-expert subsample comprises the rest. The dependent variable is *FERROR*(*k*), measured by the absolute value of average analyst forecast errors of firm *i* for forecasts made in year *t* for the earnings of year $t + k$ ($k = 0, 1, 2$). The independent variable *PeerCSR* is computed as the percentage of peer firms that issued stand-alone CSR reports in year *t-1*. In Panel A, we define expert analysts as those who were selected by The New Fortune as one of the best analysts (star analysts) of the year. In Panel B, we define expert analysts as those who issue research reports about the CSR topic in the year. All control variables in Table 2 are included in each panel. Industry and year fixed effects are controlled. Robust t-statistics are in parentheses. ***, **, and * represent the significance at 1%, 5%, and 10% levels, respectively. P-values for the permutation tests of the difference in coefficient estimators of the *PeerCSR* between the two subsamples are reported at the bottom of each panel.

Table 9
The sensitivity of financial performance to CSR engagement and the effect of peer CSR disclosure.

Variables	*FERROR(0)*		*FERROR* (1)		*FERROR* (2)	
	(1)	(2)	(3)	(4)	(5)	(6)
	CSR-sensitive	Non-CSR-sensitive	CSR-sensitive	Non-CSR-sensitive	CSR-sensitive	Non-CSR-sensitive
PeerCSR	−0.0263***	−0.0115	−0.0385***	−0.0210	−0.0615***	0.0041
	(−3.43)	(−0.87)	(−3.66)	(−0.79)	(−2.81)	(0.15)
Control	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	8726	9759	7852	8637	6695	7370
Adj.R^2	0.110	0.101	0.107	0.0940	0.139	0.121
p-value	0.004		0.063		<0.001	

This table reports the association between peer CSR disclosure and analyst forecast error in the CSR-sensitive and non-CSR-sensitive industries, separately. According to Cai et al. (2012), CSR-sensitive industries include those involved with environmental problems, social issues, moral debates, or political pressures. The dependent variable is *FERROR*(*k*), measured by the absolute value of the average analyst forecast errors of firm *i* for forecasts made in year *t* for the earnings of year $t + k$ ($k = 0, 1, 2$). The independent variable *PeerCSR* is computed as the percentage of peer firms that issued stand-alone CSR reports in year *t-1*. All control variables in Table 2 are included. Industry and year fixed effects are controlled. Robust t-statistics are in parentheses. ***, **, and * represent the significance at 1%, 5%, and 10% levels, respectively. P-values for the permutation tests of the difference in coefficient estimators of *PeerCSR* between the two subsamples are reported at the bottom of each panel.

stand-alone CSR reports. We use the average RKS rating scores of peer firms to proxy the quality of peer CSR disclosure. The high-quality subsample comprises the firms with peer CSR disclosure quality above the annual median, and the low-quality subsample includes the rest. Table 10 compares the effects of peer CSR disclosure on analyst forecast error in high- and low-quality subsamples. As shown in Table 10, peer CSR disclosure significantly reduces analyst forecast error in the high-quality subsample, indicating that the information channel dominates the attention channel when the quality of peer CSR disclosure is high. In contrast, in the low-quality subsample, the coefficients of *PeerCSR* are positive in all three columns and two of three are marginally significant, suggesting that peer CSR disclosure increases analyst forecast error in this subsample. Taken together, these results indicate that peer CSR disclosure is informative when the quality of peer CSR disclosure is high,

and peer CSR disclosure distracts analysts' attention when the quality of peer CSR disclosure is low.

5.5. Additional tests

So far, we have verified that peer CSR disclosure can significantly reduce analyst forecast error through the information channel. In this subsection, we further investigate the influence of peer CSR disclosure on the information environment of the focal firm from other perspectives.

5.5.1. Peer CSR disclosure and price synchronicity

Table 11 shows the influence of peer CSR disclosure on price synchronicity. In columns (1), (2), and (3), the dependent variable is total price synchronicity (*SYNCH*), price synchronicity induced by industry-wide information (*SYNCH_IND*), and price synchronicity induced by market-wide information (*SYNCH_MKT*), respectively. As shown in column (1), the coefficient of *PeerCSR* is positive and significant, indicating that peer CSR disclosure incorporates industry- or market-wide information into the price, and so increases the price synchronicity. Furthermore, in column (2), we find a positive and significant association between peer CSR disclosure and price synchronicity induced by industry-wide information (*SYNCH_IND*). In contrast, as shown in column (3), peer CSR disclosure does not have a significant influence on the price synchronicity induced by market-wide information (*SYNCH_MKT*). Overall, these results suggest that peer CSR disclosure can improve the information environment of the focal firm by increasing the industry-wide information.

