

Exploring the multifaceted influencing factors of corporate social responsibility in Chinese-listed manufacturing enterprises



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ABSTRACT

Article History

Received: 11 September 2023

Revised: 8 November 2023

Accepted: 12 February 2024

Published: 18 March 2024

Keywords

Big four accounting firms

CSR

DOI

Leverage ratio

SOEs.

JEL Classification:

C33; F23; L25; M42.

Although scholars have conducted research on the corporate social responsibility (CSR) of Chinese firms from different perspectives, there has been no unified conclusion so far. Therefore, identifying the factors that influence CSR in Chinese enterprises is an important topic for further investigation. Does the debt leverage ratio, ownership type, degree of internationalization (DOI), and auditing by the Big Four accounting firms have an impact on CSR? Based on a series of questions, our study aims to explore the influencing factors and relationships of CSR from multiple angles. Using data from 252 Chinese A-share listed enterprises from 2014 to 2019 and the CSR scores from the Hexun.com rating index, we constructed a panel dataset comprising 1,414 firm-year observations. After comparing models, the fixed effects method of panel data is ultimately used for empirical regression. The research results indicate a significant negative correlation between the leverage ratio and CSR. State-owned enterprises (SOEs) outperform non-state-owned enterprises (non-SOEs) in terms of CSR. There is a significant positive correlation between DOI and CSR. However, the contribution of audits by the Big Four accounting firms to CSR in Chinese enterprises is limited. While our study examines many aspects of the elements that affect corporate social responsibility (CSR) in Chinese companies, each firm must consider its circumstances and apply suitable strategies to improve its CSR practices.

Contribution/ Originality: The article studies the CSR of Chinese enterprises from various perspectives, illustrating that the impact of CSR is multifaceted. Therefore, for the firms themselves, they should not focus solely on individual CSR influencing factors but should consider them from all angles.

1. INTRODUCTION

The concept of Corporate Social Responsibility (CSR) has spread globally, becoming a prominent topic not only in developed countries but also in developing countries (Maas & Reniers, 2014; Martínez, Fernández, & Fernández, 2016). Furthermore, with the development of multinational corporations and the acceleration of global integration, issues concerning the environment, labor, and consumer rights have become increasingly evident. Against this backdrop, there is a growing demand for companies to assume more social responsibility (Carroll & Shabana, 2010). CSR refers to the actions undertaken by businesses for sustainable development and fulfilling ethical and social responsibilities. It encompasses a wide range of critical themes, such as human rights, corporate innovation, the

environment, fair business practices, customer issues, corporate governance, community development, and contributions to economic development (Duque-Grisales & Aguilera-Caracuel, 2021; Iqbal, Ahmad, & Halim, 2021; Mahlouji & Anaraki, 2009). In order to maintain reputation and standing, managers should make responsible business decisions, considering public opinion and the interests of stakeholders (Man & Macris, 2015; Tien, 2019). These trends have given rise to modern CSR models, which tackle questions pertaining to rights and responsibilities, viewpoints, and attitudes, as well as issues concerning CSR and correlated sustainable development (Nguyen, Le, Ho, & Nguyen, 2021; Tien, 2019).

Given the significance and universality of CSR, numerous previous studies have extensively investigated its concepts, practices, and empirical aspects (Carroll, 1999, 2009; Jo & Harjoto, 2011; Li & Zhang, 2010). These studies indicate that ownership structure, corporate governance, firm size, and financial performance influence CSR activities (Jo & Harjoto, 2011; Li & Zhang, 2010). In addition, Waddock and Graves (1997) analyzed the relationship between leverage ratio and CSR using the Standard & Poor's 500 index. They found that higher leverage ratios lead to increased bankruptcy risk for companies, which might limit their engagement in CSR activities, resulting in poorer CSR for highly leveraged firms. Li and Zhang (2010) attempted to explore the relationship between leverage ratio and CSR, and their results suggested that companies with higher leverage ratios tend to have weaker CSR. However, they did not explicitly explain or elaborate on the reasons in their paper, thereby having some limitations.

Many multinational corporations pay attention to CSR as it can help improve their brand image and manage legal and societal risks (Carroll, 2009). Renowned multinational companies such as Coca-Cola, Microsoft, and Unilever engage in self-initiated CSR activities, including charitable donations, anti-corruption efforts, human rights protection, environmental preservation, and community-related initiatives, integrating CSR into their strategic management (Carroll, 2009). Despite the increased interdependence and efficiency brought about by globalization, unpredictable societal risks demand that companies elevate CSR to a strategic position. These legal and societal risks can affect costs, marketability, public and reputational awareness, and even operations and supply chains. Against the backdrop of globalization, CSR policies and regulations are subjects of continuous change and adaptation, transitioning from traditional business development to a focus on people, the planet, and profit, aligning with the concept of sustainable business development (Briš, Svoboda, & Brišová, 2013; Chwistecka-Dudek, 2016; Nguyen et al., 2021).

China is also one of the important participants in global CSR. CSR in China began in the 1990s, when multinational buyers demanded Chinese firms meet certain working conditions and employee treatment requirements. To respond to the demands of multinational enterprises and government pressures, Chinese firms made significant efforts in areas such as charity, donations, food safety, pollution control, and energy conservation (Gao, 2009). Wang and Juslin (2009) emphasized that China's CSR is about respecting nature and caring for people, aligning with the harmonious concepts of Confucianism and Taoism. Integrating this cultural background into the concept of CSR can also benefit future research on CSR in China and encourage proactive CSR measures in practical business operations. However, based on previous research, Asian countries, including China, lag behind Western countries in terms of CSR penetration (Jamali & Karam, 2018; Welford, 2005). Additionally, there are many differences between Chinese listed firms and Western firms regarding ownership nature, internationalization level, and accounting auditing.

