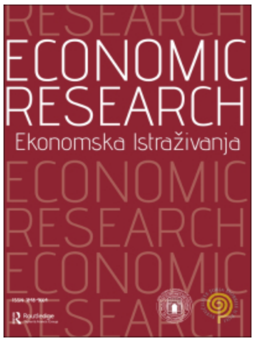

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Does corporate social responsibility matter to management forecast precision? Evidence from China

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ABSTRACT

This article investigates whether socially responsible companies differ from other firms in the quality of earnings forecasts issued by management. Specifically, using 5192 earnings forecast observations of 669 Chinese listed companies from 2010 to 2016, we examine whether companies that perform better in corporate social responsibility (CSR) still provide higher-precision management earnings forecasts compared with companies with poor CSR performance, thereby presenting an image of transparent and accountable disclosures. Through empirical research, this paper finds that CSR is positively associated with management forecast precision. This result is robust to using alternative measures of CSR, considering mandatory disclosure sample and voluntary disclosure sample, and controlling for potential endogeneity concern by adopting the instrumental variable method. Furthermore, we find the relationship between CSR and management forecast precision is stronger in non-state-owned firms. Our findings suggest that socially responsible companies will comply with higher ethical standards and hence maintain their well-established social reputation by disclosing high-quality earnings forecasts, which lends support to the transparent forecast hypothesis. This paper enriches the existing studies regarding the economic consequences of CSR and adds empirical evidence from emerging markets.

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1. Introduction

For the past few decades, the issue of CSR has attracted considerable attention from the theoretical and practical communities. Meanwhile, CSR has become an important strategic arrangement for most enterprises. Given the importance of CSR, a large number of academic studies have explored the influence of CSR engagement on corporate behaviors and outcomes. Most of the previous literature focuses on the link between CSR and firms' financial performance (e.g., Cavaco & Crifo, 2014; Kim &

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Oh, 2019; Orlitzky et al., 2003; Pava & Krausz, 1996; Skare & Golja, 2012; Surroca et al., 2010; Waddock & Grave, 1997; Wang et al., 2016). Other studies investigate the relationships between CSR and earnings management, cash holdings, financing costs, stock price crash risk, investment efficiency, consumer perceptions, and consumer loyalty, etc. (e.g., Benlemlih & Bitar, 2018; Cheung, 2016; García-Pozo et al., 2019; Goss & Roberts, 2011; Kim et al., 2012; 2014; Servera-Frances & Piqueras-Tomas, 2019; Sevilla-Sevilla et al., 2019).

The current article is centered on the relationship between CSR and the quality of management earnings forecasts. Concretely, our paper mainly investigates whether companies with better CSR performance (i.e., CSR-oriented companies) attach more importance to management forecast precision, thereby releasing more precise management earnings forecasts. According to existing research (Ben-Amar & Belgacem, 2018; Kim et al., 2012), we view CSR-oriented companies as those that actively engage in responsible economic and social activities to meet the ethical and social expectations and the reasonable interests of diverse stakeholders (including shareholders, creditors, employees, suppliers, customers, government, communities, etc.). We choose management forecast precision as the main research object, first, because managers have great discretion over it and they can decide the earnings forecast precision issued to external stakeholders, and second, because forecast precision directly determines the information content and quality of earnings forecasts, which can play a vital role in the decision-making and behaviors of various stakeholders (Cheng et al., 2013).

CSR and management earnings forecasts are two crucial topics in theoretical research and practical fields. Especially in recent years, enterprises have begun to attach great importance to their CSR while pursuing economic interests. Meanwhile, due to the influence of the market mechanism, increasingly more listed firms release earnings forecasts. Nevertheless, research efforts in the two major fields are conducted independently, and academic researchers pay little attention to the connection between them. However, this research question is vital and worth exploring by scholars since forward-looking information that reflects the company's future performance is more useful and decision-making value to stakeholders such as investors and creditors than historical financial information (Hirst et al., 2008).

The association between CSR and management forecast precision can be explained by transparent forecast hypothesis and opportunistic forecast hypothesis. Based on stakeholder theory, academic researchers put forward the transparent disclosure hypothesis, that is, the management of socially responsible companies tends to disclose more transparent and informative financial information to demonstrate their commitments to business ethics and maintain the company's good reputation for social responsibility (Freeman, 1984; Gelb & Strawser, 2001; Jones, 1995; Kim et al., 2012; Lee, 2017; Scholtens & Kang, 2013). On the contrary, the opportunistic disclosure hypothesis in the framework of agency theory argues CSR performance is likely to be negatively related to corporate disclosure transparency under the assumption that corporate executives' engagement in CSR-related initiatives is driven by opportunistic motivations, that is, under the veil of CSR, managers conceal their self-interest pursuits or unethical behavior through vague or opaque information disclosures

(Ben-Amar & Belgacem, 2018; Lee, 2017; Prior et al., 2008). So, the nexus between CSR and management forecast precision is really an empirical question that needs us to examine.

Employing a sample consisted of 5192 earnings forecast observations from 669 Chinese A-share listed firms between 2010 and 2016, we conduct empirical tests and find strong evidence that a firm's CSR performance is positively related to the precision of earnings forecasts issued by its management. This outcome fully reveals that companies with better CSR achievements will probably provide more precise earnings forecasts. Our finding confirms that CSR orientation has a salient positive effect on the quality of management earnings forecasts. This result accords with our transparent forecast hypothesis that corporate executives hope to offer a more precise prospect of the firm's forthcoming performance in keeping with their social responsibility image for the purpose of maintaining or enhancing companies' overall reputation.

The main result is robust to using alternative measures of CSR, considering mandatory disclosure sample and voluntary disclosure sample, and controlling for potential endogeneity concern by adopting the instrumental variable method. In addition, given China's special institutional background and transitional economic system, the difference in corporate ownership types (i.e., state-owned and non-state-owned ownership) may have an influence on the association between CSR and the quality of management forecasts. Accordingly, we further investigate the differences in the above nexus under different types of corporate ownership. Through empirical research, we find that CSR plays a greater role in improving management forecast precision in non-state-owned enterprises (non-SOEs) as compared to state-owned enterprises (SOEs). This result may be because the information disclosure quality of China's non-SOEs is generally low (Durnev et al., 2009; Masanori, 2010; Tang et al., 2017) and as a result, the role of CSR in enhancing disclosure quality is more obvious. Therefore, it is necessary to strengthen the CSR orientation and social responsibility consciousness of private enterprises so as to further the level of information disclosure and increase information transparency.

The contributions of this paper lie in the following aspects. First of all, our research enriches the literature on the economic consequences of CSR, especially adding to the new evidence about the impact of CSR on corporate information disclosures. Existing literature regarding CSR and corporate information disclosures focuses on the impact of CSR on the quality of reported earnings that reflects a company's historical earnings (e.g., Ben-Amar & Belgacem, 2018; Bozzolan et al., 2015; Hong & Andersen, 2011; Kim et al., 2012). We differ from these previous studies and are concerned about the effects of CSR on the quality of firms' expected earnings which are more decision-relevant and play a more crucial part in the course of stakeholders' decision-making than reported earnings to a large extent. Distinct from reported earnings, management earnings forecasts convey forward-looking information regarding the firm's future operating situation and performance change trend, which improves the fairness of access to information for stakeholders such as external investors and creditors. In particular, the precision of management forecasts directly reflects the informativeness and transparency, which is more helpful to assess whether managers develop the reputation for disclosing transparent and value-relevant information in response to their CSR image. Hence, this article sheds new light on the research concerning CSR and the quality of financial information disclosure and broadens our knowledge of the impacts of CSR on management forecast behaviors.