5.5.2. Peer CSR disclosure and future earnings response coefficient

Based on eq. (6), Table 12 tests the influence of peer CSR disclosure on the future earnings response coefficient. In column (1), we do not include additional control variables; in columns (2), (3), and (4), we separately control firm size (*SIZE*), the number of analysts (*N_Analyst*), and dividend payout dummy (*DIV*), respectively. As shown in Table 12, in all columns, the coefficients of $PeerCSR_{i,t-1}{*}E_{i,t3}$ (β_{13}) are positive and significant, confirming that peer CSR disclosure contains information about the future earnings of the focal firm. Meanwhile, consistent with Dhaliwal et al. (2012), we find the coefficient of $CSR_{i,t-1}{*}E_{i,t3}$ (β_8) is positive and significant in each column, indicating that a firm's CSR disclosure contributes to the incorporation of future earnings information into its stock price.

Table 11
Peer CSR disclosure and price synchronicity.

Variables	(1)	(2)	(3)
	SYNCH	*SYNCH_IND*	*SYNCH_MKT*
PeerCSR	0.4572***	0.3109***	0.1463
	(3.12)	(3.77)	(1.11)
Fhorizon(k)	0.0005***	−0.0001***	0.0005***
	(8.36)	(−2.81)	(10.46)
Ln(1 + N_Analyst(k))	0.0134**	0.0322***	−0.0188***
	(2.20)	(7.64)	(−3.46)
CSR	−0.0225	−0.0197*	−0.0028
	(−1.39)	(−1.92)	(−0.20)
SIZE	0.1793***	0.0400***	0.1393***
	(22.16)	(7.43)	(19.08)
VOLROA	0.0014	0.0004***	0.0010***
	(4.29)	(8.95)	(3.40)
LOSS	−0.2387***	0.0126	−0.2513***
	(−11.33)	(1.10)	(−12.42)
InstShr	−0.0501*	0.1002***	−0.1504***
	(−1.78)	(5.56)	(−5.79)
LEV	−0.1081***	−0.0315***	−0.0765***
	(−3.96)	(−8.90)	(−3.07)
AGE	0.0103***	0.0020**	0.0083***
	(7.98)	(2.31)	(7.65)
TURN	0.0137***	0.0011	0.0126***
	(8.41)	(1.09)	(8.56)
MB	−0.0001	0.0001	−0.0002
	(−0.31)	(1.43)	(−0.85)
STD	−0.3031***	0.0892	−0.3923***
	(−3.05)	(0.62)	(−3.24)
NUMPeer	0.0011***	0.0001	0.0011***
	(6.52)	(0.76)	(6.72)
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	16,965	16,965	16,965
Adj.R^2	0.532	0.311	0.649

This table shows the influence of peer CSR disclosure on price synchronicity. The independent variable *PeerCSR* is computed as the percentage of peer firms that issued stand-alone CSR reports in year *t-1*. The dependent variable is the total price synchronicity (*SYNCH*), price synchronicity induced by industry-wide information (*SYNCH_IND*), and price synchronicity induced by market-wide information (*SYNCH_MKT*) in columns (1), (2), and (3), respectively. Control variables are defined in Table A1. Industry and year fixed effects are controlled. Robust t-statistics are in parentheses. ***, **, and * represent the significance at 1%, 5%, and 10% levels, respectively.

Table 10
The role of the quality of peer CSR disclosure.

Variables	*FERROR(0)*		*FERROR* (1)		*FERROR* (2)	
	(1)	(2)	(3)	(4)	(5)	(6)
	High-quality	Low-quality	High-quality	Low-quality	High-quality	Low-quality
PeerCSR	−0.0835***	0.0169*	−0.0951***	0.0122	−0.1125***	0.0572*
	(−4.68)	(1.70)	(−3.46)	(0.70)	(−3.51)	(1.77)
Control	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Observations	7862	8340	7096	7206	6020	6087
Adj.R^2	0.097	0.130	0.082	0.100	0.102	0.105
p-value	<0.001		<0.001		<0.001	