This paper aims to explore the influencing factors of CSR in Chinese firms from multiple perspectives, providing reference and significance for the implementation of CSR. In China, firms with different ownership types have different resources, political and economic objectives, and financial conditions, resulting in varying motivations for investing in CSR activities. Therefore, when considering the impact of leverage ratios on CSR, the ownership type of the firm should be taken into account to accurately study the influence of leverage ratio's returns and risks on CSR. The internationalization process in China began comparatively late, and the prevalence of state-owned businesses (SOEs) in this process, along with transparency concerns in their financial audits, might be linked to the adoption of

Corporate Social Responsibility (CSR). This study attempts to analyze the different factors that influence Chinese firms' CSR concerning variables such as leverage ratio, internationalization level, different ownership types, and the appointment of the Big Four accounting firms for auditing.

The main contributions and significance of our article are as follows: Existing research typically focuses on CSR from a single theory and perspective. Through this research, it was found that there is a negative correlation between leverage ratio and CSR among Chinese firms, indicating that firms should control their debt ratio. However, the empirical evidence does not support a negative relationship between SOEs and CSR, suggesting that the influence of ownership nature on CSR cannot be proven. There is a positive correlation between the internationalization level of firms and CSR, implying that firms should actively expand their international presence. The positive relationship between hiring the Big Four accounting firms for auditing and fulfilling CSR is also not validated. Therefore, Chinese firms should adapt their CSR practices based on specific circumstances.

The following sections of this paper are organized as follows: Chapter 2 categorizes the pertinent literature on Corporate Social Responsibility (CSR) and puts out research hypotheses. Chapter 3 offers comprehensive explanations and detailed descriptions of the data model and variables. Chapter 4 performs model analysis and provides appropriate interpretations, exploring the importance of the findings. The last chapter provides a concise overview of the research findings and explores their potential consequences.

2. LITERATURE REVIEW AND RESEARCH HYPOTHESES

2.1. CSR and Leverage

Jones (1980) established a model to determine CSR based on institutional theory. This model illustrates various institutional levels related to CSR practices, including the social-cultural system, national economic development, industry, firm characteristics (firm age, firm size, competitive strategy, ownership type), and individuals (customers, employees). At the social-cultural level, research shows that different countries and cultural systems have a significant effect on firms' CSR, as well as the influence of specific social values and customs, including religion (Gustavson, 2011; Jamali & Karam, 2018), and patterns of social and cultural attitudes (Jamali & Karam, 2018; Wang & Juslin, 2009). CSR is also a concept that continues to evolve and change (Liu, Luo, & Cui, 2018).

Furthermore, according to the stakeholder theory, creditors are crucial stakeholders who control a firm's access to essential financial resources necessary for its ongoing operations. Creditors are more concerned about the risks that the firm faces due to irresponsible behavior, so they pay attention to the firm's CSR and hope for a strong CSR. According to Cheng and Tzeng (2011) research, the leverage ratio can represent a firm's financial condition. On the one hand, the better the financial condition or quality of the firm, the lower the probability and cost of bankruptcy, leading to better credit ratings. Diamond (1991) and Gilson (1990) argue that a high leverage ratio can induce creditors to increase monitoring and alleviate conflicts between internal stakeholders and other shareholders, so the company might choose to invest in additional CSR activities. Swandari and Sadikin (2016) utilized data from 64 Indonesian companies in 2012 and studied the effects of ownership structure, firm size, and debt ratio on CSR through multiple regression analysis.

In these previous studies, the firm's debt-to-leverage ratio was used as an important variable to control its influence on CSR. This is because the debt ratio represents the proportion of assets financed by debt within the firm. In the financial context, the debt ratio reflects the proportion of assets provided by creditors in the firm's total assets, indicating the level of risk creditor's bear in providing credit funds to the firm. A higher debt-to-leverage ratio implies higher risks related to the firm's operations. Thus, the leverage ratio is used as a proxy variable for management's risk tolerance, which affects the firm's attitude towards CSR activities. However, the impact of the leverage ratio on CSR in previous research has shown inconsistent results, with few studies exploring the relationship between the debt ratio and CSR (Ahmed, 2022; Combs, Jaskiewicz, Ravi, & Walls, 2023; Nega, 2017; Surya & Rokhim, 2022). Therefore, this study will delve into the relationship between a firm's debt ratio and CSR. Based on the aforementioned points, the first hypothesis of this paper is proposed as follows:

H: There is a positive relationship between the leverage ratio and CSR.

2.2. CSR and SOEs

According to stakeholder theory, the influence of stakeholders on a firm's management relies on the critical resources they control. Different stakeholder groups with ownership rights increase their impact on the firm and create a sense of urgency to meet their demands. Chinese listed enterprises still have a relatively high proportion (over 60%) of state ownership, which is a unique institutional characteristic in the Chinese capital market. As owners of the firm, the state often has different objectives compared to private shareholders. For instance, the state may prioritize maximizing social welfare rather than shareholder wealth (Sun, Tong, & Tong, 2002). Consequently, SOEs aim not just to earn profits but also to accomplish wider societal goals, such as generating additional employment opportunities. Sun et al. (2002) highlighted that debt within SOEs poses a substantial challenge in China and has been an obstacle to their restructuring efforts. The Chinese government is aware of the gravity of the issue and has initiated a range of measures, from permitting SOEs to deduct a portion of profit tax to implementing the recent equity-debt policy. These actions are being undertaken to mitigate the debt load of SOEs and facilitate their return to profitability.

Li and Zhang (2010) used multiple linear regression to study the effect of ownership structure on CSR. They used the CSR index of Chinese listed manufacturing enterprises and found that different control rights of SOEs significantly positively affect CSR, while non-SOEs have a significantly negative impact on CSR. Zhu, Liu, and Lai (2016) also pointed out that Chinese SOEs implement more CSR activities than non-SOEs, indicating that SOEs pay attention to CSR. Due to government regulations, SOEs are required to publish their CSR reports. Additionally, the State-owned Assets Supervision and Administration Commission (SASAC) formulates CSR indicators and incorporates CSR practices into the annual evaluation system of SOEs.

