Accounting conservatism and corporate environmental performance: Do political connection and regulatory constraints matter?

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Abstract

Using a large sample of Chinese listed firms, we find a significantly negative relationship between accounting conservatism and corporate environmental commitment. Further analysis indicates such a negative relationship can be explained by the resource dependence theory. Firms that have adopted conservative financial reporting are associated with enhanced access to short-term financing and reduced attention from financial analysts, and therefore they choose to reduce their environmental commitment to minimize the overall cost of resource dependence. We find firms with achieved political connections (executives hold a government-nominated position) and heavy polluters identified by the Ministry of Ecology and Environment are more likely to follow government environmental policy, which weakens the negative impact of accounting conservatism on corporate environmental performance. This study adds new evidence to better understand the relationship between firms' accounting policies and corporate environmental engagement in emerging markets and the mediation effects of political connection and regulatory constraints.

Key words: Accounting conservatism, corporate environmental performance, political connection, regulatory constraints

JEL: M41, O13, Q56

1. Introduction

Economic and environmental sustainability are both critical to corporations' long term sustainable development (Wu et al., 2020). Although corporations have increased their participation in environmental responsibility activities (Porter & Kramer, 2011; Vastola et al., 2017), evidence about executive's strategic decisions on environmental commitment is still inconclusive (Orlitzky et al., 2003; Busch & Friede, 2018). Our goal is to investigate whether accounting conservatism, a financial reporting policy, affects firms' environmental commitment. Both environmental commitment and conservative accounting reporting are beneficial to corporations and their stakeholders. Although corporate environmental investment has a long cycle and possible low economic benefits in the short run (Jeucken & Bouma, 2017), it can enhance firm reputation (Aguilera-Caracuel & Guerrero-Villegas, 2018) and increase firm value (Kong et al., 2014). While accounting conservatism is widely recognized in improving the transparency of firm financial information (Ruch & Taylor, 2015) and facilitating efficient contracting with various stakeholders (Guo et al., 2020).

Motivated by the recourse dependence theory suggesting that firms tend to choose the least-constraining device to manage the relationship with stakeholders (Pfeffer & Salancik, 2003), we examine how accounting conservatism is associated with environmental commitment in Chinese listed firms. Further, considering the uniqueness and importance of political connections in the Chinese market, we study the moderating effect of political connections and policy constraints on the relationship between accounting conservatism and corporate environmental commitment. As such, we aim to contribute to the literature on adopting

accounting conservatism as a mechanism to shape firm decisions (García Lara et al., 2016).

According to the resource dependence theory, firms tend to choose the least-constraining device to manage the relationship with stakeholders (Pfeffer & Salancik, 2003). Environmental performance has been proven to meet the interests of multiple stakeholders such as consumers, suppliers, and governments (Yadav et al., 2016; Flammer, 2015; Liu et al., 2021; Ruf et al., 2001), and it helps to build a strong firm reputation (Kim, Park, & Wier, 2012). However, the economic benefits of environmental commitment can be either delayed or hard to materialize (Rassier & Earnhart, 2010; Horv´athov´a, 2012). Conditional accounting conservatism imposes stronger verification standards to recognize economic gains compared to recognizing losses and reflects bad news more timely than good news (Watts 2003a; García Lara et al., 2009; Guay & Verrecchia, 2006). Therefore, accounting conservatism is suggested to be an effective means to satisfy capital providers (Watts, 2003a; Zhang, 2008) and facilitate efficient explicit and implicit contracting with stakeholders, such as customers, suppliers, investors, employees, and the society in general (Ball, 2001; Watts, 2003a; Watts, 2003b; Watts & Zimmerman, 1986). When executives need to allocate limited resources to facilitate the different expectations of different stakeholders (Buchanan et al., 2018), they may strategically reduce firms' environmental commitment if they have adopted conservative accounting reporting, as such, to reduce the overall cost of satisfying powerful stakeholders. In this case, accounting conservatism will be negatively related to corporate environmental performance.

China provides a unique setting to investigate the impact of accounting conservatism on

corporate environmental performance[1]. The Chinese government intervenes in financial markets and plays a critical role in the economy (Cull et al., 2015). In China, the government controls the allocation of key and scarce resources (Gwartney & Lawson, 2009), and it is the most powerful stakeholder that affects firm development (Li, et al., 2008). Allen et al. (2005) propose that political relations, as an alternative for market mechanisms, play a critical role in firm development in China. Due to the significance of political influence on firms' decisions, we further investigate whether the relationship between accounting conservatism and environmental performance is reshaped by firm political connections.

Following Zhang et al. (2016), we classify the political connections of firm executives as any ascribed bureaucratic connection and achieved political connections based on whether they used to work in government departments or currently are members of the People's Congress or the Political Consultative Conference. Ascribed bureaucratic connections (the past government work experience) buffers organizations from competitive and regulatory forces by gaining information, influence, and legitimacy (Hillman, 2005). While due to the shared interest with the government, executives who currently are members of the People's Congress or the Political Consultative Conference are more likely to be supportive of the government's initiatives (Zhang et al., 2016). Moreover, we examine the impact of accounting conservatism and environmental performance under regulatory constraints. When facing policy constraints, executives must cater to a wider range of stakeholders to strategically reduce litigation risk, and therefore the impact of accounting conservatism on corporate environmental performance

[1] China issued a new set of China Accounting Standards (CAS) in February 2006, which became mandatory in listed firms on January 1, 2007, introducing the principle of accounting conservatism (CAS, Article 11).

can be different due to the different intensity of regulatory constraints.

Using a large sample of firms listed on the Shanghai and Shenzhen Stock Exchanges from 2010 to 2017, we find a significantly negative association between accounting conservatism and corporate environmental performance. Our results are robust after using alternative measures of environmental performance. To mitigate the potential endogeneity problems, we conduct the IV-GMM estimation, difference-in-differences test, and control for multiple fixed effects. Our baseline results remain robust after addressing endogeneity concerns. One mechanism that explains the relationship between accounting conservatism and environmental performance is the increased short-term financing due to the adoption of conservative financial reporting. Short-term creditors require accounting conservatism to ensure the efficiency of contracts (Watts, 2003a). But it is difficult for short-term creditors to profit from borrowers' environmental commitment, which has a long investment scale and low possible economic return in a short run (Jeucken & Bouma, 2017). Hence executives are likely to strategically reduce environmental engagement if firms have adopted conservative financial reporting. As such, firms serve the interests of powerful financial stakeholders while reducing the overall cost of resource dependence. Another mechanism that justifies the negative effect of accounting conservatism is the reduced analyst attention due to the adoption of conservative accounting reporting. We find firms are more likely to lower their environmental engagement when the attention from financial analysts reduces due to the implementation of conservative financial reporting policy.

According to the resource dependence theory, firms may constantly adjust their strategies to

ensure stable access to critical resources in different environments (Hillman et al., 2009). China's unique institutional environment leads to strong political interference in corporate decisions, and political connections are important for enhancing firm legitimacy (Li et al., 2015; Li & Zhang, 2010). Executives with current government-nominated positions have dual identities in the government and the firm, therefore, they are likely to prioritize government initiatives to protect their political interests (Wang et al., 2019). As for high polluting firms, the dependence on legitimate resources will be higher, they need to continuously engage in environmental activities to reduce litigation risk. Therefore, the negative relationship between accounting conservatism and environmental commitment becomes insignificant in firms with politically connected executives and firms identified as high polluters.

Although existing studies have examined the relationship between accounting conservatism and firm social responsibility (Anagnostopoulou et al., 2021; Cho et al., 2020), there are still unresolved controversies. This study contributes to the literature in several ways. First, our study highlights that adopting accounting conservatism can function as a mechanism that shapes firm decisions. Cho et al. (2020) find that firms with more conservative financial reporting are less likely to disclose their CSR information. We add new evidence to Cho et al. (2020) by showing that firms that have adopted conservative accounting policy reduce their commitment on environmental responsibilities. Our study extends the literature that accounting conservatism not only improves the quality of firm financial reporting (Ruch & Taylor, 2015), but also facilitates the communication with various stakeholders (Guo et al., 2020). Our results therefore have important implications to accounting and environmental studies. Particularly,

policy makers in emerging economies should consider how to promote eco-friendly policies to firms that have catered for stakeholders with conservative financial reporting.

Second, our study deepens the understanding of environmental performance in emerging markets and its relationship with firm accounting policies. Different from Anagnostopoulou et al. (2021), which study the conflicts between managerial self-interests and stakeholders' interests when making decisions on CSR and accounting conservatism, we investigate the role of conservative accounting policy in corporate environmental engagement, in response to resource limitation and external uncertainties. Our results indicate that firms that have adopted conservative financial reporting are associated with enhanced access to short-term financing and reduced attention from financial analysts, and therefore, they choose to reduce their environmental commitment to minimize the overall cost of resource dependence. Our study calls for attention that to improve sustainability, financial analysts and institutions need to take their responsibility to promote eco-friendly corporations.

Last but not least, our study sheds light on the impact of political influence on corporate environmental commitment in an environment when political embeddedness is pronounced. Our results indicate that a corporation's dynamic relationship with the government reshapes its stakeholder strategy. Executives who previously worked for the government will use their government contacts to reduce the cost of dependence on the government. However, if executives currently hold a government-nominated position or enterprises are constrained by policies, they need to satisfy the government more to gain recognition from the government (Zhang et al., 2016).

2. Literature and hypothesis development

2.1 Accounting conservatism and environmental performance

From the contract perspective, the accounting policy of an enterprise is the result of the bargaining among contracting parties (Watts, 2003a). Reducing agent conflicts between contracting parties is one of the inducements of accounting conservatism (Watts, 2003a; Qiang, 2007). Prior studies have shown that accounting conservatism, which advocates caution in recognition of revenue and assets, can restrict executives' opportunistic behaviour and inhibit excessive investment (García Lara et al., 2016), reduce stock price crash risk and the risk of stock market bubbles (Kim & Zhang, 2016; Cho et al., 2020) and improve market reactions to seasoned equity offerings (Kim et al., 2013). In addition, Biddle et al. (2022) provide empirical evidence that accounting conservatism can reduce bankruptcy risk and benefit stakeholders by alleviating cash appreciation and earnings management.

