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Does Mixed-Ownership Reform Affect SOEs' Competitive Strategies?

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State-owned enterprises (SOEs) are the leading force of the socialist economy, and their competitive strategy choice is the key to the high-quality development of micro-enterprises and even the national economy. This paper constructs the variables of mixed-ownership reform from shareholder power and board power and explores the impact of mixed-ownership reform on the competitive strategy of SOEs. We find that the higher the degree of SOEs' mixed-ownership reform, the greater the shareholder power and the board power held by non-state-owned shareholders, and the more inclined they are to carry out a differentiation strategy. The mechanism test shows that mixed-ownership reform eases the financing constraints and improves the risk-taking level, facilitating SOEs to choose a differentiation strategy. Further research states that the positive effect of mixed-ownership reform on differentiation strategy is more evident in SOEs with a better external institutional environment and higher internal control quality. This study enriches the relevant literature in mixed-ownership reform and strategic management, provides empirical evidence for perfecting the governance practice at the strategic level, and has certain reference value for further promoting the sustainable development of SOEs.

Keywords: *Mixed-Ownership Reform; Competitive Strategy; Financing Constraint; Risk-Taking; State-Owned Enterprises (SOEs).*

Introduction

The competitive strategy choice is mainly to rationally allocate and efficiently use resources to win the market competition to enable enterprises to obtain promising returns and achieve high-quality development. Then, what kind of competitive strategy should the enterprise choose, and what will the strategy bring to the enterprise? These are two vital issues that enterprise strategic management must address (Sun & Sun, 2021). The solution to the above matters will clarify the overall context of enterprise strategic management, deeply analyze the reasons and consequences of enterprises choosing different strategies, and implement a scientific and effective competitive strategy to promote enterprise development.

Existing research focuses on answering the economic consequences of competitive strategic choice of enterprises (Ortega, 2010; Hu *et al.*, 2020; W. H. Wang *et al.*, 2021). There are few studies focusing on the influencing factors of competitive strategy. Currently, based on the resource-based view, slack, and behavior theory, the impact processes of resource environment factors such as ecological environment (Yang & Liu, 2014), financial redundancy (Liu *et al.*, 2018), financing structure (Fosu, 2013) on corporate competitive strategy have been explored (Fu *et al.*, 2018). However, the acquisition of internal and external resources by enterprises often depends on the judgment of decision-makers. There is a scarcity of research that considers how the power of internal decision-makers affects the formulation of competitive strategy from the source. Competitive strategy is a relatively complex decision activity generated by behavioral factors and reflects the values of decision makers (Wang & Liu, 2014). Behavioral theory also emphasizes the importance of the behavior patterns and decision-making processes of corporate decision-makers. Enterprise strategic decision needs to go through a series of organizational actions by shareholders elect interest directors - managers formulate strategic plans - directors approve strategic decisions - managers implement specific strategies, involving decision makers at the three levels of shareholders, directors, and managers. It can be seen that the source of enterprise strategic choice is driven by the interests of shareholders, which will lead to the influence of shareholders' shareholding and appointing directors on strategic decisions. Since managers are subject to the

supervision of shareholders and directors, we summarize the influence of managers into the former two categories, focusing on the role of the power composition of decision makers like shareholders and directors on competitive strategy.

With the complex and changeable external environment, the enterprise's competitive behavior has the features of motivation, rapidity, and innovation. Enterprise decision makers' control rights and values play a prominent role in strategic choices. As the primary carrier to achieve the national strategic objectives, most SOEs are dominated by the government, the state-owned controlling shareholder. There are severe historical problems such as "ambiguous property rights," "absence of owners," and "dominance of one share." The administrative preference in executive appointment and removal, resource allocation, and operating decisions are common (He & Yang, 2021). As a result, the competitive strategy of SOEs revolves around realizing social goals, which is challenging to demonstrate the ability to adapt to complex and dynamic environments quickly. It lacks the motivation to create value for differentiated customers and obtain sustainable competitive advantages and ultimately presents the competitive behavior of pursuing a scale economy. However, if SOEs want to occupy a place on the national and even world economic stage, they need the guidance of decision-makers who know the competition rules and win in the market competition through creating value for customers and forming excellent strategic positioning. The vigorous implementation of mixed-ownership reform in the new round of SOE reform provides a perfect opportunity for enterprises to form a market-oriented competitive strategy. The Third Plenary Session of the eighteen clearly stated that "actively develop the mixed-ownership economy." The 19th session of the national congress of the communist party of China proposed to "deepen the SOE reform, develop a mixed-ownership economy, and cultivate world-class enterprises with global competitiveness." Subsequently, the government launched a series of mixed-ownership reform policies committed to improving the internal governance mechanism by adjusting the ownership structure and board composition, thereby optimizing the competitive behavior of SOEs.

The resource-based view and slack theory suggest that different property rights determine their respective unique resource endowments. Sufficient heterogeneous resources play a complementary role within the enterprise, helping to optimize resource allocation and enhance risk management capabilities, thereby fostering the formation of core competitive advantages (Li & Li, 2022). Concretely, the mixed-ownership reform introduces non-state-owned shareholders to participate in SOEs, and the cross-integration of shareholdings forms a shareholding structure with mutual checks and balances (Tian *et al.*, 2023). Meanwhile, as a market-oriented force, non-state-owned capital appoints directors to promote the continuous change of the board structure. The adjustment of these two decision makers' power structures is bound to impact the SOEs' competitive strategy. On the one hand, in the process of deepening mixed-ownership reform, heterogeneous shareholder groups with different values gradually emerged in SOEs. Driven by resource endowment and interest demands, the inherent concepts and resource constraints that enterprises may face in their competitive behavior have been weakened, showing a more competitive strategic choice. On the other hand, the mixed-ownership reform empowers the shareholder power and the board power of non-state-owned capital, which ensures their ability to participate in governance, effectively supervises the selfish behaviors of controlling shareholders and managers, elevates the risk-taking level, and plays a role in the competitive strategy. Therefore, this paper emphasizes how SOEs choose an appropriate competitive strategy based on the power composition of shareholders and directors to obtain a superior competitive advantage.

