sustainability

MDPI

Article

Research on the Role of Minority Shareholders in State-Owned Enterprises Based on Big Data

Chuanzi Guo [1,2], Minghua Gao [1,2,*] and Junyi Li [1]

1 Business School, Beijing Normal University, Beijing 100875, China
2 Research Center for Corporate Governance and Enterprise Development, Beijing Normal University, Beijing 100875, China
* Correspondence: mhgao@bnu.edu.cn

Abstract: The era of big data has changed the traditional data science based on mathematical statistics, and promoted the innovation of data analysis methods. This paper takes China state-holding holding enterprises as the research object, uses game theory as the method, uses top management team (TMT) knowledge hiding degree as the background to construct a minority shareholder governance information database, and discusses the feasibility of using minority shareholders' active governance to break through and increase earnings management costs. The findings indicate, firstly, by optimizing enterprise information disclosure and reducing TMT knowledge hiding, the cost of minority shareholders' participation in governance can be reduced and the enthusiasm of minority shareholders' participation in governance can be promoted. Secondly, the presence of minority shareholders actively engaged in corporate governance can discourage two kinds of earnings management practices of managers in China state-holding enterprises. Finally, for the companies with weak state-holding and unannounced dividend policy, the active governance of minority shareholders has a more prominent restraining effect on the two types of earnings management. With an eye on strengthening the corporate micro-governance mechanism, this paper provides guidance for minority shareholders to strengthen their participation in the governance of China's state-holding enterprises.

Keywords: active governance of minority shareholders; earnings management; state-holding enterprises; big data

check for updates

Citation: Guo, C.; Gao, M.; Li, J. Research on the Role of Minority Shareholders in State-Owned Enterprises Based on Big Data. *Sustainability* **2023**, *15*, 2355. https://doi.org/10.3390/su15032355

Academic Editors: Amandeep Kaur and Kamal Gulati

Received: 23 November 2022
Revised: 11 January 2023
Accepted: 20 January 2023
Published: 28 January 2023

1. Introduction

The reform of mixed ownership has been evolving for more than three decades and has yielded positive benefits, but it is also plagued by several issues. The financial dilemma of state-holding enterprises is one of the most discussed issues in academic and commercial circles. As a result of the enormous size of state-holding companies and the internal operation of numerous factors, the financial supervision mechanism is imperfect, and the top management team (TMT) is prone to knowledge-hiding behaviors (such as false reports or concealed reports) when confronted with knowledge requests from external investors, resulting in the inefficiency of state-holding companies and the virtual high agency cost [1]. However, existing studies focus more on positive knowledge activities such as knowledge sharing and knowledge creation, while there are few studies on negative knowledge activities such as knowledge hiding, especially on knowledge-hiding behavior of TMT [2].

As China's capital market is not yet sound and its legal system is not yet perfect, TMT knowledge hiding inevitably lead to enterprise internal and external information asymmetry; the lack of outside investors for the enterprise internal information will lead to the failure of the "Cumulative voting system", and "Separate counting system", and other shareholders' voting system, which would then aggravate TMT bad financial management behavior. Therefore, knowledge-hiding behavior of TMT will not only have an adverse impact on organizational performance [3], but also seriously infringe on the rights and interests of external investors. With the deepening of the reform of state-holding enterprises and the awakening of minority shareholders' awareness of governance and rights protection, the shareholder activism of minority shareholders is encouraged, and the corporate environment for minority shareholders to participate in governance is improved. As a result, promoting minority shareholders to actively participate in corporate governance may become a powerful means to control TMT knowledge hiding and TMT bad financial behavior (such as earnings management).

The largest shareholder and its related shareholders in state-holding listed companies are regarded as major shareholders in this paper, the rest as minority shareholders. Major shareholders and managers are defined as TMT. This paper establishes a two-party game model between TMT and minority shareholders, analyzes the game process and expected returns of the two parties, and investigates the methods of restraining earnings management. Simultaneously, this paper investigates the influence of TMT knowledge hidden in the governance quality of minority shareholders from two aspects. First, from the perspective of TMT's direct knowledge hiding, the impact of TMT's external information disclosure on the governance of minority shareholders is investigated. Second, the index system of active governance of minority shareholders is constructed based on the degree of indirect knowledge hiding in TMT (namely, from the perspective of institutional environmental assessment), and it employs data to verify the impact of active governance of minority shareholders on the bad financial management behavior of managers in state-holding enterprises, in order to promote active governance of minority shareholders and to regulate the behavior of managers of state-holding enterprises.

The following are the primary contributions of this work in comparison to previous studies: In the first place, this paper improves the research of TMT knowledge hiding behavior, and combines shareholder activism to study the adverse effects of TMT knowledge hiding, which complements the existing research. Second, from the perspective of TMT indirect knowledge hiding, multiple dimensions of minority shareholder governance are proposed, which provide a reference for the construction of a minority shareholder governance index system. Current studies typically use the attendance rate or the voting situation at the shareholders' meeting as a proxy variable to gauge the extent to which minority shareholders are involved in governance [4]. In addition to ignoring the phenomenon that voting at shareholders' meeting is a mere formality and minority shareholders vote passively, this kind of substitution also disregards the differences in the governance environment and mechanism of the minority shareholders, as well as the influence of the different mechanism on the enthusiasm and effect of the minority shareholders' governance. To more effectively accomplish research goals, this study assesses the governance environment of minority shareholders from four perspectives: the right to know, decision-making and supervisory rights, the right to profit, and the environment for defending rights. Third, with the support of the above constructs, this paper independently developed the database, which has a certain uniqueness and innovation in the data and can better reflect the reality.

2. Literature Review

2.1. Influencing Factors and Motivation of Earnings Management of Managers

Numerous studies have shown that listed companies manipulate earnings by various means [5,6]. The existing literature primarily examines the influence of earnings management aspects from two perspectives: internal governance and external oversight. Good internal controls can significantly limit accrual earnings management, which is counterproductive from a corporate governance perspective because one of the goals of internal control is to make sure the company abides by relevant standards and gives shareholders reliable and high-quality accounting information [7]. In addition, when internal controls are strengthened, for example, institutional ownership has increased [8], board oversight has increased [5,9], audit quality is high [10], and there are associated non-executive directors [11], which can reduce the company's bad financial behavior to a certain extent.

From the perspective of external supervision, the supervision hypothesis posits that analysts can improve the overall information transparency of the company, reduce the cost of information acquisition for external users, and make external investors more actively supervise the internal management of the company. As a result, managers will face more oversight, which can reduce the extent of earnings management. The study found that external auditors and regulators [12], analysts' concerns [13], and stock exchange inquiries [14,15] can curb corporate earnings management practices, and improve the quality of enterprise financial reports. From the perspective of macro policy and environment, financial development [16] and anti-corruption policies [17] also can reduce the intensity of EM.

Due to the low degree of reputation punishment and legal sanction for accounting scandals in China, the manager's credit system and punishment mechanism are imperfect. Although the penalty is less after the manager's earnings management behavior is discovered, it can gain a great deal of private benefits from earnings management, which contributes to the prevalence of earnings management in domestically listed companies. Then, China's capital market information disclosure system is imperfect, and managers typically have more internal information than shareholders or creditors, hence decreasing the likelihood that their earnings management activity will be discovered. These situations do not only happen in China, which is a common problem in emerging markets. They are caused by imperfect capital markets and low levels of legal sanctions.