Similarly, literatures show that firms with high environmental performance have more chance to obtain favouritism of stakeholders. Hong and Kacperczyk (2009) find that investors, especially institutions, intend to invest in projects that meet social norms, and regulated institutions such as pension funds tend to favour socially responsible stocks. Cai et al. (2016) find that firms with greater green investment are associated with lower future risks and better reputation. Jung et al. (2018) suggest that debt market participants favour environmentally responsive firms. In addition, the disclosure of environmental engagement enhances a firm's access to government-controlled resources (Liu et al., 2021), while investment in social and environmental projects can improve firm image and brand reputation, thus enabling

corporations to differentiate themselves from competitors (Ruf et al., 2001). Given both conservative financial reporting and environmental engagement can satisfy stakeholders, it is of great interest to investigate whether accounting conservatism can serve as a substitute for a firm's environmental commitment.

The resource dependency theory suggests that firms adopting accounting conservatism may reduce their environmental commitment accordingly. According to this theory, executives will choose the least-constraining device to manage the relations with stakeholders and that will allow executives to minimize the dependence of resources and maximize the autonomy (Davis & Cobb, 2010). Particularly, executives will deepen the relationship with the providers of key resources to continuously acquire key resources and reduce the acquisition cost (Hillman et al., 2009).

The resource dependency theory has important implications to our research question to examine whether accounting conservatism could act as a substitute for environmental commitment. Both accounting conservatism and environmental commitment have been proved to be favoured by various stakeholders (Ball, 2001; Watts & Zimmerman, 1986; Jung et al., 2018), and therefore, executives may make trade-offs to maximize benefits with limited resources. Executives understand that corporate environmental engagement is an investment in future earnings (Horv´athov´a, 2012), while the benefits of environmental commitments may not be so easily recognised in the short term. King & Lenox (2001) believe that environmental performance lies more in its social value, and it is difficult to transform it into economic benefits. In addition, many social and environmental investments could be long term, and those

investments usually have a lower rate of economic return (Jeucken & Bouma, 2017; Rassier & Earnhart, 2010; Horv´athov´a, 2012). The long-term development of the firm brings debtholders limited upside benefits, but they bear the downside risks of the firm (Aier et al., 2014). Overall, although social and environmental investments have long-term benefits, they are difficult to be realized in the short term and may have limited beneficial effects on short-term debt holders (Filbeck & Gorman, 2004).

Based on the resource dependence theory and the characteristics of environmental engagement, we propose that there is a negative association between conservatism and corporate environmental performance, which leads to our first hypothesis:

Hypothesis 1 (H1): Accounting conservatism is negatively associated with corporate environmental performance ceteris paribus.

2.2 Effects of political connections and policy constraints

According to the resource dependence theory developed by Pfeffer & Salancik (1978), political connections can help firms to obtain key resources, cope with various external uncertainties, and thereby increase firm value. A firm can be considered politically connected when the persons responsible for important decisions have political connections or background (Bai, 2013; Marquis & Qian, 2014). In Chinese firms, chairmen are the top decision makers who have the greatest control over their firms' business strategies (Wang et al., 2021).

According to Zhang et al. (2016), political connections between enterprises and governments can be categorized into two types. The first is the chairman's previous government work

experience, as the political connection and personal ties before entering the firm, which can be defined as ascribed bureaucratic connection. The second is prestigious appointment to state organizations such as congresses or political councils, as the formation of these political ties result from chairmen' or their firms' achievements, which can be defined as achieved political connections.

Political ties established via past working experience, which enhance executives' network with government leaders, will effectively protect them from rent expropriation (Zhang et al., 2016). Furthermore, those former government officials do not have any formal obligations to shoulder political objectives, such as take extra environmental responsibility. They have intensive experience on the decision-making process in government sectors, and they understand how to communicate with government officials. More importantly, they have better personal channels to communicate with government officials (Hillman et al., 1999). Hence, their connection with governments can bring more resources and valuable information to the enterprise. As a result, executives' political connections may reduce firms' dependence on additional social identification in order to obtain government resources.

Hypothesis 2a (H2a): The significant relationship between accounting conservatism and environmental performance will no longer exist in firms with executives holding a government-nominated position.

The reciprocity principle in social relationships suggests that businesses political connections may be beneficial to firms, but it also implies that governments will expect something in return (Aronson et al., 2005). This payback for current and future government support may take the

form of business activities with a clear social purpose, such as environmental performance (Li et al., 2015). When business executives also hold a government-nominated position, such as a position in National People's Congress, Local People's Congress, Chinese People's Political Consultative Conference, or Local People's Political Consultative Conference, the firm's compliance or active alignment with government expectations will be increased significantly (Zhang et al., 2016). In addition, executives who are currently a member of congresses or political councils are more likely to follow the government's initiatives to consolidate their political status. Therefore, holding a government-nominated position, such as serving on the congresses or political councils, is indicative of an ongoing quid pro quo relationship between business organisations and the government (Swanson, 1999). The government provides political recognition, social status and prestige, in response to which, firms need to continuously contribute to environmental responsibilities.

Hypothesis 2b (H2b): The negative correlation between accounting conservatism and environmental performance will be weakened in firms with executives holding a government-nominated position.

With the legacy of a planned economy, government intervention in China is mainly exemplified by industry regulations (Ortega et al., 2012). In the name of national interests, the government controls licenses and permits for some key industries and regulates their operations heavily (Eaton, 2013). Firms cannot survive without meeting the corresponding standards in the operation (Gallagher, 2006). As a result, industries that are heavily regulated by the government are highly dependent on the government for permit approval/renewal, access to

government-controlled resources and preferential treatment (Eaton, 2013). Hence, heavily regulated firms are subject to frequent government intervention. Resource dependence on government makes firms more likely to comply with government requirements and even make extra effort on socially identifiable behaviours to gain government favour (Pfeffer & Salancik, 1978). We expect that firms subject to heavy regulatory constraints are more likely to commit to environmental responsibilities. Therefore, the negative correlation between accounting conservatism and environmental performance will be weakened in those firms.

Hypothesis 2c (H2c): The significant relationship between accounting conservatism and environmental performance will no longer exist in firms subject to heavy regulatory constraints.

3. Data and methodology

3.1 Sample construction

The financial data used in this paper is collected from the China Stock Market and Accounting Research (CSMAR) database, environmental responsibility scores are obtained from the Hexun CSR database, and the macroeconomic data is collected from China's National Bureau of Statistics website. All firms listed on the Shanghai and Shenzhen Stock Exchanges from 2010 to 2017 are included in the initial sample. The sample period is adopted because the data on environmental performance is only available to 2017. We then exclude: (1) firms from the financial sector, (2) B-share and H-share stocks, and (3) observations with missing information. The final sample used includes 12,160 firm-year observations. All continuous control variables are winsorized at the top and bottom 1% levels to mitigate the concern of outliers.

3.2 Variable construction

3.2.1 Measures of environmental performance

We employ four measures to gauge corporate environmental engagement. The first measure is a continuous variable denoted as *ER*, which is constructed according to the industry-year adjusted Hexun environmental responsibility score for each firm in a year. Hexun[2] is a top-ranked rating agency that provides professional financial and CSR rating of listed firms using a disclosure-oriented evaluation framework. Raw data of Hexun environmental responsibility scores from 0 to 30. This measurement is widely used by Chinese CSR studies such as Ma et al. (2020), Hu et al. (2018) and Zhang et al. (2021). Because Hexun evaluation system varies across years and industries, referring to the method of Li, Wang, & Wu (2021), we make industry-year adjustment for this measure. The industry-year adjusted score (*ER*) is calculated as a firm's Hexun score minus the mean value for all firms in the same industry-year.

According to the *Guidelines on Enhancing Environmental Information Disclosure of Listed Firms* issued by the Shanghai Stock Exchange in 2008, Chinese listed firms should actively disclose the following corporate environmental information in their annual social responsibility reports: (1) the environmental protection policies, objectives, and effects; (2) the total annual resource consumption; (3) the environmental protection investment and environmental technology development; (4) the types, quantity, concentration, and destination of pollutants

[2] Hexun started to launch the CSR rating database in 2010. Listed firms' social responsibility reports and their annual reports are evaluated by Hexun based on the framework of stakeholder theory. Environmental responsibility is evaluated through five dimensions including environmental awareness, environmental certification, environmental input, sewage discharge and energy conservation. The environmental responsibility score adopts the weighted sum of the above five dimensions (10%, 15%, 25%, 25% and 25%, respectively).

discharged; (5) the construction and operation of the firm's environmental protection facilities. Referring to Sarfraz et al. (2020) and Xu et al. (2020), we construct a comprehensive environmental disclosure measurement denoted as *Disclosure*, which covers four major dimensions, namely, legal consciousness, social evaluation, eco-friendly production, and green management. [3] The disclosure data is collected from the CSMAR database. The four dimensions contain a total of 11 disclosure indicators as shown in Appendix 3. A disclosure factor takes a value of 1 if a firm reaches the relevant criteria, and 0 otherwise. Then we add up the scores of the 11 items as the environmental disclosure variable denoted as *Disclosure*.

We employ *Cost/Sales*, which is calculated as the expenditure on environmental projects divided by total sales and multiplied by 1000, as the third measurement. Referring to the method of Li et al. (2021), we make industry-year adjustment on this variable. Environmental costs include all the expenses on solving environmental pollution and ecological damage (Li, 2005). We manually collect the data of environmental expenditure from the notes to listed firms' financial statements.

Finally, following Akbar et al. (2021), we use environmental investment, denoted as *EI*, as the fourth measurement of environmental performance, which is calculated as the natural logarithm of environmental investment plus one, with the data collected from the CSMAR database. Unlike environmental expenditure, a firm's investment behaviour is a function of the expected future profitability (Khan et al., 2016). Therefore, compared with environmental

[3] Legal consciousness examines whether firms have violated laws and regulations on environment. The social evaluation dimension reflects the recognition of a firm's environmental performance. The eco-friendly production dimension identifies whether a firm adopts the eco-friendly production modes. The green management dimension explores whether environmental factors are considered in daily operations.

expenditure, environmental investment is more long-term oriented. Due to the limited availability of data, *Cost/Sales* and *EI* are used for robustness tests.