Based on this, we take the A-share state-owned listed companies from 2008 to 2022 as the research samples and explore the impact and mechanism of mixed-ownership reform on the SOEs' competitive strategy. The main contributions are as follows:

Firstly, it expands the new research direction of the SOEs' mixed-ownership reform in strategic management. In the reform practice of western countries, privatization of SOEs has become widespread, while the concept of mixed-ownership reform has not yet been accurately proposed. Scholars around the world discuss the impact of privatization on the development of SOEs based on cross-border data of different countries, focusing on enterprise performance (Djankov & Murrell, 2002; Boubakri *et al.*, 2019) and operational efficiency (Boubakri *et al.*, 2011; Nguyen & Vo, 2020). Whether in developed or transitional countries, the privatization of SOEs may enhance their operational efficiency (Megginson & 2001; Chen *et al.*, 2006), but it may also solidify ownership and have a negative impact on profitability (Alipour, 2013). The operational efficiency of SOEs is closely related to their strategic decisions, but scholars pay less attention to the adjustment of strategic decisions in SOEs. Only Chinese scholars have explored the impact of mixed-ownership reform on strategic change (Zhang *et al.*, 2019). This paper combines China's mixed-ownership reform of SOEs with competitive strategy, explores the relationship between them, and expands the academic literature on SOE reform and strategic management worldwide.

Secondly, it enriches the relevant research on the competitive strategy choice of SOEs under institutional arrangements. Although existing literature has explored the impact of resource and environmental factors on competitive strategy, it has not taken into account the impact of decision-maker's power within SOEs on competitive strategy under China's special institutional arrangements. Based on the attention-based view, Wu (2010) explored the irrational strategic behaviors of SOEs under the government intent. This paper takes the opportunity of SOEs advancing mixed-ownership reform to explore the impact of heterogeneous decision-makers on corporate competitive strategy decisions. It provides theoretical support for explaining the irrational strategic adjustments and optimization processes within SOEs, and further distinguishes the asymmetric effects of mixed-ownership reform on competitive strategy under different institutional environments and regulatory qualities of SOEs, thereby expanding the understanding of boundary conditions that influence competitive strategy.

Thirdly, it reveals the internal logic of mixed-ownership reform affecting the SOEs' competitive strategy. This paper analyzes and verifies the internal mechanism of non-state-

owned shareholders' participation in governance affecting the competitive strategy from the resources and risks. We find that non-state-owned shareholders holding shares and appointing directors can alleviate the financing constraints faced by SOEs and optimize resource allocation, and can also improve the risk-taking level and enhance the anti-risk capability. The paper clearly expounds on how non-state capital drives SOEs to adopt differentiation strategy to compete in the market, providing a valuable supplement to the global research on the governance pathways of competitive strategy in SOE reforms.

Theoretical Analysis and Research Hypothesis

The competitive strategy choice is the core issue in strategic management. Poter (1980) proposed that the general competitive strategy is the most complete and mature framework, which is suitable for evaluating the competitive behavior of enterprises (Ormanidhi & Stringa, 2008). Porter divides competitive strategy into differentiation, cost leadership, and concentration. A concentration strategy results from a differentiation and cost leadership strategy in a market segment that does not have a competitive advantage. Therefore, the competitive strategy can be summarized as a differentiation strategy and cost leadership strategy. Differentiation strategy is a strategy adopted to deliver unique and valuable products or services to customers (Zheng & Li, 2011). It mainly establishes a competitive advantage by facilitating technical services, improving distribution channels, developing characteristic products, and erecting a brand image. This strategy increases customers' loyalty and the enterprises' profit return (Frambach *et al.*, 2003), but it also requires enterprises to bear higher risks. The cost leadership strategy refers to enterprises relying on large-scale production to achieve scale economy, mainly by acquiring production facilities that can achieve effective scale, reducing production costs and management costs. Although this strategy can penetrate a part of the market at a lower cost, an excessive price reduction may affect the profit margin of enterprises, and it is difficult to predict future market changes accurately (Sheng *et al.*, 2021).

It can be seen from the above that the resource requirements, risk levels, profitability, and competitive advantages of differentiation strategy and cost leadership strategy are different. The final strategic choice of an enterprise is the result of the decision makers' mutual game in strategic decisions under their control rights according to the resource base and risk preference. According to behavioral theory, mixed-ownership reform restructures the power structure of shareholders and the board of directors within SOEs, introducing heterogeneous shareholders and directors with diverse resource elements, risk preferences, information channels, and interest claims. This is conducive to improving the efficiency of resource utilization and taking on more risks in SOEs, as well as innovating and attempting new business models (Zhao *et al.*, 2017). Then, it remains to be explored whether and how the decision-making groups with different natures and characteristics in SOEs influence the competitive strategy.

Mixed-Ownership Reform and SOEs' Competitive Strategy

(1) Shareholder power. Shareholders of different natures have their values and target preferences, and they all have unique and potentially conflicting tendencies in strategic choice (Hoskisson *et al.*, 2002). Differentiation strategy continues to lead in the market competition by creating unique competitive advantages (Lin & Wu, 2007), taking higher risks, and obtaining higher returns, which aligns with the interests of non-state-owned shareholders. The cost leadership strategy contributes to enterprises' employment, taxation, and stable economic development by expanding the scale and lowering costs, which is consistent with the goal of state-owned controlling shareholders. In the previous SOEs, the public property rights and soft budget constraints led to the internal governance problem of controlling shareholder encroachment, resulting in inefficient resource flow. The higher the shareholding ratio of state-owned controlling shareholders, the more serious the government intervention is for SOEs. Compared with all non-state-owned enterprises whose competitive behaviors serve economic goals, the policy tasks of SOEs limit the choice of competitive strategy based on economic benefits. Moreover, the absolute voice of state-owned controlling shareholders in the general meeting makes the competitive behaviors of SOEs tend to be consistent with their values, preferring to carry out cost leadership strategy that brings scale advantages and stable returns to SOEs.