Furthermore, as the largest shareholder of SOEs, the government has an incentive to pursue CSR activities to fulfill its social responsibility and wealth transfer objectives (Bai, Lu, & Tao, 2006; Khan et al., 2023), which contributes to a higher level of CSR. Significant government ownership motivates firms' CEOs to achieve non-financial objectives related to the government's policies, such as infrastructure development, resolving regional financial difficulties, and addressing unemployment issues, putting pressure on SOEs to pursue CSR (See, 2009). For these reasons, compared to non-SOEs, SOEs are subject to fewer constraints from government social or political objectives (Ang, Shao, Liu, Yang, & Zheng, 2022; Chen, Liang, & Wu, 2023; Khan, Ali, Zahid, Huo, & Nazir, 2022; Zhong, Ren, & Wu, 2022). Li and Zhang (2010) stated that the shareholders of non-SOEs reduce investment in CSR to pursue more self-interest. As a result, SOEs tend to outperform non-SOEs in CSR. Based on the above arguments, this study proposes the second hypothesis:

H: State-owned enterprises have better CSR than non-state-owned enterprises.

2.3. Degree of Internationalization and CSR

In terms of the internationalization of companies, the resource-based view explains that it is contingent upon the unique resources a company holds as the driving force, and the value of such resources becomes more apparent through processes of operation and management (Hitt, Bierman, Uhlenbruck, & Shimizu, 2006; Hitt, Xu, & Carnes, 2016). Based on this, a higher degree of internationalization (DOI) implies that firms need to demonstrate their sustainability more extensively to engage in CSR activities (Kolk, 2016; Zhang, Wang, Guo, & Yang, 2021). However, some viewpoints argue that when exporting and importing economies have similar cognitions of activities related to the public interest, exporting may not motivate firms to focus on CSR issues (De Marchi & Grandinetti, 2013; RL & Mishra, 2021). When considering China, there still exists a deficiency in systematic theoretical backing and constrained viewpoints in empirical studies concerning the internationalization of Chinese corporations. As a result, previous research has raised concerns that companies may not have fully understood how to improve their competitive edge through internationalization (Liao, Lin, & Zhang, 2018). Wu, Hossain, Teng, and Shen (2023) suggested that future research should pay more attention to the antecedents, processes, and outcomes of Chinese firms'

internationalization. For multinational enterprises, the implementation of CSR is considered to reduce operating costs and increase stakeholder acceptance and legitimacy (Kostova & Zaheer, 1999). However, it may unexpectedly lead to stakeholder mistrust (Grewatsch & Kleindienst, 2017). Firms conducting business in international markets have complex relationships with stakeholders due to their limited understanding of foreign market laws, regulations, and systems (Contractor, Kumar, & Kundu, 2007). Firms with experience understand the methods to minimize conflicts in business activities, norms, and culture and gain advantages from adhering to CSR. Subsequently, enhanced financial results allow multinational companies to persist in conducting operations in foreign markets and sustain their competitiveness (Babajee, Seetana, Nunkoo, & Gopy-Ramdhany, 2022).

The complex mechanisms of corporate operations and external transaction costs increase with the DOI. In situations where companies invest less effort in implementing CSR, it may lead to biases and prejudices from local stakeholders (Campbell, Eden, & Miller, 2012). In such cases, stakeholder skepticism forces firms to incur higher costs (Stahl, Tung, Kostova, & Zellmer-Bruhn, 2016). For example, they may encounter more intensive searches, prolonged negotiations, frequent communication, unfavorable contract terms, and litigation, which negatively impact financial performance (Arian, Sands, & Tooley, 2023; Nguyen, Nguyen, & Nguyen, 2022). As an integral part of competitive strategy, international business consumes companies' resources and incurs costs. Most firms should improve their CSR performance and meet the demands and expectations of more stakeholders to secure their position. Through the implementation of CSR, they can convey valuable information about the overall reliability, stability, and reputation of the company to stakeholders (Doh, Littell, & Quigley, 2015). Consequently, it can control operating costs (Sethi & Judge, 2009). Based on the above analysis, the third research hypothesis of this paper is proposed:

H₃: The degree of internationalization can promote the development of CSR.

2.4. The Big Four Accounting Firms' Audit and CSR

The theoretical foundation for the influence of auditing on CSR stems from agency theory. Jo and Harjoto (2011) posited that conflicts of interest exist between shareholders (principals) and managers (agents) within a firm. Shareholders tend to delegate some responsibility to managers and directors to act on their behalf, giving rise to agency problems. Despite this, due to the incomplete behaviors of shareholders, firms, and managers, the latter may act in their own interests. Consequently, financial statements provided by managers to shareholders could be intentionally vague, inaccurate, or even deliberately falsified. So, shareholders can ask regulatory agencies (external auditors) to keep an eye on how executives run the business and make sure they report on CSR activities (Fernandez-Feijoo, Romero, & Ruiz, 2014; Handayati, Tham, Yuningsih, Rochayatun, & Meldona, 2022; Ioannou & Serafeim, 2017), with the goal of lowering agency costs. Similarly, through this auditing mechanism, not only are the credibility and transparency of audit firms improved, but it also enhances the effectiveness of the audit system, raising the management level and economic benefits of these firms. Among these aspects, CSR issues are utilized to gain a social responsibility reputation (Ioannou & Serafeim, 2017; Linthicum, Reitenga, & Sanchez, 2010), enhance the firm's brand image, and improve the impressions of capital markets and stakeholders about the firm.