3.2.2 Measurement of accounting conservatism

The accounting conservatism measurement adopted in this paper is the level of annual accounting conservatism developed by Khan & Watts (2009). Firstly, based on Basu's (1997) cross-sectional regression model, the accounting conservatism measure is constructed as follows:

$$X_i = \beta_0 + \beta_1 D_i + \beta_2 R_i + \beta_3 D_i R_i + \varepsilon_i \quad (1)$$

where X_i is earning per share divided by the beginning-of-period stock price; R_i is the stock return of firm i in a year; D_i is a dummy variable equal to one if R_i is less than zero, and zero otherwise. Coefficient β_2 represents the timeliness of positive news disclosure. β_3 shows a gap in the timeliness of information disclosure of negative news relative to positive news, which is used to measure accounting conservatism. $\beta_2 + \beta_3$ indicates the timeliness of information disclosure of negative news. Timeliness of positive news confirmation β_2 and accounting conservatism β_3 can be expressed as a linear function:

$$GScore = \beta_2 = \mu_0 + \mu_1 SIZE_i + \mu_2 MB_i + \mu_3 LEV_i \quad (2)$$

$$CScore = \beta_3 = \omega_0 + \omega_1 SIZE_i + \omega_2 MB_i + \omega_3 LEV_i \quad (3)$$

where $SIZE_i$ is the natural logarithm of firm i's total assets, MB_i is the ratio of the market value of equity to its book value, LEV_i is firm i's leverage ratio. Then equation (4) is obtained combining equations (2) and (3) into equation (1) to estimate conditional accounting

conservatism, as follows:

$$X_i = \beta_0 + \beta_1 D_i + R_i(\mu_0 + \mu_1 SIZE_i + \mu_2 MB_i + \mu_3 LEV_i) + D_i R_i(\omega_0 + \omega_1 SIZE_i + \omega_2 MB_i + \omega_3 LEV_i) + \varepsilon_i \quad (4)$$

Using equation (4), coefficients ω_0, ω_1, ω_2 and ω_3 can be estimated by regression with the annual cross-sectional data. Then, by plugging them into equation (3), the firm-year conditional accounting conservatism measure *CScore* (β_3) can be calculated, which is the measurement of accounting conservatism in this study.

3.2.3 Control variables

We control for other variables that may affect environmental performance based on the literature (Anagnostopoulou et al., 2021; Cho et al., 2020; Pan & Zhao, 2021). Those factors include a dummy variable equals one if a firm is state-owned, and zero otherwise; market-to-book value (*M/B Ratio*); growth in sales (*Sales Growth*); debt to assets ratio (*LEV*); firm size, calculated as the natural logarithm of total assets (*Size*); R&D expenses scaled by Sales (*R&D/Sales*); profitability calculated as net profit over total assets (*ROA*); shareholding of the largest shareholder (*Top1*); the natural logarithm of the number of board of directors (*Board Size*); the proportion of independent directors on the board (*Board Independence*); a dummy variable equals one if the firm hires an international Big-4 auditor firm, and zero otherwise (*Big 4*); and provincial GDP growth where a listed firm is headquartered (*GDP Growth Rate*). Detailed definitions of variables are shown in Appendix 1.

3.3 Methodology

To examine the influence of accounting conservatism on corporate environmental performance,

we employ the following regression model:

$$
\begin{aligned}
&Environmental\ Performance_{i,t} \\
&\quad = \alpha + \beta_1 CScore_{i,t} + \beta_2 SOE_{i,t} + \beta_3 Top1_{i,t} + \beta_4 Board\ Size_{i,t} \\
&\quad + \beta_5 Borad\ Independence_{i,t} + \beta_6 M/B\ Ratio_{i,t} + \beta_7 Sales\ Growth_{i,t} \\
&\quad + \beta_8 LEV_{i,t} + \beta_9 Big4_{i,t} + \beta_{10} Size_{i,t} + \beta_{11} R\&D/Sales_{i,t} + \beta_{12} ROA_{i,t} \\
&\quad + \beta_{13} GDP\ Growth\ Rate_{i,t} + \varepsilon_{i,t} \qquad (5)
\end{aligned}
$$

where *Environmental Performance* is measured by *ER* and *Disclosure* respectively. *CScore* is the variable to measure accounting conservatism. To address the unobserved firm characteristics and time-varying heterogeneity, we control for firm and year fixed effects.

4. Empirical results

4.1 Descriptive statistics

Table 1 Panel A presents the descriptive statistics for the main variables used in this study. The mean value of *Hexun ER* is 1.997 (the full score is 30) and *Disclosure* is 1.513 (the full score is 11), indicating that the overall environmental performance of sample firms is low. The average value of *CScore* is very close to zero with the minimum value of -1.974 and the maximum value of 1.975. The statistics of control variables are generally consistent with the previous literature (Pan & Zhao, 2021; Guo et al., 2020). The mean of *SOE* is 0.422, indicating that 42.2% of the observations in our sample are SOEs. Panel B shows the distribution of samples by industry. Industries with high environmental engagement tend to be those with more pollution, such as mining, transportation, electric power and construction; while those with less pollution, such as information transmission and leasing, have low environmental engagement scores. We report the correlation coefficients between key variables in Appendix 2, which indicates that multi-collinearity is not a concern in this study.

(Insert Table 1 here)

4.2 Baseline regression

The baseline regression results are shown in Table 2. *CScore* is negatively associated with the two environmental performance indicators *ER* and *Disclosure* in columns (1) and (2), respectively. This supports Hypothesis 1 that firms with higher accounting conservatism are associated with lower environmental commitments. Our results support the resource dependence theory that executives take actions to strategically manage their dependence on external interdependencies (Hillman et al., 2009), and they use accounting conservatism as a substitute for environmental commitment. Firm size is positively associated with *ER* and *Disclosure*. In addition, *LEV* is negatively correlated with corporate environmental disclosure quality, indicating that high leverage will limit environmental engagement, which is consistent with the result of Anagnostopoulou et al. (2021).

(Insert Table 2 here)

4.3 Mechanism analysis

4.3.1 Access to short-term financing

Creditors take downside risk but have limited upside potential, and therefore they prefer conservative financial reporting that identifies bad news in a timely way and reduces default risk (Li, 2015). Previous literature has shown that accounting conservatism can reduce the cost of capital and enhances firm's access to financing (Li, 2015; Zhang, 2008). Creditors often protect themselves with binding contracts based on a range of performance measures in regular

financial reports (LaFond & Watts, 2008). In exchange, creditors may demand lower returns from borrowers who commit to conservative financial reporting practices, which enable firms to acquire more credit (García Lara et al., 2011).

Although environmental performance has been shown to benefit capital providers in the long run (Hong & Kacperczyk, 2009; Cai et al., 2016), it may not necessarily benefit short-term creditors (Zhou et al., 2021). A firm's upside potential from environmental performance is more likely be long-term orientated, which is difficult to benefit short-term creditors (Li, 2015). Jeucken and Bouma (2017) point out that banks prefer short-term payback periods, while investments for achieving sustainability tends to be long term. If conservative accounting reporting can enhance short-term financing, then firms may reduce environmental commitment to satisfy the short-term creditors.

We adopt a two stage least square (2SLS) approach to explore the role of short-term creditors' preference on the relationship between accounting conservatism and environmental performance. Referring to Anagnostopoulou et al. (2021), we measure the access to short-term creditors of firms' *Debt/TA* by the ratio of short-term debts to total assets. Table 3 Column (1) reports the regression results of the first stage analysis, which demonstrates a positive association between *CScore* and *Debt/TA*. In the second stage regression, we replace *CScore* in the baseline regression with the fitted values of *Debt/TA*. In Columns (2) and (3) of Table 3, *FV_ Debt/TA* is negatively and significantly associated with the environmental performance measures. Therefore, we suggest that the enhanced short-term financing due to conservative accounting reporting explains the reduced environmental performance in firms with higher

accounting conservatism.

(Insert Table 3 here)

4.3.2 Analyst attention

Conditional accounting conservatism reduces information asymmetry and protects stakeholders' interests (Mora & Walker, 2015). Analysts' monitoring plays a similar role in improving firms' transparency (Langberg & Sivaramakrishnan, 2008; Chen et al., 2016). Therefore, we suspect that high accounting conservatism will reduce attention from analysts, and therefore, firms choose to reduce environmental engagement accordingly. On the contrary, more analyst attention means that firms bear more pressure from external public opinion (Chen et al., 2016). As such, they have to put additional effort on environmental performance to improve their reputation (Pan & Zhao, 2021). Therefore, we surmise that the attention of analysts is a channel to explain the substitution effect of accounting conservatism on environmental performance.

Similarly, we utilize a 2SLS approach to examine whether analyst attention explains why accounting conservatism can substitute environmental engagement. Following Crawford et al. (2012) and Piotroski and Roulstone (2004), we construct two variables to measure the degree of analyst's attention. *Analyst Attention* is measured as the natural logarithm of the number of financial analysts that follow a firm in a year; and *Report Attention* is the natural logarithm of the number of research reports about a firm in a year. Results in Panels A and B of Table 4 (the first stage analyses) indicate that accounting conservatism is negatively associated with *Analyst Attention* or *Report Attention*. In the second stage regression, we replace *CScore* with both the

fitted values of *Analyst Attention* (*FV_Analyst Attention*) and *Report Attention (FV_Report Attention)*. The coefficients of *FV_Analyst Attention* and *FV_Report Attention* are both positive and significant. The results confirm our expectation that analysts will pay less attention to firms with high accounting conservatism, and therefore firms could reduce their environmental commitment accordingly.

(Insert Table 4 here)

4.4 The impact of different political connections

China's unique institutional environment leads to political interference in firms, so firms will seek various ways of establishing political connections to increase their legitimacy (Li, Song, & Wu, 2015; Li & Zhang, 2010). Following Li, Song and Wu (2015) and Li and Zhang (2010), we define two types of political connections. Ascribed political connection is defined as a firm whose board chairperson has previously held a government-nominated position before they become the chairperson. While achieved political connection is identified when a firm's board chairperson currently holds a position in National People's Congress, Local People's Congress, Chinese People's Political Consultative Conference, or Local People's Political Consultative Conference. The past government work experience enables executives with common language, shared experience and network relationships with government officials. As such, the past government work experience helps them to have good communication channels and better opportunities to obtain resources, apply for subsidies and appeal penalties (Hillman, 2005). In addition, executives with ascribed political connection are now firm executives rather than government bureaucrats, they would be more concerned about firm development rather than

political objectives. On the contrary, executives with current government-nominated positions have dual identities in the government and the firm. They may prioritize government expectations to protect their political interests and strengthen their political position (Wang, Du, & Marquis, 2019).

We run regressions adding the interaction term of *CScore*Ascribed bureaucratic connection* and *CScore*Achieved political connection* respectively, and the results are shown in Table 5. The results show that ascribed bureaucratic connection can enhance the substitution effects of accounting conservatism and environmental performance, demonstrating H2a. We attribute this to ascribed bureaucratic connection, which gives firms more access to government resources they rely on, reducing the incentive to build social identification. In contrast, the negative association between accounting conservatism and environmental performance becomes insignificant when firms with executives having achieved political connection, which is consistent with H2b. We argue that this is because the dual role of those executives induces them to please government via environmental engagement.