Additionally, compared to private enterprises, managers in state-holding enterprises are transferred more frequently, resulting in more obvious short-term behavior of managers in the operating process; they make decisions that consider the effects of their tenure, which can result in earnings management and false financial reporting. From a risk perspective, the success of state-holding enterprises has little effect on managers' motivation, whereas the failure of management not only reduces managers' profits but also affects their promotion; consequently, managers of state-holding enterprises may be inclined to be conservative and reduce their own risks as much as possible in order to manage earnings. Due to the multi-polar goals and "Lack of Owners" of state-holding enterprises, they have super-strong control in politics and super-weak control in the economy, and the executives of state-holding enterprises often have administrative rank. "Achievement tournament" causes managers of state-holding enterprises to have a strong desire to pursue promotion. In the situation of unequal risk and income, the management's earnings management motivation is strong, and they will endeavor to maximize their own interests. Although this seems to be due to China 's unique system, the same situation applies to all state-controlled companies or companies with a high degree of political connection.

2.2. Minority Shareholder Governance Based on TMT Knowledge Hiding

With regard to whether to increase the engagement of minority shareholders in corporate governance, particularly in decision making and oversight, and whether to promote minority shareholders, existing research has not reached an agreement on the impact of minority shareholders' engagement in decision making and oversight, which has made activist shareholders a popular issue in academic and business circles. Some scholars believe that minority shareholders can play an active role when they have a voice [18], that the direct participation of minority shareholders in decision making can reduce agency problems [19], and reject schemes that damage enterprise value [20], leading to a steady growth in performance [21]. However, some scholars believe that the participation of minority shareholders in decision making may be biased due to information asymmetry [22], and simply changing the size of shareholder power without changing other governance mechanisms cannot lead to changes in corporate governance [23]. It may also encourage managers to participate in "Pandering behavior" and engage in earnings management to a greater extent [4].

The reason for the disputed finding may be that the knowledge of minority shareholder governance is skewed or that the measurement dimension is too one-sided and unidimensional. Participation of minority shareholders in corporate governance is multidimensional and intimately tied to the corporate governance environment. Only after the microgovernance environment and governance mechanism are improved can TMT knowledge hiding be reduced to the greatest extent, and then minority shareholders will be able to take part in corporate governance. As a result, minority shareholder governance involves more than just a "Vote", but rather a complex interplay of factors. We believe that minority shareholder governance should focus on four dimensions: the right to know, decision-making and supervisory rights, the right to profit, and the environment for defending rights. The right to know is the prerequisite and basis for the active participation of minority shareholders in corporate governance, just as information asymmetry is the prerequisite for TMT knowledge hiding. There is a need for multiple channels of communication to convey to minority shareholders the essential information regarding the company's business decisions, such as the operation report, major regulatory and audit issues, financial risk factors, the experience of the independent director, etc. Decision-making and supervisory rights of minority shareholders are both a direct way for them to participate in governance and a direct constraint means of TMT knowledge hiding. We also need to examine the frequency of interim shareholders' meetings and proposal submission, as well as the performance of independent directors and special committees. The right to profit, and the environment for defending rights of minority shareholders are the guarantee of their participation in governance, as well as the indirect restriction means of TMT knowledge hiding. Therefore, it is necessary to investigate the return on investment of minority shareholders and the construction of a system protecting their rights and interests, while avoiding the influence of minority shareholders' governance initiative factors. The aforementioned four aspects might reflect the rights of minority shareholders and the institutional environment that protects those rights, allowing minority owners to actively participate in governance.

3. Theoretical Analysis and Research Hypothesis

The projected performance utility for managers consist of bonus income, residual distribution, and opportunity income, which is typically proportional to the enterprise's profit level, denoted as $W(P)$. Due to the fact that profit level P is the private information of company manager [24,25], managers have an incentive to adopt a false corporate earnings level to present to shareholders in order to maximize private interest. The company's profit level after the manager's earnings management should be noted as $\overline{P} = P + K$, where the K was generated by the manager's earnings management. In this instance, the manager's performance utilities are accounted for $W(\overline{P})$, including the manager's personal performance and the private opportunity benefits through earnings management.

It has been determined that a manager's earnings management behavior will not only have a negative impact on the manager's career and the enterprise's reputation, but will also result in administrative and even criminal punishment. This is the negative utility of a manager's earnings management, denoting as $C(K)$. The real negative value of managers' earnings management is contingent on the likelihood of being detected, i.e., the level of government oversight, internal governance, and shareholder oversight. The cost coefficient α_1 is generated by setting up an external supervisory body, and the cost coefficient α_2 generated by the internal governing body (Party Committee, Board of Directors, etc.). This article focuses solely on shareholder governance. Governance of shareholders should involve governance of major shareholders and governance of minority shareholders. In the ideal condition of manager market transparency and perfection, the manager reputation mechanism and the method of selecting and hiring should be able to play an effective role, regardless of the size of the shareholder. Due to the fact that the majority of China managers are appointed or sent by major shareholders, we view managers and major shareholders as consistent actors with the same interests, and the governance of minority shareholders as a separate governance mechanism for analysis; thus, this paper only discusses the governance of minority shareholders. There are two types of governance for minority shareholders: active and passive governance. If the passive governance strategy is adopted, such as minority shareholders only vote in the shareholders' meeting, there is no transaction cost, the probability of passive governance finding the behavior of manager's earnings management is α_L. If we adopt the strategy of active governance, we must pay the exercise cost C_1 of participating in governance (including the information cost, the time cost of information collection, etc.), the probability that active governance discovers managers' earnings management behavior is α_H, where $\alpha_H > \alpha_L$ is, the cost coefficient of earnings management generated by minority shareholder governance.

In this game, minority shareholders will receive compensation income $\varphi U(K)$ if they identify the earnings management conduct of the manager. The coefficient φ is the proportion of shares $0 < \varphi < 1$ held by minority shareholders, which $U(K)$ is the utility function of the earnings management degree K. It can be interpreted as the premium income of minority shareholders, the payment of the amount involved, the prevention of the risk of a future stock price collapse, and the anticipated increase in the value of the company's earnings. In addition, minority shareholders can acquire the usual dividend income $R(\overline{P}) = c\varphi\overline{P}$ from the company's earnings, the coefficient c being the dividend ratio $0 < c < 1$ of various companies. Table 1 provides a summary of the two-way game model between managers and minority shareholders based on the calculation of expected returns.

Table 1. Two-party game model between managers and minority shareholders.