The ownership structure has an important influence on the competitive strategy. Firstly, in the process of mixed-ownership reform, SOEs transferred certain state-owned shares to non-state-owned shareholders. The shareholding proportion of state-owned shareholders continues to decline, weakening the pursuit of social goals by SOEs and urging enterprises to concentrate on choosing differentiation strategy to achieve economic goals (Chen *et al.*, 2021). Secondly, a differentiation strategy requires enterprises to have sufficient information and resources to respond to changes in market conditions in time and adjust their products, services, and markets frequently and rapidly. In light of the resource-based view, unique heterogeneous resources are the source from which enterprises formulate strategies and achieve competitive advantages (Wernerfelt 1984; Zou & Fu, 2020). The non-state-owned shareholders with different values bring rich resource elements, operation philosophy, and market information to SOEs so that SOEs have a broader cognitive structure, improve the operation efficiency and competitiveness (Guan *et al.*, 2021), and promote enterprises to adopt differentiation strategy to respond quickly to market changes. Thirdly, concerning the cost leadership strategy of process innovation, the differentiation strategy creates products that has shorter life cycles, and requires substantial and ongoing investment in technology and marketing. Following the rise of the diversification of shareholder nature, the motivation of supervision and balances between heterogeneous shareholders is strengthened, lessening the capital embezzlement behaviors of state-owned controlling shareholders (Liu, 2019), and providing more funds for the differentiation strategy with significant capital needs. Lastly, non-state-owned shareholders have a deeper understanding of the strategic plans of SOEs under their diversified investment

experience and professional knowledge. The higher the shareholding ratio of non-state-owned shareholders, the stronger their willingness to supervise and govern. They can apply for holding an extraordinary general meeting and "vote by hand" to restrict the selfish behaviors of the controlling shareholders and choose a differentiation strategy that meets the market demand and is conducive to the SOEs' long-term development.

Based on the above analysis, this paper proposes the following hypotheses:

H1: The higher the diversity of mixed shareholders, the more inclined SOEs are to choose a differentiation strategy.

H2: The higher the depth of mixed equity, the more inclined the SOEs are to choose a differentiation strategy.

(2) Board power. The board is the core of corporate governance. The primary responsibilities of directors are to supervise and evaluate the management and protect the interests of all shareholders (Baldenius *et al.*, 2014; Wu & Du, 2022). While SOEs undertake too many social functions, the appointed directors lack the professional ability to operate the enterprise (Li *et al.*, 2012). They lack an understanding of the enterprise's operation conditions and development direction and cannot provide accurate and professional opinions on how to participate in the market competition. Their preferred competitive behaviors mostly focus on the original products and markets, and promote SOEs to avoid risks and expand scale by reducing costs. In addition, the complex pyramid structure makes it difficult for SOEs to form an adequate supervision and incentive mechanism for managers and hinder information sharing among managers, leading the management authorities to tend to lower-risk competitive behaviors in risky decisions.

The mixed-ownership reform allows non-state-owned shareholders to appoint directors to the board so that non-state-owned shareholders enjoy the decision-making authority of major events in SOEs (Cai *et al.*, 2018). It increases their enthusiasm to participate in competitive strategy. Firstly, Coviello and Munro (1997) find that the social capital of enterprises can influence competitive strategic decisions. The resource-based view posits that a firm, as a collection of resources, encompasses various types of resources such as capital, human resources, and knowledge. When non-state-owned capital appoints directors to SOEs, it disrupts the existing patterns of interest and resource distribution within the SOEs, advocating for the inclusion of more R&D and marketing professionals on the board. These professionals focus on exploring new intellectual domains, pursuing cutting-edge knowledge and technology, and are capable of timely and accurate market change predictions, tracking and understanding unique customer needs, and matching the enterprise's resource endowments with strategic opportunities (Zhang *et al.*, 2023). This brings personalized product design to SOEs, assists in forming a unique brand and technological advantage for the enterprise, and increases the likelihood of SOEs choosing a differentiation strategy. Secondly, Resource dependence theory indicates that when non-state-owned shareholders use their resource advantages as a bargaining chip to win more board seats than their shareholding ratios, the phenomenon of over-appointing directors emerges. The non-state-owned shareholders obtain the over-allocated board power, which significantly increases their leverage of the original board voting rights; and their control power is also covertly raised (Cheng & Wei, 2013). This has boosted the space for non-state-owned shareholders to supervise and perform their duties, formed strict supervision over the selfish behaviors and efforts of managers, promoted the "owner return" of SOEs, and stimulated enterprises to adopt the differentiation strategy to shape competitive advantages. Thirdly, in line with the information asymmetry theory, non-state-owned shareholders obtain substantive voice through appointment, especially over-appointment of directors, and have the chance to play the role of decision guidance, establish a communication channel for dialogue with the management, reduce the information asymmetry among heterogeneous shareholders and between shareholders and managers, and gather more comprehensive and centralized strategic decision information. Further, it enhances the sharing of risks and benefits among heterogeneous shareholders and directors, and promotes SOEs to choose a differentiation strategy.

On account of the above analysis, this paper puts forward the following hypotheses:

H3: The higher the control of mixed equity, the more inclined the SOEs are to choose a differentiation strategy.