(Insert Table 5 here)

4.5 The impact of regulatory constraints

For high polluting firms, the dependence on legitimate resources will be higher, because legitimacy may affect their survival (Colwell & Joshi, 2013). Government monitoring of pollution control and environmental protection will directly affect the operating certification of highly polluting firms (Matsumoto & Szidarovszky, 2020; Shahbaz et al., 2015), thus changing the attitude of firms towards more environmental participation. Therefore, we expect

that under the pressure of policy regulation, the negative association between accounting conservatism and environmental performance will become insignificant.

In 2003, Chinese Ministry of Ecology and Environment issued document No. 60, which announced 15 types of highly polluting industries as key polluters. It is required that key polluters should be closely monitored by local governments. According to the classification of key polluters by the Ministry of Ecology and Environment, we divide the full sample into two subsamples: key polluters and non-key polluters. Table 6 shows the subsample regression analysis of accounting conservatism and environmental performance. The negative association between accounting conservatism and environmental performance becomes insignificant in key polluters. The result is in line with H2c that when facing policy constraints, executives need to continuously engage in environmental activities to reduce litigation risk, and therefore, the substitute effect of accounting conservatism disappears.

(Insert Table 6 here)

4.6 Other heterogeneity analysis

Environmental engagement has its unique purpose and provides different benefits compared with accounting conservatism. In this section, we examine the heterogeneous factors on the impact of accounting conservatism on environmental performance.

4.6.1 Financial constraints

According to the resource dependence theory, firms try to restructure their dependencies with a variety of tactics to reduce the uncertainty in the flow of needed resources (Casciaro &

Piskorski, 2005). Therefore, we conjecture that the substitute effect of accounting conservatism may vary with the level of the firm's financial constraints, thus affecting the relationship between accounting conservatism and environmental performance. We adopt three measure to gauge the degree of financial constraints, namely Whited-Wu (WW) index, Financing-constraint (FC) index, and absolute value of Size-age (SA) index (absSA). Higher WW, or FC, or absSA denotes greater financial constraints.[4] According to the median of financing constraints measures, we conduct subsample analysis. The results are shown in Table 7. From Panel A, Panel B and Panel C, we find that the association between accounting conservatism and environmental performance becomes insignificant in firms with high financial constraints. The results support our conjecture that when facing intensive constraints, such as greater financial constraints, executives need to adjust their strategies to cater to powerful stakeholders to maintain compatibility even though they are short of resources. As the Chinese government provides the unique green credits policy and subsidies for environmental protection, commitment to green activities would help to mitigate corporate financial constraints (Chang et al., 2020).

(Insert Table 7 here)

[4] The WW index (Whited & Wu, 2006) and FC index (Fee et al., 2009) consider several characteristic factors of enterprises, such as cash flow, sales growth, long-term debt to total assets, firm size, dividend policy, and the firm's three-digit industry sales growth. While the SA index (Hadlock & Pierce, 2010) only considers the size and age of a firm, which takes into fewer factors but reduces the effect of endogeneity. The construction of the indexes is presented in Appendix 1.

4.6.2 Industry competition

A firm's survival depends on how it responds to market competition, which encourages executives to develop appropriate strategies to compete effectively (Yadav et al., 2016). The challenges posed by competition put tremendous pressure on executives to find scarce resources and create strategic value to gain a competitive advantage (Ruf et al., 2001). A growing body of evidence highlights those efforts in social and environmental practices can improve firm image, and increase consumer satisfaction with green products, thus enabling firms to differentiate themselves from competitors in the market (Yadav et al., 2016). In the fierce competition environment, gaining consumer recognition and obtaining consumer resources is an important factor to increase market shares (Tsendsuren et al., 2021). The literature has provided evidence that consumers consider environmental responsibility in their purchasing decisions (Luo & Bhattacharya, 2006). Consumers are more likely to buy from socially and environmentally responsible firms and reduce their price sensitivity due to the additional satisfaction of consuming eco-friendly products. Therefore, we expect that in a highly competitive industry, executives will not reduce environmental performance even when they have adopted accounting conservatism.

To verify the above expectations, two widely used industry concentration indexes, e.g., the Herfindahl-Hirschman index (HHI) and CR4 are employed. The HHI indicates the industry concentration, e.g., the lower the index, the higher the competition in the industry. CR4 is the sum of the market share (revenue) of the top four largest enterprises in an industry. CR4 indicates the industry concentration, the smaller the index, the fiercer the competition. Panels

A and B in Table 8 show that when industry competition is high, the negative correlation between accounting conservatism and environmental performance becomes insignificant. The results verify our expectation that executives intend to engage more in green activities when they face intensive competition, as such, the substitution effect of accounting conservatism becomes insignificant.

(Insert Table 8 here)

5. Robustness checks

5.1 Endogeneity

To mitigate the potential endogeneity problems in baseline regression, such as missing variables and reverse causality, we use two instrumental variables and the IV-GMM estimation to mitigate concerns about endogeneity. Following Khan and Watts (2009), we use *Age* and *InvestmentCycle* to instrument *CScore*. *Age* refers to the number of years since listing; *InvestmentCycle* is calculated as depreciation divided by lagged total assets. In the first stage, we regress the two instrumental variables on *CScore*. The result is shown in Column (1) of Table 9. *Age* is positively related to *CScore*, and *InvestmentCycle* is negatively related to *CScore* (both coefficients are statistically significant at the 1% level). The Kleibergen-Paap Wald rk F statistic is 10.68, which is larger than the critical value of 10 (Stock & Yogo, 2005), indicating that we can safely reject the weak instrumental variable hypothesis. The Kleibergen-Paap rk LM statistic is significant at the 1% level, suggesting that the model is not under-identified. The fitted value of the first stage regression is then collected and used as the independent variable in the second stage analysis. The results of the second stage analysis are

reported in Columns (2) and (3) in Table 9. We note that the coefficients of *Fitted_CScore* are negative and statistically significant at the 5% level in both columns. The Hansen's J statistics are not significant, indicates that the null hypothesis that the instruments are valid cannot be rejected. Overall, our baseline results remain robust after addressing endogeneity.[5]

(Insert Table 9 here)

5.2 Controlling for multiple fixed effects

The baseline regression considers the influence of the unobserved firm characteristics and time-varying heterogeneity, so firm and year fixed effects are controlled for. We add industry×year fixed effects and province×year fixed effects in Table 10 to address the concern that unobserved firm characteristics and time-varying heterogeneity across industries and provinces may affect corporate environmental engagement. The results in Table 10 show that accounting conservatism is still significantly and negatively associated with environmental performance indicators after controlling for multiple fixed effects.

(Insert Table 10 here)

5.3 Difference-in-differences test

We conduct a difference-in-differences (DID) test to further address causality. We group firms that receive at least one penalty due to financial fraud as treatment firms, while those that do not receive a financial fraud related penalty in a year as the control group. That is, receiving a penalty due to financial fraud in year t-1 is adopted as a shock, which increases accounting

[5] To further address the causality issue, $CScore_{t+1}$ is regressed on ER_t with the same controls as in the baseline regression, we do not find a significant impact of ER_t on $CScore_{t+1}$.

conservatism but does not affect environmental performance directly, to justify the causality between accounting conservatism and environmental performance. According to Wei (2021), firms will increase their accounting conservatism to maintain legitimacy after financial reporting misstatements or relative penalties. The data of penalties on financial fraud is collected from the CSMAR database. The sample period for regressing is selected as two years before to two years after the shock. *Treat* is a dummy variable equals one for treatment firms (firms receive at least one penalty due to financial fraud) and zero for control firms. *Post* is a dummy variable equals one when the period is after the shock and zero for the pre-shock period. By taking the shock as an exogenous event of accounting conservatism improvement, the DID estimation helps to justify causality. The result of the DID analysis is reported in Table 11. It shows that the coefficients of *Post*Treat* are negatively and significantly related to the two environmental performance measures, indicating that firms reduce their environmental commitment after the penalty shock. This result supports our baseline finding that increases on accounting conservatism will lead to decreases on environmental commitment.

(Insert Table 11 here)

5.4 Alternative measures of environmental engagement

To avoid measurement errors, we use two alternative environmental performance indicators to revalidate our baseline results. We employ *Cost/Sales*, which is the expenditure on environmental engagement divided by sales and multiplied by 1000, as the third environmental engagement measurement. Following Li et al. (2021), this variable is industry-year adjusted. It includes all the expenses on solving environmental pollution and ecological damage from

resource exploitation, production, transportation, use, recovery to disposal in a certain commodity production activity (Li, 2005). We manually collect the relevant environmental cost data from the notes to sample firms' financial statements. Corporate environmental investment, which is denoted as *EI*, is calculated as the natural logarithm of corporate environmental investment plus one. Following Akbar et al. (2021), we use environmental investment (*EI*) as the fourth variable to measure environmental performance. The results in Table 12 show that accounting conservatism is significantly and negatively associated with the adopted alternative measures of environmental performance.

(Insert Table 12 here)

6. Conclusion

We investigate the association between accounting conservatism and environmental performance in China's setting. Firms with better accounting information quality are found to reduce their environmental engagement. The result supports the resource dependent theory that executives strategically use accounting conservatism as a substitute for environmental commitment due to its long investment scale and possible low economic return in a short run. The results remain robust after addressing endogeneity concerns using the IV 2SLS estimations, controlling for multiple fixed effects, using the DID method and utilizing alternative environmental measurements. We further find that the increased short-term financing and reduced attention from analysts due to providing conservative financial reporting are the two mechanisms that explain the negative relationship between accounting soundness and environmental performance. In addition, political connections and the level of policy

constraints that firms are subject to reshape the relationship between accounting conservatism and corporate environmental performance. The negative relationship is weakened in firms with executives currenting hold a government-nominated position, and firms facing tougher policy constraints. In addition, internal and external pressures, such as financing constraints and industry competition, also moderate the substitution effect of accounting conservatism. Our results suggest that firms under pressure need to make more efforts to satisfy powerful stakeholders.

Our study has important policy implications. Our results highlight that adopting accounting conservatism can function as an efficient mechanism that affects corporate environmental commitment. Particularly, we call for attention that policy makers need to consider how to promote the concept of eco-friendly corporations to firms that have catered for stakeholders with conservative accounting reporting.