Manager / Minority Shareholders	Earnings Management (p_1)	No Earnings Management ($1-p_1$)
Active Governance (p_2)	$\alpha_H\varphi U(K) + c\varphi\overline{P} - C_1$, $W(\overline{P}) - W(P) - (\alpha_1 + \alpha_2 + \alpha_H)C(K)$	$c\varphi P - C_1, 0$
Passive Governance ($1 - p_2$)	$\alpha_L\varphi U(K) + c\varphi\overline{P}$, $W(\overline{P}) - W(P) - (\alpha_1 + \alpha_2 + \alpha_L)C(K)$	$c\varphi P, 0$

Let the probability of manager's earnings management be p_1 and the expected utility be π_1 in the game, and let the probability of middle and small shareholders' active governance be p_2 and the expected utility be π_2 in the game; the expected utility function of managers and minority shareholders can be obtained, respectively:

$$\begin{aligned}\pi_1 = \quad & p_1 \times \{(1-p_2)\left[W(\overline{P}) - W(P) - (\alpha_1+\alpha_2+\alpha_L)C(K)\right] \\ & +p_2 \times \left[W(\overline{P}) - W(P) - (\alpha_1+\alpha_2+\alpha_H)C(K)\right]\} \\ & +(1-p_1)\times 0\end{aligned} \tag{1}$$

$$\begin{aligned}\pi_2 = p_2 \times \left[(1-p_1)\left(c\varphi\overline{P} - C_1\right) + p_1 \times \left(\alpha_H\varphi U(K) + c\varphi\overline{P} - C_1\right)\right] \\ + (1-p_2) \times [(1-p_1)\times c\varphi P + p_1 \times (\alpha_L\varphi U(K) + c\varphi P)]\end{aligned} \tag{2}$$

In order to simplify the formula, let the probability of discovering manager's earnings management $\alpha_L = 0$ under the passive governance and $\alpha_H = 1$ under the active governance. The partial derivatives of p_1 and p_2 are obtained from Equations (3) and (4), respectively:

$$\frac{\partial\pi_1}{\partial p_1} = 0 \Longrightarrow p_2* = \frac{W(\overline{P}) - W(P) - (\alpha_1+\alpha_2)C(K)}{C(K)} \tag{3}$$

$$\frac{\partial\pi_2}{\partial p_2} = 0 \Longrightarrow p_1* = \frac{C_1}{\varphi U(K)} \tag{4}$$

(p_1*, p_2*) is the game's Nash equilibrium. There is $\pi_1(\text{earnings management}, p_2*) = \pi_1(\text{non} - \text{earnings management}, p_2*)$ when the probability of active governance of minority shareholders is $p_2 = p_2*$, $\pi_1(\text{earnings management}, p_2) > \pi_1(\text{non} - \text{earnings management}, p_2)$ when the probability of active governance of minority shareholders is $p_2 < p_2*$, and only $\pi_1(\text{earnings management}, p_2) < \pi_1(\text{non} - \text{earnings management}, p_2)$ when the probability of active governance of minority shareholders is $p_2 > p_2*$.

This leads to three conclusions: first, the two major influencing factors of minority shareholders' participation in governance are consisted of the two major factors, namely, compensatory benefits and exercise costs. From the perspective of lowering the barrier to minority shareholders' participation in decision making, corporate governance should play a role in the mechanism and reduce TMT knowledge hiding. Transparency in information disclosure, the availability of channels of communication between the minority shareholders and the company, and the participation of the board of directors, especially the independent directors, will significantly impact the degree of TMT knowledge hiding, thereby reducing the cost and time of collecting information to a certain extent, improving the degree of minority shareholders' governance. As a result, Hypothesis 1 is proposed in this paper:

Hypothesis 1 (H1): *By reducing TMT knowledge hiding, the cost of minority shareholders' participation in governance can be reduced and their enthusiasm can be enhanced.*

Second, there is a negative correlation between the probability of active governance of minority shareholders and the expected utility of managers; that is, the higher the probability of active governance p_2 of minority shareholders, the lower the expected utility of earnings management of managers. When the probability of active governance of minority shareholders is high enough (greater than p_2*), managers will choose non-earnings management. Minority shareholders have access to accounting information such as accounting policies and methods of different companies through investing in and participating in governance, which is beneficial for screening potential accrual earnings management means in time and exercising its supervisory function more effectively. The active participation of shareholders in corporate governance will considerably enhance the difficulty of managers manipulating real business. By participating in the decision making, questioning, and voting of the shareholders' meeting, exerting pressure on the shareholders' meeting and the board of directors, and increasing the transparency of the company's decision making, minority shareholders can find managers' behavior deviating from the company's interests more quickly and reduce the degree of manager's earnings. As a result, Hypothesis 2 is proposed in this paper:

Hypothesis 2 (H2): *Minority shareholder governance can act as a supervisory role for managers and minimize the degree to which managers control their earnings (including accrual earnings management and real earnings management).*

Finally, in the Nash equilibrium, if p_2 is easier to satisfy $p_2 > p_2*$, it needs to have a small enough p_2*; therefore, increasing the negative utility $C(K)$ of managers and reducing the expected utility $W(\overline{P}) - W(P) - \alpha_1 C(K)$ of managers without external supervision can make the minority shareholders actively participate in governance, so as to restrain the management of managers' earnings. However, it is more difficult for government agencies to supervise the managers of state-holding enterprises because of their administrative rank [26]; at the same time, the role of market supervision is greatly reduced due to the imperfect incentive and restraint mechanism of managers in state-holding enterprises. The higher the degree of state-holding enterprises, the more ineffective the government supervision and market supervision, and the lower the external supervision coefficient of managers, which will weaken the active role of minority shareholders in the supervision of state-owned enterprises. This paper therefore proposes Hypothesis 3:

Hypothesis 3 (H3): *The inhibitory effect of minority shareholder governance on earnings management behavior of managers of state-owned holding enterprises will weaken when the state-holding level is high.*

Moreover, the dividend rights is a fundamental shareholder interest; if minority owners can ensure their dividend rights, then minority shareholders would participate actively in governance. Alternatively, if the payout is sufficiently high, minority owners will loosen governance. Minority shareholders rely heavily on dividends as a proxy for the company's development, and the signal theory posits that managers use dividends as a communication tool to convey the company's prospects to the outside world. Therefore, the company announced its dividend plan for the previous year as a method of communicating to the outside world the good news that the company's operational performance is solid and relatively risk-free. Despite the fact that minority shareholders are unable to get the true dividend income, they may become more careless in their oversight of these firms in the future due to the encouraging signal. Minority shareholders will increase their oversight of corporate governance and the earnings management behavior of managers if the firm did not pay dividends in the prior year, indicating the company may have potential hazards. Consequently, we assume that the dividend policy of the firm will have an influence on the oversight effect of minority shareholder control on earnings management of state-holding companies. This research presents consequently Hypothesis 4:

Hypothesis 4 (H4): *The corporate dividend plan can lessen the degree of earnings management of state-holding enterprises and partially replace the function of governance of minority shareholders.*

4. Research Design

4.1. Sample Selection and Data Sources

State-holding enterprises trading on the China Shanghai and Shenzhen Stock Exchanges between 2014 and 2019 were used to compile the research samples, which were then filtered in the following ways: ① In order to avoid the influence of abnormal situation of listed companies, ST companies are excluded from the sample. ② Companies listed in the financial sector were left out of the sample to reduce the potential bias caused by industry characteristics. ③ State-holding listed companies with missing data were excluded.

Earnings management variables and control variables are derived from the Csmar and Wind databases, respectively. Minority shareholder governance data are provided by the "the Classified Corporate Governance Index Database of Chinese Listed Companies" of the Resaerch Center for Corporate Governance and Enterprise Development of Beijing Normal University. All continuous variables are Winsorized by 1% to verify the data's veracity and eliminate the influence of outliers on the final outcome.