Second, the disclosure of forecasting information is of importance to various stakeholders, but its quality is more vital. However, compared with the research on the forecast motivation and consequence, there is a lack of research with respect to the characteristics of management earnings forecasts, especially about the contributing factors of their qualitative characteristics (Hirst et al., 2008). Among the qualitative characteristics of forecasting information, forecast precision is more easily controlled by managers (Cheng et al., 2013). Yet, only a few studies have explored the determinants of management forecast precision (e.g., Baginski & Hassell, 1997; Cheng et al., 2013; Choi et al., 2010). We expand the research in this field by showing the significance of CSR in deciding management forecast precision, thus, answering the call for more research on the qualitative characteristics of management forecasts (Hirst et al., 2008). Furthermore, our paper also investigates under what circumstances the role of CSR is weaker or stronger.

Third, this paper selects Chinese listed companies as a sample, including not only the sample of voluntary disclosure earnings forecasts but also the sample of mandatory disclosures, which can substantially reduce the sample self-selection problem caused by the earnings forecast samples of completely voluntary disclosure in previous literature. In this paper, the mandatory disclosure sample accounts for 93.91%of the total sample, which is quite different from the voluntary disclosure sample in prior studies, and thus our research can alleviate the problem of sample self-selection in the studies which examine the relationship between the quality of voluntary disclosure and CSR. Moreover, our study extends the work of CSR and management earnings forecasts by taking the linkage between the two academic issues into account in China which is the largest emerging economy. The academic community believes that emerging economies provide an interesting and valuable research context in which both traditional research issues and unique phenomena can be investigated to promote the development of academic research (e.g., Lau et al., 2016; Wright et al., 2005; Xu et al., 2012). Therefore, this article ties together three areas of research: corporate social responsibility, emerging economy, and management earnings forecasts, finds the positive effect of Chinese companies' CSR orientation on the quality of management forecasts, and thus provides relevant evidence about emerging markets.

Finally, our research is beneficial to regulators who are more inclined to advocate managers to issue more precise information about corporate future earnings (Choi & Pae, 2011). By and large, our results are consistent with the expected goals of regulatory agencies, which aim to enhance the precision of information disclosures and facilitate corporate responsibility to the entire society. Moreover, our study is also helpful for investors to evaluate the transparency and informativeness of corporate information disclosures. A growing body of research shows that management earnings forecasts provide more information to investors than any other accounting source (e.g., Beyer et al., 2010; Bozanic et al., 2018), and more precise forecasts generate stronger investor responses (Bamber & Cheon, 1998; Hutton et al., 2003). Thus, the results of this paper provide an important reference for investors to make reasonable decisions.

The remainder of this article is arranged as follows. The second section describes the institutional background of management earnings forecast in China. The third part reviews the related literature regarding the impact of CSR on information disclosure quality and develops the research hypothesis of this paper on this basis. The fourth section exhibits the data, empirical model and variables. The regression results, empirical analysis and robustness test are presented in Section 5. Lastly, we discuss the research results, summarize the conclusions of this paper, and point out future research direction in Section 6.

2. Management earnings forecasts in China

Management earnings forecasts have existed for a long time and have attracted tremendous academic focus. Since the SEC incorporated forward-looking information into the US capital market information disclosure system in 1973, the earnings forecast disclosed by the management has become one of the important means by which most listed companies are able to convey information, adjust market expectations (Ajinkya & Gift, 1984), and reduce disclosure or litigation costs (Skinner, 1994, 1997). A lot of research contends that management earnings forecasts issued by listed companies have a large information content, which can provide crucial information for the capital market and also enhance the disclosure reputation of listed companies, and hence boost stock prices and reduce capital costs (Baginski et al., 1993; Beyer et al., 2010; Coller & Yohn, 1997; Hutton et al., 2003; King et al., 1990; Pownall et al., 1993).

As China is in the stage of an economic transition, relevant laws and regulations are incomplete, and the awareness of information disclosure of listed firms is weak (Ang et al., 2015; Du et al., 2016), which hinder the establishment and improvement of the management earnings forecast system. Unlike fully voluntary earnings forecasts in most countries, China has a semi-mandatory feature for listed firms' management forecasts, that is, public firms that meet certain characteristics (such as loss or turnaround) have to disclose their management earnings forecasts (Gao & Wang, 2014; Yuan et al., 2014). Although corporate managers have partial discretion in whether to make earnings forecasts, they have considerable discretion over the forecast forms, including point forecast, interval forecast, open-interval forecast, and qualitative forecast. Similar to US companies, most of management earnings forecasts are interval format with specific upper and lower estimate values in China (Cheng et al., 2013), and the difference between the upper and lower estimate values (the opposite of forecast precision) has a large variation among earnings forecasts.

The existing literature has found that earnings forecast precision has a significant market reaction, specifically affecting stock returns, investor decision-making, and analyst forecasts (Baginski et al., 1993; Kim & Verrecchia, 1991; Maines & McDaniel, 2000). More precise information provided by firms is more valuable and useful for information users to make accurate judgments and informed decisions (Karamanou & Vafeas, 2005; Kim & Verrecchia, 1991; Subramanyam, 1996). Investors will revise their assessments of managers' reputation, if any, based on the earnings forecast behavior they have observed by managers (Beyer & Dye, 2012). Overall, management earnings forecast precision is crucial not only to shareholders' investment decisions but also to all stakeholders' understanding of corporate operating and financial conditions.

3. Literature review and hypothesis development

3.1. Related literature

Based on our research theme, the literature most closely related to this paper is the research in regard to the link between corporate social responsibility and the quality of financial information disclosure. The existing research mainly examines the association between CSR and accounting information quality from the perspective of earnings management. Extant studies state that enterprises undertaking responsible activities will adhere to the moral quality of honesty and integrity under the guidance of social ethics and the incentive of reputation effects, which will reduce the company's earnings management behavior and thus improve the quality of accounting information. For instance, Chih et al. (2008) use cross-country data for empirical research and find the evidence showing that companies with superior CSR performance are unlikely to manipulate corporate earnings, displaying lower smooth earnings and lower probability of avoiding earnings decline. Hong and Andersen (2011) choose corporate America as a sample to explore the relationship between CSR and earnings management and find that CSR-oriented companies generally have fewer earnings management activities, exhibit higher accruals quality and tend not to be the subject of SEC investigations. Similarly, Kim et al. (2012) also take American listed companies as a sample and find that companies that attach importance to social responsibility often do not manage their earnings. Besides, using the data of Asian countries, Scholtens and Kang, (2013) still draw a conclusion that socially responsible enterprises tend not to involve in aggressive earnings management behavior. In addition, prior research provides further evidence that a company with better social responsibility performance is unlikely to conduct real earnings management practices that are detrimental to corporate future performance (Bozzolan et al., 2015). Contrary to this position, some theoretical researchers state that CSR will exacerbate the agency problem of companies if managers opportunistically leverage CSR strategies to seek private benefits (Martinez-Ferrero & García-Sánchez, 2015; Prior et al., 2008). Under the framework of agency theory, a handful of studies find that there is a positive correlation between CSR and earnings management (e.g., Gargouri et al., 2010; Prior et al., 2008). Moreover, Gelb and Strawser (2001) confirm that CSR-oriented firms are apt to disclose more extensive and more useful information to market participants than firms that pay less attention to CSR. Ben-Amar and Belgacem (2018) find firms that invest more in CSR actions are more prone to release complex and obscure annual reports due to managers' manipulation of disclosure readability for self-interest purposes.

