Analyzing Corporate Governance Model with Chinese Characteristics and Accounting Information Disclosure: A Quasi-natural Experimental Study Based on a Special Institutional Arrangement

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Abstract

A new corporate governance model for SOEs with Chinese characteristics was implemented in China in 2016, in which a 4 + 1 (Chinese Communist Party committee, shareholders' meeting, board of directors, board of supervisors + managers) corporate governance structure was formed by integrating the Party organization into the traditional Western 3 + 1 structure (shareholders' meeting, board of directors, board of supervisors + managers), and it was a major breakthrough of the modern enterprise system with Chinese characteristics. With this brand-new institutional arrangement as a quasi-nature experiment, the Propensity Score Matching (PSM) and Differences in Differences (PSM-DID) methods have been used in this paper to empirically test the impact of the corporate governance model with Chinese characteristics on accounting information disclosure of State-Owned Enterprises (SOE). It has been found in the study that the corporate governance model with Chinese characteristics has improved the transparency of accounting information of SOEs in China, but no significant contribution to the quality of accounting information has been identified. Samples are subdivided in view of the influence of the hierarchy and internal governance of Chinese SOEs. In central government-owned enterprises or those with a low level of internal control, the new governance model plays a more prominent role in enhancing the transparency of accounting information. The study verifies the positive effect of the corporate governance model with Chinese characteristics in improving the level of accounting information disclosure. Also, the study has practical significance in enhancing the corporate governance system with Chinese characteristics.

I. Introduction

The corporate governance model with Chinese characteristics refers to one in which the leadership of the Chinese Communist Party (CPC) is integrated into the Western governance structure, with 3 + 1 as its core. After China officially carried out Reform and Opening-up in 1978, the 3 + 1 corporate governance structure was promoted in Chinese State-Owned Enterprises (SOEs). Though the promotion accelerated marketization, somehow, it does not play the leading and central role of the Communist Party of China in SOEs very well. Therefore, the Chinese government started to explore a better combination of the two and find out better ways to integrate the leadership of CPC with each link of corporate governance to build an effective corporate governance model with Chinese characteristics.

In October 2016, the Chinese government emphasized embedding the Party organizations of enterprises in the corporate governance structure and proposed to intensify the leadership of CPC in corporate governance through organizational embedding (Hanna and Qiang, 2010; Dewri, 2021). More specifically, the Party organization of an SOE is required to discuss and decide on major corporate matters in accordance with the regulations, and important business management matters must be studied and discussed by the Party organization before decisions are made by the board of directors or the managers. This institutional arrangement put the Party organization ahead of the 3 + 1 structure, forming the 4 + 1 structure, which is a new distinctive governance model of Chinese SOEs and a major breakthrough from the Western 3 + 1 corporate governance structure. What kind of impact this milestone event has on

enterprises and whether it helps to improve the quality of enterprises are research areas with theoretical and practical significance.

It has long been an objective of the Chinese government to improve the quality of listed companies. Accounting information is the main information for the stakeholders to understand the state of business and make decisions, which is the critical content of information disclosure and the level of the disclosure reflects the quality of the enterprise (Zhuo et al., 2021). In such a context, the present paper conducts research on the micro impact of the corporate governance model with Chinese characteristics from the perspective of accounting information disclosure. In this study, with the 4 + 1 structure proposed in 2016 as a quasi-nature experiment, the PSM-DID method has been used to empirically test the impact of the corporate governance model with Chinese characteristics on accounting information disclosure of SOEs. It has been found in the study that the corporate governance model with Chinese characteristics has improved the transparency of accounting information of SOEs in China, but not that this model can promote the quality of such information. Samples are subdivided in view of the influence of the hierarchy and internal governance of Chinese SOEs. In central government-owned enterprises or those with a low level of internal control, the new governance model plays a more prominent role in enhancing the transparency of accounting information.

The main contributions of the present paper are as follows. First, it empirically studies the role of the corporate governance model with Chinese characteristics. Due to the late implementation of this model, the previous studies mainly adopt the normative approach, while the present paper discusses its effects on information disclosure through empirical research. Second, though there are relatively well-established and complete theories and literature related to accounting information disclosure, the Party organization's impact on accounting information disclosure has been rarely touched upon. From the perspective of the corporate governance model with Chinese characteristics, this study has expanded the literature related to accounting information disclosure and conducted research based on the decision-usefulness theory and Stewardship theory, respectively. Finally, the research findings have practical implications for promoting further the corporate governance model with Chinese characteristics. It is suggested from the study, on the one hand, that such a model improves the transparency of accounting information disclosure. Still, it has not been found that the model promotes the quality of accounting information. On the other hand, this model plays different roles in different sample enterprises, requiring further strengthening and improvements.

Ii. Institutional Background And Literature Review

i. Institutional Background

The involvement of Party organizations in corporate governance is a long-standing tradition in China's national conditions, with continuously innovative governance patterns. Before the reform and opening-up in 1978, Chinese SOEs largely adopted the 'overall responsibility by the factory director' system, resulting from multiple factors in that historical context. After 1978, China formally transformed from a planned

economy to a market economy, and a modern enterprise system was gradually carried out nationwide. However, the diversified governance structure promoted in China, together with the modern enterprise system, weakened the leadership of the CPC and made the role of the Party organization as the political core vulnerable (Ma Lianfu, 2017; Ezzeddine and Jarboui, 2017). In 2004, the Chinese government clarified the governance pattern of 'two-way entry and cross-appointment' as an effort to strengthen the leadership of Party organizations, pointing out that members of the Party organization can partly overlap members of the board of directors, the board of supervisors, and the management. This pattern, however, had severe problems in practice, so the Party organization failed to fully play its role.