4.2. Variables and Models

4.2.1. Manager Earnings Management (EM)

(1) Accrual Earnings Management (*ABSDA*). Dechow et al. (1995) modified Jones model first estimated the annual accrual earnings by industry according to Formula (6), then obtained the estimated coefficients a_1, a_2 and a_3, then, in Formula (5), obtained the normal accrual earnings (*NDA*), and finally, in Formula (7), obtained the enterprise earnings management degree (*ABSDA*) [27]. The following are the specific types:

$$NDA_t = a_1 \times (1/A_{t-1}) + a_2 \times (\Delta REV_t - \Delta REC_t)/A_{t-1} + a_3(PPE/A_{t-1}) \tag{5}$$

$$TA_t/A_{t-1} = a_1 \times (1/A_{t-1}) + a_2 \times (\Delta REV_t - \Delta REC_t)/A_{t-1} + a_3(PPE_t/A_{t-1}) + \varepsilon_{j,t} \tag{6}$$

$$ABSDA_t = |TA_t/A_{t-1} - NDA_t| \tag{7}$$

TA_t is the difference between the net profit and the net cash flow of operating activities of the enterprise in the current period, A_{t-1} is the total assets of the enterprise in the previous period, ΔREV_t is the difference between the main business income of the enterprise in the current period and that of the enterprise in the previous period, ΔREC_t is the difference between the accounts receivable of the enterprise in the current period and that of the enterprise in the previous period, and PPE_t is the total fixed assets of the enterprise at the end of the current period.

(2) Real earnings management (*ABSREM*). The paper first estimates the net cash flow, the normal production cost, and the normal discretionary cost of an enterprise

using the Formulas (8)–(10) from Roychowdhury (2006) [28]. The residuals are sales earnings management (*CFO*), productive earnings management (*PROD*), and discretionary expense earnings management (*DISE*). The variables include the current date enterprise's principal business revenue, the previous period enterprise's principal business revenue, the difference between the previous period, and the previous period enterprise's accounts receivable, and the remaining variables are defined as outlined above. Lastly, the actual earnings management (*ABSREM*) is calculated using the method (11). The specific instance is as follows:

The following are the specific types:

$$CFO_t = b_0 + b_1 * (1/A_{t-1}) + b_2 \times (REV_t/A_{t-1}) + b_3(\Delta REV_t/A_{t-1}) + \varepsilon_{j,t} \tag{8}$$

$$\begin{gathered} PROD_t = b_0 + b_1 \times (1/A_{t-1}) + b_2 \times (REV_t/A_{t-1}) + b_3(\Delta REV_t/A_{t-1}) \\ +b_4(\Delta REV_{t-1}/A_{t-1}) + \varepsilon_{j,t} \end{gathered} \tag{9}$$

$$DISE_t = b_0 + b_1 \times (1/A_{t-1}) + b_2 \times (REV_{t-1}/A_{t-1}) + \varepsilon_{j,t} \tag{10}$$

$$ABSREM_t = |PROD_t - CFO_t - DISE_t| \tag{11}$$

4.2.2. Minority Shareholder Governance ($CCMII^{BNU}$)

From a comprehensive evaluation of listed companies in the four aspects of minority shareholders governance (the right to know, decision-making and supervisory rights, the right to profit, and the environment for defending rights), each dimension is taken into account in the "Minority Shareholders Protection Index Database" of the "the Classified Corporate Governance Index Database of Chinese Listed Companies", which was developed by the author of this paper and collected manually every year [29]. The majority of minority shareholders' income comes from dividends, and most of the information comes from the company's public documents, so this kind of index is more valuable to minority shareholders than it is to large shareholders, even though some of these indicators also apply to large shareholders. Indicators, detailed in Table 2, include:

Table 2. Specific Indicators of Minority Shareholders Governance.

Grade I Indexes	Grade II Indexes	Grade II Indexes	Grade II Indexes
Right to Know *(MIK)*	1. Whether disclosure of periodic corporation reports on schedule	Right of Profit (MIR)	22. Whether the return of individual stocks is greater than or equal to the market return
	2. Whether the forecast disclosure time of the annual report is consistent with the actual disclosure time		23. Cash dividends
	3. Whether the forecast performance is consistent with the actual performance		24. Stock dividends
	4. Whether the company has been publicly criticized, reprimanded, or administratively punished by the Securities and Futures Commission, the Stock Exchange, and other departments for violation of regulations		25. Financial performance
	5. There is an unqualified opinion as to whether the external audit has issued standards		26. Growth rate
	6. Whether the listed company has launched WeChat/Weibo/website/investor consultation phone or online interactive platform		27. Whether ST
	7. Analyst attention		28. Whether there is a minority shareholders of the right to benefit from the institutional arrangements (dividends)

Table 2. *Cont.*

Grade I Indexes	Grade II Indexes	Grade II Indexes	Grade II Indexes
	8. Whether to disclose details of the experience of the independent directors in the past three years	The Environment for Defending Rights (MII)	29. Shareholder Litigation and compensation
	9. Media attention		30. Whether the controlling shareholder (the actual controller) has been investigated and punished by the regulatory agency for transferring or seizing the assets of the listed company directly or indirectly
	10. Whether to disclose foreseeable financial risk factors		31. Whether to establish the system of risk reserve against non-compliance
Decision-making and Supervisory Rights (MIE)	11. Whether to adopt an online voting system		32. The development of investor relations
	12. Whether to adopt a cumulative voting system		33. Whether internal controls are regularly evaluated by the board of directors or the general meeting of shareholders
	13. Whether to adopt a separate counting of votes by minority shareholders		34. Whether the special committees play a role in internal control
	14. The proportion of independent directors		35. Whether disclosure of significant internal control deficiencies
	15. Whether the shareholders who hold more than 10% of the shares of the company individually or collectively have proposed to convene an interim general meeting of shareholders		36. How are the risk control committees set up
	16. Whether the independent director is the chairman of the company		37. Whether there is any stock price variation
	17. Whether any shareholders holding more than 3% of the company's shares individually or jointly put forward a proposal		
	18. Whether three committees are established (audit, nomination, remuneration)		
	19. Whether the Chairman of the Audit Committee is an independent director		
	20. Actual board attendance of independent directors		
	21. Whether the chairman is from a controlling shareholder unit		

4.2.3. TMT Knowledge Hiding (CCVDI^{BNU})

In this paper, "*CCVDI*" and four sub-indices of "*CCVDI_GS*", "*CCVDI_GE*", "*CCVDI_SH*", and "*CCVDI_RC*" are used to measure TMT knowledge hiding. They are obtained from the "the Classified Corporate Governance Index Database of Chinese Listed Companies" of the Research Center for Corporate Governance and Enterprise Development of Beijing Normal University, which is manually compiled each year. Indicators, detailed in Table 3, include:

Table 3. Index System of Voluntary Information Disclosure.

Grade I Indexes	Grade II Indexes	Grade I Indexes	Grade II Indexes
Governance Structure (GS)	1. Composition of the board of directors	Stakeholders (SH)	17. A description of the development of investor relations
	2. Education as a director		18. Social Responsibility
	3. The experience of the director (excluding part-time job, social title, etc.)		19. Creditor status
	4. The composition of the special committee		20. Debtor status
	5.The composition of the supervisory board		21. suppliers
	6. Members of the supervisory board		22. Customer profile

Table 3. *Cont.*

Grade I Indexes	Grade II Indexes	Grade I Indexes	Grade II Indexes
	7. Executive Education	Risk control (RC)	23. Strategic objectives for enterprise development
	8. Senior management experience (not less than three years) (not including part-time, social title)		24. Profitability Analysis
Governance Efficiency (GE)	9. Attendance rate of shareholders at general meeting (including interim General Meeting)		25. Operational Capability Analysis
	10. A description of the voting mechanism at the general meeting of shareholders (including the provisional general meeting of shareholders)		26. Analysis of solvency
	11. Whether there is a clear system of director appraisal or remuneration		27. Capacity Development Analysis
	12. A description of the rules of procedure of the board of directors		28. Description of the current accounting firm
	13. A statement of the manner in which the board of directors shall be convened		29. An analysis of the impact of the macro situation on corporate performance
	14. An independent director agrees with, challenges, or rejects a statement of a resolution of the board of directors		30. Industry status (or market share) analysis
	15. The structure and amount of executive compensation		31. Competitor analysis
	16. Senior Management Network		

Data sources: Gao Minghua, Guo Chuanzi, Shao Mengying, et al.: *Report on the Classified Corporate Governance Index of Chinese Listed Companies No.19 (2020)*, China Textile & Apparel Press, 2020.