Taken together, the above literature focuses on the impact of a firm's CSR orientation on the quality of historical financial information, little research pays attention to the role that CSR plays in the quality of forward-looking earnings forecasts. As far as we know, Lee (2017) is the only article to explore the impact of CSR on management forecast quality. But our study is markedly distinguishable from Lee (2017). First, our focus is on management forecast precision, whereas he investigates management forecast accuracy. Forecast precision and accuracy are two different quality characteristics of management earnings forecasts. Compared with forecast accuracy, the management has greater discretion and control over forecast precision, and they can choose to disclose earnings forecasts with different precision to external parties for certain motivations (Cheng et al., 2013). Thus, management forecast precision can better reflect managers' responsibility to their stakeholders in information disclosure. Second, forecast precision can often generate significant market reactions (e.g., investors' and analysts' responses) when earnings forecasts are released, while the market reaction of forecast accuracy cannot be effectively evaluated as forecast accuracy needs ex-post verification by comparing forecast earnings with real earnings. Finally, based on the setting of China, the largest emerging and transitional economy, the research we conduct is quite different from Lee (2017) that focuses on the American market because the two economies have great dissimilarities in management earnings forecasts and CSR performance of publicly listed companies. Therefore, this article enriches the existing studies concerning the economic consequences of CSR and the determinants of the earnings forecast quality.

3.2. Hypothesis development

Currently, CSR has gradually become an important dimension for stakeholders to evaluate enterprises. Stakeholder theory holds that corporate executives have a moral responsibility to meet the needs and interests of a broad class of stakeholder groups so managers tend to comply with higher ethical standards in their interactions with stakeholders to demonstrate corporate social responsibility (Donaldson & Preston, 1995; Freeman, 1984; Jones, 1995). Furthermore, CSR has increasingly become a strategic means for corporations to achieve competitive advantages (Garriga & Melé, 2004; Mohammadi et al., 2018; Porter & Kramer, 2002). CSR can help companies to access external resources to gain competitive advantages (Costa-Climent & Martínez-Climent, 2018; El Ghoul et al., 2017; Garriga & Melé, 2004; Martínez-Ferrero et al., 2016). Specifically, CSR-oriented companies can earn a good social reputation, which can develop long-term friendly cooperative relations and networks with their stakeholders and obtain market, personnel, capital, goodwill, and other key resources that are sources of competitive advantages through these social networks so as to achieve sustained excellent financial performance (Bhattacharya & Sen, 2004; Cheng et al., 2014; Godfrey et al., 2009; Goss & Roberts, 2011; Kim et al., 2012; Roberts & Dowling, 2002; Turban & Greening, 1997). Hence, the favorable stakeholder relationship generated by a company's CSR engagement can give rise to positive effects on financial performance and corporate value (Choi & Wang, 2009; Davis, 1960; Godfrey, 2005; Lee, 2019). CSR has been viewed as an effective management strategy and one of the most critical factors for business success (Cheng et al., 2014; Falck & Heblich, 2007; Freeman et al., 2007). To this end, managers have incentives to meet the interests of their major stakeholders, which is also the socially ethical concern advocated by CSR (Garriga & Melé, 2004; Jones, 1995). A new global survey of CSR conducted by Adam Friedman Associates shows that establishing a favorable corporate reputation is the main motivator of CSR strategies, which is consistent with stakeholder theory (Adam Friedman Associates, 2012).

Owing to information asymmetry between enterprises and their stakeholders, meeting the information needs of stakeholders is the primary task that socially responsible firms should do, and hence CSR-oriented firms will build a good reputation for transparency and responsible disclosure. Providing high-quality and more informative disclosures is a responsible response to the information needs of key stakeholder groups and the first step in ethical communication between corporate managers and external stakeholders. The significance of high-quality management forecast policies is generally regarded as a pre-commitment to decrease the information asymmetry between corporate insiders and outsiders (King et al., 1990). Compared with low-precision earnings forecast information, releasing high-precision earnings forecasts can decrease information asymmetry more and send clearer signals to information users, which will, in turn, lessen the uncertainty and risk faced by the stakeholder groups. The existing literature finds that securities analysts have more confidence in the course of forecasts when the precision of management forecasts is higher (Libby et al., 2006). Overall, precise forecast information contributes to the reasonable judgment and decision-making of stakeholders, which is in line with the enterprise value maximization principle considering the interests of various stakeholder groups. Such ethical communication also has potential benefits for the company. Corporate reputation mainly reflects stakeholders' perceptions and evaluations on a firm's behaviors of providing valuable products or services (Fombrun, 1996). Hence, issuing precise forecast information can promote firms to develop a good reputation for transparent and responsible disclosure. As the literature documents, if public companies intend to establish a favorable reputation for forecasting disclosure, corporate executives would disclose more precise and unbiased information (King et al., 1990). This reputation for transparent and responsible disclosure can lessen the transaction cost caused by opaque disclosure, thereby helping to reduce the company's capital cost, increase the wealth of stakeholders and ultimately achieve 'win-win' outcomes (Cho et al., 2013; Jones, 1995; Miller & Bahnson, 2002), which aligns with the long-term value maximization objective pursued by the CSR strategy (Garriga & Melé, 2004). On the basis of mutual gains, the interaction between the company and its stakeholders can be sustained (Costa-Climent & Martínez-Climent, 2018; Wagner-Tsukamoto, 2019).

If companies spend efforts and resources engaging in CSR-related initiatives to improve the reputation for responsible and ethical behavior that represents the interests of stakeholders, they will continue to maintain and manage this good reputation. This is because building a solid reputation is a difficult, expensive, and time-consuming process. Moreover, the reputation is extremely vulnerable, and the firm's minor mistakes, such as unfairness, dishonesty, or other irresponsible behavior, will make all of the efforts be in vain. Earnings forecast precision depends largely on the benefit and cost of information production by the management (Baginski et al., 2004;

Bamber & Cheon, 1998). Consequently, those firms with a good reputation tend not to waste their past efforts and reputation-building investment due to opportunism and short-term benefits and are more willing to continue their reputation investments to sustain and earn more reputation effects (Jo & Kim, 2007; Telser, 1980). Accordingly, CSR-oriented companies have strong incentives to act in a responsible and moral manner because these actions are advantageous to them (Jones, 1995). Therefore, companies that are superior in their social responsibilities are also inclined to provide relatively precise management earnings forecasts to enhance the reputation of transparent disclosure, which, similar to CSR, also reflects executives' efforts to build positive corporate reputation.

On the basis of the above theoretical analysis, we expect firms that are more socially responsible will disclose higher-precision earnings forecasts than do firms with poor CSR performance. This leads to the transparent forecast hypothesis:

H1a: Ceteris paribus, CSR is positively associated with management forecast precision.