This table reports the association between peer CSR disclosure and analyst forecast error in the subsamples formed on the basis of peer CSR disclosure quality. Following Dai et al. (2018), we use the rating scores awarded by RKS to measure the disclosure quality of CSR reports. We use the average RKS rating scores of peer firms to proxy the quality of peer CSR disclosure. The high-quality subsample comprises the firms with peer CSR disclosure quality above the annual median, and the low-quality subsample includes the rest. Since the data on the RKS rating score starts in 2009, the sample period in this table is from 2009 to 2020. The dependent variable is *FERROR(k)*, measured by the absolute value of the average analyst forecast errors of firm *i* for forecasts made in year *t* for the earnings of year $t + k$ ($k = 0, 1, 2$). The independent variable *PeerCSR* is computed as the percentage of peer firms that issued stand-alone CSR reports in year *t-1*. All control variables in Table 2 are included. Industry and year fixed effects are controlled. Robust t-statistics are in parentheses. ***, **, and * represent the significance at 1%, 5%, and 10% levels, respectively. P-values for the permutation tests of the difference in coefficient estimators of *PeerCSR* between the two subsamples are reported at the bottom of each panel.

5.5.3. Peer CSR disclosure and analyst forecast dispersion

In Table 13, we investigate the influence of peer CSR disclosure on the analyst forecast dispersion. Specifically, following Cheong and Thomas (2011), analyst forecast dispersion (*FDISP*) is calculated as the standard deviation of all earnings forecasts for a firm, scaled by the stock price at the beginning of the year. In columns (1), (2), and (3), the dependent variables *FDISP*(*0*), *FDISP* (1), and *FDISP* (2) represent the dispersion of analyst forecast for forecasts made in year *t* for the earnings of year *t*, *t* + *1*, and *t* + *2*, respectively. As shown in Table 13, the coefficient of *PeerCSR* is negative and significant in each column, supporting the argument that peer CSR disclosure contains value-relevant information, and so reduces disagreement.

Table 12
Peer CSR disclosure and future earnings response coefficient.

Variables	(1)	(2)	(3)	(4)
	Ret	*Ret*	*Ret*	*Ret*
E_{t-1}	0.4625**	0.4673	0.4564**	0.4585**
	(2.49)	(0.59)	(2.38)	(2.48)
E_t	0.3750***	0.3091	0.3830***	0.3917***
	(3.54)	(0.43)	(3.28)	(3.44)
E_{t3}	0.0961	0.1857	0.1849***	0.0997
	(1.11)	(0.23)	(3.14)	(1.14)
Ret_{t3}	−0.0980***	−0.3659***	−0.1099***	−0.1059***
	(−9.18)	(−6.33)	(−9.10)	(−9.56)
CSR	−0.0871***	−0.0364***	−0.0800***	−0.0708***
	(−12.89)	(−4.37)	(−11.59)	(−10.07)
$CSR*E_{t-1}$	−0.0312	0.0962	−0.1888	−0.0134
	(−0.21)	(0.49)	(−1.31)	(−0.09)
$CSR*E_t$	0.0216	0.0910	0.0881	0.1425*
	(0.29)	(0.98)	(1.10)	(1.79)
$CSR*E_{t3}$	0.1324**	0.2402***	0.1729***	0.1380***
	(2.56)	(3.02)	(3.42)	(2.60)
$CSR*Ret_{t3}$	0.0323***	0.0138**	0.0288***	0.0162***
	(6.08)	(2.25)	(5.41)	(2.82)
PeerCSR	−0.2786**	−0.2209*	−0.3020**	−0.2953**
	(−2.27)	(−1.82)	(−2.47)	(−2.42)
$PeerCSR*E_{t-1}$	−0.5728	−0.5831	−0.4938	−0.5411
	(−0.79)	(−0.78)	(−0.68)	(−0.75)
$PeerCSR*E_t$	−0.7184*	−0.7374*	−0.5278	−0.6572
	(−1.79)	(−1.80)	(−1.28)	(−1.56)
$PeerCSR*E_{t3}$	0.6006**	0.6129*	0.9638***	0.5596**
	(2.17)	(1.73)	(4.57)	(2.16)
$PeerCSR*Ret_{t3}$	0.2354***	0.1987***	0.2200***	0.2074***
	(5.68)	(4.67)	(5.30)	(4.96)
Ctrl		−0.0489***	−0.0873***	−0.0019***
		(−11.58)	(−9.32)	(−8.23)
$Ctrl*E_{t-1}$		0.0015	0.9255***	0.0067
		(0.04)	(4.41)	(1.54)
$Ctrl*E_t$		0.0037	−0.3666***	−0.0069**
		(0.11)	(−3.86)	(−2.37)
$Ctrl*E_{t3}$		−0.0041	−0.2768***	0.0026
		(−0.11)	(−4.81)	(1.64)
$Ctrl*Ret_{t3}$		0.0128***	0.0246***	0.0010***
		(4.84)	(3.84)	(8.46)
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Observations	23,558	23,557	23,558	23,524
Adj.R^2	0.594	0.597	0.596	0.596