H4: The higher the excess control of mixed equity, the more inclined the SOEs are to choose a differentiation strategy.

Financing Constraint Mechanism

Financing constraint is a principal element affecting the enterprise's strategic behavior (Ma & Jin, 2021). Due to internal information asymmetry and soft budget constraints, SOEs often seek the support of relevant government agencies, strive for loans from state-owned banks when there is a shortage of funds, and have a single channel for external funds, resulting in a more conservative competitive strategy. Brander and Lewis (1986) also indicate that enterprises with heavier debt financing are more likely to adopt a cost leadership strategy. Now SOEs face high liabilities and tend to increase sales by reducing prices to generate more cash flow to repay debts and reduce the debt repayment pressure on enterprises. The implementation of mixed-ownership reform has broadened the financing channels of SOEs, enriched the capital source, and provided resource guarantees for the differentiation strategy. Firstly, the mixed-ownership reform has increased the financing channels of SOEs. With the exaltation of the diversification of heterogeneous shareholders, SOEs have multiple financing channels. SOEs introduce various non-state-owned shareholders by issuing new shares or transferring state-owned equity, bringing financing channels such as equity financing, bank loans, and commercial credit for enterprises, alleviating the financing constraints (Pang *et al.*, 2019), to provide funds for differentiation strategy requiring more market and product investment. Secondly, the participation of non-state-owned shareholders enhances the financing level of SOEs, which is reflected in that the shareholding of non-state-owned shareholders is equivalent to offering equity financing for enterprises, and the larger the shareholding proportion, the higher the financing level, and the more sufficient external funds. It helps SOEs eliminate the dilemma of debt financing and form a more reasonable financing structure to support the differentiation strategy. Thirdly, SOEs have given non-state-

owned shareholders equal or even more board seats than their shareholdings in the mixed-ownership reform, mobilizing the enthusiasm of non-state-owned strategic investors to participate in SOEs and bringing more sources of capital to enterprises. Moreover, based on signaling theory, giving non-state-owned shareholders excess board seats reflects the smooth implementation of the SOEs' mixed-ownership reform and sends a positive signal to the capital market (Feng & Guo, 2021), which decreases the financing cost and raises the possibility of enterprises to obtain external financing(Luo *et al.*, 2019), facilitating SOEs to create competitive advantage through differentiation strategy.

Based on the above analysis, this paper proposes the following hypothesis:

H5: Mixed-ownership reform can affect the SOEs' competitive strategy by easing the financing constraints.

Risk-Taking Mechanism

Risk-taking is the fundamental driving force for enterprises to maintain competitive advantage, which embodies the enterprises' intention to pursue high investment returns (Low, 2009). Different types of enterprises and decision-makers have disparate risk preferences. Enterprises with high risk-taking levels have higher motivation and the ability to choose a differentiation strategy to participate in market competition. Due to property rights' inherent defects and executives' bureaucratic management, the risk-taking level in SOEs is significantly lower than that of private enterprises. In the absence of supervision and incentives, controlling shareholders and managers are motivated to occupy and transfer SOEs' resources to seek personal interests and career stability, which often manifests as evident risk aversion (He *et al.*, 2019), choosing a competitive strategy that requires less capital.

The mixed-ownership reform has changed the risk-taking level of SOEs by reconstructing the internal power structure, which then impacts the competitive strategy. Firstly, compared with state-owned shareholders, non-state-owned shareholders grow up in different operating systems and cognitive frameworks and live in a more severe competitive environment, leading to their higher pursuit of income and risk tolerance. They are willing to supervise the selfish behaviors of state-owned controlling shareholders and managers and boost the risk-taking ability of SOEs (Boubakri *et al.*, 2013). Secondly, after the mixed-ownership reform, SOEs begin to implement decentralization control. Non-state-owned shareholders have a certain right to speak and influence SOEs, enhancing the overall protection level of shareholders' interests (Barroso Casado *et al.*, 2016), elevating the risk-taking ability of SOEs, and promoting the adjustment of competitive strategy. Thirdly, the differentiation strategy concentrates on product innovation and brand image, which requires a lot of R&D investment and marketing costs. The cycle is long, and the risks are high, bringing greater operational risks to the enterprise (Chai *et al.*, 2017). Non-state-owned capital has mastered comprehensive operation information by appointing directors, bringing flexible organizational structure, sending personnel with innovative consciousness and adventurous spirit, increasing the anti-risk capability of SOEs, and raising the possibility of choosing high-risk differentiation strategy. Lastly, heterogeneous non-state-owned shareholders and directors have brought multiple financing channels to SOEs. The shareholding of non-state-owned shareholders has reduced bank loans and other debt financings, optimized the capital structure, decreased financial risks, and enhanced the risk-taking level of enterprises in carrying out differentiation strategy. Slack theory suggests that the redundant resources brought about by mixed-ownership reform can play a role in risk mitigation within SOEs. It provides support for enterprises to cope with changes in the market environment, promotes the acceleration of product technology updates in highly competitive markets, and helps to form differentiation competitive advantages (Bo & Yang, 2020).

Based on the above analysis, this paper proposes the following hypothesis:

H6: Mixed-ownership reform can affect the SOEs' competitive strategy by increasing the risk-taking level.