Furthermore, the Chinese government proposed to embed the Party in the corporate governance structure. Specifically, the Chinese government integrated the discussions of Party organizations into the pre-procedure of enterprises' decision-making on major issues of the boards of directors and the management of SOEs. At the 19th National Congress of the Communist Party of China in October 2017, the amended Constitution of the Communist Party of China added that the Party committee (the Party leading group) of state-owned enterprises should play a leading role in setting the direction, managing the overall situation, ensuring implementation, discussing and deciding on significant matters of the enterprises in accordance with the provisions. Finally, the Party organization's embedding in the governance of SOEs witnessed the breakthrough of 4 + 1. This paper aims to discuss the impact of this corporate governance model with Chinese characteristics on Chinese SOEs.

ii. Literature Review

Until the mid-1990s, corporate governance in China was regarded as minor. The PRC Company Law of 1994 was the first attempt at reform, laying the groundwork for what was to come. The Corporate Governance Code for Quoted Enterprises in China was released in 2002 by the China Securities Regulation Commission (CSRC) and the State Economic and Trade Commission, based on the principles of the Organisation for Economic Cooperation and Development (Liu et al., 2019; Mutlu et al., 2018).

Both Anglo-Saxon and German elements are included in the Chinese corporate governance structure. A two-tier board, consisting of a supervisory board and a board of directors, is required by the Code. The supervisory board oversees the executive board and provides advice to senior executives; however, it is not involved in the corporation's day-to-day operations (Elston, 2019; Liu et al., 2019). In China, corporate governance is essentially managed by a single board of directors, with the largest shareholders exerting significant influence. Because of the active involvement of controlling shareholders, independent directors have only a minor influence. The strength and integrity of the environment in which corporations operate are essential for effective corporate governance. The CSRC established a corporate disclosure regulatory framework and a series of regulations to improve stock market efficiency and protect shareholders' preferences. These regulations require listed companies to make truthful, accurate, complete, and timely disclosures, allowing investors to make better decisions. In addition, the two stock exchanges have built corporate governance systems, releasing a set of rules and regulations to

safeguard investors' interests and improve disclosure transparency (Pirchio, 2018; Elston, 2019; Liu et al., 2019; Jiang and Kim, 2020).

Studies in the early stages related to Party organizations' participation in corporate governance mainly adopted normative studies or case studies to analyze the problems of various governance models. As empirical studies gained popularity in China, an increasing number of scholars have tested the results of Party organizations' embedding through modeling (Ramesh, 2020). Existing studies found that Party organizations' participation in corporate governance:

- helps SOEs improve their corporate governance and make internal control more effective (Lu and Zhu, 2020).
- improves information transparency (Mao Zhihong and Wei Yanpeng, 2020).
- inhibits earnings management of senior executives (Cheng Haiyan *et al.*, 2020), excesses remuneration (Ma Lianfu *et al.*, 2013), hiddens corruption (Yan Ruosen and Li Linshan, 2019), etc.
- promotes their performance in environment-related issues, strengthens the information disclosure of social responsibility, and facilitates the green transformation (Yu Lianchao et al., 2019).
- raises their efficiency of investment, prevents over-investment (Lai Mingfa, 2018), improves performance (Chang and Wong, 2004), and thus prevents the loss of national assets (Chen Shihua and Lu Changchong, 2014).

With the gradual implementation of the new distinctive corporate governance model in China after 2016, some scholars started to pay attention to this research field and put forward valuable suggestions centered on the background and advantages of policies and difficulties that might occur in practice (e.g., Jia, 2019; Jiang and Kim, 2020; Yang et al., 2017). For example, Su Hong (2018) argued that the relationship between the modern enterprise system and the Party organization's leadership should be handled appropriately in implementing the model. The model should be institutionalized and standardized as soon as possible. Zheng Qi (2018) clarified the three key links of this governance model of the Party organization, including the formulation of the scope of discussion, the procedure of research and discussion, the results of research and discussion, and put forward valuable suggestions for policy implementation. In addition, there were some more intensive studies. For example, through pre-decision game models, Liu Fuguang *et al.* (2019) found that the board of directors is more likely to cooperate with managers under the new decision mechanism, with an apparent cooperative effect. Furthermore, Liu Xuexin *et al.* (2020) found that after implementing the corporate governance model with Chinese characteristics, motions about to be voted on by the board of directors will face fewer dissenting opinions in the decision-making stage because they have been politically reviewed by the Party organization.

In conclusion, studies on Party organizations' participation in corporate governance are mainly in China, while there are few empirical studies on this new distinctive corporate governance model (e.g., Lin et al.,

2020; Shahab and Ye, 2018; Dewri, 2021). The present paper aims to verify the impact of this new model on the accounting information disclosure of Chinese SOEs through empirical research.

Iii. Theoretical Analysis And Hypothesis Formulation

In China, though relevant policies in as early as 2010 regulated that the decision-making of important matters, appointment and removal of critical personnel, necessary project arrangement, and the use of large amounts of funds ('three important and one large' for short) should be determined by the collective. The collective here is the Party committee, the board of directors, the general managers' meeting, the joint meeting of the Party leadership, etc. The specific decision-making procedures can be chaotic, with different enterprises adopting various procedures and even one enterprise often shifting its decision-making procedure. In addition, past lessons taught us that the key role of the Party organization was weakened after the restructuring of some SOEs. For example, the production and operation of enterprises are believed to be the sole responsibility of the chairman and general manager (Tsang, 2002). Similarly, the simultaneous holding of the chairman and the secretary of the Party committee may lead to functional conflicts between the Party committee and the company's board of directors, even if the committee's functions are replaced by the board (Leutert, 2016). The actual absence of the Party organization is likely to trigger 'the absence of the owner', causing strong self-interest motive of senior executives of enterprises, which will not only influence the transparency of information due to non-disclosure and under-disclosure but also lead to hidden corruption through capitalized accounting, thus lowering the quality of accounting information.