This table reports the results of the relation between peer CSR disclosure and future earnings response coefficient. The dependent variable $Ret_{i,t}$ is the one-year buy-and-hold return for firm *i* in year *t*. $Ret_{i,t3}$ is the three-year buy-and-hold return for firm *i* over the period from year *t* + *1* to year *t* + *3*; $E_{i,t}$ denotes the scaled net income, measured as the net income scaled by the market value of equity of firm *i* in year *t*; $E_{i,t3}$ represents the total scaled net income over the three years from year *t* + *1* to year *t* + *3*. *CSR* is a dummy variable equal to one for firms issuing stand-alone CSR reports in the year, and zero otherwise. *PeerCSR* is computed as the percentage of peer firms that issue stand-alone CSR reports in year *t-1*. Following Dhaliwal et al. (2012), we do not include additional control variables in column (1). In columns (2), (3), and (4), the control variable (*Ctrl*) denotes the firm size (*SIZE*), the number of analysts (*N_Analyst*), and the dividend payout dummy (*DIV*), respectively. Industry and year fixed effects are controlled. Robust t-statistics are in parentheses. ***, **, and * represent the significance at 1%, 5%, and 10% levels, respectively.

6. Conclusion

In this paper, we investigate the influence of peer CSR disclosure on analyst forecast error. We document a negative association between the intensity of peer CSR disclosure and analyst forecast error, supporting the information channel and ruling out the attention channel. This negative association is more pronounced when the information environment of the focal firm is worse, when the correlation in fundamentals between the focal firm and its peers is higher, when the business of the focal firm is less complex, when the focal firm has more expert analyst coverage, when the focal firm's financial performance is more sensitive to CSR engagement, or when the quality of peer CSR disclosure is higher. Furthermore, we find that peer CSR disclosure can increase the industry-wide information, strengthen the return-future earnings relationship of the focal firm, and decrease the analyst forecast dispersion. These results further validate the information channel. Overall, our results suggest that peer CSR disclosure conveys value-relevant information about the focal firm.

Our findings have several implications for investors, firm managers, and regulators. First, investors should pay more attention to CSR information disclosed by the interested firm and its peers. We find CSR

Table 13
Peer CSR disclosure and analyst forecast dispersion.

Variables	(1)	(2)	(3)
	FDISP(*0*)	*FDISP* (1)	*FDISP* (2)
PeerCSR	−0.0099***	−0.0127**	−0.0169**
	(−2.78)	(−2.40)	(−2.03)
Fhorizon(*k*)	0.0000***	0.0000***	0.0000***
	(5.43)	(6.11)	(3.15)
Ln(*1* + *N_Analyst*(*k*))	−0.0002	0.0006***	0.0012***
	(−1.01)	(3.64)	(5.71)
CSR	−0.0009**	−0.0009**	−0.0005
	(−2.19)	(−2.41)	(−0.97)
SIZE	0.0019***	0.0013***	0.0011***
	(6.57)	(4.52)	(3.40)
VOLROA	−0.0000**	0.0000***	−0.0000***
	(−2.47)	(3.29)	(−6.26)
LOSS	0.0065***	0.0037***	0.0031***
	(3.87)	(3.18)	(2.82)
InstShr	−0.0026***	−0.0037***	−0.0046***
	(−3.61)	(−4.81)	(−5.37)
LEV	0.0046**	0.0057**	0.0064**
	(2.08)	(2.23)	(2.35)
AGE	0.0000	−0.0000	−0.0000
	(0.98)	(−0.22)	(−0.30)
TURN	−0.0000	0.0000	0.0000
	(−1.02)	(0.17)	(0.12)
MB	−0.0000	0.0000	−0.0000
	(−0.18)	(0.89)	(−0.54)
STD	−0.0004	−0.0026	−0.0008
	(−0.25)	(−1.52)	(−0.28)
NUMPeer	−0.0000	−0.0000***	−0.0000**
	(−1.53)	(−3.51)	(−2.28)
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
Observations	16,196	14,394	12,077
Adj.R^2	0.066	0.078	0.109