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Appendix 1. Variable description

Variable	Description
ER	Industry-year adjusted Hexun environmental responsibility score. Following Li et al. (2021), it is calculated as Hexun environmental responsibility score minus its mean value for all firms in the same industry in a year. The higher the score is, the higher the firm's environmental performance.
Hexun ER	Raw data of Hexun environmental performance score, ranged from 0 to 30. The higher the score is, the higher the firm's environmental performance.
Disclosure	Environmental information disclosure score (ranged from 0 to 11). The higher the score, the higher environmental disclosing quality.
CScore	Accounting conservatism measure. A higher *CScore* indicates more conservative accounting activities.
M/B Ratio	The ratio of market value to its book value of equity.
Sales Growth	Change in sales between years t and t-1.
LEV	Total liabilities scaled by total assets.
Size	The natural logarithm of total assets.
Board Size	The natural logarithm of the total number of directors on the board.
Board Independence	The proportion of independent directors to the total number of directors on the board.
Big4	A dummy variable equals one if the auditor of the firm is one of international 'Big4' audit firms, and zero otherwise.
Top1	The largest shareholding ratio.
SOE	A dummy variable equals one if the ultimate controller of a firm is a government agency or a state-owned enterprise, and zero otherwise.
R&D/Sales	R&D expenses scaled by total sales.
ROA	Return on assets, calculated as net profit after tax/total assets.
GDP Growth Rate	The per capita GDP growth rate of the province where the firm is located.
Robustness controls	
Age	Age of firm, measured as number of years since listing.
InvestmentCycle	Proxy of a firm's investment-cycle length, calculated as depreciation divided by lagged total assets.
EI	The natural logarithm of corporate environmental investment plus one.
Cost/Sales	Industry-year adjusted corporate environmental protection and pollution treatment expenses divided by sales and times 1000.
Ascribed bureaucratic connection	A dummy variable equals one when the chairman has previous government experience.
Achieved political connections	A dummy variable equals one when the chairman is appointed to state organs such as National People's Congress, Local People's Congress, Chinese People's Political Consultative Conference, or Local People's Political Consultative Conference.
HHI	The Herfindahl-Hirschman index that proxies the industry concentration, calculated as the sum of the squares of market shares of all firms in a particular market. The lower the index, the higher the competition in the industry sector.
CR4	The sum of the market share (revenue) of the top four largest

	firms in an industry. The smaller the index, the fiercer the competition.
Analyst Attention	The natural logarithm of the number of analysts (teams) that cover a firm in a year.
Report Attention	The natural logarithm of the number of analyst research reports about a firm in a year.
Debt/TA	The ratio of short-term debts to total assets.
WW	Following Whited & Wu (2006), the *WW* index is calculated as: $WW = (0.091*CF) - (0.062*DIVPOS) + (0.021*TLTD) - (0.044*LNTA) + (0.102*ISG) - (0.035*SG)$ where *CF* is ratio of cash flow divided by total assets; *DIVPOS* is a dummy variable equals to one if the firm pays dividend, and otherwise zero; *TLTD* is long-term debt to total assets; *LNTA* is the natural logarithm of total assets; *ISG* is an industry's average sales growth; and *SG* is a firm's sales growth. A higher value of the *WW* index implies a greater level of financial constraints.
FC	Following Fee et al. (2009), the *FC* index is calculated as: $$\mathrm{P}(QUFC = 1 \text{ or } 0 \mid Z_{i,t}) = \frac{e^{Z_{i,t}}}{1+e^{Z_{i,t}}}$$ $$Z_{i,t} = \alpha_0 + \alpha_1 Size_{i,t} + \alpha_2 Lev_{i,t} + \alpha_3 (\frac{CashDiv}{Ta})_{i,t} + \alpha_4 MB_{i,t} + \alpha_5 (\frac{NWC}{Ta})_{i,t} + \alpha_6 (\frac{EBIT}{Ta})_{i,t}$$ where *Size* is the natural logarithm of total asset; *Lev* is total liabilities/total assets; *CashDiv* is cash dividends paid by a firm in a year; *MB* is a firm's market value/book value; *NWC* is net working capital=working capital - monetary funds - short-term investments; EBIT is earnings before interest and tax.
absSA	Absolute values of the SA index (*absSA*). Following Hadlock & Pierce (2010), the SA index is calculated as: $$SA = -0.737*Size + 0.043*Size^2 - 0.040Age$$ where *Size* is the natural logarithm of total asset; *Age* is the operating year of the firm. A higher absolute value of the *SA* index implies a greater level of financial constraints.
Keypolluter	A dummy variable equals to one if the firm is identified as a key-polluter, and zero otherwise.

Appendix 2. Correlation matrix

This table reports the correlation coefficients between key variables. Definitions of variables are in Appendix 1. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

		1	2	3	4	5	6	7	8	9	10	11	12
1	*CScore*	1.000											
2	*Top1*	-0.064***	1.000										
3	*Board Size*	-0.065***	0.020**	1.000									
4	*Board Independence*	-0.006	0.040***	-0.463***	1.000								
5	*M/B ratio*	0.121***	-0.089***	-0.197***	0.062***	1.000							
6	*Sales Growth*	0.004	-0.004	-0.024***	-0.002	0.050***	1.000						
7	*R&D/Sales*	0.003	-0.094***	-0.049***	0.044***	0.149***	-0.007	1.000					
8	*ROA*	-0.038***	0.098***	-0.015*	-0.020**	0.287***	0.173***	0.009	1.000				
9	*Big4*	-0.068***	0.125***	0.105***	0.020**	-0.114***	-0.034***	-0.023**	0.033***	1.000			
10	*LEV*	-0.039***	0.076***	0.168***	-0.017*	-0.487***	0.041***	-0.129***	-0.393***	0.105***	1.000		
11	*Size*	-0.222***	0.219***	0.277***	0.011	-0.533***	0.051***	-0.061***	-0.023**	0.331***	0.521***	1.000	
12	*GDP Growth Rate*	0.029***	-0.012	0.062***	-0.028***	-0.079***	0.002	-0.054***	-0.015	-0.076***	0.063***	-0.136***	1.000

Appendix 3. Dimensions Indicator name

I1: Legal consciousness 1. Whether a firm discloses environmental protection concept, environmental policy, environmental management organization structure, circular economy development mode, green development. 2. Whether a firm discloses a series of management systems, such as relevant environmental management systems, systems, regulations and responsibilities, formulated by the firm. 3. Whether a firm is subject to environmental violations, environmental petition cases or sudden environmental accidents.
I2: Social evaluation 1. Whether a firm received any environmental awards. 2. Whether a firm discloses special environmental protection activities, environmental protection and other social public welfare activities that the firm participates in. 3. Whether a firm discloses the establishment of an emergency mechanism for major environmental emergencies, the emergency measures taken, and the treatment of pollutants.
I3: Eco-friendly production 1. Whether a firm adopts a clean production. 2. Whether a firm discloses the implementation of the "three simultaneous" system. 3. Whether a firm discloses the establishment of an emergency mechanism for major environmental emergencies, the emergency measures taken, and the treatment of pollutants.
I4: Green management 1. Whether a firm has an ISO 14001 certification. 2. Whether a firm has an ISO 9001 certification.

Table 1. Descriptive statistics

Panel A shows the summary statistics of the main variables used in this study. Panel B shows the sample distribution by industry. Industry classification is based on Industry Classification and Code of China's National Economy (GB/4754-2011). *Hexun ER* denotes Hexun environmental responsibility score. *Disclosure* denotes environmental information disclosure score. Definition of variables is reported in Appendix 1.

Panel A Summary statistics

Variable	N	Mean	Std. Dev.	Min	Max
Hexun ER	12,148	1.998	5.307	0.000	30.000
Disclosure	12,148	1.510	1.902	0.000	9.000
CScore	12,148	-0.001	0.435	-1.974	1.975
M/B	12,148	2.098	1.776	0.200	9.250
Sales Growth	12,148	0.194	0.443	-0.510	2.789
R&D/Sales	12,148	0.004	0.014	0.000	0.087
ROA	12,148	0.040	0.048	-0.131	0.184
LEV	12,148	0.435	0.211	0.053	0.888
Size	12,148	22.177	1.238	19.862	25.844
Board Size	12,148	8.744	1.706	5.000	15.000
Board Independence	12,148	0.372	0.052	0.333	0.571
Big4	12,148	0.056	0.229	0.000	1.000
Top1	12,148	0.353	0.150	0.089	0.748
SOE	12,148	0.421	0.494	0.000	1.000
GDP Growth	12,148	0.078	0.020	0.033	0.146
Analyst Attention	9,520	1.781	1.068	0.000	3.714
Report Attention	9,558	2.298	1.292	0.000	4.682
Debt/TA	11,580	0.101	0.106	0.000	0.558
Ascribed bureaucratic connection	12,122	0.058	0.234	0.000	1.000
Achieved political connections	12,070	0.099	0.299	0.000	1.000
WW	12,148	-1.017	0.070	-1.217	-0.854
FC	12,148	0.447	0.291	0	0.992
absSA	12,148	3.748	0.236	2.146	4.718
Keypolluter	12,148	0.088	0.284	0.000	1.000
HHI	12,148	0.057	0.088	0.008	0.453
CR4	12,148	0.296	0.194	0.109	0.892
EI	756	6.082	2.789	0.412	11.535
Cost/Sales	1,356	0.000	2.113	-5.368	13.004

Panel B Sample industry distribution

Industry	N	*Hexun ER*	*Disclosure*
Mining Industry	222	5.581	3.090
Transportation, Warehousing and Postal Services	427	4.165	1.555
Construction Industry	309	3.231	1.848
Electricity, Heat, Gas and Water Production and Supply	374	2.612	1.385
Manufacturing Industry	8,101	1.954	1.706
Public Administration, Social Security and Social Organization	306	1.677	0.627
Hotels and Catering Services	16	1.656	1.500
Whole-sales and Retail Trade	671	1.607	0.718
Water Conservancy, Environment and Public	87	1.563	1.494

Facilities Management			
Real Estate	368	1.446	1.038
Scientific Research and Technology Services	62	1.371	1.532
Culture, Sports and Entertainment	70	1.164	0.500
Agriculture, Forestry, Animal Husbandry and Fishery	247	1.160	0.960
Residential services, repairs and other services	65	0.815	0.600
Leasing and Commercial Service	127	0.787	0.551
Information Transmission, Software, and Information Technology Services	696	0.784	0.628

Table 2. Baseline regression: accounting conservatism and environmental performance