The scope and quality of information disclosure are determined by how well-established corporate governance is. The better the governance is, the higher-level information disclosure is because there is limited space for the management to use private information for rent-seeking (Millar et al., 2005; Mete and Belgin, 2021). Much of the current literature on corporate governance revolves around the principal-agent theory, viewing corporate governance as the institutional arrangements that must be made among shareholders, the board of directors, and management due to the separation of ownership and control (Ezzeddine and Jarboui, 2017). However, as the products of China's unique institution, SOEs feature both economic and public functions, where corporate governance sees a high level of administration, with relatively complicated information disclosure that cannot be well interpreted by the principal-agent theory. A significant number of studies have shown that in countries that witnessed economic transition, administrative governance can serve as an alternative mechanism to safeguard investors' interests due to the incomplete legal system, which can alleviate the serious information-related problems facing investors and regulators (e.g., Pistor and Xu, 2005; Chen Donghua, Zhang Tiesheng, *et al.*, 2008; Peigong and Yifeng, 2010). The corporate governance model with Chinese characteristics, as an administrative governance method, adds the leading role of the Party committee (Party leading group) to the traditional '3 + 1' corporate governance structure, in order to strengthen the separation of powers, check and balance, lift the level of corporate governance, and exert influence on accounting information disclosure from various aspects. Therefore, the present paper discusses the impact of China's new distinctive corporate

governance model on accounting information disclosure, based on the decision-usefulness theory and Stewardship theory, respectively.

i. Based on the Decision-usefulness Theory

In the decision-usefulness theory, the goal of accounting is deemed to provide useful information for stakeholders (Hitz, 2007). The focus should be placed on the relevance and usefulness of accounting itself to avoid the problem of adverse selection caused by information asymmetry. Thus, the management should disclose as much information as possible regardless of the subjectivity of accounting information (Georgiou et al., 2021; Williams and Ravenscroft, 2015). According to the proprietary cost hypothesis, in a competitive industry, though a company's information disclosure facilitates the market's accurate assessment of its value, such disclosure also provides information for rivals who may act against the company (Wagenhofer, 1990). Therefore, management tends to choose a low disclosure policy to avoid the high proprietary costs related to information disclosure in the Chinese market which relies its transactions on relations (Cheng Xinsheng *et al.*, 2012).

Moreover, in the context of a long agency chain and deeply-rooted principal-agent relationship in SOEs, the management may, for the purpose of using disclosure as a signal to display, disclose information selectively, concealing adverse information to enjoy private benefits easily. However, in the previous 3 + 1 decision-making mechanism of SOEs, the board of directors and management enjoy such intense power that the supervision of the Party organization can barely come into force. In other words, senior executives have more discretion regarding information disclosure. They are likely to reduce the disclosure as much as possible, considering costs and self-interest. For sensitive information such as accounting, senior executives have weaker motives. A new decision-making relation of 4 + 1 has been formed in the new distinctive governance model in China, not only enabling Party organizations to have a better understanding of the enterprises and the management, inhibiting senior executives' motives to disclose information selectively, but also adding top-level supervision to the previous governance structure to impose a stronger warning effect on managers and restrain them from non-disclosure and under-disclosure.

Rational investment decisions depend on adequate information disclosure. Management concealment of information or corruption cannot only seriously harm the interests of investors and jeopardize the development of the company, but also increase the level of public debt (Baklouti and Boujelbene, 2018; Baklouti and Boujelbene, 2021), destabilize society, and even affect the image of the country. In terms of the political attributes of SOEs, the Party organization is responsible for organizing and supervising the implementation of guidelines and policies of the Party and the country in the enterprise and supporting the subject of corporate governance in exercising power in accordance with laws (Wang, 2014; Chouaibi, 2021). In contrast, the economic attributes of SOEs lie in safeguarding the shareholders' interests and maintenance and appreciation of state-owned assets (Liu Fuguang *et al.*, 2019). The critical point of the SOE system is the board of directors and its selected management, which leads to the fact that the political key role of the Party organization is not allowed full play in practice. However, the establishment

of the 4 + 1 decision-making mechanism has strengthened the leading role of the Party organization. To protect investors' interests, safeguard SOEs' images, and ensure social stability, Party organizations' political awareness of 'serve the people wholeheartedly,' 'the interests of the Party and the people are above everything,' and 'Party members should play an exemplary role' pioneers and comes into play. Financial affairs that have taken place and are of great concern to investors and important matters that the management previously considered unnecessary or wanted to conceal from the Party organization should now go through the discussion of the latter, which diminishes the possibility of the management's non-disclosure or under-disclosure and urges it to disclose as much accounting information as possible.

Bushman *et al.* (2004) believed that corporate transparency is the broad accessibility of specific information about a listed company for outsiders of the company. Thus, based on the decision-usefulness theory, the corporate governance model with Chinese characteristics can improve stakeholders' accessibility of information by increasing the amount of accounting information to be disclosed, thus making the enterprise's accounting information more transparent, based on which this paper proposes the following hypothesis.

H1: The corporate governance model with Chinese characteristics can improve the transparency of accounting information for Chinese SOEs.

ii. Based on the Stewardship Theory

The corporate governance framework is the most comprehensive internal and external control mechanism for encouraging intelligent use of corporate resources and accountability for their stewardship. Corporate governance aims to align the interests of stakeholders, firms, and society to fulfill the corporations' long-term strategic priorities and maximize shareholder value. Corporate governance procedures that are strong lessen agency difficulties and help firms achieve their value maximization goals. According to empirical research, principal-agent agency conflicts are less common in organizations with concentrated ownership, as concentrated ownership increases corporate governance's monitoring role and, as a result, improves the performance of the firm (Ahsan et al., 2020).