Research Design

Data Sources and Sample Selection

This paper selects the A-share state-owned listed companies from 2008 to 2022 as the investigation objects. There is a time lag in the impact of mixed-ownership reform on the SOEs' competitive strategy. We use the pre-stage competitive strategy for regression testing to alleviate the endogeneity problem caused by reverse causality. Thus, the sample interval of the competitive strategy is forwarded by one-period from 2009 to 2022, and explanatory variables and control variables are the current period from 2008 to 2021. In the light of the research needs, the samples are excluded as follows: (1) ST and *ST companies; (2) financial companies; (3) companies with abnormal financial data (asset-liability ratio $\geqslant 1$ or $\leqslant 0$ and operating income < 0); (4) companies with missing main variables; (5) companies of shareholder nature could not be determined from databases, annual reports, and websites, resulting in 11473 firm-year observations. In addition, as there are new listed or withdrawn SOEs every year, the sample of eligible state-owned listed companies is not exactly the same from year to year. There were 685 samples in 2008, 718 samples in 2009, 720 samples in 2010, 769 samples in 2011, 795 samples in 2012, 803 samples in 2013, 781 samples in 2014, 777 samples in 2015, 804 samples in 2016, 828 samples in 2017, 895 samples in 2018, 879 samples in 2019, 977 samples in 2020, and 1042 samples in 2021.

The basic data of mixed-ownership reform are manually sorted out by querying the annual reports and related information websites of state-owned listed companies. The relevant data on competitive strategy and other financial indicators come from CSMAR and CNRDS databases, and the industry classification is from WIND databases. To avoid the influence of extreme values on the research results, the main continuous variables are winsorized at 1 % and 99 % levels.

Model Construction

To explore the impact of mixed-ownership reform on the competitive strategy of SOEs, this paper draws on the research of Deng et al. (2015) to construct the following model to be tested:

$$CS_{i,t+1} = \alpha_0 + \alpha_1 MIX_{i,t} + \alpha_2 CONTROLS_{i,t} + \eta_{YEAR} + \eta_{IND} + \varepsilon_{i,t} \quad (1)$$

Where i and t represent the firm and year, and ε is the residual of the regression model. The explained variable $CS_{i,t+1}$ represents the competitive strategy of firm *i* in year *t+1*, *MIX* is the degree of SOEs' mixed-ownership reform of firm *i* in year *t*, and *CONTROLS* delegates all control variables. To improve the reliability of regression results, the model is processed as follows: Firstly, the fixed effects in the year η_{YEAR} and industry η_{IND} levels are controlled in the model to alleviate the endogeneity problem caused by omitted variables. Secondly, T-statistics adjusted for the robust standard error of clustering at the firm level are used to ease possible model serial correlation problems.

Variable Definition

(1) Explained variable

The explained variable is the competitive strategy (*CS*), including differentiation strategy and cost leadership strategy. This paper draws on the practices of David et al. (2002), Zhou et al. (2018), and Duanmu et al. (2018) and selects eight public financial indicators to measure the type of enterprise competitive strategy. The differentiation strategy aims to form unique products and services through vigorous development, reduce the price sensitivity of consumers, and conduct more R&D and marketing activities while pursuing higher profits. Thus, we take period expense ratio, R&D expense ratio, operating gross profit margin and market to book ratio to measure (Z. Wang, J. *et al.,* 2021). The cost leadership strategy focuses on the formation of enterprise scale economy and the promotion of production and operation efficiency, and reduces costs by accelerating the use efficiency of assets. It is measured by total asset turnover, fixed asset turnover, accounts receivable turnover and employee efficiency (Lei *et al.,* 2015). The specific index definitions are shown in Table 1. Based on the above indicators, this paper adopts the confirmatory factor analysis method to obtain the differentiation factor (*Diff*) and the cost leadership factor (*Cost*) for subsequent testing.

Table 1

Index Composition of Competitive Strategy

Strategy type	Indicator name	Indicator definition
Differentiation strategy	Period expense ratio	(Selling expenses + administrative expenses)/operating income
	R&D expense ratio	Net intangible assets/total assets
	Operating gross profit margin	(Operating income - operating cost) / operating cost
	Market to book ratio	Stock market value/book value
Cost leadership strategy	Total asset turnover	Net operating income / average total assets
	Fixed asset turnover	Net operating income/average net fixed assets
	Accounts receivable turnover	Net operating income / average balance of accounts receivable
	Employee efficiency	Operating income/employee compensation

(2) Explanatory variables

The explanatory variable is the degree of SOEs' mixed-ownership reform (*MIX*), described from the two dimensions of shareholder power and board power. From the shareholder power, drawing on the practices of Zhao and Mao (2023), we construct the following indicators to measure: The diversity of mixed shareholders (*MIXS*) is defined as the Herfindahl Index of shareholder categories ($HHI = 1 - \sum {P_i}^2$, P_i represents the proportion of the class *i* shareholders among the top ten shareholders); The depth of mixed equity (*MIXO*), is defined as the sum of the four non-state-owned shareholders shareholding ratios of private, foreign, natural persons and institutional investors among the top ten shareholders. In terms of the board power, referring to the research of Ma et al. (2021) and Li et al. (2021), the proportion of directors appointed by non-state-owned shareholders and the proportion of directors over-appointed by non-state-owned shareholders among the top ten shareholders are used to measure the control of mixed equity (*NONSOE_D*) and the excess control of mixed equity (*NONSOE_OD*). This paper manually collects the association relationship and the description of concerted action among the top ten shareholders from the annual report of listed companies to ensure the accuracy of the shareholder nature, the number of shares held, and appointed directors. This paper also aggregates the shares held by shareholders and the number of appointed directors belonging to the persons acting in concert, which are treated as one shareholder.

(3) Control variables

This paper controls many other factors that may simultaneously affect the degree of SOEs' mixed-ownership reform and competitive strategy from two aspects. In terms of operating conditions, six variables of company size (*SIZE*), profitability (*TQ*), asset-liability ratio (*LEV*), growth (*GROWTH*), cash flow ratio (*CF*), and capital intensity (*CI*) are selected. In terms of corporate governance characteristics, three variables are selected: board size (*BOARD*), duality (*DUAL*), and firm age (*AGE*). Moreover, the enterprise's market share in the industry may also impact strategic decisions, so we also control the market share (*MS*). The specific variable definitions and descriptions are shown in Table 2.