4.2.4. Control Variables

Based on previous studies, this paper selects the following control variables: *SIZE*, *BM*, *TobinQ*, *GROWTH* in company characteristics; *InstHold*, *ExeHold*, *StateHold*, the company's *top1*, and the *TOP2_10* are all part of the company's ownership structure. The auditor's membership in the *Big 4*, *H10*, *Z*, *S*, and *Duality* are all examples of corporate governance features. *Ind* and *YEAR* virtual variables may also be set and retrieved using this function. Definitions are provided in Table 4.

Table 4. Variable Definitions and Descriptive Statistics.

VARIABLES	Name/Evaluation Method	(1)	(2)	(3)	(4)	(5)
		N	Mean	Sd	Min	Max
CCMII	Degree of minority shareholders' governance	5821	49.1413	6.8739	32.0838	64.0192
ABSDA	Accrual earnings management	5764	0.0542	0.0599	0.0004	0.3604
ABSREM	Real earnings management	5559	0.0814	0.0899	0.0004	0.5251
InstHold	Shareholding Ratio Owned by Institutional Investors	5791	52.4443	18.5904	4.4219	91.1473
ExeHold	Proportion of shares owned by executives: the proportion of uncirculated shares is determined by the stock quantity held by directors, supervisors, and senior management.	5821	0.3961	1.7970	0.0000	13.0056
StateHold	State-holding ratio of top 10 shareholders	5818	45.7939	16.2399	4.4100	95.2600
top1	The proportion of shares held by the largest shareholder	5821	38.6043	15.2336	11.2194	76.3135
TOP2_10	China's top ten owners' shareholding ratio	5821	19.5283	12.3864	2.0934	53.1055
H10	Equity Concentration: Herfindal Index of the Top 10 Shareholders	5821	0.1898	0.1252	0.0226	0.5844
Z	Equity Checks and Balances 1: the ratio of the company's greatest stakeholder to its second largest shareholder.	5821	13.7369	20.5333	1.0315	119.2312
S	Checks and Balances on Equity 2: the second to tenth biggest/the greatest shareholder holding ratio	5821	0.6759	0.6278	0.0364	2.9781
Duality	Two Separate Positions: If both Chairman and General Manager are the same individual, the number is 1; otherwise, it is 0.	5821	0.1223	0.3277	0.0000	1.0000

Table 4. *Cont.*

VARIABLES	Name/Evaluation Method	(1)	(2)	(3)	(4)	(5)
		N	Mean	Sd	Min	Max
size	Company Size: natural logarithm of total assets	5821	22.9296	1.4016	20.1849	27.0638
TobinQ	Tobin Q: Market Value/Total Assets	5677	1.8500	1.1955	0.8277	7.6282
BM	Book-to-market Ratio: Total Assets/Market Value	5677	0.6575	0.2754	0.1202	1.2292
Growth	Company growth: (current period net fixed assets less previous period net fixed assets)/(net fixed assets end of the same period last year)	5818	0.1403	0.5216	−0.5038	3.6909
Big4	Whether or not the auditor is a member of the "Big Four". If Yes = 1; otherwise, 0	5821	0.0982	0.2976	0.0000	1.0000

4.2.5. Regression Models

This research designs the following model to empirically examine the influence of minority shareholders governance on the earnings management behavior of managers in state-holding enterprises, namely, H1.

$$ABSDA = \beta_0 + \beta_1 CCMII^{BNU} + \beta_2 control + \varepsilon \quad (12)$$

$$ABSREM = \theta_0 + \theta_1 CCMII^{BNU} + \theta_2 control + \varepsilon \quad (13)$$

In this paper, we estimate the aforementioned regression models using the ordinary least squares approach, and we provide regression results using White's variance adjustment to mitigate the impact of heteroscedasticity and increase the robustness of the regression findings.

Each variable's descriptive statistics are included in Table 4. The average governance degree score of minority shareholders in state-holding listed companies is 49.1413, which is lower; this indicates that the rules and regulations for the protection of minority shareholders in state-holding enterprises are imperfect, and minority shareholders find it challenging to participate in the governance of state-holding enterprises. Excluding the missing data, all state-holding enterprises have some level of accrual earnings management, whereas just 17 state-holding enterprises have no earnings management (described by the data before the winsorize treatment); In terms of real earnings management, there are six state-holding enterprises whose degree is 0 (described by the data before winsorize), and the proportion is extremely low, indicating that earnings management is a prevalent phenomenon in state-holding enterprises and needs to be taken seriously.

5. Empirical Results and Analysis

Note: Due to a lack of available space, the correlation coefficient matrix of the major factors was eliminated. The correlation analysis findings indicate that the major explanatory variable (*CCMII*) has a substantial negative connection with both methods of earnings management, supporting the premise of this article. The controlling variable of the proportion of institutional investors holding shares (*InstHold*) and the two types of earnings management also exhibit a significant negative correlation, confirming previous research on the issue of institutional investors and earnings management and validating the model's robustness.

5.1. Impact of TMT Knowledge Hiding on Minority Shareholders' Governance

Table 5 presents the outcomes of the regression analyses. At the 1% level of significance, the coefficients of the *CCVDI* and its four sub-indices all show a positive trend, which suggests that enhancing the information disclosure system and reducing the degree of TMT knowledge hiding can create a good governance environment and increase the enthusiasm of minority shareholders to participate in governance.

Table 5. Impact of TMT knowledge hiding.

VARIABLES	**(1)** *CCMII*	**(2)** *CCMII*	**(3)** *CCMII*	**(4)** *CCMII*	**(5)** *CCMII*	**(6)** *CCMII*
CCVDI_GS	0.0921 *** (17.7947)				0.0620 *** (11.6628)	
CCVDI_GE		0.1327 *** (15.8105)			0.0700 *** (8.1894)	
CCVDI_SH			0.0760 *** (17.4344)		0.0526 *** (11.9029)	
CCVDI_RC				0.0610 *** (8.5179)	0.0524 *** (7.6783)	
CCVDI						0.2337 *** (25.5621)
Control	*Control*	*Control*	*Control*	*Control*	*Control*	*Control*
Observations	4731	4731	4731	4731	4731	4731
Adjusted R-squared	0.3719	0.3625	0.3708	0.3379	0.4138	0.4131

Note: *** $p < 0.01$, the numbers within parentheses are T statistics derived from robust standard deviation (the same as in the other tables). Due to space constraints, the subsequent regression tables no longer provide the results of the regression of the Control variables, uniformly stated as *Control*, and all table control variables are the same as in Table 6.

Table 6. Main Effect Test: OLS Regression.