Modern corporate governance should address the core issue of insider control and moral risk arising under the condition of separation of ownership and operation. The Stewardship theory is generated from the separation, in which the operators of enterprises (i.e., the management) are responsible for providing valid and reliable information for the owners to avoid the problem of moral risks triggered by information asymmetry. The Party committee (The Party leading group) plays an independent supervisory role in SOEs, which can regulate the chairman and general manager' exercise of power, free from the constraints of business performance, check, balance, and coordinate in the process of decision-making, operation, and supervision, and play a positive role in regulating corporate governance.

First, the corporate governance model with Chinese characteristics realized the transition from 3 + 1 to 4 + 1. This new decision-making relationship allows the Party organization to play a stronger supervisory role before, during, and after the event, restraining the management's opportunistic behavior and reducing

its discretionary power in the selection of accounting policy and other aspects (Cheng Haiyan *et al.*, 2020). Second, it is found that under the new decision-making mechanism, the board of directors and the management are more likely to share the same goal and cooperate, inducing a cooperative effect (Naciti et al., 2021). Furthermore, it becomes possible that the board of directors and the management have the same goal of preventing financial cheating when the Party organization's role in the board of directors and the management is of great magnitude (Liu Fuguang *et al.*, 2019). In addition, the Party organization's full embedding in the corporate governance structure can:

- give full play to the political core and leadership role of the Party organization (Tenev et al., 2002).
- promote the establishment of an honest and trustworthy corporate culture in SOEs (Bu, 2015).
- develop a concept of law-abiding operation (Lin, 2013).
- actively guide the management and employees from the ideological perspective (Tenev et al., 2002).
- facilitate the building of a healthy outlook of performance (Davies, 2016).
- reduce opportunistic behaviors that wander on the edge of the rules in blind pursuit of profits (Reyes, 2018).

Embedding the Party organization in the corporate governance structure is a complementary administrative means to the market tools (Ma Lianfu *et al.*, 2012), which can be comprehensively adopted in corporate governance to avoid moral risks caused by information asymmetry. The corporate governance model with Chinese characteristics has specified the decision-making procedure of 'the Party committee goes first, then the management committee'. A proposal rejected by the former cannot enter the decision-making stage of the latter. This means that the Party committee (the Party leading group) and the management of SOEs share the decision-making power of 'three important and one large', having the right to decide what not to do, in the 4 + 1 decision-making mechanism. If a proposal is rejected at the primary stage, it prevents the management from utilizing its authority to do something that harms the interests of SOEs. Even for proposals passed by the Party committee and enter the implementation process, there is the supervision of the Party organization, which serves as a deterrent to the management. It can restrain the administration from opportunistic behaviors, prevent finance-related regulation violations, and urge leadership to disclose accurate and reliable information to the public, thus positively influencing the quality of accounting information. The above arguments lead to the following hypothesis:

H2: The corporate governance model with Chinese characteristics can improve the quality of accounting information for SOEs.

However, there might be some obstacles in the implementation of the corporate governance model with Chinese characteristics. Though it has been specified in the policy that important matters should go through the discussion of Party organizations, there is no specific list of matters, which may lead to the chaotic implementation in SOEs. Some enterprises submit everything to the Party committee for discussion and regard the Party organization as a protective umbrella. In other cases, the board of

directors or management selectively submit matters to be discussed, which leaves the management some room for financial fraud and makes this new mode a mere formality, failing to play a fundamental supervisory role. In addition, studies argue that giving companies certain democratic rights leads to their economic growth (e.g., Ghardallou and Sridi, 2020). Still, the new corporate governance model in China has weakened the democratic rights of companies to some extent, which may put financial pressure on companies and force them to reduce the quality of accounting information. Thus, a hypothesis has been made as follows:

H3: The corporate governance model with Chinese characteristics cannot improve the transparency of accounting information for SOEs (the quality of accounting information).

Iv. Research Design

i. Sample Selection and Data Sources

Since the institutional arrangement of 'three important and one large' has been implemented in Chinese SOEs since 2010 and the index of information transparency is only disclosed in detail on the Shenzhen Stock Exchange, this paper selects A-share listed SOEs on the Shenzhen Stock Exchange from 2010 to 2019 as the research samples. According to research needs, samples should go through the following screening procedures: (a) excluding financial samples; (b) retaining only samples with normal trading status; (c) excluding samples with missing data in the calculation of variables. All financial data in this paper are obtained from CSMAR, and STATA 16 is used for data collation and statistical analysis. All continuous variables in this paper are treated with Winsorize of 1% above and below in order to exclude the influence of extreme values.

ii. Variable Selection

1. Transparency of Accounting Information

The index of the transparency of accounting information selected in this paper comes from the information disclosure rating published on the Shenzhen Stock Exchange. This index combines factors such as the level of standardized operation of listed companies and the degree of protection of investors' rights and interests. Also, it examines the adequacy and usefulness of the disclosure of financial reports, performance forecasts, and other financial information by listed companies, including those in the probation period. Finally, it divides them into four grades from high to low: A, B, C, and D. The four grades are assigned 4, 3, 2, and 1, respectively. The variable *Tra* represents information transparency.