Table 2

The Variable Definition and Description

Variable type	Variable name	Symbol	Measurement of variable
Explained variable	Differentiation strategy	*Diff*	Differentiation factors identified by confirmatory factor analysis
	Cost leadership strategy	*Cost*	Cost leadership factors identified by confirmatory factor analysis
Explanatory variable	The diversity of mixed shareholders	*MIXS*	Herfindahl index of shareholder categories $HHI = 1 - \sum {P_i}^2$, P_i represents the proportion of the class i shareholders among the top ten shareholders
	The depth of mixed equity	*MIXO*	The sum of the four non-state-owned shareholders' shareholding ratios of private, foreign, natural persons, and institutional investors among the top ten shareholders
	The control of mixed equity	*NONSOE_D*	The proportion of directors appointed by non-state-owned shareholders among the top ten shareholders
	The excess control of mixed equity	*NONSOE_OD*	(Board seats appointed by non-state shareholder − board seats that non-state-owned shareholders should obtain)/total number of directors
Control variable	Company size	*SIZE*	Natural logarithm of the total market value of listed companies
	Profitability	*TQ*	The company's market value/asset replacement cost
	Asset-liability ratio	*LEV*	Total liabilities / total assets
	Growth	*GROWTH*	Percentage change in operating income over the fiscal year
	Cash flow ratio	*CF*	Net cash flow from operating activities/total assets
	Capital intensity	*CI*	Total assets / operating income
	Market share	*MS*	The main business income / total main business income of the industry
	Board size	*BOARD*	Natural logarithm of the number of directors on the board
	Duality	*DUAL*	Dummy variable, if the chairman concurrently serves as the general manager, it takes 1; otherwise, it takes 0
	Firm age	*AGE*	Age of the company at the year of IPO

Results and Discussion

Extraction of Strategic Factors

Referring to Lei et al. (2015), this paper uses confirmatory factor analysis to identify the competitive strategy and obtain strategic factor types. Firstly, the KMO and Bartlett sphericity tests are performed on the sample data. The results show that the KMO test coefficient is 0.722, the Bartlett test coefficient is18360.392, and the Sig = 0.000, indicating that the original variables are suitable for confirmatory factor analysis. Secondly, extracting strategic factors, in line with the extraction principle that the eigenvalue is greater than 1, we extract two common factors, which explain 62.31 % of the total variance of the original variables, stating that the information of the original variables is relatively complete, and the factor analysis results are more reliable.

The analysis results show that the R&D expense ratio and accounts receivable turnover have relatively small loadings on the differentiation factor and cost leadership factor (0.0852 and 0.3432), which are not significant enough. Therefore, these two indicators are eliminated in the subsequent factor analysis process. The remaining indicators are selected for analysis and research to obtain the rotation factor analysis matrix, as shown in Table 3. We find that the loadings of period expense ratio, operating gross profit margin, and market to book value ratio are very high on F_1. Because they are the main indicators of differentiation strategy, F_1 is defined as a differentiation factor (*Diff*); On F_2, the total asset turnover, fixed asset turnover, and employee efficiency have significant loadings. Because they are the main variables of cost leadership strategy, F_2 is defined as a cost leadership factor (*Cost*).

Based on the above test results, the differentiation and cost leadership factors identified by the confirmatory factor analysis can more accurately reflect the competitive strategy type and can be used for follow-up research.

Table 3

Rotation Component Matrix

Metrics	Composition	
	Differentiation	Cost leadership
Period expense	0.6881	-0.4432
Operating gross	0.7010	-0.3386
Market to book	0.6974	0.3074
Total asset	0.1293	0.7514
Fixed asset	-0.2113	0.7668
Employee	-0.2916	0.7635

Summary Statistics

Table 4 reports the summary statistics of the main variables. For the competitive strategy, the mean value of the differentiation strategy (*Diff*) is -0.068; the standard deviation is 0.838, the mean value of the cost leadership strategy is -0.048, and the standard deviation is 0.791, declaring that there are specific differences in the selection of competitive strategy among state-owned listed companies. For the relevant indicators of the degree of SOEs' mixed-ownership reform, the mean value of mixed shareholders diversity (*MIXS*) is 0.279, indicating diversified types of shareholders' shareholding in SOEs. The mean value of mixed equity depth (*MIXO*) is 0.119, and the average shareholding ratio of non-state-owned shareholders

is 11.9 %, illustrating that SOEs have transferred a certain degree of state-owned equity to non-state-owned shareholders, and the reconfiguration of ownership structure has been initially realized. The mean value of mixed equity control (*NONSOE_D*) is 0.031. The average proportion of directors appointed by non-state-owned shareholders in the board is 3.1%, which is far lower than their shareholding proportion, stating that there is unequal power between shareholders and board in SOEs, and the ability of non-state-owned shareholders to participate in governance needs to be improved. The mean value of mixed equity excess control (*NONSOE_OD*) is -0.099, and the median is -0.070, which explains that only a few non-state-owned shareholders of SOEs have obtained excess board seats. And the maximum value is 0.322, indicating that among SOEs in which non-state-owned shareholders over-appointed directors, their over-appointment level is higher. In addition, the other control variables are consistent with the existing literature results, and there are no significant abnormalities.