According to agency theory, firms are more inclined to engage the services of the Big Four accounting firms to boost their reputation and change auditors before publicly acknowledging mistakes, signaling the need for truthful and transparent information disclosure. In past literature, numerous studies have employed various methods to analyze the relationship between external auditing and CSR. Specifically, research by Al-Janadi, Rahman, and Omar (2013) found that the Big Four firms enhance the level of voluntary information disclosure between Saudi Arabian and French companies. Additionally, De Moraes, de Souza Goncalves, and Niyama (2015) analyzed the voluntary disclosure environment of companies relating to large audits and social and economic information. Biaek-Jaworska and Matusiewicz (2015) documented a positive correlation between the Big Four audit companies and the elective dissemination of CSR details by corporations. The substantial audit entities deliver high-quality assurance reports, subsequently augmenting trustworthiness and curtailing the distortion of financial information (Dechow, Ge, & Schrand, 2010). Additionally, Sierra, Zorio, and García-Benau (2013) discovered that whether or not large audit firms

audit the financial statements affects the decision to disclose CSR information. The Big Four firms are widespread providers of CSR assurance. As such, they can encourage companies to voluntarily disclose CSR information and devise various marketing and sales strategies to ensure the disclosure of sustainability reports (Dakhli, 2022; Gomes, Eugénio, & Branco, 2015; Handayati et al., 2022; Jahid, Yaya, Pratolo, & Pribadi, 2023).

Hence, based on the above arguments, the Big Four audit firms enhance the quality of financial reporting by curbing opportunistic and unethical accounting practices. Consequently, they also encourage companies to strengthen their CSR reporting to ensure higher quality. The higher the audit quality, the more it benefits in reducing expropriation of interests by controlling shareholders during the company's internationalization process. Simultaneously, it can effectively suppress the false inflation of total assets or overvaluation of low-quality assets by target companies. Therefore, it can actively advocate for protecting corporate interests, enhancing corporate strength, and promoting the implementation of CSR.

H₁: Firms audited by the Big Four accounting firms exhibit a positive correlation with CSR.

3. DATA, VARIABLES, AND METHODOLOGY

3.1. Sample and Data

Compared to other countries, Chinese listed enterprises possess unique and significant institutional characteristics, namely relatively large government ownership. This study looks at how return and risk are affected by debt leverage ratio, corporate ownership, level of internationalization, and audit level for listed companies in China's emerging market. The companies are chosen because they are typical of those in the market. We utilize a sample of 252 A-share manufacturing firms listed on the Shanghai and Shenzhen Stock Exchanges from 2014 to 2019. CSR data for publicly listed manufacturing companies in China is acquired from Hexun, while data related to finance, company attributes, governance, and control variables are obtained from the China Securities Market and Accounting Research (CSMAR) database. The CSMAR database is notable for its broad scope, comprehensive time frames, and plethora of indicators. It caters to over 90% of financial entities in the Chinese marketplace and is a pivotal source of information for the bulk of scholarly research conducted in China.

3.2. Research Variables

3.2.1. Dependent Variable

CSR represents a firm's responsibility towards society. However, measuring CSR proves challenging due to its abstractness and inclusivity (Guo & Lu, 2021). As a result, prior research has introduced Corporate Social Performance (CSP) as a quantifiable form to represent CSR (Lu, Chau, Wang, & Pan, 2014). The Hexun CSR Evaluation Database offers comprehensive CSR information for Chinese enterprises (Sang, Zhang, Ye, & Jiang, 2022). It assesses the CSR of listed enterprises in China based on information obtained from annual financial reports or non-financial reports. Shahab, Ntim, and Ullah (2019) and Wen and Song (2017) utilized professional CSR assessment systems and Hexun rating data to measure CSR for Chinese listed enterprises. Higher scores in CSR and better CSR ratings indicate exceptional CSR performance by Chinese enterprises (Su, 2019).

3.2.2. Independent Variable

3.2.2.1. Leverage Ratio

In this study, our important independent variable is the leverage ratio. We employ the ratio of total liabilities to total assets as a measure of the leverage ratio. The leverage ratio is considered a means to enhance potential investment returns through debt utilization (Zhu, Yang, An, & Huang, 2014). It indicates the reliability of a company's reliance on debt for operations. If a firm's debt-to-leverage ratio is high, it may bring returns or risks to its financial performance due to this financial leverage. Particularly in existing research, it is believed that the better a firm's financial performance, the better its CSR (Li & Zhang, 2010; Waddock & Graves, 1997). These returns and risks

associated with the leverage ratio, which are linked to financial performance, might also have a direct or indirect relationship with CSR (Lin, 2010).

3.2.2.2. Ownership Type (SOEs is a Dummy Variable)

In recent years, as the Chinese central government has tightened requirements for CSR, SOEs are increasingly in need of broader and deeper implementation of CSR practices to enhance their operations and become socially responsible corporate citizens (Zhu et al., 2016). States, as company owners, often have different objectives than private shareholders. Zhu et al. (2016) highlight that Chinese SOEs perform more CSR than non-SOEs. Li and Zhang (2010) found, using Chinese data, that there is a positive relationship between dispersion in non-SOEs and CSR, while a negative relationship exists among SOEs. This could be due to the state's capability to redistribute wealth for social stability, which aids in enhancing CSR (Hu, Zhu, & Hu, 2016). In our paper, SOEs are assigned a value of 1, while non-SOEs are assigned a value of 0.

3.2.2.3. Degree of Internationalization

In our paper, we use the Foreign Sales to Total Sales ratio (FSTS) as a measure of Chinese firms' Degree of Internationalization (DOI). On one hand, it is the most widely used and direct indicator reflecting a firm's internationalization status (Li, Qiu, & Wan, 2011). Due to its widespread availability, as most Chinese listed enterprises report both overseas and total revenue in their financial statements, FSTS can be easily calculated based on these two figures. Apart from FSTS-related data being relatively accessible, obtaining other internationalization indicators' data is more or less challenging. Attig, Boubakri, El Ghoul, and Guedhami (2016) also employed this accounting method to measure DOI in their research.