2. Quality of Accounting Information

Regarding AQ, the index of the quality of accounting information, this paper refers to the practice of Dechow and Dichev (2002), McNichols (2002), and Francis *et al.* (2005) and regress the following model (1) by industry and year to obtain the model residuals and take its absolute value, which is AQ.

$$\frac{TA_{i,t}}{A_{i,t-1}} = \frac{\partial}{A_{i,t-1}} + \beta_1 \frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{A_{i,t-1}} + \beta_2 \frac{PPET_{i,t}}{A_{i,t-1}} + \beta_3 ROA_{i,t} + \varepsilon_{,t} \quad (1)$$

$TA_{i,t}$ is the total accrued surplus in year t, equaling to operating profit in year t minus cash flow from operating activities in year t. A_{t-1} is the is total assets at the beginning of year t -1. $DREV_{i,t}$ is the change in main business income in year t, equaling to the difference between main business income at the end of year t and that at the end of year t-1. $DREC_{i,t}$ is the change in accounts receivables in year t, equaling to the difference between accounts receivables at the end of year t and that at the end of year t-1. $PPE_{i,t}$ is the original book value of fixed assets at the end of year t. $ROA_{i,t}$ is the performance variable (return on total assets). $e_{i,t}$ is the deviation, representing the level of discretionary accruals, the absolute value of which is taken in this paper to measure the quality of accounting information of enterprises; the smaller the value, the higher the quality.

iii. Modeling

The policy effect of the corporate governance model with Chinese characteristics mainly lies in two parts: the so-called “time effect” part formed as time naturally goes by and the “effect of policy treatment” generated in the implementation of policy. Therefore, the critical point is how to distinguish the two effects. To better assess the governance effect brought by the implementation of policy, this paper refers to Wooldridge’s (2020) DID (Differences in Differences) method of quasi-natural experiment to assess the impact of the National Conference on Party Building of State-owned Enterprises. In other words, SOEs are taken as the treatment group and private enterprises as the control group. It is assumed that both groups have the same trend of ‘time effect’ before implementing the policy. Also, the change of both after the implementation of the policy is the so-called change of ‘effect of policy treatment’ in the DID method. Based on this, model (2) and model (3) below are constructed to verify H1 and H2, respectively.

$$Tra_{i,t} = \beta_0 + \beta_1 Time_{i,t} + \beta_2 Treat_{i,t} + \beta_3 Time_{i,t} \times Treat_{i,t} + \beta_4 Controls_{i,t} + \varepsilon_{,t} \quad (2)$$

$$AQ_{i,t} = \beta_0 + \beta_1 Time_{i,t} + \beta_2 Treat_{i,t} + \beta_3 Time_{i,t} \times Treat_{i,t} + \beta_4 Controls_{i,t} + \varepsilon_{,t} \quad (3)$$

$Tra_{i,t}$ is the index of the transparency of accounting information, and $AQ_{i,t}$ is the index of the quality of accounting information. $Treat_{i,t}$ is the dummy variable of the treatment group and the control group, which takes the value of 1 when the sample company is an SOE and 0 otherwise. $Time_{i,t}$ is the dummy variable of time, which takes the value of 1 when the sample time is after 2016 and 0 otherwise. The cross-multiplication of $Treat_{i,t} \times Time_{i,t}$ represents the dummy variable after the implementation of the policy, and its coefficient b_3 is the different impact of the implementation of the policy on the treatment group and the control group, the main analysis of this paper. $Controls_{i,t}$ is the combination of control

variables. With the practice of Yi Zhihong, Jiang Fuxiu *et al.* (2010) as a reference, this paper selects *Size, Lev, Roa, Growth, Lholding, MB, Dual, Bordsize, Idr* and in addition, controls the fixed effect of time and industry. The logit model is adopted for regression in model (2) because the explained variable T*ra* is a categorical variable. And the fixed-effects model is adopted for regression in model (3) because the explained variable *AQ* is a continuous variable.

Though DID performs well in reaching the “effect of policy treatment” through differences and solving the endogenous problems, it presupposes that the treatment group and the control group have the same development trend. Since there is significant heterogeneity between SOEs and private enterprises, it is not easy to have a uniform time effect. Therefore, before DID, a batch of private enterprises should be selected as the matched group, similar to the treatment group in terms of features from various aspects. The PSM developed by Heckman *et al.* (1976) can adequately solve this problem. As a result, this paper combines PSM and DID models so as to estimate the governance effect of policy more precisely. Specifically, we found the matched group with PSM and then conducted DID on the matched treatment group and control group. In addition, *Size, Lev, Roa, Growth, Lholding, and MB* have been selected as matched covariates. The variables involved in this paper are shown in Table 1.

Table 1
Definition and Metrics of Key Variables

Variables	Definition and Metrics
Tra	The index of the transparency of accounting information comes from the information disclosure rating published on the Shenzhen Stock Exchange
AQ	The index of the transparency of accounting information as shown in model (1)
Time	The dummy variable of time, which takes the value of 1 when the sample time is after 2016 and 0 otherwise
Treat	The dummy variable of the treatment group and the control group, which takes the value of 1 when the sample company is an SOE and 0 otherwise
Size	The size of the company, equal to the natural logarithm of the firm's total assets
Lev	Financial leverage represents the company's debt level, equal to the ratio of the company's total debt to total assets
Roa	Return on total assets, equal to the ratio of net profit to total assets
Growth	Growth, equal to the growth rate of operating income
Lholding	The share proportion of the largest shareholder
MB	Market-to-book ratio, a measure of the growth of a listed company, equal to the ratio of market value to book value of the company
Dual	Dual refers to whether one person holds the position of both the chairman and general manager, which takes the value of 1 when yes and 0 otherwise
Bordsize	The size of the board of directors
Idr	The percentage of independent directors

V. Empirical Analysis

i. Descriptive Statistics

Table 2 presents the results of descriptive statistics of the main variables. The mean value of *Tra* is 3.034, indicating that the information disclosure rating of the sample companies is C on average; the minimum and maximum values of *Tra* are 1 and 4, respectively, indicating that the highest rating is A and the lowest is D, with a standard deviation of 0.628. The ratings of different companies drastically vary, which shows that this paper covers a wide range of companies as its samples. The mean, minimum, and maximum values of *AQ* are 0.063, 0.0008, and 0.395, respectively, indicating that the quality of accounting information varies widely among different companies. The mean value of *Treat*, the dummy variable of SOEs and non-SOEs, is 0.332, which means that SOEs account for 33.2% of the samples. Other control variables are within reasonable range after Winsorize treatment.