According to agency theory, the existing literature on CSR and financial information quality also finds that CSR activities can aggravate agency problems to a certain extent, providing opportunities for managers to manipulate financial information disclosures to mask poor financial performance or their opportunistic behavior (Hemingway & Maclagan, 2004; Martinez-Ferrero & García-Sánchez, 2015). Based on the agency perspective, some empirical studies find that listed firms that invest more in social responsibility projects have a great tendency to manage corporate earnings, provide opaque financial reports, and thus cover up their real performance (Ben-Amar & Belgacem, 2018; Gargouri et al., 2010; Martinez-Ferrero & García-Sánchez, 2015). Extant literature also finds that when managers exercise discretionary power in the financial reporting process, they will participate in activities related to CSR as a defensive tactic to avoid scrutiny and boycotts from stakeholders who may be affected by manipulated financial information (Cespa & Cestone, 2007). This finding underpins the perception that an opportunistic manager often assumes that meeting the interests of stakeholders and establishing an image of caring about society and the environment can reduce the likelihood that they will be scrutinized and punished by these stakeholders for manipulating information disclosure. CSR behavior has become a powerful tool to win support from a wide range of stakeholders (Prior et al., 2008). Therefore, those companies where managers have considerable discretion in making decisions are more prone to over-invest in CSR actions to gain the support of key stakeholders and divert attention from firms' poor performance or managers' misconduct. As a consequence, managers may regard the exercise of CSR as entrenchment strategies to conceal opportunistic motives (Martinez-Ferrero et al., 2016; Martinez-Ferrero & García-Sánchez, 2015; Surroca & Tribó, 2008).

If the opportunistic motivation of the management dominates the information disclosure practice, there is likely to be a reverse relationship between firms' CSR performance and the precision of earnings forecasts, as managers of these companies tend to try to mislead stakeholders' perceptions with respect to corporate actual financial performance through ambiguous or opaque earnings forecasts. Based on the discussion of the opportunistic uses of CSR, we present a competing hypothesis about the relationship between CSR performance and earnings forecast precision, namely, the opportunistic forecast hypothesis.

H1b: Ceteris paribus, CSR is negatively related to management forecast precision.

4. Research design

4.1. Data

Our paper selects the earnings forecasts issued by the A-share firms listed on Chinese stock markets between 2010 and 2016 as the initial sample. Because the management earnings forecast data in CSMAR (CSMAR, 2016) database are available beginning in 2010 and the available data on CSR data in RKS (Rankins CSR Ratings, 2016) database is up to 2016. Drawing on the existing research practices (Cheng et al., 2013; Huang et al., 2017; Li & Zhang, 2015; McGuinness et al., 2017), the initial sample is screened and processed as follows: (1) removing financial and insurance firms because they are subject to different regulatory and accounting standards from other companies; (2) removing observations of qualitative forecasts and open interval forecasts whose precision cannot be measured following Cheng et al. (2013); (3) excluding the observations with missing CSR value because they are not available in the RKS database; (4) deleting the observations with missing values of other control variables. The final sample size of CSR on management forecast precision is 5192. The CSR data in this article comes from the RKS (Rankins CSR Ratings, 2016) database that is an independent CSR rating agency, and other data are derived from the CSMAR database that is extensively used by scholars to study the issues related to Chinese listed companies.

4.2. Measurement of CSR

We rely on the RKS database to measure Chinese listed firms' CSR performance, and this method has been widely adopted in prior research (e.g., Chen & Wan, 2020; Huang et al., 2017; Marquis & Qian, 2014; McGuinness et al., 2017; Pan et al., 2018). As a professional and independent rating agency, RKS evaluates the CSR status of Chinese A-share listed companies according to ISO 26000 Guidance and GRI (3.0) and takes the Chinese characteristics into account. RKS conducts the rating by adopting four initial level indicators: macrocosm, content, technology, and industry. Among them, the first three initial indicators also include a series of first-level indicators and second-level indicators, which apply to all industries. For instance, under the content level, there are six first-level indicators, including community participation and development, consumers, operating fairness, environment, labor and human rights, and economic performance. Under the first-level indicators, such as the environment, there are four second-level indicators, including environmental management information, pollution prevention information, climate change mitigation and adaptation information, and sustainable resource use information. Regard to the industry indicator, a number of different industry-specific indicators are assigned to every industry. Finally, an aggregate CSR rating varying from 0 to 100 is formed according to the values of those sub-indicators for each firm. This CSR score comprehensively reflects how a company performs in CSR in a certain year.

4.3. Measurement of forecast precision

Referring to the methods of Johnson et al. (2001), Cheng et al. (2013), and Li and Zhang (2015), we use the negative value of the width of earnings forecasts to measure forecast precision. For the closed interval forecast, the forecast width is the difference between the upper and lower estimates, scaled by the per-share price of the company at the beginning of the fiscal year. For the point forecast, we treat its forecast width as 0. Hence, a larger value of PRECISE means a higher degree of forecast precision.

4.4. Empirical models and measurements of control variables

To examine the hypotheses presented above, we construct the following multiple regression model (1) to estimate and analyze the effect of CSR on management forecast precision. Meanwhile, in this model, the industry and year fixed effects are also controlled. Further, all the standard errors in the regression model are clustered by firm to control the cluster effects. We mainly focus on the sign of CSR coefficient β_1 in model (1). If the sign of β_1 is positive, the result supports hypothesis H1a; otherwise, the hypothesis H1b is endorsed.

$$\begin{aligned} PRECISE = {} & \beta_0 + \beta_1 CSR + \beta_2 SIZE + \beta_3 BM + \beta_4 LEV + \beta_5 ROA + \beta_6 LOSS + \beta_7 VOLR \\ & + \beta_8 RETURN + \beta_9 COVER + \beta_{10} HORIZON + \beta_{11} ANNUAL + \beta_{12} NEWS \\ & + \beta_{13} SOE + \beta_{14} DUAL + \beta_{15} INDR + \beta_{16} INST + \sum INDUSTRY + \sum YEAR + e \end{aligned} \tag{1}$$

In the above model (1), PRECISE represents the precision of management earnings forecasts, and the main explanatory variable CSR denotes the company's overall CSR performance level. Following the existing literature (Ajinkya et al., 2005; Cheng et al., 2013), our paper also contains many essential control variables which probably affect management forecast precision. Concretely, these control variables include corporate size (SIZE), firms' growth opportunities (BM, measured as book-to-market ratio), corporate financial leverage (LEV), corporate financial performance (ROA), whether firms' actual earnings during the forecast period are negative (LOSS), stock returns' volatility (VOLR), the stock return rate (RETURN), a dummy variable of annual earnings forecast (ANNUAL), forecast horizon (HORIZON), news type (NEWS), and the quantity of analysts following (COVER). Furthermore, considering the view that effective corporate governance mechanisms are crucial to monitor managers' behaviors and decisions (García-Sánchez et al., 2019), we also select a few representative corporation governance variables as control variables, including corporate ownership types (SOE), CEO duality (DUAL), the proportion of independent directors on the board of directors (INDR), and the shareholding proportion of institutional investors (INST). At the same time, we also control industry and year fixed effects, which are represented by binary variables respectively. Table 1 shows more detailed definitions and measures for each variable.

Table 1. Variable definitions.