This table reports the relationship between peer CSR disclosure and analyst forecast dispersion. The dependent variable *FDISP* is calculated as the standard deviation of all earnings forecasts for a firm, scaled by the stock price at the beginning of the year. The independent variable *PeerCSR* is calculated as the percentage of peer firms that issued stand-alone CSR reports in year *t-1*. In columns (1), (2), and (3), *FDISP*(*0*), *FDISP* (1), and *FDISP* (2) represent the dispersion of analyst forecast for forecasts made in year *t* for the earnings of year *t*, *t* + *1*, and *t* + *2*, respectively. Control variables defined in Table A1 in the Appendix are included in each test. Industry and year fixed effects are included. Robust t-statistics are in parentheses. ***, **, and * represent the significance at 1%, 5%, and 10% levels, respectively.

disclosures from both the focal firm and its peers contain value-relevant information. Second, firm managers should attach importance to nonfinancial disclosures like CSR reporting. We provide evidence that market participants care about nonfinancial information, and disclosing nonfinancial information can improve firms' information environment. Third, regulators should encourage listed firms to disclose CSR information to improve market efficiency. Using the mandatory CSR disclosure of selected firms required by SHSE and SZSE in 2008 as a pseudo-natural experiment, we find that the exogenous increase in peer CSR disclosure intensity can reduce the analyst forecast error. This finding suggests that the mandatory CSR disclosure regulation improves the market information environment and makes prices incorporate more value-relevant information. Hence, we advise the regulators to promote the CSR disclosure policy step-by-step.

CRediT authorship contribution statement

Juan Ni: Data curation, Methodology, Funding acquisition, Supervision, Validation. **Shuchang Jin:** Data curation, Methodology, Project administration, Formal analysis, Software, Writing – original draft. **Yi Hu:** Conceptualization, Formal analysis, Methodology, Funding acquisition, Supervision, Validation, Writing – review & editing. **Lei Zhang:** Data curation, Validation, Writing – review & editing.

Data availability

Data will be made available on request.

Acknowlegment

We acknowledge financial support from the National Natural Science Foundation of China (Grant No. 72102111 and Grant No. 72002218).

Appendix

Table A1
Variable definitions.

Variables	Description
FERROR(*k*),*k* = 0,1,2	For each firm, *FERROR*(*0*), *FERROR* (1), and *FERROR* (2) denote the absolute value of average errors for analyst forecasts made in year *t* for the earnings of year *t*, $t+1$, and $t+2$, respectively. The individual forecast error is computed as the absolute difference between the forecasts and actual EPS, divided by the stock price at the beginning of the year.
Fhorizon(*k*),*k* = 0,1,2	For each firm, *Fhorizon*(*0*), *Fhorizon* (1), and *Fhorizon* (2) represent the median forecast horizon of analyst forecasts for earnings of year *t*, $t+1$, and $t+2$, respectively. The forecast horizon is calculated as the number of days between the forecast date and the earnings announcement date.
N_Analyst(*k*),*k* = 0,1,2	For each firm, *N_Analyst*(*0*), *N_Analyst* (1), and *N_Analyst* (2) denote the number of analysts who make a forecast in year *t* for the earnings of year *t*, $t+1$, and $t+2$, respectively.
PeerCSR	The percentage of peer firms that issue stand-alone CSR reports in year *t-1*.
CSR	A dummy variable that equals one for firms issuing stand-alone CSR reports in year *t-1*, and zero otherwise.
SIZE	The natural logarithm of total assets in RMB at the end of year *t-1*.
VOLROA	The standard deviation of ROA (EBIT scaled by total assets) within a rolling window of five years before the current year.
LOSS	An indicator variable that equals one if a firm has negative earnings in year *t-1*, and zero otherwise.
InstShr	The number of shares held by institutional investors, scaled by total shares outstanding at the end of year *t-1*.
LEV	Total liability scaled by total assets at the end of year *t-1*.
AGE	The number of years since listing.
TURN	The number of shares traded scaled by the total outstanding shares in year *t-1*.
MB	The market value of equity scaled by the book value of equity at the end of year *t-1*.
STD	The standard deviation of daily stock return in year *t-1* for each firm.
NUMPeer	The number of peer firms.