Table 2
Descriptive Statistics

Var	N	Mean	St.Dev	Median	min	max
Tra	9454	3.0361	0.6282	3	1	4
AQ	9454	0.0633	0.0655	0.0448	0.0008	0.3953
Time	9454	0.3740	0.4839	0	0	1
Treat	9454	0.3321	0.4710	0	0	1
Size	9454	22.0431	1.1535	21.9185	19.2377	27.0387
Lev	9454	0.4269	0.2068	0.4189	0.0473	0.9774
Roa	9454	0.0416	0.0605	0.0381	-0.2319	0.2308
Growth	9454	0.2134	0.5444	0.1222	-0.6192	4.3095
Lholding	9454	0.3419	0.1472	0.3199	0.0850	0.7510
MB	9454	2.1234	1.4305	1.6480	0.8977	9.9559
Dual	9454	0.2770	0.4476	0	0	1
Bordsize	9454	8.6329	1.6750	9	4	18
Idr	9454	0.3729	0.0534	0.3333	0.3333	0.5714

Correlation Analysis

Table 3 illustrates the results of correlation analysis, Pearson correlation coefficient in the lower triangular and Spearman correlation coefficient in the upper triangular. It is shown that the coefficient of *Time×Treat* is significantly positive at the 1% level with *Tra* and significantly negative at the 1% level with *AQ*, preliminarily suggesting that the corporate governance model with Chinese characteristics can improve the information transparency and the quality of accounting information of Chinese SOEs

ii. Regression Analysis

Table 4 presents the regression results of the corporate governance model with Chinese characteristics and the quality of accounting information disclosure. The first column shows the results of DID modeling. The main focus of this paper is on the coefficient of *Time×Treat*, which is 0.262 and significant at the 1% level, indicating that the corporate governance model with Chinese characteristics improves the transparency of accounting information of SOEs. Since it cannot be guaranteed that the treatment group and the control group have the same development trend required by DID, the paper adopts PSM to match the two groups and verify the matched samples with DID. It is suggested that the coefficient of *Time×Treat* is 0.304 and significant at the 5% level, further confirming that the corporate governance model with Chinese characteristics exerts a certain governance effect on SOEs and improves the

transparency of accounting information. For the results of *AQ* based on DID and PSM, it is shown that the coefficients of *Time×Treat* are no longer significant, indicating that the corporate governance model with Chinese characteristics cannot improve enterprises' quality of accounting information after taking more comprehensive factors into account. The reason might be that though SOEs are actively implementing the pre-procedure requirements, it is still in the tentative stage when the system has not been refined and completed. The actual implementation of some enterprises is a mere formality that cannot play a positive role in the quality of accounting information.

Table 4
The Regression Results of Party Organizations' "Pre-discussion" and the Quality of Accounting Information Disclosure

	(1)	(2)	(3)	(4)
Var	**DID**	**PSM-DID**	**DID**	**PSM-DID**
	Tra	Tra	AQ	AQ
Time	-0.1049	-0.1935	-0.0108***	-0.0118***
	(0.1132)	(-1.3221)	(0.0035)	(-2.6466)
Treat	0.3851***	0.3460***	-0.0021	-0.0032
	(0.0635)	(4.5657)	(0.0019)	(-1.4167)
Time×Treat	0.2617***	0.3045**	0.0005	0.0001
	(0.0984)	(2.5455)	(0.0028)	(0.0214)
Size	0.4595***	0.5006***	-0.0029***	-0.0035***
	(0.0287)	(13.9352)	(0.0008)	(-3.3353)
Lev	-1.7338***	-2.0489***	0.0483***	0.0511***
	(0.1464)	(-10.8597)	(0.0049)	(8.1489)
Roa	12.1579***	12.4968***	0.1009***	0.0920***
	(0.4744)	(20.6102)	(0.0152)	(4.8340)
Growth	-0.2256***	-0.0833	0.0242***	0.0271***
	(0.0432)	(-1.4869)	(0.0026)	(7.6451)
Lholding	0.9182***	0.6177***	0.0158***	0.0200***
	(0.1580)	(3.1171)	(0.0048)	(3.2670)
MB	-0.0704***	-0.0575**	0.0029***	0.0030***
	(0.0204)	(-2.0306)	(0.0006)	(3.3266)
Dual	0.0815	0.0422	0.0003	-0.0012
	(0.0523)	(0.6046)	(0.0015)	(-0.5984)
Bordsize	0.0404**	0.0392*	-0.0014***	-0.0015***

Notes: ***, **, * represent significance tests passing 1%, 5%, and 10%, respectively, and the values in brackets below the coefficients are robust standard errors.

	(1)	(2)	(3)	(4)
	(0.0163)	(1.9184)	(0.0004)	(-2.7963)
ldr	0.0704	0.1153	-0.0133	0.0019
	(0.5052)	(0.1866)	(0.0133)	(0.1141)
_cons	0.2893	0.2813	0.1065***	0.1147***
	(0.0324)	(0.0287)	(0.0185)	(5.1065)
Ind	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	9454	5866	9454	5866
adj. R2	0.2150	0.2310	0.1090	0.1150
Notes: ***, **, * represent significance tests passing 1%, 5%, and 10%, respectively, and the values in brackets below the coefficients are robust standard errors.				

iv. Robustness Test

1. Fixed-effects Regression

As mentioned above, information transparency is the embodiment of corporate governance, while corporate governance is subject to multiple factors. Since the modeling of this paper cannot cover every factor, fixed-effects regression is adopted to conduct robustness tests in order to avoid errors caused by omitted variables.