Table 4

Descriptive Statistics of the Main Variables

Variable	N	Mean	Std	Min	P50	P25	P75	Max
Diff	11473	-0.068	0.838	-1.664	-0.227	-0.644	0.328	2.950
Cost	11473	-0.048	0.791	-1.517	-0.245	-0.536	0.201	3.422
MIXS	11473	0.279	0.175	0.019	0.244	0.129	0.422	0.682
MIXO	11473	0.119	0.118	0.006	0.075	0.037	0.160	0.640
NONSOE_D	11473	0.031	0.078	0.000	0.000	0.000	0.000	0.444
NONSOE_OD	11473	-0.099	0.128	-0.574	-0.070	-0.149	-0.030	0.322
SIZE	11473	22.800	1.1940	19.880	22.630	21.950	23.520	27.120
TQ	11473	1.751	1.064	0.745	1.386	1.098	1.982	9.306
LEV	11473	0.509	0.198	0.068	0.518	0.361	0.662	0.943
GROWTH	11473	0.160	0.377	-0.708	0.086	0.005	0.206	3.838
CF	11473	0.049	0.069	-0.204	0.049	0.010	0.090	0.297
CI	11473	2.605	2.770	0.280	1.798	1.183	2.937	28.580
MS	11473	0.015	0.038	0.000	0.00	0.001	0.010	0.319
BOARD	11473	2.208	0.194	1.609	2.197	2.197	2.303	2.708
DUAL	11473	0.092	0.289	0.000	0.000	0.000	0.000	1.000
AGE	11473	14.150	6.546	1.000	14.000	9.000	19.000	29.000

Basic Regression Results

Table 5 reports the regression results of the impact of mixed-ownership reform on competitive strategy. Columns (1)-(2) display that the diversity of mixed shareholders (*MIXS*) is significantly positively correlated with differentiation strategy (*Diff*) (α_1=0.380, *P*<0.01), but not significantly correlated with cost leadership strategy (*Cost*) (α_1 = -0.107, P>0.1), indicating that the higher the diversification degree of heterogeneous shareholders introduced by the mixed-ownership reform of SOEs, the stronger the promotion of the differentiation strategy, but it has no substantial impact on the cost leadership strategy. Columns (3)-(4) show that the depth of mixed equity (*MIXO*) is significantly positively correlated with differentiation strategy (*Diff*) (α_1=0.473, P<0.01), but not correlated with cost leadership strategy (*Cost*) (α_1=-0.068, P>0.1), which declares that the higher the shareholding ratio of non-state-owned shareholders, the more inclined the SOEs are to carry out a differentiation strategy. Columns (5)-(6) reveal that the control of mixed equity (*NONSOE_D*) is significantly positively correlated with differentiation strategy (*Diff*) (α_1=0.954, P<0.01), but does not correlate with cost leadership strategy (*Cost*) (α_1=0.021, P>0.1), manifesting that the higher the proportion of directors appointed by non-state-owned shareholders, the more able they are to drive SOEs to choose a differentiation strategy rather than a cost leadership strategy. Columns (7)-(8) display that the excess control of mixed equity (*NONSOE_OD*) is also significantly positively correlated with differentiation strategy (*Diff*) (α_1=0.170, P<0.05), but not with a cost leadership strategy (α_1=0.073, P>0.1), demonstrating that the more excess board seats obtained by non-state-owned shareholders, the greater the possibility that SOEs will choose the differentiation strategy. From the above results, it can be seen that H1-H4 are accepted.

Table 5

The Regression Results of the Impact of Mixed-Ownership Reform on the Competitive Strategy of SOEs

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Diff	Cost	Diff	Cost	Diff	Cost	Diff	Cost
MIXS	0.380***	-0.107						
	(4.30)	(-1.08)						
MIXO			0.473***	-0.068				
			(3.76)	(-0.43)				
NONSOE_D					0.954***	0.021		
					(5.34)	(0.11)		
NONSOE_OD							0.170**	0.073
							(2.48)	(1.07)
SIZE	-0.054***	0.040**	-0.057***	0.040**	-0.046***	0.039**	-0.048***	0.039**
	(-3.35)	(2.23)	(-3.58)	(2.23)	(-2.94)	(2.16)	(-3.07)	(2.18)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Diff	**Cost**	**Diff**	**Cost**	**Diff**	**Cost**	**Diff**	**Cost**
TQ	0.286***	0.092***	0.289***	0.091***	0.288***	0.091***	0.290***	0.091***
	(6.38)	(5.05)	(6.41)	(5.03)	(6.46)	(5.03)	(6.46)	(5.04)
LEV	-0.290**	1.107***	-0.294**	1.107***	-0.271**	1.107***	-0.283**	1.109***
	(-2.39)	(10.20)	(-2.43)	(10.18)	(-2.25)	(10.17)	(-2.34)	(10.20)
GROWTH	-0.0001***	0.00002	-0.0002***	0.00002	-0.0002***	0.00002	-0.0002***	0.00003
	(-9.14)	(0.49)	(-9.55)	(0.56)	(-9.32)	(0.57)	(-9.28)	(0.64)
CF	1.331***	0.013	1.319***	0.015	1.308***	0.014	1.329***	0.014
	(7.17)	(0.07)	(7.10)	(0.08)	(7.06)	(0.07)	(7.13)	(0.07)
CI	0.041***	-0.046***	0.041***	-0.046***	0.040***	-0.046***	0.040***	-0.046***
	(4.21)	(-4.00)	(4.22)	(-3.99)	(4.21)	(-3.99)	(4.18)	(-3.99)
MS	-0.905**	1.116	-0.902**	1.117	-0.895**	1.119	-0.900**	1.125
	(-2.54)	(1.45)	(-2.52)	(1.45)	(-2.51)	(1.45)	(-2.54)	(1.46)
BOARD	-0.082	-0.265***	-0.076	-0.268***	-0.080	-0.271***	-0.071	-0.273***
	(-0.97)	(-2.89)	(-0.91)	(-2.92)	(-0.96)	(-2.93)	(-0.84)	(-2.96)
DUAL	0.095**	-0.040	0.104**	-0.043	0.105**	-0.043	0.105**	-0.044
	(2.23)	(-0.87)	(2.43)	(-0.93)	(2.49)	(-0.94)	(2.46)	(-0.94)
AGE	-0.004	0.005	-0.003	0.005	-0.002	0.005*	-0.005*	0.005*
	(-1.40)	(1.63)	(-1.21)	(1.64)	(-0.78)	(1.73)	(-1.68)	(1.80)
CONSTANT	0.751*	-1.035**	0.866**	-1.049**	0.615	-1.032**	0.735*	-1.028**
	(1.81)	(-2.41)	(2.07)	(-2.46)	(1.51)	(-2.40)	(1.78)	(-2.39)
YEAR F.E.	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
IND F.E.	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N	11473	11473	11473	11473	11473	11473	11473	11473
R^2	0.260	0.149	0.259	0.149	0.262	0.148	0.255	0.149
adj. R^2	0.258	0.146	0.256	0.146	0.260	0.145	0.253	0.146