3.2.2.4. Big Four Audit Firms

The Big Four accounting firms are multinational corporations with comprehensive knowledge of political environments, economic developments, and resource elements in various countries. As such, they can offer consulting services while assisting other companies with audits. Consequently, higher audit quality is more favorable for reducing controlling shareholders' interests' appropriation and interest diversion during the firm's internationalization, effectively curbing asset inflation or overvaluation of low-quality assets, actively safeguarding company interests, strengthening company capabilities, and promoting the implementation of CSR (Liao et al., 2018). In our study, if a listed enterprise in China hires one of the Big Four accounting firms for auditing, it is assigned 1; otherwise, it is assigned 0.

3.2.3. Control Variables

3.2.3.1. Tobin's Q

The main interested parties in a firm are its shareholders, who prioritize the firm's profit and economic results (Jo & Harjoto, 2011). As per the Resource-Based Theory proposed by Waddock and Graves (1997), when a firm has a stronger financial outcome, it possesses more additional resources for its CSR endeavors. In this research, Tobin's Q serves as a representative measure for the firm's market-oriented financial results. It is determined by taking the total market equity worth and net debt value and dividing it by the total assets at the end of the year.

3.2.3.2. Firm Size

Research indicates that firm size has a significant impact on the level of CSR (Gainet, 2010). Larger companies are more likely to face intense scrutiny from the general public and watchdog organizations, which makes them more likely to engage in CSR practices. Firm size is often positively correlated with corporate charitable donations (Cheung, Kong, Tan, & Wang, 2015; Liu, Quan, Li, & Forrest, 2018). The level and quality of CSR disclosure are positively

related to firm size. This is because larger firms possess higher reputations and attract a broader range of stakeholders who require attention (Hu et al., 2016).

3.2.3.3. Board Size

Prior research has found that a larger number of board members, indicating a larger board size, can enhance the supervisory capacity of the board and consequently improve CSR (Tong, 2015). In China, enterprises with larger board sizes are more likely to engage in charitable donations, indicating that firms with lower monitoring efficiency are more inclined to make corporate donations as directors are more likely to work for their own interests (Li, Lin, & Yang, 2016). Higher board size increases the likelihood of enhancing CSR quality and participating in voluntary CSR assurance (Liao et al., 2018).

3.2.3.4. Subsidiaries

Globally, large firms have numerous subsidiaries. To achieve profit maximization, a balance between global integration and local responsiveness is essential (Doz & Prahalad, 1984). The number of headquarters coordinators compared to subsidiaries shows how important internal coordination is. It lowers transaction costs and agency problems that come up when overseas subsidiaries have too much freedom in how they run their businesses. Simultaneously, subsidiaries with higher operational autonomy and attention tend to exhibit better CSR (Ambos & Birkinshaw, 2010).

3.2.3.5. Firm Age

Firm age plays an essential role in influencing CSR activities. More established enterprises tend to prioritize their reputation, which might lead them to boost their CSR initiatives (Roberts, 1992; Tang, Qian, Chen, & Shen, 2015). Moreover, considering that larger corporations may experience distinct pressures concerning CSR (Petrenko, Aime, Ridge, & Hill, 2016), it's pivotal to factor in the company's size when evaluating its CSR efforts.

3.2.3.6. Corporate Innovation

Even with the rise of globalization and breakthroughs in Information and Communication Technology (ICT) offering fresh avenues for corporate innovation (Grant, Matousek, Meyer, & Tzeremes, 2017), there's a significant correlation between a company's innovation pursuits and its CSR, as highlighted in many studies. Through dedicated research and development, firms can cultivate invaluable intangible assets. Such assets equip companies with the leverage to excel in foreign investments, benefiting from economies of scale and capitalizing on market irregularities (Ferraris, Bresciani, & Del Giudice, 2016; Graves & Shan, 2014).

3.2.3.7. EPS

There is a complex relationship between EPS (Earnings per Share) and CSR. EPS is a key indicator of a firm's financial performance, representing the net profit corresponding to each share of shareholder equity. It is often used to evaluate a company's profitability. Numerous studies have shown that an increase in EPS can have a positive mid-term impact on a firm's CSR (Mughal, Jehangir, Khan, & Saeed, 2021; Samy, Odemilin, & Bampton, 2010; Yang, Bento, & Akbar, 2019).

3.2.3.8. BPS

The relationship between BPS (Book Value per Share) and CSR reflects how a firm's financial health and its commitment to social responsibility influence each other. BPS is a financial metric that indicates a firm's book value for each share of stock, while CSR focuses on a firm's performance in environmental, social, and governance aspects.

However, in the long run, enhancing BPS coupled with a firm commitment to CSR can bring many benefits to a firm, making the two complementary (Liu & Liu, 2023; Son & Lee, 2019; Wu et al., 2023; Xu, Zeng, Qi, & Cui, 2023).