2. Probit Regression

Considering that the quality of information disclosure, the dependent variable of this paper, is a categorical variable, both the Logit model and Probit model can be used for regression. Logit has been selected in the preceding part of the paper, and Probit is selected here for robustness tests.

3. Placebo Test

The placebo test is a commonly used robustness test to examine the effect of policy treatment and can be realized by adjusting the time of occurrence of the policy. Therefore, this paper adjusts the range of samples to 2010–2015, before the implementation of policy, and assumes the policy took place in 2012. If the estimated result of the interaction coefficient in the placebo test is significant, potential factors exist that improve the quality of information disclosure in addition to the improvement brought by the implementation of the corporate governance model with Chinese characteristics, which in turn verify the regression results presented above.

Table 5 presents the robustness test results mentioned above. Column (1) and Column (2) show the results of fixed-effects regression and Probit regression, respectively. The coefficients of the key variable *Time×Treat* are significantly positive at the 1% level, indicating that the research results of this paper are robust, i.e., the corporate governance model with Chinese characteristics improves the transparency of accounting information of SOEs. Column (3) shows the results of the placebo tests, which illustrates that *Time×Treat*is no longer significant when the policy is implemented at another time, proving that the aforementioned research results are not caused by other policies or random factors.

Table 5
The Results of Robustness Tests

Var	(1)	(2)	(3)
	Fixed-effects Regression	**Probit Regression**	**Changed Time of Policy Implementation**
	Tra	Tra	Tra
Time	-0.119	-0.0599	0.386**
	(0.134)	(0.0615)	(0.174)
Treat	0.484***	0.212***	0.177
	(0.118)	(0.0354)	(0.147)
Time×Treat	0.429***	0.154***	0.255
	(0.114)	(0.0546)	(0.166)
Size	0.438***	0.247***	0.476***
	(0.0497)	(0.0162)	(0.0471)
Lev	-1.777***	-0.952***	-1.667***
	(0.227)	(0.0809)	(0.242)
Roa	11.89***	6.703***	12.93***
	(0.583)	(0.267)	(0.876)
Growth	-0.127**	-0.120***	-0.202***
	(0.0496)	(0.0237)	(0.0691)
Lholding	1.499***	0.508***	0.466*
	(0.291)	(0.0885)	(0.243)
MB	-0.108***	-0.0435***	-0.0173
	(0.0269)	(0.0112)	(0.0344)
Dual	0.00935	0.0474*	0.00426
	(0.0780)	(0.0287)	(0.0895)
Bordsize	0.0245	0.0243***	0.00699

Notes: ***, **, * represent significance tests passing 1%, 5%, and 10%, respectively, and the values in brackets below the coefficients are robust standard errors.

Var	(1)	(2)	(3)
	Fixed-effects Regression	**Probit Regression**	**Changed Time of Policy Implementation**
	(0.0277)	(0.00901)	(0.0242)
ldr	0.188	0.0122	-0.429
	(0.762)	(0.278)	(0.858)
_cons	2.0321***	3.609***	1.3352***
	(0.0237)	(0.3145)	(0.0368)
Ind	Yes	Yes	Yes
Year	Yes	Yes	Yes
N	5866	5866	3746
adj. R^2	0.0890	0.1220	0.2230
Notes: ***, **, * represent significance tests passing 1%, 5%, and 10%, respectively, and the values in brackets below the coefficients are robust standard errors.			

Vi. Further Analysis

The aforementioned regression analysis has only found that the corporate governance model with Chinese characteristics improves the transparency of accounting information of enterprises and has not identified its impact on the quality of accounting information. Therefore, this chapter focuses on the transparency of accounting information and conducts an in-depth discussion.

i. Heterogeneity Test of the Hierarchy in SOEs

Central government-owned enterprises and local SOEs may see different policy implementation due to their positions in the hierarchy. Specifically, central government-owned enterprises are larger in size and have more employees and a well-established organizational structure, in which the Party organization, board of directors, and management overlap each other, but not profoundly. In contrast, the leaders of provincial and municipal SOEs overlap each other to a larger extent, in which the Party committee and the administrative leadership can even be the same group of people, leaving the practice of ‘putting the study and discussion of the Party organization prior to the board of directors and management making decisions on important matters’ the fact that an identical group of people holds two meetings to decide on the same proposal twice. Some enterprises, in practice, even form two minutes of one meeting to respond to the requirement of two meetings. Therefore, compared with local SOEs, the implementation of the corporate governance model with Chinese characteristics is complete and smooth in central government-owned enterprises, with the policy easily implemented (Zheng Qi, 2018). This plays a

prominent role in promoting corporate governance and is conducive to improving the transparency of accounting information of central government-owned enterprises.

ii. Heterogeneity Test of Internal Control

An enterprise is an aggregation of contracts according to Coase's theory. However, due to the deficiency of contracts, enterprises tend to have asymmetric allocations of residual control rights, which is likely to trigger a series of principal-agent problems. The internal control, as an institutional arrangement that enterprises should improve, covers various aspects of business activities and strictly controls each aspect to compensate for the drawbacks caused by the deficiency of contracts (Sun Guangguo and Yang Jinfeng, 2013)

As previous studies have suggested that internal control can improve the transparency of information (e.g., Sun Guangguo and Yang Jinfeng, 2013), this paper supports that the level of internal control affects the role of the corporate governance model with Chinese characteristics on the transparency of accounting information. Specifically, enterprises with poorer internal control usually have worse internal supervision. The effect of internal control on corporate governance is not enough to remedy the drawbacks caused by principal-agent problems. Also, the implementation of the corporate governance model with Chinese characteristics can serve as a complementary supervisory mechanism to enhance the transparency of accounting information. Moreover, due to strict internal supervision, the new governance model cannot play a strong complementary role in enterprises with well-functioning internal control. In a word, the contribution of the corporate governance model with Chinese characteristics to the transparency of accounting information is more significant in the samples with poorer internal control.