VARIABLES	**(1)** *ABSDA*	**(2)** *ABSDA*	**(3)** *ABSREM*	**(4)** *ABSREM*	**(5)** $ABSDA_{i+1}$	**(6)** $ABSREM_{i+1}$
CCMII		−0.0004 *** (−2.7089)		−0.0005 ** (−2.1944)	−0.0002 (−1.3492)	−0.0007 *** (−2.9240)
InstHold	−0.0001 * (−1.9295)	−0.0001 * (−1.7421)	−0.0003 *** (−3.0910)	−0.0003 *** (−2.9360)	−0.0001 (−1.4542)	−0.0003 *** (−2.6190)
ExeHold	0.0012 ** (2.0616)	0.0013 ** (2.2219)	0.0007 (0.8271)	0.0008 (0.9762)	0.0018 ** (2.1098)	0.0001 (0.1173)
StateHold	−0.0001 (−0.6228)	−0.0001 (−0.6989)	0.0001 (0.4080)	0.0001 (0.3422)	−0.0001 (−0.9939)	0.0000 (0.2501)
top1	0.0008 ** (2.2646)	0.0008 ** (2.3371)	0.0007 (1.2385)	0.0007 (1.2784)	0.0007 * (1.9293)	0.0006 (1.0451)
TOP2_10	0.0001 (0.7763)	0.0001 (0.7708)	0.0005 ** (2.1051)	0.0005 ** (2.1009)	0.0001 (0.3523)	0.0006 ** (2.3612)
H10	−0.0779 ** (−2.5312)	−0.0802 *** (−2.6058)	−0.0576 (−1.1013)	−0.0596 (−1.1407)	−0.0586 (−1.6412)	−0.0534 (−0.9135)
Z	0.0000 (0.9958)	0.0000 (0.9093)	0.0002 *** (2.6748)	0.0002 *** (2.6116)	0.0000 (0.1630)	0.0003 *** (2.9997)
S	0.0018 (0.5205)	0.0019 (0.5699)	−0.0044 (−0.8501)	−0.0042 (−0.8179)	0.0027 (0.6626)	−0.0051 (−0.9646)
Duality	−0.0033 (−1.4023)	−0.0030 (−1.2739)	−0.0004 (−0.1198)	−0.0000 (−0.0112)	−0.0037 (−1.3619)	−0.0022 (−0.6077)
size	−0.0013 (−1.4973)	−0.0009 (−0.9974)	−0.0001 (−0.0899)	0.0004 (0.3097)	−0.0012 (−1.2043)	0.0010 (0.6695)
BM	−0.0201 *** (−3.5364)	−0.0218 *** (−3.8104)	−0.0314 *** (−3.5982)	−0.0334 *** (−3.8377)	−0.0227 *** (−3.5765)	−0.0354 *** (−3.7661)

Table 6. *Cont.*

VARIABLES	(1) *ABSDA*	(2) *ABSDA*	(3) *ABSREM*	(4) *ABSREM*	(5) $ABSDA_{i+1}$	(6) $ABSREM_{i+1}$
Growth	0.0040 * (1.8509)	0.0039 * (1.8326)	0.0268 *** (6.1787)	0.0267 *** (6.1620)	0.0041 * (1.7104)	0.0284 *** (5.6627)
TobinQ	−0.0000 (−0.0283)	−0.0001 (−0.1144)	−0.0003 (−0.1583)	−0.0004 (−0.2184)	−0.0005 (−0.3659)	0.0007 (0.3261)
Big4	−0.0033 (−1.2245)	−0.0029 (−1.0703)	−0.0039 (−1.0118)	−0.0034 (−0.8694)	−0.0035 (−1.1419)	−0.0046 (−1.0743)
Constant	0.0870 *** (4.2308)	0.0942 *** (4.5714)	0.0881 *** (2.9133)	0.0969 *** (3.2025)	0.0941 *** (3.9152)	0.1030 *** (3.0869)
year	YES	YES	YES	YES	YES	YES
industry	YES	YES	YES	YES	YES	YES
Observations	5591	5591	5390	5390	4450	4343
Regulated R-squared	0.0910	0.0923	0.1580	0.1589	0.0950	0.1702

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$, the numbers within parentheses are T statistics derived from robust standard deviation (the same as in the other tables). Due to space constraints, the subsequent regression tables no longer provide the results of the regression of the Control variables, uniformly stated as *Control*, and all table control variables are the same as in Table 6.

5.2. Impact of Minority Shareholders' Governance on Managers' Earnings Management Behavior

The fundamental regression findings are shown in Table 6. The dependent variable in columns (1)(2) is accrual earnings management (*ABSDA*), and there is a 1% significant negative connection between the governance of minority shareholders (*CCMII*) and the accrual earnings management. Columns (3)(4) take the real earnings management (*ABSREM)* as the dependent variable; there is a significant negative correlation between minority shareholder governance and real earnings management at the 5% level, indicating that the degree of minority shareholder participation in governance can constrain the two types of earnings management behavior of managers in state-holding enterprises, thereby supporting Hypothesis 2. Examining the long-term effect of minority shareholder governance, columns (5)(6) employ earnings management level in the next year as dependent variables to do so. The findings indicate that there is no significant correlation between minority shareholders' governance and the level of accrual earnings management in the upcoming year. The results demonstrate that there is no significant correlation between minority shareholders' governance and the level of accrual earnings management in the coming year. However, there is a significant negative correlation with the level of real earnings management in the coming year at 1%, and the correlation is stronger than the current effect. The reason may be that real earnings management requires a lengthy period of time and period, and has a strong relationship with previous years' business activities, so the minority shareholders' governance can play a long-term effective role.

5.3. Interactive Influence of State-Owned Holding on the Governance of Minority Shareholders and the Earnings Management of Managers

In this paper, we utilize *top1* as a proxy for the level of state-holding; the greater the weight given to the first largest shareholder, the greater the level of state-holding, the smaller the impact of minority shareholders on management's earnings behavior, and the more challenging it is to rein in management's earnings behavior. Table 7 displays the regression results; the $CCMII^{BNU} \times top1$ coefficients are significantly positive, indicating that as the degree of state ownership rises, the inhibition of minority shareholder governance on both types of earnings management declines; that is, as the degree of state ownership rises, the role of minority shareholders in the day-to-day operation of governance, voice, and interference weakens. This is not a favorable environment for minority shareholders, supporting H3.

Table 7. Moderator Test of the State-holding Degree.

	(1)	(2)
VARIABLES	*ABSDA*	*ABSREM*
CCMII	−0.0009 *** (−2.8336)	−0.0013 *** (−2.6268)
top1	0.0002 (0.3625)	−0.0003 (−0.3575)
CCMII_top1	0.00001 * (1.8645)	0.00002 * (1.8360)
Control	*Yes*	*Yes*
Observations	5591	5390
Regulated R-squared	0.0928	0.1595

Note: *** $p < 0.01$, * $p < 0.1$.