Variable names	Variable definitions
PRECISE	PRECISE is measured by the negative value of the width of earnings forecasts.
CSR	CSR is the score obtained from the ratings published by RKS (Rankins CSR Ratings) for sample firms.
SIZE	SIZE is calculated as the natural logarithm of the firm's total assets.
BM	BM stands for book-to-market value, measured by the ratio of a company's book value divided by its market value, and the greater the value of BM means the lower the growth of the company.
LEV	LEV is measured by a company's total liabilities divided by its total assets.
ROA	ROA is measured by a company's net profit divided by its total assets.
LOSS	It is a dummy variable that is equal to 1 if the actual net profit during the forecast period is negative, and 0 otherwise.
VOLR	VOLR denotes the volatility of stock returns, measured by the standard deviation of stock returns in the year before the release date of the earnings forecast.
RETURN	RETURN stands for stock return rate, referring to the stock return for the year before the date on which the earnings forecast is released.
COVER	COVER denotes the number of securities analysts who follow the company.
HORIZON	HORIZON is measured by the number of days between the release date of earnings forecasts and the fiscal period end date.
ANNUAL	It is a dummy variable that is equal to 1 if the earnings forecast is an annual forecast, and 0 otherwise.
NEWS	It is a dummy variable that is equal to 1 if the cumulative abnormal return rate of firm stock is greater than 0 over the three-day window centered on the earnings forecast day (i.e., good news), and 0 otherwise (i.e., bad news).
SOE	It is a dummy variable that is equal to 1 if a firm's ultimate owner is the government or its agencies, and 0 otherwise.
DUAL	DUAL denotes firm CEO duality, which is equal to 1 if the CEO also serves as the company's chairman, and 0 otherwise. Separation of the two positions helps to maintain a balanced board without anyone has unfettered power.
INDR	INDR denotes the proportion of the number of independent directors on the board of directors.
INST	INST stands for the proportion of the shares holding of institutional investors.

Source: Following existing literature.

5. Empirical results and analysis

5.1. Descriptive statistics

Table 2 displays the summary statistics for the variables that are included in our main regression model. To mitigate the impact of outliers on our regression analysis, all continuous variables are winsorized at1% and 99%. The mean value and standard deviation of PRECISE are −0.096 and 0.275, respectively, which means there are great variations in the precision of earnings forecasts for the sample firms. The mean and median values of CSR are 39.516 and 37.569, respectively, whereas 1% and 99% of CSR are 22.373 and 70.714, respectively, which means that CSR performance among the sample firms is generally not good enough (based on the reason that the full score of CSR rating is 100) and that there is substantial heterogeneity in the CSR performance among our sample firms. The mean value of LOSS is 0.108, suggesting that 10.8% of the sample companies have a loss during the forecast period. The mean value of ANNUAL is 0.359, which indicates that about 36% of earnings forecasts in the sample observations are annual forecasts. The mean value of NEWS is 0.442, and we can conclude that 44.2% of earnings forecasts receive a positive market reaction from investors, and we classify these earnings forecasts as good news. Moreover, the

Table 2. Descriptive statistics.

Variables	Mean	Std. Dev	P1	P25	Median	P75	P99
PRECISE	−0.096	0.275	−1.611	−0.010	−0.003	−0.001	0.000
CSR	39.516	9.928	22.373	32.553	37.569	44.251	70.714
SIZE	22.646	1.340	20.216	21.659	22.444	23.552	26.063
BM	0.437	0.292	0.070	0.230	0.359	0.555	1.566
LEV	0.459	0.211	0.047	0.294	0.476	0.628	0.862
ROA	0.047	0.062	−0.140	0.011	0.039	0.077	0.240
LOSS	0.108	0.310	0.000	0.000	0.000	0.000	1.000
VOLR	0.030	0.010	0.015	0.023	0.028	0.035	0.059
RETURN	0.157	0.472	−0.524	−0.194	0.049	0.409	1.754
COVER	2.037	1.022	0.000	1.386	2.197	2.833	3.689
HORIZON	16.122	38.033	−31.000	−15.000	−3.000	63.000	74.000
ANNUAL	0.359	0.480	0.000	0.000	0.000	1.000	1.000
NEWS	0.442	0.497	0.000	0.000	0.000	1.000	1.000
SOE	0.438	0.496	0.000	0.000	0.000	1.000	1.000
DUAL	0.245	0.430	0.000	0.000	0.000	0.000	1.000
INDR	0.376	0.054	0.333	0.333	0.364	0.429	0.571
INST	0.069	0.096	0.000	0.017	0.044	0.078	0.560

Source: Authors' calculations based on data from the RKSdatabase and CSMAR database.

mean value of SOE is 0.438, which means that approximately 44% of the observations come from state-owned enterprises.

5.2. Correlation analysis

Table 3 lists the Pearson correlation coefficient results among the main variables. The results in Table 3 show that the correlation coefficient between PRECISE and CSR is significantly positive at the 1% level, initially confirming hypothesis H1a (transparent forecast hypothesis). All the correlation coefficients among independent variables are below 0.62, indicating that multicollinearity does not constitute a concern for us in the regression model since Gujarati (2009) holds that the model may not have severe multicollinearity concerns if the correlation coefficients are not greater than 0.8. The above results are only the correlation analysis between univariates, and further rigorous empirical evidence will be presented in the multiple regression analysis below.

5.3. Multivariate regression results

Table 4 demonstrates the multivariate regression results of CSR's impact on management forecast precision. In Table 4, column (1) shows the regression results without corporate governance control variables, and column (2) lists the regression results after adding corporate governance control variables. It can be seen from the results of these two columns that the regression coefficients on CSR are both significantly positive at the 1% level, which indicates that CSR performance is positively and significantly related to the precision of management earnings forecasts after controlling possible influencing factors. This positive relationship is in line with the proposition of H1a (transparent forecast hypothesis), suggesting that managers release more precise earnings forecasts in companies with superior CSR performance. Our result implies that CSR plays a crucial role in improving management forecast precision. This is in accordance with the notion that for the investing public, the foremost social responsibility of publicly listed companies is to provide transparent financial

Table 3. Pearson correlation matrix.

Variables	PRECISE	CSR	SIZE	BM	LEV	ROA	LOSS	VOLR	RETURN	COVER	HORIZON	ANNUAL	NEWS	SOE	DUAL	INDR	INST
PRECISE	1.00																
CSR	0.05***	1.00															
SIZE	−0.06***	0.40***	1.00														
BM	−0.13***	0.17***	0.52***	1.00													
LEV	−0.04***	0.16***	0.62***	0.32***	1.00												
ROA	−0.07***	−0.04***	−0.16***	−0.27***	−0.44***	1.00											
LOSS	0.10***	−0.02	0.05***	0.08***	0.21***	−0.57***	1.00										
VOLR	0.11***	−0.01	−0.08***	−0.31***	−0.03**	−0.04***	0.01	1.00									
RETURN	0.13***	0.01	−0.11***	−0.33***	−0.04***	0.13***	−0.07***	0.13***	1.00								
COVER	−0.06***	0.16***	0.25***	−0.06***	−0.09***	0.47***	−0.25***	−0.06***	−0.01	1.00							
HORIZON	−0.08***	−0.03	−0.25***	−0.17***	−0.24***	0.26***	−0.17***	−0.05***	0.00	0.18***	1.00						
ANNUAL	−0.13***	−0.04***	0.04***	0.03**	0.06***	−0.05***	0.04***	−0.06***	−0.01	−0.06***	−0.03**	1.00					
NEWS	0.00	−0.01	0.03**	−0.03**	0.01	0.11***	−0.09***	−0.04***	0.09***	0.06***	−0.05***	−0.01	1.00				
SOE	0.00	0.10***	0.36***	0.32***	0.33***	−0.27***	0.20***	−0.06***	−0.08***	−0.16***	−0.33***	0.07***	0.01	1.00			
DUAL	0.02	−0.08***	−0.12***	−0.18***	−0.14***	0.14***	−0.07***	0.06***	0.04***	0.09***	0.12***	−0.04***	−0.02	−0.32***	1.00		
INDR	0.03**	−0.03*	0.04***	0.01	−0.03**	0.04***	−0.02	0.03**	−0.02	0.04***	0.02	−0.02	−0.02	−0.10***	0.14***	1.00	
INST	−0.04***	0.06***	0.13***	0.08***	0.07***	0.06***	−0.01	−0.04***	0.02	0.13***	−0.06***	0.01	0.01	0.17***	−0.01	−0.08	1.00

Note: *, **, *** denote significance level at 10%, 5%, and 1%.
Source: Authors' calculations based on data from the RKSdatabase and CSMAR database.