3.3. Formatting of Mathematical Components

To verify the reliability and accuracy of our research, we utilize the collected panel data model to estimate the equations. For individual $i=1, 2, 3, 4, \dots, N$, observed across several time periods $t=1, 2, 3, \dots, T$, the model is as follows:

To verify Hypothesis 1, the following model is adopted.

$$CSR_{i,t} = \beta_0 + \beta_1 LEV_{i,t} + \beta_{2-9} Controls_{i,t} + \xi_i + \eta_t + \varepsilon_{i,t} \tag{1}$$

To verify Hypothesis 2, the following model is adopted.

$$CSR_{i,t} = \beta_0 + \beta_1 SOE_{i,t} + \beta_{2-9} Controls_{i,t} + \xi_i + \eta_t + \varepsilon_{i,t} \tag{2}$$

To verify Hypothesis 3, the following model is adopted.

$$CSR_{i,t} = \beta_0 + \beta_1 DOI_{i,t} + \beta_{2-9} Controls_{i,t} + \xi_i + \eta_t + \varepsilon_{i,t} \tag{3}$$

To verify Hypothesis 4, the following model is adopted.

$$CSR_{i,t} = \beta_0 + \beta_1 BIG4_{i,t} + \beta_{2-9} Controls_{i,t} + \xi_i + \eta_t + \varepsilon_{i,t} \tag{4}$$

Below is the model that includes all variables.:

$$CSR_{i,t} = \beta_0 + \beta_1 LEV_{i,t} + \beta_2 SOE_{i,t} + \beta_3 DOI_{i,t} + \beta_4 BIG4_{i,t} + \beta_{5-12} Controls_{i,t} + \xi_i + \eta_t + \varepsilon_{i,t} \tag{5}$$

Where, $CSR_{i,t}$ represents the CSR rating of company i at time t , β_0 indicates the unobserved heterogeneity, and LEV, SOE, DOI, and BIG4 are the independent variables of interest. Within the Control, it includes Tobin's Q, FIRMSIZE, AGE, BOARDSIZE, R&D, Sub, BPS, and EPS. ξ_i stands for individual fixed effects, η_t represents the time factor, and $\varepsilon_{i,t}$ denotes the random disturbance term.... Table 1 summarizes the details of the variables.

Table 1. Variable definition.

Type	Variable	Abbreviation	Variable measurement
Dependent variable	CSR	CSR	CSR score ranked by Hexun
Independent variable	Leverage	LEV	Leverage=Total debt/Total assets
	DOI	DOI	DOI=Foreign sales/Total sale
	SOEs	SOEs	One if the firm is SOEs and zero otherwise
	Big4	BIG4	One if a big four firm audited firm reports zero otherwise
Control variable	Firm age	AGE	Number of years since establishment
	Board size	BOARDSIZE	Number of directors
	Firm size	FIRMSIZE	Log (Book value of total assets)
	Tobin's Q	Q	Tobin's Q=Market value/Total assets
	R&D	R&D	Research and development expense
	Subsidiaries	SUB	Number of subsidiaries
	EPS	EPS	(Net income-preferred dividends)/Weighted average Shares outstanding
	BPS	BPS	(Shareholder's equity-preferred equity)/Number of outstanding common shares

4. RESULTS

Table 2 shows the descriptive statistics of the main variables in this study. From the statistical results, it is evident that the mean values for CSR score, leverage ratio, state-owned enterprise (SOEs), DOI, Big4, Tobin's Q, firm age, board size, firm size, R&D, subsidiaries, BPS, and EPS are 41.131, 0.477, 0.905, 0.210, 0.107, 0.154, 11.623, 9.121, 0.945, 0.364, 22.994, 4.878, and 0.394, respectively. Among the variables of interest, CSR has a maximum value of 75.420, a minimum value of 10.610, and a standard deviation of 22.613, indicating a relatively balanced distribution

of CSR scores. The maximum value of the leverage ratio is 0.777, the minimum value is 0.153, and the standard deviation is 0.182. As binary variables (1 and 0) represent state-owned enterprises (SOEs) and non-state-owned enterprises (non-SOEs), their mean is 0.905, indicating that 90% of the sampled firms are SOEs. Conversely, the mean for the presence of Big4 audit firms is only 0.107, indicating a relatively low proportion of sampled firms audited by the Big4. The mean value of DOI is 0.210, suggesting that the average overseas sales as a proportion of total revenue is one-fifth, highlighting the significance of overseas market income as a crucial source of revenue.

Table 2. Descriptive statistics.

Variable	Mean	Std. dev.	Min.	Max.
CSR	41.131	22.613	10.610	75.420
LEV	0.477	0.182	0.153	0.777
SOEs	0.905	0.294	0.000	1.000
DOE	0.210	0.201	0.004	0.714
BIG4	0.107	0.309	0.000	1.000
Q	1.547	1.081	0.307	4.299
Age	11.623	3.677	6.008	19.066
BOARDSIZE	9.121	1.377	7.000	12.000
FIRMSIZE	0.945	0.544	0.076	2.000
R&D	0.364	0.569	0.006	2.157
SUB	22.994	19.603	2.000	73.000
EPS	4.878	2.514	1.600	10.874
BPS	0.394	0.473	-0.400	1.500

Table 3 shows the Pearson correlation coefficients among the variables used in the model estimation. The results show that the dependent variable (CSR score) is negatively correlated with leverage ratio, negatively correlated with SOEs, negatively correlated with DOI, and negatively correlated with Big4. These coefficients are -0.108, -0.009, 0.052, and 0.072, respectively. Among these variables, apart from CSR and SOEs being insignificantly correlated, the remaining three variable groups exhibit statistically significant correlations at the 1% level. Notably, the significant negative correlation between Leverage and CSR score contradicts our research hypothesis, warranting further exploration in subsequent empirical models. Additionally, while only BPS and EPS are significantly correlated with CSR among the control variables, the relationships do not impact the findings of this study. The actual significance of these relationships will be further investigated in the subsequent models. Moreover, the correlation matrix shows that most coefficients are below 0.5, with the highest being 0.699 (the correlation between R&D and firm size), indicating relatively low inter-variable correlation, meeting the requirements for model establishment.