5.4. Signal Transduction Function of the Company's Dividend Program

In this paper, we introduce the dummy variable *Dividend*, which indicates whether the announcement of the implementation of the previous year's dividend program was made in the current year. This variable takes the value 1 if the company announced the implementation of the previous year's dividend program in the current year, and the value 0 otherwise. The regression outcomes are shown in Table 8, and the coefficient is notably negative at the 5% level, demonstrating that the announcement of the company's dividend plan has a certain constraining influence on the earnings management behavior of managers in that year. The coefficient $CCMII^{BNU} \times Dividend$ is highly positive at the 5% level, indicating that the release of the governance and dividend plan for minority shareholders has some supervisory substitution impact, supporting H4. Due to the plan's limitation on managers' earnings management behavior, the degree of earnings management is generally low for businesses that disclose the dividend plan from the prior year, and the influence of minority shareholders' governance on earnings management is relatively moderate. For the unannounced dividend plan, the pressure of the company's major shareholders and managers is diminished, and the degree of earnings management and operating risk may be relatively high. Consequently, minority shareholders are more willing to govern, and supervision has a relatively high marginal effect. Therefore, when minority shareholders are exhausted, they can concentrate their efforts on businesses with undisclosed dividend intentions. Regulators should also concentrate on corporations with undisclosed dividend intentions and pay attention to the dividend plans of publicly traded companies.

Table 8. Supervisory Substitution Functions of Dividends.

	(1)	(2)
VARIABLES	*ABSDA*	*ABSREM*
CCMII	−0.0007 *** (−3.2118)	−0.0010 *** (−3.0837)
Dividend	−0.0283 ** (−2.4655)	−0.0383 ** (−2.2908)
CCMII_Dividend	0.0005 ** (2.2871)	0.0008 ** (2.2943)
Control	*Yes*	*Yes*
Observations	5591	5390
Regulated R-squared	0.0936	0.1597

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

5.5. Robustness Test

In this study, *Two-Stage Least Squares (2SLS)* is utilized to alleviate model endogeneity, and two instrumental variables are incorporated. First, use the *Mean* of minority shareholder governance within the same industry as the instrumental variable, because there may be information homogeneity within the same industry, which can affect the governance participation of minority shareholders in a listed company to some extent, but it does not directly affect the earnings behavior of the company's managers. Second, we introduce *AccRate* as a tool variable to measure a company's investor base. Dyl and Elliott (2006) argue that there is an optimal trading range for common stock, and that both high and low prices affect the investment behavior of minority shareholders [30]. In addition, Schultz (2000) discovered that the number of shareholders grew by approximately 20% following a stock split, indicating that minority shareholders preferred lower-priced equities over higher-priced stocks [31]. On this basis, we believe that stock divestment is strongly connected to the degree of minority shareholders' control, but it is unlikely to have a direct impact on the earnings management behavior of managers. Due to the rarity of stock splits in China, this paper employs the technique of utilizing the growth rate of shareholder accounts as a proxy variable to alleviate endogenous issues [4].

The IV estimations are provided in Table 9. In the first stage, both the *AccRate* and *mean* instrumental variables were significantly positively correlated with *CCMII* at the 1% level, while in the second stage, *CCMII* and the two types of earnings management remained significantly negatively correlated, which was consistent with the previous results. This demonstrates that, under the condition of controlling endogeneity, the extent of participation of minority shareholders in governance will inhibit earnings management. Additionally, the findings of the weak instrumental variable test and the over-recognition test are shown. First, both methods of earnings management were evaluated using the *Cragg–Donald Wald F statistic* and the *Kleibergen–Paap rk Wald F statistic* tests with a threshold of 19.93 over 10%, indicating that the weak instrumental variable hypothesis could be rejected; second, after adjusting for heteroscedasticity, the *Hansen J statistic* test for both categories of earnings management failed to reject the null hypothesis at a 10% significance level (all instrumental variables were exogenous). In conclusion, neither the weak tool variable issue nor the over-recognition problem is present in this research.

Table 9. Endogenesis Test: IV Estimations.

VARIABLES	**(1)** **First** ***CCMII***	**(2)** **Two** ***ABSDA***	**(3)** **Two** ***ABSREM***
AccRate	−0.5898 *** (−2.94)		
Mean	1.0238 *** (8.17)		
CCMII		−0.0020 * (−1.8265)	−0.0053 ** (−2.3300)
Control	*Yes*	*Yes*	*Yes*
Observations	5590	5590	5389
F statistic in 1 st stage	37.58		
Cragg–Donald Wald F statistic		33.617	29.347
Kleibergen–Paap rk Wald F statistic		37.581	32.257
Hansen J statistic *Chi-sq(1) P-val*		2.393 (0.1219)	0.005 (0.9451)

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

6. Conclusions and Enlightenment

Governance of minority shareholders is one of the most disregarded connections in the reform of China's state-holding enterprises, but it is also one of the most essential measures of restraining TMT knowledge hiding, the high agency costs, and inadequate financial management oversight of state-holding enterprises. Based on game theory, this paper examines the influencing factors, motivation, and constraint circumstances of earnings management behaviour of China's state-holding enterprises, as well as the game process between minority shareholders and managers. On the earnings management restriction of state-holding enterprises, the active governance of minority shareholders is validated using empirical data. Our research shows that the completeness of information disclosure can boost minority shareholders' eagerness to engage in governance by reducing TMT knowledge hiding and lowering the cost of exercising power. As the government's stake in a company grows, minority shareholders' capacity to have their voices heard within the organisation declines; minority shareholders governance and dividend plan announcement have an alternate function in impeding the earnings management of state-holding enterprises. In the event that the energy of minority shareholders is restricted, we can concentrate on companies that have not yet disclosed a dividend plan.

Policy proposals are made at the end of this paper, including ones that aim to improve the poor financial conduct of TMT and to encourage the beneficial governance of minority shareholders. First, we should recognise the significance of minority shareholders in corporate governance. In emerging markets, minority shareholders will increasingly provide the bulk of an organization's capital. Therefore, it has become a topic of concern for enterprises in emerging markets to figure out how to make minority shareholders ready to invest, and how to play the minority shareholders' governance influence. Enterprises should safeguard decision-making and supervisory rights and the right to profit of minority shareholders, and increase the desire of minority shareholders to actively govern by fostering a conducive environment for their constructive governance. Second, if reducing the exercising costs of minority shareholders, we need to ensure minority shareholders have the right to know by enhancing the system of information disclosure, bolstering the credibility of voluntary information disclosure, reducing TMT knowledge hiding behavior. To this purpose, we should enhance the protection of minority shareholders' rights and interests, as well as their remuneration, by enhancing class actions, collective claims, and other procedures. Third, the signal transmission function of dividend plans should be considered; dividend proportions should be raised to worldwide levels gradually, and the regulator should monitor whether or not listed businesses are releasing their dividends on time and in accordance with the plan. Finally, TMT knowledge hiding is common in all kinds of enterprises, including knowledge hiding within the team and knowledge hiding from external investors. The proportion of the two will vary according to the degree of legal perfection and the transparency of capital market. Such issues need special attention in emerging markets. The same applies to all companies with state ownership, especially in developing countries where capital markets are not yet perfect. It is necessary to establish a multi-supervision system and accountability mechanism suitable for different national conditions, and constantly improve relevant laws and regulations; deepening the reform of power operation and supervision mechanism.

The main significance of this paper is to expand the role of shareholder activism and shareholder governance from institutional investors to minority investors. Previous studies generally believe that in emerging markets, the governance ability of minority shareholders is poor, and the shareholders who can play a greater role are mostly institutional investors. However, the author thinks that the minority shareholders can also play their due role, but the enterprise did not provide them with the corresponding information and failed to mobilize their enthusiasm. Therefore, we should improve the enthusiasm of minority shareholders to participate in governance by reducing TMT knowledge hiding, so as to inhibit TMT bad financial behavior. The conclusion of this paper has certain theoretical and practical significance. This study takes earnings management as a standard to measure the bad financial behavior of TMT. Future research issues include the comparison of the TMT knowledge hiding degree and behavior in emerging markets and mature markets, and the different roles of minority shareholders governance in different types of markets.