Table 4. CSR and management forecast precision.

Variables	(1)	(2)
CSR	0.002***	0.002***
	(3.870)	(3.979)
SIZE	−0.016***	−0.018***
	(−2.967)	(−3.188)
BM	−0.091***	−0.093***
	(−4.805)	(−4.869)
LEV	−0.005	−0.005
	(−0.168)	(−0.195)
ROA	−0.064	−0.063
	(−0.690)	(−0.687)
LOSS	0.062***	0.061***
	(4.341)	(4.245)
VOLR	0.797	0.758
	(1.621)	(1.541)
RETURN	0.014	0.015
	(1.443)	(1.510)
COVER	−0.002	0.001
	(−0.318)	(0.172)
HORIZON	−0.001***	−0.001***
	(−4.943)	(−4.701)
ANNUAL	−0.065***	−0.065***
	(−8.515)	(−8.498)
NEWS	0.002	0.002
	(0.329)	(0.326)
SOE		0.021**
		(2.177)
DUAL		0.005
		(0.513)
INDR		0.097
		(1.426)
INST		−0.075*
		(−1.881)
CONSTANT	0.141	0.126
	(1.265)	(1.107)
N	5192	5192
ADJ-R^2	14.84%	14.93%
F-value	16.078***	15.234***

Note: T-values are reported in parentheses, and *, **, *** denote significance level at 10%, 5%, and 1% (similarly hereinafter).
Source: Authors' calculations based on data from the RKSdatabase and CSMAR database.

information since transparent and reliable information disclosures are not only regarded as the prerequisite for effective and mutually beneficial communications between firms and their stakeholders but also a measure of the 'just' and 'fair' treatment to different stakeholders by a company (Holley, 1998; Ruppel & Harrington, 2000). Corporate managers have the discretion over the disclosure precision to external stakeholders as they have inside information that is not available to outsiders (Choi et al., 2010). Corporate executives in CSR-oriented companies have a greater tendency to make more transparent disclosure decisions because they have an incentive to be ethical and accountable in disclosure practices, whereas managers in companies that don't care about CSR may release less specific disclosures with the purpose of misleading outside stakeholders' judgment about the actual performance of firms by issuing vague earnings forecasts.

Moreover, the regression results of the control variables in the model are basically in line with our expectations. The larger the firm, the more difficult it is to precisely forecast firm performance, resulting in lower precision of earnings forecasts, which is consistent with the existing literature (Baginski & Hassell, 1997). The higher book-to-market ratio (BM) indicates a lower growth of the company, which causes managers to issue a vague earnings forecast, and this is in accord with Cheng et al. (2013). The regression coefficient on LOSS is positive at the 1% significance level, indicating that managers have a clearer estimate of the company's operating loss status. The regression coefficient on HORIZON is significantly negative, which conforms to our intuition, suggesting that the closer the managers' forecast time is to the fiscal period end date, the higher the forecast precision will be. The regression coefficient on ANNUAL is negative at the 1% significance level, which indicates the precision of management annual forecasts is lower than that of quarterly and semi-annual forecasts. Additionally, the regression coefficient of SOE is significantly positive, suggesting that the precision of earnings forecasts issued by state-owned companies is higher than that of non-state-owned ones. The regression coefficient on INST is negative, which points out that firms with more institutional investors are prone to release less precise earnings forecasts. The regression coefficients of other control variables in the model are not statistically significant, which is similar to the findings of existing literature, such as Li and Zhang (2015), Cheng et al. (2013), Ajinkya et al. (2005), and Karamanou and Vafeas (2005).

5.4. Robustness tests

To make our results more stable, we carry out the following robustness tests. First, we change the measurement of our independent variable, CSR. In this part, CSR data is taken from the CSR research database of listed firms in China, which comes from the CSMAR database. Following Sial et al. (2018), we use the number of disclosure items in the CSR report as the alternative CSR measurement. There are 11 CSR reporting items summarized by the CSMAR CSR database. Specifically, we divide the number of items contained in the CSR report of each company by a total of 11 items, and the value obtained is the first alternative measurement of CSR performance. The regression result is demonstrated in column (1) of Table 5. Additionally, we take the logarithm of the number of disclosure items in each CSR reporting as the second alternative measurement of CSR performance, and the regression result is listed in column (2) of Table 5. As seen in Table 5, CSR is still significantly and positively associated with management forecast precision. Multiple measurement approaches can effectively avoid defects in a single evaluation index that may not accurately and fully assess the CSR performance of public firms.

Second, as mentioned above, management earnings forecasts of listed companies in China are semi-mandatory, so our sample includes voluntary disclosure subsample and mandatory disclosure subsample. Considering the difference in disclosure motivation between mandatory disclosures and voluntary disclosures, the information quality of these two kinds of earnings forecasts is likely to be different. Hence, we divide the entire sample into two groups: the voluntary disclosure subsample and the mandatory disclosure subsample and conduct regression analysis on them, respectively. Table 6 displays the regression results of two separate groups. We can see that the significant positive relation between CSR and earnings forecast precision remains

Table 5. Alternative CSR measurements and management forecast precision.

Variables	(1)	(2)
CSR	0.096***	0.144***
	(4.640)	(4.677)
SIZE	−0.011**	−0.011**
	(−1.999)	(−1.983)
BM	−0.099***	−0.099***
	(−5.204)	(−5.195)
LEV	−0.013	−0.014
	(−0.472)	(−0.492)
ROA	−0.065	−0.065
	(−0.708)	(−0.710)
LOSS	0.059***	0.059***
	(4.146)	(4.137)
VOLR	0.727	0.720
	(1.479)	(1.464)
RETURN	0.015	0.015
	(1.489)	(1.502)
COVER	0.000	0.000
	(0.090)	(0.095)
HORIZON	−0.001***	−0.001***
	(−5.075)	(−5.070)
ANNUAL	−0.063***	−0.063***
	(−8.336)	(−8.334)
NEWS	0.002	0.002
	(0.252)	(0.254)
SOE	0.018*	0.018*
	(1.906)	(1.888)
DUAL	0.003	0.003
	(0.380)	(0.340)
INDR	0.101	0.104
	(1.476)	(1.526)
INST	−0.074*	−0.074*
	(−1.865)	(−1.856)
CONSTANT	−0.172	−0.081
	(−1.408)	(−0.696)
N	5192	5192
ADJ-R^2	15.02%	15.03%
F-value	15.34***	15.346***

Note: T-values are reported in parentheses, and *, **, *** denotesignificance level at 10%, 5%, and 1%.
Source: Authors' calculations based on data from the RKSdatabase and CSMAR database.

unchanged whether the disclosure is voluntary or mandatory. However, in the voluntary disclosure sample, the role of CSR is greater than that in the mandatory sample. This fully illustrates that those firms that attach more importance to CSR tend to voluntarily disclose earnings forecasts and strive to improve the disclosure quality to maintain the established reputation effect of CSR.