Table A2
Matching diagnoses

Panel A: Pre-matching propensity score regression and post-matching diagnostic regression		
Variables	(1)	(2)
	Unmatched	Matched
SIZE	0.389***	−0.0749
	(0.0736)	(0.0953)
VOLROA	5.773***	−1.830
	(1.669)	(2.385)
LOSS	−0.459	0.266
	(0.455)	(0.528)
InstShr	−0.133	0.0494
	(0.293)	(0.360)
LEV	−0.816**	−0.111
	(0.386)	(0.475)
AGE	−0.087***	0.005
	(0.0186)	(0.0241)
TURN	0.122***	−0.048
	(0.0191)	(0.0298)
MB	−0.00172***	0.014
	(0.000485)	(0.0119)
STD	−5.851***	10.83

(*continued on next page*)

Table A2 (*continued*)

Panel A: Pre-matching propensity score regression and post-matching diagnostic regression		
Variables	(1)	(2)
	Unmatched	Matched
	(1.721)	(15.25)
Constant	−8.331***	1.651
	(1.559)	(2.212)
Observations	463	290
Pseudo R^2	0.134	0.014

Panel B: Differences in firm characteristics								
Variables	Unmatched sample				Matched sample			
	Treated	Control	Difference	t-value	Treated	Control	Difference	t-value
SIZE	22.2400	21.8620	0.3780	3.57***	21.9450	21.9870	−0.0420	−0.35
VOLROA	0.0374	0.0413	−0.0039	−0.46	0.0339	0.0328	0.0011	0.23
LOSS	0.0198	0.0284	−0.0086	−0.60	0.0276	0.0207	0.0069	0.38
InstShr	0.4838	0.4990	−0.0152	−0.70	0.4810	0.4684	0.0126	0.48
LEV	0.5244	0.5383	−0.0139	−0.83	0.5275	0.5351	−0.0076	−0.37
AGE	8.2778	9.6445	−1.3667	−4.29***	8.9655	9.0414	−0.0759	−0.19
TURN	10.5270	9.0311	1.4959	4.63***	9.7962	10.3500	−0.5538	−1.52
MB	0.3686	6.9982	−6.6296	−0.99	6.9962	5.9243	1.0719	1.34
STD	0.0411	0.0491	−0.0080	−1.14	0.0410	0.0407	0.0003	0.42

This table reports the results of matching diagnoses. In Panel A, the dependent variable equals one if the firm is mandated to disclose the CSR report, and zero otherwise. Columns (1) and (2) present the results of probit regression in the pre-matching and post-matching samples, respectively. Panel B reports the *t*-tests on the difference in firm characteristics between treated firms and control firms in both the pre-matching sample and the post-matching sample. Standard errors are displayed in parentheses.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.irfa.2023.102575.

References

Agrawal, A. K., & Matsa, D. A. (2013). Labor unemployment risk and corporate financing decisions[J]. *Journal of Financial Economics, 108*(2), 449–470.

Ali, U., & Hirshleifer, D. (2020). Shared analyst coverage: Unifying momentum spillover effects[J]. *Journal of Financial Economics, 136*(3), 649–675.

Ang, A., Hodrick, R. J., Xing, Y., et al. (2006). The cross-section of volatility and expected returns[J]. *The Journal of Finance, 61*(1), 259–299.

Aslan, H. (2022). Personal financial distress, limited attention[J]. *Journal of Accounting Research, 60*(1), 97–128.

Badertscher, B. A., Shanthikumar, D. M., & Teoh, S. H. (2019). Private firm investment and public peer misvaluation[J]. *The Accounting Review, 94*(6), 31–60.

Beatty, A., Liao, S., & Yu, J. J. (2013). The spillover effect of fraudulent financial reporting on peer firms' investments[J]. *Journal of Accounting and Economics, 55*(2–3), 183–205.

Becchetti, L., Ciciretti, R., & Giovannelli, A. (2013). Corporate social responsibility and earnings forecasting unbiasedness[J]. *Journal of Banking & Finance, 37*(9), 3654–3668.

Bradley, D., Gokkaya, S., Liu, X., et al. (2017). Are all analysts created equal? Industry expertise and monitoring effectiveness of financial analysts[J]. *Journal of Accounting and Economics, 63*(2–3), 179–206.

Bushman, R., Chen, Q., Engel, E., et al. (2004). Financial accounting information, organizational complexity and corporate governance systems[J]. *Journal of Accounting and Economics, 37*(2), 167–201.