Author Contributions: Conceptualization, C.G. and M.G.; methodology, C.G. and M.G.; validation, C.G., M.G. and J.L.; investigation, C.G.; resources, M.G.; data curation, C.G. and J.L.; writing—original draft preparation, C.G.; writing—review and editing, M.G.; supervision, J.L.; project administration, M.G. All authors have read and agreed to the published version of the manuscript.

Funding: This work was sponsored in part by Major projects of National Social Science Foundation of China (14ZDA025).

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Restrictions apply to the availability of these data. Data was obtained from The Classified Corporate Governance Index Database of Chinese Listed Companies, and are available from the authors with the permission of Author Minghua Gao.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Jiang, F.; Kim, K.A. Corporate Governance in China: A Survey. *Rev. Financ.* **2020**, *24*, 733–772. [CrossRef]
2. Rong, P.F.; Liu, S. Top Management Team Knowledge Hiding and Enterprise Innovation Performance: A Moderated Mediation Model. *Front. Psychol.* **2021**, *12*, 783147. [CrossRef]
3. Connelly, C.E.; Zweig, D.; Webster, J.; Trougakos, J. Knowledge Hiding in Organizations. *J. Organ. Behav.* **2012**, *33*, 64–88. [CrossRef]
4. Kong, D.M. Minority Shareholder Participation and Earnings Management a Test of Catering Theory. *China Financ. Rev. Int.* **2019**, *9*, 73–109. [CrossRef]
5. Chi, W.; Lisic, L.; Pevzner, M. Is Enhanced Audit Quality Associated with Greater Real Earnings Management? *Account. Horiz.* **2011**, *25*, 315–335. [CrossRef]
6. Morsfield, S.G.; Tan, C.E.L. Do Venture Capitalists Influence the Decision to Manage Earnings in Initial Public Offerings? *Account. Rev.* **2006**, *81*, 1119–1150. [CrossRef]
7. Chen, J.; Chan, K.; Dong, W.; Zhang, F. Internal Control and Stock Price Crash Risk: Evidence from China. *Eur. Account. Rev.* **2017**, *26*, 125–152. [CrossRef]
8. Cassell, C.A.; Giroux, G.; Myers, L.; Omer, T. The Emergence of Second-Tier Auditors in the Us: Evidence from Investor Perceptions of Financial Reporting Credibility. *J. Bus. Financ. Account.* **2013**, *40*, 350–372. [CrossRef]
9. Ashraf, B.N.; Qian, N. The Impact of Board Internationalization on Real Earnings Management: Evidence from China. *Sage Open* **2021**, *11*, 21582440211032640. [CrossRef]
10. Chen, H.; Chen, J.; Lobo, G.; Wang, Y. Effects of Audit Quality on Earnings Management and Cost of Equity Capital: Evidence from China. *Contemp. Account. Res.* **2011**, *28*, 892. [CrossRef]
11. Ghaleb, B.A.A.; Kamardin, H.; Hashed, A. Investment in Outside Governance Monitoring and Real Earnings Management: Evidence from an Emerging Market. *J. Account. Emerg. Econ.* **2021**, *12*, 52–76. [CrossRef]
12. Cohen, D.A.; Dey, A.; Lys, T. Real and Accrual-Based Earnings Management in the Pre- and Post-Sarbanes-Oxley Periods. *Account. Rev.* **2008**, *83*, 757–787. [CrossRef]
13. Li, S.; Ding, F.; Liu, Q.; Qiao, Z.; Chen, Z. Can Financial Analysts Constrain Real Earnings Management in Emerging Markets? Evidence from China. *Asia-Pac. J. Account. Econ.* **2021**, *29*, 1208–1226. [CrossRef]
14. Cunningham, L.M.; Johnson, B.; Johnson, E.; Lisic, L. The Switch-Up: An Examination of Changes in Earnings Management after Receiving Sec Comment Letters. *Contemp. Account. Res.* **2020**, *37*, 917–944. [CrossRef]
15. Johnston, R.; Petacchi, R. Regulatory Oversight of Financial Reporting: Securities and Exchange Commission Comment Letters. *Contemp. Account. Res.* **2017**, *34*, 1128–1155. [CrossRef]
16. Khan, M.K.; Qin, Y.; Zhang, C. Financial structure and earnings manipulation activities in China. *World Econ.* **2022**, *45*, 2593–2621. [CrossRef]
17. Hope, O.-K.; Yue, H.; Zhong, Q. China's Anti-Corruption Campaign and Financial Reporting Quality. *Contemp. Account. Res.* **2020**, *37*, 1015–1043. [CrossRef]
18. Nie, Y.; Jia, M. The Power of Crowds: Can Minority Shareholder Activism Promote Management Earnings Forecast Accuracy. *Account. Financ.* **2021**, *61*, 6333–6385. [CrossRef]
19. Bebchuk, L.A. The Case for Increasing Shareholder Power. *Harv. Law Rev.* **2005**, *118*, 833–914. [CrossRef]
20. Chen, Z.; Ke, B.; Yang, Z. Minority Shareholders' Control Rights and the Quality of Corporate Decisions in Weak Investor Protection Countries: A Natural Experiment from China. *Account. Rev.* **2013**, *88*, 1211–1238. [CrossRef]

21. Gonzalez, T.A.; Calluzzo, P. Clustered Shareholder Activism. *Corp. Gov. -Int. Rev.* **2019**, *27*, 210–225. [CrossRef]
22. Bainbridge, S.M. Director Primacy and Shareholder Disempowerment—Response. *Harv. Law Rev.* **2006**, *119*, 1735–1758.
23. Listokin, Y. If You Give Shareholders Power, Do They Use It? An Empirical Analysis. *J. Inst. Theor. Econ. -Z. Fur Die Gesamte Staatswiss.* **2010**, *166*, 38–53. [CrossRef]
24. Desai, M.A.; Dharmapala, D. Corporate Tax Avoidance and High-Powered Incentives. *J. Financ. Econ.* **2006**, *79*, 145–179. [CrossRef]
25. Dye, R.A. Earnings Management in an Overlapping Generations Model. *J. Account. Res.* **1988**, *26*, 195–235. [CrossRef]
26. Wang, Z.; Braam, G.; Reimsbach, D.; Wang, J. Political Embeddedness and Firms' Choices of Earnings Management Strategies in China. *Account. Financ.* **2020**, *60*, 4723–4755. [CrossRef]
27. Dechow, P.M.; Sloan, R.; Sweeney, A. Detecting Earnings Management. *Account. Rev.* **1995**, *70*, 193–225.
28. Roychowdhury, S. Earnings Management through Real Activities Manipulation. *J. Account. Econ.* **2006**, *42*, 335–370. [CrossRef]
29. Gao, M.H.; Guo, C.; Shao, M. *Report on China Classified Corporate Governance Index No.19*; China Textile & Apparel Press: Beijing, China, 2020.
30. Dyl, E.A.; Elliott, W.B. The Share Price Puzzle. *J. Bus.* **2006**, *79*, 2045–2066. [CrossRef]
31. Schultz, P. Stock Splits, Tick Size; Sponsorship. *J. Financ.* **2000**, *55*, 429–450. [CrossRef]