5.5. Endogeneity issue

Our paper may encounter with the potential endogeneity problem due to omitted variables or reverse causality. Although we follow previous literature and have controlled as many variables as possible, including the firm characteristics, management earnings forecast features, and corporate governance factors, both the dependent variable PRECISE and our main independent variable CSR may still be jointly affected by some unknown factors that are not captured in this paper. In regard to the reverse causality issue, one may argue that the higher management earnings forecast

Table 6. Voluntary disclosure and mandatory disclosure.

Variables	Voluntary disclosure	Mandatory disclosure
CSR	0.006**	0.002***
	(2.248)	(3.681)
SIZE	−0.072**	−0.013**
	(−2.048)	(−2.394)
BM	0.082	−0.099***
	(0.881)	(−5.093)
LEV	−0.028	0.003
	(−0.159)	(0.097)
ROA	−0.353	−0.088
	(−0.413)	(−0.967)
LOSS	0.151	0.050***
	(0.811)	(3.571)
VOLR	3.444	0.640
	(1.063)	(1.310)
RETURN	0.075	0.011
	(1.114)	(1.115)
COVER	−0.053*	0.005
	(−1.681)	(0.992)
HORIZON	0.000	−0.001***
	(−0.147)	(−5.617)
ANNUAL	−0.130***	−0.055***
	(−2.978)	(−7.157)
NEWS	0.052	0.000
	(1.225)	(−0.069)
SOE	−0.080	0.033***
	(−1.402)	(3.364)
DUAL	−0.001	0.005
	(−0.014)	(0.573)
INDR	0.328	0.136**
	(0.819)	(1.978)
INST	0.097	−0.098**
	(0.459)	(−2.468)
CONSTANT	1.281*	−0.012
	(1.706)	(−0.106)
N	316	4876
ADJ-R^2	13.94%	15.98%
F-value	1.963***	15.490***

Note: T-values are reported in parentheses, and *, **, *** denotesignificance level at 10%, 5%, and 1%.
Source: Authors' calculations based on data from the RKSdatabase and CSMAR database.

precision may yield higher market returns and lower financing costs according to the classic information disclosure literature, thereby increasing the company's financial capacity to implement more CSR activities. In order to address the possible endogeneity issue in this paper, we follow Cheng et al.,(2014) and introduce two instrumental variables named MPSCSR and MPYCSR, which are measured by the average CSR level of each provincial-sector pair and each provincial-year pair respectively.

The reason for selecting the above instrumental variables is that both the provincial-sector pairs and provincial-year pairs might affect the focal firm (Cheng et al., 2014; Marquis et al., 2007), but no clear evidence supports that one firm's CSR performance can influence the average CSR level of provincial firms or sector firms. These features indicate that the two instrumental variables are suitable to be used in two-stage least squares regression (2SLS).

As shown in Table 7, the results of the first stage of 2SLS regression are represented in the first column, and both MPSCSR and MPYCSR are positively related to CSR performance at the 1% significance level. The second stage results of 2SLS

Table 7. 2SLS regression results.

Variables	(1)	(2)
Instrumented CSR		0.004***
		(3.580)
MPSCSR	0.732***	
	(25.453)	
MPYCSR	0.212***	
	(5.020)	
SIZE	2.464***	−0.025***
	(13.378)	(−3.065)
BM	−0.202	−0.116***
	(−0.312)	(−4.842)
LEV	−3.468***	−0.024
	(−3.686)	(−0.684)
ROA	−18.087***	0.042
	(−6.079)	(0.371)
LOSS	−1.592***	0.067***
	(−3.196)	(3.591)
VOLR	−50.662***	1.136*
	(−3.147)	(1.904)
RETURN	0.734**	0.004
	(2.258)	(0.332)
COVER	0.556***	−0.008
	(3.481)	(−1.366)
HORIZON	0.002	−0.000***
	(0.679)	(−3.366)
ANNUAL	−0.162	−0.067***
	(−0.648)	(−7.199)
NEWS	−0.090	0.001
	(−0.378)	(0.053)
SOE	−0.375	0.013
	(−1.212)	(1.163)
DUAL	−0.551*	−0.011
	(−1.860)	(−0.972)
INDR	2.460	0.148*
	(1.049)	(1.711)
INST	−0.184	−0.073
	(−0.132)	(−1.419)
CONSTANT	−56.283***	0.217
	(−14.824)	(1.408)
N	3657	3657
ADJ-R^2	50.216%	16.017%
F-value	62.46***	12.81***

Note: T-values are reported in parentheses, and *, **, *** denotesignificance level at 10%, 5%, and 1%.
Source: Authors' calculations based on data from the RKSdatabase and CSMAR database.

regression are listed in column (2) of Table 7, and a significantly positive coefficient on Instrumented CSR is observed (0.004, t = 3.5803). The 2SLS analysis results show the positive relationship between instrumented CSR and earnings forecast precision remains significant. In this light, to some extent, we consider that the endogeneity issue does not affect our main results.

5.6. Further analysis

China's institutional environment and transitional economic system have created the dual separation of the non-state-owned and state-owned nature of listed companies, which results in significant dissimilarities between non-SOEs and SOEs in many aspects. As compared to non-SOEs, China's SOEs are often under a more sound and effective internal and external supervision mechanisms, which largely determines the higher quality of the financial disclosure of SOEs. Moreover, in China, SOEs have easier access to financing, including equity and debt financing, and governments are more inclined to bail out SOEs when they run into financial distress (Chen et al., 2010; Gordon & Li, 2003; Sapienza, 2004), which gives them less incentive to manipulate earnings upwards. Previous studies have also found that state-owned listed firms have higher information transparency and a lower degree of information asymmetry, and they make more voluntary information disclosures (Ferguson et al., 2002; Huang et al., 2017; Luo & Zhu, 2010; Masanori, 2010). By contrast, non-SOEs perform less well in terms of corporate governance and have serious asymmetric information problems (Masanori, 2010). Especially in countries with weak property rights protection, non-SOEs exhibit lower levels of information transparency to prevent the government's expropriation (Bushman et al., 2004; Durnev et al., 2009). Tang et al. (2017) suggest that the suspicion of the 'original sin' of private entrepreneurs gives rise to the lower transparency and earnings quality of private enterprises in China. Consequently, we consider that when the information disclosure of state-owned firms is of high quality, CSR may not play a strong role in improving management forecast precision. On the other hand, since non-SOEs generally have lower transparency in their disclosure practices, the roles of CSR in affecting disclosure quality are likely to be more prominent; that is, the relationship between CSR and the precision of management earnings forecasts may be stronger in non-SOEs. To test our prediction, the sample of our paper is classified into SOEs subsample and non-SOEs subsample, and we estimate each subsample separately.