Furthermore, multicollinearity is a significant concern in empirical analysis, as it implies varying degrees of relationships between model variables. This may lead to larger variances in regression coefficients, affecting the precision and accuracy of coefficient estimates (Gujarati, 2009; Hair, Black, Babin, & Anderson, 2010). Empirical judgment methods suggest that if the Variance Inflation Factor (VIF) of a variable in the model is greater than 10, multicollinearity may be present. When the VIF is greater than 0 but less than 10, multicollinearity is generally considered absent. Additionally, the reciprocal of VIF is termed tolerance, with a range from 0 to 1. A tolerance closer to 0 suggests a higher probability of multicollinearity, while a tolerance closer to 1 provides evidence of the absence of collinearity (Moore, Craig, & McCabe, 2012). **Table 4** indicates that the maximum VIF value among the model variables is 4.11, with the rest being below the critical threshold of 10. Consequently, these results suggest that the regression estimates provided in **Table 5** are not biased due to the multicollinearity, thereby maintaining the credibility of the model.

Table 3. Pearson correlation matrix.

Variables	CSR	LEV	SOEs	DOI	BIG4	Q	AGE	BOARDSIZE	FIRMSZIE	R&D	SUB	BPS	EPS
CSR	1												
LEV	-0.108***	1											
SOEs	-0.009	0.151***	1										
DOI	0.052**	-0.094***	-0.060**	1									
BIG4	0.072***	0.134***	0.112***	-0.077***	1								
Q	0.003	-0.618***	-0.033	0.124***	-0.157***	1							
Age	-0.001	0.089***	0.001	0.045*	0.021	-0.082***	1						
BOARDSIZE	0.025	0.147***	0.079***	-0.033	0.105***	-0.165***	0.106***	1					
FIRMSIZE	0.009	0.545***	0.156***	-0.127***	0.433***	-0.547***	0.074***	0.237***	1				
R&D	0.028	0.323***	0.141***	0.006	0.457***	-0.296***	-0.050*	0.125***	0.699***	1			
SUB	-0.017	0.265***	0.071***	-0.082***	0.273***	-0.252***	0.074***	0.072***	0.625***	0.493***	1		
BPS	0.156***	-0.115***	0.041	-0.102***	0.236***	-0.124***	-0.031	0.105***	0.298***	0.206***	0.267***	1	
EPS	0.252***	-0.190***	0.012	-0.046*	0.210***	0.172***	-0.039	0.037	0.210***	0.199***	0.229***	0.648***	1

Note: *** p<0.01, ** p<0.05, * p<0.

Table 4. Collinearity test results.

Variable	VIF	1/VIF
FIRMSIZE	4.11	0.243487
R&D	2.25	0.444933
Q	2.24	0.447187
LEV	2.11	0.472869
BPS	2.09	0.477337
EPS	2.06	0.485144
SUB	1.73	0.578899
BIG4	1.34	0.744803
BOARDSIZE	1.08	0.927306
SOEs	1.07	0.936449
DOI	1.06	0.94532
AGE	1.05	0.950668
Mean VIF	1.85	

To effectively estimate panel data, this study employed a stepwise regression testing method for model selection: the Hausman test (Hausman, 1978) was used to choose the fixed effects and random effects models. Ultimately, after testing and comparison, the fixed effects model was selected for estimating the equation. Moreover, the fixed effects model assists in partially controlling for endogeneity issues and aids in addressing endogeneity problems (Sun, Hu, & Hillman, 2016).

In Model (1), the coefficient of leverage is -18.550 and at a significant level of 1%, indicating a negative impact of the firm's leverage ratio on CSR. This contradicts our hypothesis 1 entirely, thus leading to the rejection of hypothesis 1. The study suggests that higher leverage ratios in companies hinder CSR, contrary to expectations, but it is similar to some previous research findings (Combs et al., 2023; Surya & Rokhim, 2022; Wu & Kim, 2023; Zhang et al., 2021). This result verifies that capital structure decisions are part of the overall company stakeholder strategy, where creditors are key stakeholders in China and their influence should be considered. This reflects the significance of creditors to equity investors and hinders CSR activities.

In Model (2), ownership type was found to have a negative impact on CSR, though not statistically significant. In other words, the CSR of SOEs is superior to that of non-SOEs. This supports our hypothesis 2. It indicates that the power of government stakeholders, reflecting state ownership (government power), impacts the CSR management strategy of firms as crucial stakeholders for state-owned enterprises. Furthermore, from the perspective of the resources and privileges possessed by SOEs, they are more likely to receive political and financial support from the government, with government leaders being motivated to aid state-owned enterprises (Khan et al., 2022; Li, Xu, McIver, Liu, & Pan, 2022). Managers of state-owned enterprises might prioritize CSR activities due to the potential negative consequences of poor non-financial performance on their political reputation and risk of demotion.

From Model (3), the linear model indicates that the degree of DOI is significantly positively correlated with the CSR score ($\beta=7.840, p<0.05$). This suggests a general positive correlation between Chinese firms' DOI and CSR, as opposed to the often negatively correlated DOI and CSR found in early internationalization stages of emerging economies, thus supporting hypothesis 3. Although firms face negative internationalization returns due to late entry and outsider disadvantages in the early stages, the positive returns for Chinese international enterprises are more apparent after accounting for ownership, geographic, and internalization advantages. Consequently, the level of internationalization among Chinese firms is positively correlated with CSR (Sang et al., 2022; Zhang et al., 2021). The study looks at how DOI affects CSR relationships and finds that companies that do business in other countries have more complicated stakeholder relationships (Sharfman, Shaft, & Tihanyi, 2004). Being socially responsible can give stakeholders good information about a company.

In Model (4), the coefficient for Big4 is 0.213, but it is statistically insignificant, implying that the supportive effect of the presence of the Big4 audit firms on the relationship between CSR performances is not substantiated,

leading to the rejection of hypothesis 4. In other words, this might be linked to the unique nature of Chinese companies and their business environment. The full-variable Model (5) further demonstrates the robustness of the aforementioned conclusions.

Table 5. Regression results.