This table presents the results of the baseline regression. It reports the influence of accounting conservatism on the two measures of corporate environmental performance, including industry-year adjusted Hexun environmental responsibility rating (*ER*) and environmental disclosure score (*Disclosure*). Definitions of variables are in Appendix 1. *t*-statistics are reported in parentheses. Standard errors are robust and clustered at industry level. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)
Variables	*ER*	*Disclosure*
CScore	-0.423***	-0.073**
	(-2.996)	(-2.016)
M/B	0.042	-0.039***
	(1.049)	(-2.774)
Sales Growth	0.021	-0.062
	(0.172)	(-1.592)
R&D/Sales	10.417*	2.720
	(1.684)	(1.318)
ROA	2.463	0.255
	(1.389)	(0.686)
LEV	-0.852	-0.403**
	(-1.515)	(-2.168)
Size	0.678***	0.136**
	(4.740)	(2.549)
Board Size	-0.051	-0.148
	(-0.077)	(-0.906)
Board Independence	1.204	0.327
	(0.698)	(0.724)
Big4	0.905	0.076
	(1.428)	(0.447)
Top1	-0.638	-0.179
	(-0.809)	(-0.666)
SOE	0.034	0.000
	(0.081)	(0.000)
GDP Growth	-3.529	0.314
	(-0.759)	(0.210)
Constant	-15.139***	-0.719
	(-4.115)	(-0.609)
Observations	12148	12148
Adjusted R^2	0.381	0.664
Firm FE	Yes	Yes
Year FE	Yes	Yes

Table 3. Mechanism analysis: Access to short-term financing

This table presents the results of the 2SLS mechanism analysis. Column (1) presents the regression results between *CScore* and the channel measure, *Debt/TA,* which is calculated as the ratio of short-term debts to total assets. Column (2) and (3) present the channel test results between the fitted values from column (1) and the two environmental performance measures. The variable descriptions are reported in Appendix 1. *t*-statistics are reported in parentheses. Standard errors are robust and clustered at industry level. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)
Variables	*Debt/TA*	*ER*	*Disclosure*
CScore	0.003*		
	(1.702)		
Fitted_ Debt/TA		-24.281*	-136.969***
		(-1.945)	(-2.865)
M/B	-0.000	-0.051***	0.020
	(-0.372)	(-3.083)	(0.450)
Sales Growth	-0.004*	-0.158***	-0.519**
	(-1.668)	(-2.874)	(-2.254)
R&D/Sales	0.167**	7.048**	33.828***
	(2.535)	(2.435)	(2.945)
ROA	-0.121***	-2.433	-14.344**
	(-4.003)	(-1.562)	(-2.571)
LEV	0.332***	7.548*	44.741***
	(18.393)	(1.836)	(2.790)
Size	-0.012***	-0.147	-0.872
	(-2.956)	(-0.921)	(-1.482)
Board Size	-0.003	-0.157	-0.479
	(-0.327)	(-0.940)	(-0.630)
Board Independence	0.001	0.529	1.487
	(0.053)	(1.149)	(0.784)
Big4	0.003	0.135	1.489**
	(0.235)	(0.748)	(2.124)
Top1	-0.017	-0.537	-3.153***
	(-0.978)	(-1.649)	(-2.741)
SOE	-0.014*	-0.329*	-1.864**
	(-1.712)	(-1.782)	(-2.259)
GDP Growth	-0.141	-2.792	-22.703**
	(-1.487)	(-1.136)	(-2.612)
Constant	0.253**	5.104	17.393
	(2.518)	(1.528)	(1.357)
Observations	11580	11580	11580
Adjusted R^2	0.790	0.667	0.400
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Table 4. Mechanism analysis: Analyst attention

This table presents the 2SLS regression results using *Analyst Attention* and *Report Attention* as the mechanism through which accounting conservatism affects corporate environmental performance. *Analyst Attention* is the natural logarithm of the number of analysts (teams) that cover a firm in a year. *Report Attention* is the natural logarithm of the number of analyst research reports about a firm in a year. Panel A presents the results of *Analyst Attention*. Panel B presents the results of *Report Attention*. The first stage analysis results are reported in column (1) in each panel. Results of the second stage regressions are shown in columns (2) and (3) in each panel. Definitions of other variables are in Appendix 1. *t*-statistics are reported in parentheses. Standard errors are robust and clustered at industry level. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A Analyst attention

Variables	(1) *Analyst Attention*	(2) *ER*	(3) *Disclosure*
CScore	-0.048**		
	(-2.095)		
Fitted_ Analyst Attention		2.030**	12.283***
		(2.359)	(3.294)
M/B	0.149***	-0.324**	-1.794***
	(10.828)	(-2.482)	(-3.325)
Sales Growth	-0.013	-0.026	0.166
	(-0.435)	(-0.405)	(0.920)
R&D/Sales	-0.311	2.792	14.854**
	(-0.211)	(1.144)	(2.091)
ROA	5.113***	-10.324**	-59.693***
	(12.522)	(-2.318)	(-3.136)
LEV	-0.085	-0.465**	1.219*
	(-0.603)	(-2.303)	(1.712)
Size	0.618***	-1.094**	-6.742***
	(13.389)	(-2.034)	(-2.939)
Board Size	0.089	-0.199	-1.199
	(0.612)	(-0.970)	(-1.178)
Board Independence	0.322	-0.058	-2.324
	(0.693)	(-0.091)	(-0.958)
Big4	0.195	-0.399	-1.436
	(1.636)	(-1.531)	(-1.494)
Top1	-0.396	0.660	3.314*
	(-1.498)	(1.304)	(1.899)
SOE	-0.041	0.096	0.677
	(-0.374)	(0.484)	(0.972)
GDP Growth	0.477	0.409	-8.301
	(0.335)	(0.193)	(-1.382)
Constant	-12.868***	24.590**	138.564***
	(-11.589)	(2.192)	(2.873)
Observations	9520	9520	9520
Adjusted R^2	0.643	0.662	0.382
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Panel B Report attention

Variables	(1) *Report Attention*	(2) *ER*	(3) *Disclosure*
CScore	-0.053*		
	(-1.792)		
Fitted_ Report Attention		1.966**	10.428***
		(2.426)	(2.975)
M/B	0.191***	-0.398**	-1.948***
	(12.820)	(-2.523)	(-2.987)
Sales Growth	-0.002	-0.050	0.040
	(-0.041)	(-0.841)	(0.221)
R&D/Sales	-1.185	4.456*	23.383**
	(-0.729)	(1.752)	(2.605)
ROA	6.768***	-13.196**	-67.641***
	(14.031)	(-2.393)	(-2.862)
LEV	-0.084	-0.451**	0.894
	(-0.575)	(-2.441)	(1.265)
Size	0.756***	-1.322**	-7.022***
	(14.021)	(-2.144)	(-2.660)
Board Size	0.126	-0.296	-1.423
	(0.794)	(-1.367)	(-1.327)
Board Independence	0.263	0.117	-1.227
	(0.509)	(0.200)	(-0.517)
Big4	0.253	-0.490	-1.701
	(1.633)	(-1.664)	(-1.544)
Top1	-0.602*	1.088*	4.738**
	(-1.749)	(1.680)	(2.119)
SOE	-0.105	0.210	1.197
	(-0.695)	(1.006)	(1.606)
GDP Growth	0.403	0.207	-6.777
	(0.260)	(0.099)	(-1.131)
Constant	-15.617***	29.090**	143.040**
	(-12.213)	(2.283)	(2.597)
Observations	9558	9558	9558
Adjusted R^2	0.641	0.663	0.381
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Table 5. Regression regarding political connection

This table reports the regression results regarding whether political connection reshapes the relationship between accounting conservatism and corporate environmental performance. Columns (1) and (2) show the regression with the interaction term *CScore*Ascribed bureaucratic connection*. Columns (3) and (4) show the regression with the interaction term *CScore*Achieved political connection*. Variable descriptions are summarized in Appendix 1. *t*-statistics are reported in parentheses. Standard errors are robust and clustered at industry level. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Ascribed bureaucratic		*Achieved political*	
	(1)	(2)	(3)	(4)
Variables	*ER*	*Disclosure*	*ER*	*Disclosure*
CScore	-0.289*	-0.053	-0.394***	-0.066*
	(-1.763)	(-1.286)	(-2.735)	(-1.695)
*CScore*Ascribed bureaucratic connection*	-1.032**	-0.269***		
	(-2.622)	(-3.199)		
*CScore*Achieved political connection*			-0.563	-0.156
			(-1.126)	(-0.908)
Ascribed bureaucratic connection	0.149	0.074		
	(0.694)	(1.297)		
Achieved political connection			-0.369	-0.008
			(-1.634)	(-0.093)
M/B	0.031	-0.039***	0.044	-0.038***
	(0.768)	(-2.677)	(1.070)	(-2.699)
Sales Growth	0.025	-0.064	0.005	-0.063
	(0.204)	(-1.620)	(0.042)	(-1.616)
R&D/Sales	10.168	2.473	10.165	2.465
	(1.647)	(1.275)	(1.658)	(1.256)
ROA	2.599	0.391	2.605	0.272
	(1.424)	(0.975)	(1.456)	(0.718)
LEV	-0.833	-0.374*	-0.840	-0.396**
	(-1.487)	(-1.981)	(-1.500)	(-2.121)
Size	0.633***	0.134**	0.696***	0.139**
	(4.580)	(2.418)	(4.761)	(2.605)
Board Size	-0.012	-0.145	-0.007	-0.141
	(-0.018)	(-0.872)	(-0.011)	(-0.856)
Board Independence	1.212	0.310	1.351	0.265
	(0.709)	(0.626)	(0.798)	(0.569)
Big4	0.876	0.066	0.898	0.075
	(1.367)	(0.386)	(1.426)	(0.441)
Top1	-0.606	-0.199	-0.669	-0.182
	(-0.787)	(-0.734)	(-0.865)	(-0.674)
SOE	0.030	-0.027	0.037	0.007
	(0.068)	(-0.216)	(0.086)	(0.060)
GDP Growth	-3.374	0.031	-3.658	0.328
	(-0.735)	(0.021)	(-0.783)	(0.223)
Constant	-14.204***	-0.677	-15.656***	-0.795
	(-3.969)	(-0.549)	(-4.279)	(-0.675)

Observations	12070	12070	12122	12122
Adjusted R^2	0.382	0.663	0.382	0.664
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 6. Subsample regression regarding key and non-key polluters