Cai, Y., Jo, H., & Pan, C. (2012). Doing well while doing bad? CSR in controversial industry sectors[J]. *Journal of Business Ethics, 108*(4), 467–480.

Cao, J., Liang, H., & Zhan, X. (2019). Peer effects of corporate social responsibility[J]. *Management Science, 65*(12), 5487–5503.

Chen, D., Ma, Y., Martin, X., et al. (2022). On the fast track: Information acquisition costs and information production[J]. *Journal of Financial Economics, 143*(2), 794–823.

Chen, Y., Li, T., Zeng, Q., et al. (2023). Effect of ESG performance on the cost of equity capital: Evidence from China[J]. *International Review of Economics and Finance, 83*, 348–364.

Chen, Y. C., Hung, M., & Wang, Y. (2018). The effect of mandatory CSR disclosure on firm profitability and social externalities: Evidence from China[J]. *Journal of Accounting and Economics, 65*(1), 169–190.

Cheong, F. S., & Thomas, J. (2011). Why do EPS forecast error and dispersion not vary with scale? Implications for analyst and managerial behavior[J]. *Journal of Accounting Research, 49*(2), 359–401.

Cho, H., & Muslu, V. (2021). How do firms change investments based on MD&A disclosures of peer firms?[J]. *The Accounting Review, 96*(2), 177–204.

Cohen, L., & Lou, D. (2012). Complicated firms[J]. *Journal of Financial Economics, 104*(2), 383–400.

Dai, N. T., Du, F., Young, S. M., et al. (2018). Seeking legitimacy through CSR reporting: Evidence from China[J]. *Journal of Management Accounting Research, 30*(1), 1–29.

De Bondt, W. F. M., & Thaler, R. H. (1990). Do security analysts overreact?[J]. *The American Economic Review, 80*(2), 52–57.

Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management [J]. *The Accounting Review, 70*(2), 193–225.

Demmer, M., Pronobis, P., & Yohn, T. L. (2019). Mandatory IFRS adoption and analyst forecast accuracy: The role of financial statement-based forecasts and analyst characteristics[J]. *Review of Accounting Studies, 24*(3), 1022–1065.

Dess, G. G., & Robinson, R. B., Jr. (1984). Measuring organizational performance in the absence of objective measures: The case of the privately-held firm and conglomerate business unit[J]. *Strategic Management Journal, 5*(3), 265–273.

Dessein, W., & Santos, T. (2021). Managerial style and attention[J]. *American Economic Journal: Microeconomics, 13*(3), 372–403.

Dhaliwal, D. S., Li, O. Z., Tsang, A., et al. (2011). Voluntary nonfinancial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting [J]. *The Accounting Review, 86*(1), 59–100.

Dhaliwal, D. S., Radhakrishnan, S., Tsang, A., et al. (2012). Nonfinancial disclosure and analyst forecast accuracy: International evidence on corporate social responsibility disclosure[J]. *The Accounting Review, 87*(3), 723–759.

Du, S., & Yu, K. (2021). Do corporate social responsibility reports convey value relevant information? Evidence from report readability and tone[J]. *Journal of Business Ethics, 172*(2), 253–274.

Edmans, A. (2011). Does the stock market fully value intangibles? Employee satisfaction and equity prices[J]. *Journal of Financial Economics, 101*(3), 621–640.

Fang, V. W., Huang, A. H., & Karpoff, J. M. (2016). Short selling and earnings management: A controlled experiment[J]. *The Journal of Finance, 71*(3), 1251–1294.

Foster, G. (1981). Intra-industry information transfers associated with earnings releases [J]. *Journal of Accounting and Economics, 3*(3), 201–232.

Foucault, T., & Fresard, L. (2014). Learning from peers' stock prices and corporate investment[J]. *Journal of Financial Economics, 111*(3), 554–577.

Freund, S., Nguyen, N. H., & Phan, H. V. (2022). Shareholder litigation and corporate social responsibility[J]. *Journal of Financial and Quantitative Analysis* (forthcoming).

Gibbons, B., Iliev, P., & Kalodimos, J. (2021). Analyst information acquisition via EDGAR [J]. *Management Science, 67*(2), 769–793.

Grennan, J. (2019). Dividend payments as a response to peer influence[J]. *Journal of Financial Economics, 131*(3), 549–570.