Variable	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
LEV	-18.55*** [4.442]				-18.08*** [4.581]
SOEs		-1.418 [2.108]			-0.0262 [1.964]
DOI			7.840** [3.155]		7.339** [3.078]
BIG4				0.213 [2.384]	0.0525 [2.311]
Q	-0.419 [0.713]	0.77 [0.678]	0.696 [0.672]	0.73 [0.674]	-0.437 [0.718]
AGE	0.0575 [0.184]	0.0383 [0.188]	0.0141 [0.183]	0.0387 [0.187]	0.0332* [0.180]
BOARDSIZE	-0.326 [0.456]	-0.335 [0.468]	-0.339 [0.467]	-0.344 [0.469]	-0.322 [0.455]
FIRMSIZE	4.850** [2.083]	2.473 [2.069]	2.82 [2.064]	2.292 [2.068]	5.257** [2.126]
R&D	-0.0862 [1.439]	-0.0257 [1.470]	-0.521 [1.449]	-0.0905 [1.501]	-0.532 [1.440]
SUB	0.0203* [0.038]	0.0199* [0.039]	0.0237* [0.038]	0.0208* [0.039]	0.023** [0.037]
BPS	-0.502 [0.322]	-0.144 [0.300]	-0.11 [0.296]	-0.149 [0.302]	-0.46 [0.320]
EPS	13.03*** [1.748]	12.93*** [1.788]	13.05*** [1.769]	12.97*** [1.784]	13.10*** [1.748]
_Cons	60.89*** [5.264]	52.30*** [5.128]	49.46*** [4.913]	51.30*** [4.922]	59.01*** [5.497]
N	1414	1414	1414	1414	1414
Year	Yes	Yes	Yes	Yes	Yes
Firms	Yes	Yes	Yes	Yes	Yes

Note: Standard errors in brackets; *** p < 0.01, ** p < 0.05, * p < 0.1.

Table 6. Robustness check.

Variable	Model (6)	Model (7)	Model (8)	Model (9)	Model (10)
LEV	-13.02*** [4.849]				-12.34** [4.929]
SOEs		-0.755 [2.030]			-0.0847 [1.911]
DOE			7.925** [3.101]		7.483** [3.091]
BOI				0.353 [2.294]	0.176 [2.298]
_Cons	55.39*** [5.002]	49.74*** [4.917]	47.19*** [4.597]	49.16*** [4.583]	53.34*** [5.401]
N	1414	1414	1414	1414	1414
Controls	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes
Firms	Yes	Yes	Yes	Yes	Yes

Note: Standard errors in brackets; *** p < 0.01, ** p < 0.05, * p < 0.1.

In order to confirm the robustness of our models, this study followed the method of variable replacement for empirical regression, as practiced in Ma et al. (2016). Consistent with the previous method, hierarchical regression was conducted for the main variables, and the results are reported in Table 6. According to the regression results, the main tested variables were essentially consistent with the previous findings. Through this approach, the stability of the model was verified, thereby enhancing the credibility of the results.

5. CONCLUSIONS

Studying a firm's CSR has strategic significance, as investments in CSR should focus on establishing key stakeholder relationships that competitors find difficult to replicate. Thus, it is necessary to identify the driving factors of CSR. This study not only enhances our understanding of the direct impact of leverage on CSR but also discovers that in China, SOEs pay more attention to CSR than non-SOEs. The positive correlation between the level of a firm's internationalization and its CSR suggests that Chinese firms should strive to enhance their international presence. Additionally, while hiring the Big Four audit firms might not directly promote CSR fulfillment due to China's unique business environment, maintaining a sound audit process is crucial for overall corporate development.

This study contributes to stakeholder theory and CSR literature. First, stakeholder theory predicts that creditors, as important stakeholders, significantly influence corporate behavior and outcomes. Creditors are concerned about the risks arising from irresponsible behavior and thus desire good CSR, motivating greater investment in CSR activities. Our findings suggest that creditors, as critical stakeholders, drive firms to invest in CSR activities through debt financing; a high debt leverage ratio might hinder the firm's CSR initiatives. The study indicates that the CSR of SOEs outperforms that of non-SOEs. When considering ownership type's individual impact on CSR, it can be concluded that CSR is better for SOEs, possibly due to lower investment costs in CSR attributed to their unique political status and resources.

Furthermore, business leaders should shift their focus to promoting CSR fulfillment through improved internationalization can help establish stronger social relationships with customers, employees, investors, and other stakeholders. Firms should actively engage in technological innovation, increase R&D investments, and aid the firm in gaining long-term competitive advantages and social performance in international markets. Due to the inherent characteristics of Chinese enterprises, even though it's not statistically significant. Moreover, selecting Big Four audit firms for audit can enhance management practices and internationalization, in the long term, it may thereby favoring CSR implementation. Despite careful consideration in study design and rigorous empirical research, this study has limitations due to various conditions, which might lead to specific estimations under certain assumptions. Although the study examined the relationship between Chinese firms' Leverage, DOI, ownership structure, Big Four audit, and their CSR, many factors could influence this relationship. Clearly, numerous other factors were not adequately considered, including crucial national policies influencing corporate development, i.e., overlooking macroeconomic factors. Limitations were present in indicator selection and choice of CSR rating data. While Hexun ranks CSR of Chinese listed enterprises as a third-party entity and is as authoritative as KLD and similar rating agencies in the CSR assessment field, it relies mainly on financial statements, thus carrying some subjectivity. The extent to which these rating data comprehensively reflect relationships with various stakeholders is a thought-provoking issue.

Funding: This study received no specific financial support.

Institutional Review Board Statement: Not applicable.

Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

Data Availability Statement: Upon a reasonable request, the supporting data of this study can be provided by the corresponding author.

Competing Interests: The authors declare that they have no competing interests.

Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

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