This table reports the subsample analysis between key and non-key polluters. Key polluters are identified by the Ministry of Ecology and Environment. Variable descriptions are summarized in Appendix 1. *t*-statistics are reported in parentheses. Standard errors are robust and clustered at industry level. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	Non-key polluters		Key polluters	
	(1)	(2)	(3)	(4)
Variables	*ER*	*Disclosure*	*ER*	*Disclosure*
CScore	-0.406**	-0.089**	-0.658	0.006
	(-2.589)	(-2.330)	(-1.182)	(0.034)
M/B	0.032	-0.043**	0.135	0.045
	(0.943)	(-2.510)	(0.189)	(0.376)
Sales Growth	0.052	-0.051	0.262	-0.151
	(0.425)	(-1.480)	(0.329)	(-0.469)
R&D/Sales	10.126	2.885	24.108	-0.166
	(1.516)	(1.624)	(0.816)	(-0.022)
ROA	2.102	0.045	1.830	1.524
	(1.465)	(0.116)	(0.121)	(0.608)
LEV	-0.634	-0.421**	-4.195	1.250
	(-1.233)	(-2.340)	(-0.680)	(0.835)
Size	0.561***	0.128**	1.454	0.166
	(3.509)	(2.161)	(1.390)	(0.420)
Board Size	0.167	-0.110	3.555	-0.839
	(0.267)	(-0.731)	(0.767)	(-0.675)
Board Independence	1.074	-0.003	8.102	2.961
	(0.598)	(-0.007)	(0.518)	(0.867)
Big4	1.250*	0.102	-1.900	0.145
	(1.856)	(0.536)	(-0.663)	(0.109)
Top1	-0.621	-0.169	-3.600	-0.966
	(-0.795)	(-0.576)	(-0.402)	(-0.395)
SOE	0.089	-0.006	-7.205***	0.228
	(0.200)	(-0.056)	(-5.100)	(0.745)
GDP Growth	-1.109	0.890	-39.938	-5.736
	(-0.213)	(0.604)	(-0.975)	(-0.714)
Constant	-13.119***	-0.776	-34.842	0.293
	(-3.036)	(-0.592)	(-1.236)	(0.031)
Observations	11082	11082	1066	1066
Adjusted R^2	0.423	0.639	0.153	0.693
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 7. The effect of financial constraints

This table reports the subsample analysis based on financial constraints. Panel A reports the subsample analysis according to above and below median WW. Panel B reports the subsample analysis according to above and below median FC. Panel C reports the subsample analysis according to above and below median absSA (Absolute value of SA index). A higher WW index, FC index, or absSA reflects a greater level of financing constraints. Definitions of variables are in Appendix 1. *t*-statistics are reported in parentheses. Standard errors are robust and clustered at industry level. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A WW index

	Low WW (Low constraint)		High WW (High constraint)	
	(1)	(2)	(3)	(4)
Variables	*ER*	*Disclosure*	*ER*	*Disclosure*
CScore	-0.693***	-0.112**	0.061	0.012
	(-3.802)	(-2.242)	(0.429)	(0.198)
M/B	0.142	0.003	-0.093**	-0.043**
	(1.441)	(0.083)	(-2.479)	(-2.274)
Sales Growth	-0.155	-0.045	0.077	-0.062
	(-0.818)	(-0.638)	(0.451)	(-1.064)
R&D/Sales	9.917	2.341	11.107**	3.057
	(0.727)	(0.758)	(2.443)	(1.200)
ROA	2.887	-0.754	2.267	0.697
	(1.142)	(-0.638)	(1.132)	(1.225)
LEV	-0.685	-0.761**	-0.708	0.055
	(-0.705)	(-2.021)	(-1.197)	(0.164)
Size	1.146***	0.247***	0.333	0.032
	(3.355)	(2.888)	(1.436)	(0.335)
Board Size	-0.255	0.006	-1.118	-0.408
	(-0.230)	(0.019)	(-1.403)	(-1.262)
Board Independence	1.699	0.624	-2.411	-0.648
	(0.593)	(0.917)	(-0.954)	(-0.720)
Big4	1.058	-0.045	-0.618	-0.371
	(1.411)	(-0.203)	(-0.374)	(-1.164)
Top1	-0.445	0.519	1.399	-0.971**
	(-0.331)	(1.084)	(0.787)	(-2.287)
SOE	-0.329	0.180	0.520	-0.187
	(-0.344)	(0.779)	(0.725)	(-0.888)
GDP Growth	-8.795	0.009	4.759	-1.982
	(-0.944)	(0.004)	(0.806)	(-0.926)
Constant	-25.996***	-3.578*	-4.564	2.358
	(-3.125)	(-1.754)	(-0.795)	(1.176)
Observations	6873	6873	5275	5275
Adjusted R^2	0.375	0.675	0.431	0.633
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Panel B FC index

	Low FC (Low constraint)		High FC (High constraint)	
	(1)	(2)	(3)	(4)
Variables	*ER*	*Disclosure*	*ER*	*Disclosure*
CScore	-0.627***	-0.088*	-0.120	-0.032
	(-3.729)	(-1.820)	(-0.704)	(-0.516)
M/B	0.064	-0.040	-0.050	-0.041***
	(0.567)	(-1.277)	(-0.978)	(-2.986)
Sales Growth	-0.185	-0.042	0.035	-0.103*
	(-1.042)	(-0.707)	(0.221)	(-1.800)
R&D/Sales	23.318	1.017	5.208	3.385**
	(1.635)	(0.234)	(0.792)	(2.523)
ROA	2.541	-0.322	1.899	1.037
	(0.992)	(-0.445)	(0.809)	(1.186)
LEV	-3.349***	-0.489	0.547	-0.101
	(-3.318)	(-1.512)	(0.664)	(-0.288)
Size	0.771***	0.212**	0.096	0.110
	(2.982)	(2.396)	(0.296)	(1.275)
Board Size	0.056	-0.169	-0.921	-0.423*
	(0.052)	(-0.649)	(-0.892)	(-1.673)
Board Independence	2.848	0.310	-3.431*	0.243
	(1.140)	(0.476)	(-1.721)	(0.290)
Big4	1.659**	0.137	-1.308	-0.179
	(2.433)	(0.618)	(-0.880)	(-0.389)
Top1	-0.995	-0.130	1.865	0.566
	(-0.894)	(-0.286)	(1.407)	(1.058)
SOE	-1.292***	0.146	1.475	-0.232
	(-2.897)	(0.713)	(1.248)	(-0.659)
GDP Growth	-10.126	2.364	6.367	-3.214
	(-1.213)	(1.122)	(0.887)	(-1.239)
Constant	-16.130**	-2.313	-0.311	0.033
	(-2.448)	(-1.045)	(-0.042)	(0.016)
Observations	6647	6647	5501	5501
Adjusted R^2	0.356	0.672	0.453	0.644
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Panel C absSA index

	Low absSA (Low constraint)		High absSA (High constraint)	
	(1)	(2)	(3)	(4)
Variables	*ER*	*Disclosure*	*ER*	*Disclosure*
CScore	-0.911**	-0.141**	-0.054	-0.061
	(-2.535)	(-2.177)	(-0.407)	(-1.233)
M/B	0.110	-0.037	-0.035	-0.029
	(1.148)	(-1.161)	(-0.568)	(-1.485)
Sales Growth	0.238	-0.104	0.058	-0.002
	(0.920)	(-1.552)	(0.438)	(-0.043)
R&D/Sales	13.168	4.758	5.252	2.143
	(1.191)	(1.424)	(1.217)	(0.813)
ROA	4.453	0.886	1.766	-0.207
	(0.903)	(0.832)	(0.850)	(-0.393)
Board Size	2.592*	-0.089	-2.132**	-0.654**
	(1.717)	(-0.187)	(-2.649)	(-2.257)
Board Independence	0.245	0.163	0.579**	0.145*
	(0.678)	(1.061)	(2.340)	(1.694)
Big4	0.217	-0.297	-0.184	0.005
	(0.197)	(-0.969)	(-0.173)	(0.020)
Top1	-1.073	-1.142	2.385	1.106
	(-0.327)	(-1.177)	(1.106)	(1.510)
SOE	1.606	0.448	1.016	-0.164
	(0.750)	(0.939)	(1.151)	(-0.709)
LEV	-2.274	-0.689	-0.790	0.169
	(-0.964)	(-0.974)	(-0.801)	(0.415)
Size	0.644	-0.094	-0.228	-0.004
	(0.342)	(-0.157)	(-0.428)	(-0.031)
GDP Growth	-7.996	1.503	-1.046	0.628
	(-0.636)	(0.490)	(-0.179)	(0.358)
Constant	-7.066	-0.612	-12.276**	-1.586
	(-1.013)	(-0.321)	(-2.040)	(-0.730)
Observations	-6.539	-0.525	7878	7878
Adjusted R^2	(-0.657)	(-0.141)	0.344	0.679
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 8. Does industry competition matter

This table reports the subsample analysis based on industry competition, proxied by HHI and CR4. Panel A reports the results according to above and below median HHI respectively, and panel B reports the results according to above and below median CR4 respectively. HHI and CR4 refers to two indexes of market concentration, and the higher the index, the lower the market competition. Variable descriptions are summarized in Appendix 1. *t*-statistics are reported in parentheses. Standard errors are robust and clustered at industry level. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A Subsample analysis between high HHI and low HHI

	High HHI (Low Competition)		Low HHI (High Competition)	
	(1)	(2)	(3)	(4)
Variables	*ER*	*Disclosure*	*ER*	*Disclosure*
CScore	-0.475**	-0.113**	-0.143	0.011
	(-2.566)	(-2.381)	(-0.663)	(0.197)
M/B	0.005	-0.034	0.031	-0.042*
	(0.106)	(-1.572)	(0.436)	(-1.728)
Sales Growth	-0.013	-0.040	0.123	-0.103
	(-0.084)	(-0.938)	(0.499)	(-1.418)
R&D/Sales	7.169	-1.144	12.896*	2.421
	(0.802)	(-0.558)	(1.792)	(0.980)
ROA	0.404	0.516	3.911	0.046
	(0.211)	(0.653)	(1.396)	(0.121)
LEV	-1.430	-0.496*	-0.289	-0.301
	(-1.540)	(-1.742)	(-0.374)	(-0.783)
Size	0.530***	0.125	0.735***	0.155**
	(3.055)	(1.272)	(2.766)	(2.462)
Board Size	1.066	-0.036	-1.198	-0.326
	(1.123)	(-0.158)	(-1.192)	(-1.416)
Board Independence	3.116	0.155	-0.740	0.168
	(1.569)	(0.190)	(-0.271)	(0.308)
Top1	0.642	0.155	0.671	-0.085
	(0.956)	(0.584)	(0.520)	(-0.355)
Big4	-0.168	-0.127	-1.122	0.116
	(-0.142)	(-0.248)	(-0.935)	(0.297)
SOE	0.314	0.097	0.152	-0.061
	(0.398)	(0.892)	(0.282)	(-0.264)
GDP Growth	0.641	0.149	-8.785	1.578
	(0.087)	(0.084)	(-1.159)	(0.457)
Constant	-15.095***	-1.068	-13.029*	-0.481
	(-3.346)	(-0.443)	(-1.907)	(-0.329)
Observations	6007	6007	6141	6141
Adjusted R^2	0.391	0.664	0.385	0.658
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Panel B Subsample analysis between high CR4 and low CR4