Table 6 presents the results of the heterogeneity tests for SOE hierarchy and level of internal control. To test the impact of the SOE hierarchy, samples are divided, according to the ultimate controller, into central government-owned enterprises and local SOEs. It is prone to multicollinearity when tested by DID based on the original samples, so only the SOE samples are retained in this section, in which central government-owned enterprises and local SOEs are distinguished. 2016, the year when the policy was implemented, is used to set dummy variables for regression (*Time* takes the value of 1 after 2016 and 0 otherwise). As shown in Column (1) and Column (2) of Table 6, the coefficient of *Time* is significantly positive only in the samples of central government-owned enterprises. The coefficient of *Time* is no longer significant in the samples of local SOEs, indicating that after 2016, the implementation of the corporate governance model with Chinese characteristics see higher efficiency in central government-owned enterprises, while the policy implementation has a weaker effect on local SOEs because the Party committee and administrative leadership highly overlap each other. To examine the impact of internal control, this paper adopts DIB Internal Control Index to measure the internal control of enterprises. When the index is higher than the median of all samples, it is identified as the group with a high level of internal control. Otherwise, it is the group with a low level of internal control, and group regression is performed based on the original samples. As shown in Column (3) and Column (4) in Table 6, the coefficient of *Time×Treat* is 0.375 in the samples showing that a low level of internal control is still significant. On

the contrary, it is no longer significant in the samples with a high level of internal control, indicating that the corporate governance model with Chinese characteristics can make up for the deficiency of poor internal control and improve the transparency of enterprises' accounting information.

Table 6 Heterogeneity Tests of SOE Hierarchy and Level of Internal Control

	(1)	(2)	(3)	(4)
Var	Central government-owned enterprises	Local SOEs	High Level of Internal Control	Low Level of Internal Control
	Tra	*Tra*	*Tra*	*Tra*
Time	0.5950**	0.1530	0.0543	-0.0533
	(0.2873)	(0.2077)	(0.1581)	(0.1760)
Treat			0.4246***	0.3312***
			(0.0844)	(0.0976)
Time×Treat			0.1193	0.3753***
			(0.1458)	(0.1402)
Size	0.6308***	0.5173***	0.5085***	0.3382***
	(0.0775)	(0.0602)	(0.0392)	(0.0443)
Lev	-2.2866***	-2.0005***	-1.8288***	-1.6998***
	(0.5245)	(0.3166)	(0.2162)	(0.2018)
Roa	11.3761***	11.4182***	12.4310***	10.3367***
	(1.3945)	(1.2063)	(0.6820)	(0.6746)
Growth	-0.2349**	-0.0787	-0.1629***	-0.3474***
	(0.1108)	(0.0978)	(0.0566)	(0.0665)
Lholding	1.6182***	0.3882	0.7262***	1.0969***
	(0.5838)	(0.3328)	(0.2119)	(0.2418)
MB	0.1025	0.0437	-0.0177	-0.1424***
	(0.0626)	(0.0622)	(0.0318)	(0.0274)
Dual	0.2477	0.0785	0.2202***	-0.0886
	(0.3435)	(0.1342)	(0.0745)	(0.0744)
Bordsize	0.0521	0.0311	0.0351	0.0438*
	(0.0433)	(0.0287)	(0.0227)	(0.0243)
Idr	-1.2357	0.1815	0.1818	-0.3121
	(1.3884)	(1.0849)	(0.6899)	(0.7560)

_cons	-0.5452	0.3081	0.1712	1.000***
	(-0.0267)	(0.2453)	(0.2831)	(0.3243)
Ind	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	1041	2099	4858	4596
adj. R^2	0.2410	0.1750	0.2290	0.1790

Notes: ***, **, * represent significance tests passing 1%, 5%, and 10%, respectively, and the values in brackets below the coefficients are robust standard errors.

Vii. Conclusions And Implications

Theoretical implications: The transition from 3+1 to 4+1 of the corporate governance models with Chinese characteristics are a significant reform of the governance structure of SOEs, which has changed the decision-making rules and procedures of traditional corporate governance structure and established the new relationship of decision-making among governance subjects such as the Party organization, shareholders' meeting, board of directors, and management in SOEs. The study finds that the corporate governance model with Chinese characteristics improves the transparency of accounting information of Chinese SOEs but does not find that Party organizations' promotion to the quality of accounting information. Given that the SOE hierarchy and the level of internal control may affect the policy implementation, this paper subdivided the samples and finds that in central government-owned enterprises and those with a low level of internal control, the contribution of the corporate governance model with Chinese characteristics to the enhancement of information transparency is evident. Though the DID (Differences in Differences) model is effective at achieving the 'impact of policy treatment' by exploiting differences and resolving endogenous problems, it assumes that the treatment and control groups are on the same developmental path. As a result, this paper integrates PSM and DID models in order to more precisely assess the governance effect of the policy. We used PSM to find the matched group and performed DID on the matched treatment and control groups.

The scope for future direction: Though this paper has not found that the corporate governance model with Chinese characteristics improves the quality of accounting information, it is firmly believed that the policy will be steadily promoted and play a stronger role in the development of SOEs as the relevant supportive documents have been successively released and Chinese SOEs have taken actions accordingly. Contrarily, future research can be conducted with financial firms as a unit of analysis. Future studies might look at the direct influence of sustainability disclosure on sustainable growth, as well as the moderating effect of sustainability disclosure on the relationship between policy-related uncertainty and sustainable growth. This study can be expanded to include other emerging/developed markets as well as larger data sets.

Declarations

Competing interests: The authors declare no competing interests.

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Tables

Table 3 is available in the Supplementary Files section.

Supplementary Files

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- Table3.png