Hirshleifer, D., Lim, S. S., & Teoh, S. H. (2009). Driven to distraction: Extraneous events and underreaction to earnings news[J]. *The Journal of Finance, 64*(5), 2289–2325.

Hirshleifer, D., & Teoh, S. H. (2003). Limited attention, information disclosure, and financial reporting[J]. *Journal of Accounting and Economics, 36*(1–3), 337–386.
Hong, H., & Stein, J. C. (2007). Disagreement and the stock market[J]. *Journal of Economic Perspectives, 21*(2), 109–128.
Jiao, T., Koning, M., Mertens, G., et al. (2012). Mandatory IFRS adoption and its impact on analysts' forecasts[J]. *International Review of Financial Analysis, 21*, 56–63.
Kaustia, M., & Rantala, V. (2015). Social learning and corporate peer effects[J]. *Journal of Financial Economics, 117*(3), 653–669.
Krishnaswami, S., & Subramaniam, V. (1999). Information asymmetry, valuation, and the corporate spin-off decision[J]. *Journal of Financial Economics, 53*(1), 73–112.
Kubick, T. R., Lynch, D. P., Mayberry, M. A., et al. (2015). Product market power and tax avoidance: Market leaders, mimicking strategies, and stock returns[J]. *The Accounting Review, 90*(2), 675–702.
Lambert, R., Leuz, C., & Verrecchia, R. E. (2007). Accounting information, disclosure, and the cost of capital[J]. *Journal of Accounting Research, 45*(2), 385–420.
Leary, M. T., & Roberts, M. R. (2014). Do peer firms affect corporate financial policy?[J]. *The Journal of Finance, 69*(1), 139–178.
Lee, C. M. C., Sun, S. T., Wang, R., et al. (2019). Technological links and predictable returns[J]. *Journal of Financial Economics, 132*(3), 76–96.
Lev, B., Petrovits, C., & Radhakrishnan, S. (2010). Is doing good good for you? How corporate charitable contributions enhance revenue growth[J]. *Strategic Management Journal, 31*(2), 182–200.
Liu, C., Low, A., Masulis, R. W., et al. (2020). Monitoring the monitor: Distracted institutional investors and board governance[J]. *The Review of Financial Studies, 33*(10), 4489–4531.
Ma, M. (2017). Economic links and the spillover effect of earnings quality on market risk [J]. *The Accounting Review, 92*(6), 213–245.
Moskowitz, T. J., & Grinblatt, M. (1999). Do industries explain momentum?[J]. *The Journal of Finance, 54*(4), 1249–1290.
Palmon, D., & Yezegel, A. (2012). R&D intensity and the value of analysts' recommendations[J]. *Contemporary Accounting Research, 29*(2), 621–654.
Petaibanlue, J., Walker, M., & Lee, E. (2015). When did analyst forecast accuracy benefit from increased cross-border comparability following IFRS adoption in the EU?[J]. *International Review of Financial Analysis, 42*, 278–291.
Piotroski, J. D., & Roulstone, D. T. (2004). The influence of analysts, institutional investors, and insiders on the incorporation of market, industry, and firm-specific information into stock prices[J]. *The Accounting Review, 79*(4), 1119–1151.
Ramnath, S. (2002). Investor and analyst reactions to earnings announcements of related firms: An empirical analysis[J]. *Journal of Accounting Research, 40*(5), 1351–1376.
Roberts, M. R., & Whited, T. M. (2013). *Endogeneity in empirical corporate finance1[M]// Handbook of the Economics of Finance. 2* pp. 493–572). Elsevier.
Sánchez, P. E., & Benito-Hernández, S. (2015). CSR policies: Effects on labour productivity in Spanish micro and small manufacturing companies[J]. *Journal of Business Ethics, 128*(4), 705–724.
Seo, H. (2021). Peer effects in corporate disclosure decisions[J]. *Journal of Accounting and Economics, 71*(1), Article 101364.
Shroff, N., Verdi, R. S., & Yost, B. P. (2017). When does the peer information environment matter?[J]. *Journal of Accounting and Economics, 64*(2–3), 183–214.
Tan, H., Wang, S., & Welker, M. (2011). Analyst following and forecast accuracy after mandated IFRS adoptions[J]. *Journal of Accounting Research, 49*(5), 1307–1357.
Xu, N., Chan, K. C., Jiang, X., et al. (2013). Do star analysts know more firm-specific information? Evidence from China[J]. *Journal of Banking & Finance, 37*(1), 89–102.