	High CR4 (Low Competition)		Low CR4 (High Competition)	
	(1)	(2)	(3)	(4)
Variables	*ER*	*Disclosure*	*ER*	*Disclosure*
CScore	-0.419**	-0.102**	-0.250	-0.025
	(-2.259)	(-2.265)	(-1.113)	(-0.445)
M/B	0.002	-0.031	0.065	-0.037**
	(0.052)	(-1.540)	(1.002)	(-2.037)
Sales Growth	-0.046	-0.051	0.079	-0.111
	(-0.326)	(-1.250)	(0.347)	(-1.639)
R&D/Sales	7.547	-1.083	11.507	2.950
	(0.874)	(-0.553)	(1.581)	(1.268)
ROA	0.373	0.474	3.928	0.049
	(0.206)	(0.632)	(1.516)	(0.125)
LEV	-1.213	-0.384	-0.281	-0.243
	(-1.495)	(-1.558)	(-0.349)	(-0.670)
Size	0.522***	0.106	0.722***	0.180***
	(3.011)	(1.098)	(2.910)	(3.064)
Board Size	0.906	-0.045	-1.020	-0.266
	(0.996)	(-0.203)	(-1.083)	(-1.179)
Board Independence	3.132*	0.367	-0.105	0.253
	(1.705)	(0.462)	(-0.039)	(0.512)
Big4	0.628	0.094	0.761	-0.076
	(0.944)	(0.372)	(0.749)	(-0.375)
Top1	-0.272	-0.117	-0.712	0.154
	(-0.234)	(-0.235)	(-0.662)	(0.408)
SOE	0.334	0.101	-0.017	-0.081
	(0.442)	(0.995)	(-0.035)	(-0.361)
GDP Growth	0.514	0.337	-8.215	1.779
	(0.073)	(0.200)	(-1.175)	(0.541)
Constant	-14.707***	-0.809	-13.483**	-1.284
	(-3.311)	(-0.342)	(-2.291)	(-0.952)
Observations	5469	5469	6659	6659
Adjusted R^2	0.349	0.654	0.386	0.664
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 9. Instrumental variables

This table reports the generalized method of moments (GMM) estimates. Instrumental variables (IVs) are employed: (1) *Age*: Age of firm *i* in year *t*, measured as number of years since listing. (2) *InvestmentCycle*: Proxy of a firm's investment-cycle length, calculated as depreciation divided by lagged total assets. Detailed definitions of variables are given in Appendix 1. *t*-statistics are reported in parentheses. Standard errors are robust and clustered at industry level. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

First stage		Second stage		
	(1)		(2)	(3)
Variables	*CScore*	Variables	*ER*	*Disclosure*
Age	0.004***	*Fitted_CScore*	-4.469*	-5.312***
	(3.86)		(-1.720)	(-2.931)
InvestmentCycle	-0.180***	*M/B ratio*	0.254***	0.047
	(-2.64)		(3.886)	(0.895)
M/B ratio	0.009**	*Sales Growth*	-0.256*	-0.267***
	(2.330)		(-1.719)	(-2.754)
Sales Growth	0.006	*R&D/Sales*	-6.141	-6.424***
	(0.450)		(-1.552)	(-2.832)
R&D/Sales	0.053	*ROA*	3.404**	-0.106
	(0.230)		(2.077)	(-0.084)
ROA	-0.060	*LEV*	-0.599	0.628
	(-0.480)		(-0.629)	(1.224)
LEV	0.249***	*Size*	0.718***	-0.030
	(6.900)		(2.769)	(-0.147)
Size	-0.087***	*Board Size*	-0.742	0.420
	(-11.470)		(-1.328)	(1.468)
Board Size	-0.014	*Board Independence*	-0.665	-0.479
	(-0.420)		(-0.484)	(-0.589)
Board Independence	-0.032	*Big4*	1.532**	0.191
	(-0.290)		(2.208)	(0.697)
Big4	0.010	*Top1*	-1.652***	-0.289
	(0.340)		(-3.129)	(-1.316)
Top1	-0.032	*SOE*	0.880***	0.226*
	(-0.93)		(4.774)	(1.899)
SOE	-0.016	*GDP Growth Rate*	0.985	5.784**
	(-1.350)		(0.178)	(2.457)
GDP Growth Rate	-0.091	Constant	-14.221***	-11.283**
	(-0.33)		(-2.584)	(-2.396)
Constant	1.849***			
	(10.14)			
Kleibergen-Paap Wald rk *F* statistic (For Weak identification test)	17.647			
Kleibergen-Paap rk *LM* statistic (For Underidentification test)	14.862***	Observations	7,267	7,267
		Hansen's *J* statistic (For overidentification test)	0.084 (0.772)	0.923 (0.337)
Observations	7,267			

Table 10. Controlling for multiple fixed effects

This table presents the robustness test for the baseline regression by controlling for multiple fixed effects. Column (1) and (2) presents the results of the regression controlling for firm and industry-year fixed effects. Column (3) and (4) presents the results of the regression controlling for firm and province-year fixed effects. Variable descriptions are summarized in Appendix 1. *t*-statistics are reported in parentheses. Standard errors are robust and clustered at industry level. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Variables	(1) *ER*	(2) *Disclosure*	(3) *ER*	(4) *Disclosure*
CScore	-0.504***	-0.075**	-0.394***	-0.063*
	(-3.029)	(-2.130)	(-2.754)	(-1.682)
M/B ratio	0.040	-0.037**	0.040	-0.043***
	(0.902)	(-2.639)	(1.085)	(-2.683)
Sales Growth	0.015	-0.065	0.058	-0.061
	(0.123)	(-1.650)	(0.471)	(-1.542)
R&D/Sales	10.595*	2.497	6.877	2.474
	(1.731)	(1.259)	(1.090)	(1.307)
ROA	2.485	0.251	1.848	0.358
	(1.394)	(0.696)	(1.041)	(0.956)
LEV	-0.785	-0.419**	-0.867	-0.392**
	(-1.368)	(-2.137)	(-1.550)	(-2.192)
Size	0.665***	0.133**	0.713***	0.128**
	(4.383)	(2.619)	(5.408)	(2.385)
Board Size	-0.009	-0.104	0.046	-0.107
	(-0.014)	(-0.644)	(0.072)	(-0.640)
Board Independence	1.178	0.325	1.210	0.319
	(0.663)	(0.686)	(0.713)	(0.691)
Big4	0.832	0.097	1.028	0.083
	(1.302)	(0.574)	(1.612)	(0.499)
Top1	-0.589	-0.075	-0.608	-0.189
	(-0.743)	(-0.273)	(-0.898)	(-0.673)
SOE	0.051	0.009	0.097	0.020
	(0.120)	(0.079)	(0.210)	(0.173)
GDP Growth Rate	-3.820	0.878	78.556	-15.859
	(-0.800)	(0.540)	(1.321)	(-0.731)
Constant	-13.883***	-1.703	-15.097***	-1.419
	(-3.701)	(-1.550)	(-4.521)	(-1.269)
Observations	12148	12148	12148	12148
Adjusted R^2	0.377	0.666	0.394	0.664
Firm FE	Yes	Yes	Yes	Yes
Industry-year FE	Yes	Yes		
Province-year FE			Yes	Yes

Table 11. Difference in differences test

This table reports the results of the DID estimation. Receiving penalty due to financial fraud in year t-1 is adopted as a shock, which increases accounting conservatism but does to affect environmental performance directly, to justify the causality between accounting conservatism and environmental performance. The event window is selected as two years before to two years after the shock. *Treat* is a dummy variable equals one for the treatment firms (receive at least one penalty due to financial fraud) and zero for control firms (do not receive any financial fraud related penalty) in a year. *Post* is a dummy variable equals one when the period is after the shock and zero for the period before the shock. Detailed definitions of variables are given in Appendix 1. *t*-statistics are reported in parentheses. Standard errors are robust and clustered at industry level. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)
Variables	*ER*	*Disclosure*
*Post*Treat*	-0.350*	-0.100*
	(-1.875)	(-1.985)
M/B	-0.015	-0.013
	(-0.181)	(-0.546)
Sales Growth	-0.106	-0.035
	(-0.612)	(-0.571)
R&D/Sales	0.855	0.690
	(0.102)	(0.386)
ROA	3.021	0.516
	(1.012)	(0.757)
LEV	-0.419	-0.402
	(-0.452)	(-1.199)
Size	0.635***	0.139
	(3.855)	(1.267)
Board Size	-0.379	-0.048
	(-0.299)	(-0.171)
Board Independence	3.027	-0.821
	(0.976)	(-1.075)
Big4	1.572	0.006
	(1.331)	(0.020)
Top1	0.283	1.024*
	(0.153)	(1.854)
SOE	0.062	0.086
	(0.065)	(0.406)
GDP Growth	15.341**	-1.860
	(2.005)	(-0.728)
Constant	-15.600***	-0.934
	(-3.148)	(-0.347)
Observations	4112	4112
Adjusted R-squared	0.380	0.692
Firm FE	Yes	Yes
Year FE	Yes	Yes

Table 12. Alternative measures of environmental performance

This table presents the robustness test for the baseline regression with alternative measures of environmental performance: *EI* and *Cost/Sales.* Variable descriptions are summarized in Appendix 1. *t*-statistics are reported in parentheses. Standard errors are robust and clustered at industry level. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Variables	(1) *EI*	(2) *Cost/Sales*
CScore	-0.697*	-0.145*
	(-1.726)	(-1.771)
M/B ratio	-0.349	-0.049
	(-1.067)	(-0.626)
Sales Growth	0.082	-0.314**
	(0.188)	(-2.072)
R&D/Sales	23.978	-17.261
	(0.845)	(-1.614)
ROA	-3.958	-2.724
	(-0.686)	(-1.252)
LEV	-1.587	-1.923**
	(-0.355)	(-2.642)
Size	0.785	-0.161
	(0.662)	(-0.811)
Board Size	0.153	-0.142
	(0.084)	(-0.164)
Board Independence	1.685	1.098
	(0.290)	(0.425)
Big4	2.745**	0.442
	(2.455)	(0.477)
Top1	-2.338	-0.644
	(-0.344)	(-0.831)
SOE	1.175	0.499
	(0.736)	(0.690)
GDP Growth Rate	8.841	2.600
	(0.435)	(0.354)
Constant	-12.497	4.313
	(-0.430)	(0.821)
Observations	756	1356
Adjusted R^2	0.488	0.689
Firm FE	Yes	Yes
Year FE	Yes	Yes