In addition, to further explore whether corporate ownership affects the relationship between CSR and earnings forecast precision, this paper adds the interaction term of CSR and corporate ownership type (CSR × SOE) based on model (1) and form the following model (2) to investigate the moderating effect of corporate ownership.

$$\begin{aligned} PRECISE = {} & \beta_0 + \beta_1 CSR + \beta_2 CSR \times SOE + \beta_3 SOE + \beta_4 SIZE + \beta_5 BM + \beta_6 LEV + \beta_7 ROA \\ & + \beta_8 LOSS + \beta_9 VOLR + \beta_{10} RETURN + \beta_{11} COVER + \beta_{12} HORIZON \\ & + \beta_{13} ANNUAL + \beta_{14} NEWS + \beta_{15} DUAL + \beta_{16} INDR + \beta_{17} INST \\ & + INDUSTRY + YEAR + e \end{aligned} \tag{2}$$

The first two columns of Table 8 reveal the regression results grouped by corporate ownership type, and the third column shows the regression results after adding the interaction item between CSR and SOE. According to the grouped regression results, we find that in non-SOEs, CSR plays a greater part in raising management earnings forecast precision than in state-owned companies, which is consistent with our expectation. Furthermore, we are concerned about the coefficient of the interaction term (CSR × SOE). As we expected, the regression coefficient on CSR × SOE is significantly negative at the 1% statistical level, indicating a weaker positive relation between CSR and the precision of earnings forecasts for SOEs than for non-SOEs. Our finding also means that compared with SOEs, the CSR orientation of non-SOEs can promote the quality of management forecasts to a greater extent. This is probably due to the argument that the information disclosure quality of SOEs is inherently

Table 8. The mediating effect of firms' ownership.

Variables	SOEs	Non–SOEs	Full sample
CSR	0.001**	0.003***	0.003***
	(2.150)	(4.514)	(5.564)
CSR × SOE			−0.003***
			(−3.886)
SOE			0.136***
			(4.367)
SIZE	−0.032***	−0.008	−0.016***
	(−3.598)	(−1.094)	(−2.973)
BM	−0.044*	−0.205***	−0.084***
	(−1.686)	(−6.619)	(−4.384)
LEV	0.116***	−0.101***	−0.010
	(2.716)	(−2.721)	(−0.350)
ROA	−0.193	0.143	−0.056
	(−1.223)	(1.284)	(−0.603)
LOSS	0.049**	0.094***	0.062***
	(2.553)	(4.072)	(4.308)
VOLR	0.088	1.160*	0.771
	(0.108)	(1.938)	(1.571)
RETURN	0.009	0.003	0.017*
	(0.515)	(0.260)	(1.677)
COVER	0.000	−0.018***	0.000
	(0.050)	(−2.884)	(0.073)
HORIZON	0.000**	−0.001***	−0.001***
	(−2.157)	(−4.119)	(−4.85)
ANNUAL	−0.090***	−0.032***	−0.065***
	(−7.635)	(−3.407)	(−8.532)
NEWS	0.004	0.003	0.002
	(0.377)	(0.308)	(0.342)
DUAL	0.034*	−0.013	0.006
	(1.649)	(−1.303)	(0.638)
INDR	0.030	0.124	0.099
	(0.251)	(1.517)	(1.455)
INST	−0.089*	−0.100	−0.068*
	(−1.889)	(−1.178)	(−1.727)
CONSTANT	0.531***	−0.162	0.046
	(2.868)	(−1.092)	(0.400)
N	2276	2916	5192
ADJ-R^2	10.44%	28.2%	15.16%
F-value	5.738***	19.768***	15.274***

Note: T-values are reported in parentheses, and *, **, *** denotesignificance level at 10%, 5%, and 1%.
Source: Authors' calculations based on data from the RKSdatabase and CSMAR database.

high, so the role of CSR in information disclosure is not as strong, while China's private enterprises need to strengthen CSR orientation to improve the quality of information disclosure owing to their poor information disclosure practices.

6. Discussion and conclusion

Although a growing amount of literature studies the influence of CSR on the information quality based on historical financial reports, there is little concern about whether CSR could affect the quality of financial disclosure regarding future earnings forecasts. However, the precision of management earnings forecasts directly influences the quality and usefulness of forward-looking information disclosure and can also fully reflect managers' social responsibility to provide transparent information to their stakeholders. Against this backdrop, we mainly examine the relation between CSR and the earnings forecast quality represented by forecast precision. Following stakeholder theory and agency theory, we propose two competing hypotheses, i.e., the transparent forecast hypothesis and the opportunistic forecast hypothesis. Through empirical research, we find a significantly positive link between the firm's CSR performance and management forecast precision. This finding lends support to our transparent forecast hypothesis, which indicates high-quality information disclosure is responsible and ethical behavior in the interaction and communication between corporate executives and external stakeholders. Our result ties in with the viewpoints based on stakeholder theory, i.e., that a company's consideration of its stakeholders' interests has a positive impact on corporate information disclosures, and CSR-oriented companies are more diligent and accountable in the production and disclosure of financial information to serve the needs of various stakeholders.

The research conclusion of this paper is that firms performing well in terms of CSR will exhibit high-quality financial disclosure, that is, issue high-precision earnings forecasts. This is mainly due to the following reasons. CSR orientation is associated with a good corporate reputation for ethical behavior, limiting the likelihood of managers' opportunistic use of CSR activities. Many socially responsible companies have realized the great value that good corporate reputations can bring them, so they will continue to forge a transparent reputation in information disclosures to enhance the value creation effect of reputation.

Furthermore, in the light of China's institutional background, we find the relationship between CSR performance and the precision of earnings forecasts to be stronger in non-state-owned enterprises, which suggests that CSR plays a greater role in enhancing management forecast precision for non-SOEs than SOEs. This result is probably because, compared with SOEs, non-SOEs have lower information transparency and consequently, firms' CSR orientation can play a greater role in information disclosure practices. By taking ownership type into consideration, we extend the understanding of how corporate ownership affects the role of CSR. This finding also has certain implications for the establishment and improvement of the information disclosure regulatory system for capital markets in China and other transitional economies.

Our research offers strong empirical evidence that the management in CSR-oriented firms acts in an accountable way by providing more precise earnings forecasts that represent more transparent and informative forecasts. Existing studies on CSR and managerial behavior can come down to a basic argument about whether the management is inherently moral or opportunistic in the face of social responsibility engagement. Thus, this article makes a contribution to this discussion by presenting compelling evidence that the ethical concerns and reputation effects of CSR are likely to be the driving factors for managers to provide high-quality information disclosure, which supports the stakeholder theory. Moreover, our study also suggests that managers' awareness of CSR can exert great influence on their discretionary decision (e.g., the precision of earnings forecasts), and this result is helpful for information users to evaluate the transparency and informativeness of corporate information disclosures. Finally, our findings also facilitate policymakers and regulators to better understand the business behaviors and disclosure practices of listed companies under the guidance of CSR orientation.

Like previous studies, this article inevitably has several limitations. Firstly, due to the difficulties in data acquisition, our sample is only restricted to Chinese listed firms, which may limit the generalizability of our conclusions. Secondly, we only focus on management forecast precision, and other quality characteristics are not involved. In future studies, we might adopt international samples to expand the current research. Moreover, we can also explore the connection between CSR and other quality characteristics of earnings forecasts, such as management forecast bias, forecast consistency, forecast credibility and so on.

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