*Note: The t-statistics are reported in parentheses on robust standard errors clustered at the firm level. *, ** and *** designate statistical significance at the 10 %, 5 %, and 1 % level, respectively.*

Robustness Test

(1) Endogenous Test

Instrumental variable analysis. Many unobservable factors at the firm level may affect the degree of mixed-ownership reform and competitive strategy of SOEs, resulting in the problem of omitted variable bias. This paper adopts the two-stage least squares method (IV-2SLS) to alleviate the possible endogeneity problem. Following the research of Li and Yu (2015), Tang et al. (2020), we select the annual average temperature of the city (*AVER_TEM*) and the number of coastal ports in the province (*SEA_PORT*) as the instrumental variables for the degree of SOEs' mixed-ownership reform.. The above variables are closely related to the level of economic development and the degree of marketization in the region where SOEs are located and determine the mixed-ownership reform process of SOEs to a certain extent. Meanwhile, as external factors, these variables will not directly affect the strategic decisions, thus meeting the conditions for instrumental variables. Table 6 reports the two-stage regression results. Columns (1)-(4) show the results of the first stage. The regression coefficient of the number of coastal ports in each province (*SEA_PORT*) is significantly positive, indicating that the greater the number of coastal ports in the region where SOEs are located, the higher the degree of non-state-owned shareholders participating in the governance. The second-stage regression results in columns (5)-(8) reveal that after controlling for endogeneity, the effect of SOEs' mixed-ownership reform in promoting the differentiation strategy still exists.

Table 6

The Regression Results of Two-Stage 2SLS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	MIXS	**MIXO**	**NONSOE_D**	**NONSOE_OD**	**Diff**	**Diff**	**Diff**	**Diff**
SEA_PORT	0.002***	0.001***	0.001***	0.0005*				
	(7.03)	(5.54)	(7.71)	(1.77)				
AVER_TEMP	0.001	0.001	-0.0001	0.0001				
	(1.61)	(1.48)	(-0.28)	(0.35)				
MIXS					0.978**			
					(2.34)			
MIXO						1.711**		
						(2.34)		
NONSOE_D							1.872**	
							(2.06)	
NONSOE_OD								4.875*
								(1.65)
CONSTANT	-0.109	-0.278***	0.0900*	-0.117**	0.591*	0.959***	0.332	1.056**
	(-1.38)	(-4.43)	(1.90)	(-2.19)	(1.89)	(2.60)	(1.02)	(1.96)
CONTROLS	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
YEAR/IND	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N	9217	9217	9217	9217	9217	9217	9217	9217

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	MIXS	**MIXO**	**NONSOE_D**	**NONSOE_OD**	**Diff**	**Diff**	**Diff**	**Diff**
R^2	0.077	0.082	0.092	0.033	—	—	—	—
adj. R^2	0.073	0.078	0.087	0.029	—	—	—	—
Hansen test	—	—	—	—	1.364 (P=0.2429)	1.249 (P=0.2638)	2.546 (P=0.1106)	0.835 (P=0.3607)

*Note: *, ** and *** designate statistical significance at the 10 %, 5 %, and 1 % level, respectively.*

Propensity score matching. The possibility and intensity of implementing mixed-ownership reform in SOEs are not thoroughly selected randomly. This paper uses the practice of Ma et al. (2021) for reference, and takes the propensity score matching method (PSM) to test the matched samples to alleviate the endogeneity problem caused by the sample selection. Firstly, we select the matching variables and group the samples according to whether non-state-owned shareholders appoint directors to SOEs. Secondly, the nearest neighbor matching method with calipers of 0.05 and put back is used for 1:2 propensity score matching. The balance test exhibit that the matching effect was good. Finally, we use model (1) to re-estimate the paired samples. Table 7 lists the regression results after matching. The diversity of mixed shareholders, the depth of mixed equity, the control of mixed equity, and the excess control of mixed equity are significantly positively related to the differentiation strategy but not associated with the cost leadership strategy. The regression results are consistent with the previous one.

Table 7

The Regression Results after PSM Matching

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Diff	**Cost**	**Diff**	**Cost**	**Diff**	**Cost**	**Diff**	**Cost**
MIXS	0.384*** (4.34)	-0.107 (-1.07)						
MIXO			0.474*** (3.77)	-0.066 (-0.42)				
NONSOE_D					0.955*** (5.34)	0.021 (0.11)		
NONSOE_OD							0.172** (2.50)	0.076 (1.11)
CONSTANT	0.762* (1.83)	-1.028** (-2.38)	0.879** (2.10)	-1.042** (-2.43)	0.627 (1.53)	-1.026** (-2.36)	0.747* (1.80)	-1.022** (-2.36)
CONTROLS	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
YEAR F.E.	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
IND F.E.	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N	11379	11379	11379	11379	11379	11379	11379	11379
R^2	0.261	0.149	0.259	0.149	0.263	0.149	0.255	0.149
adj. R^2	0.258	0.146	0.256	0.146	0.260	0.146	0.253	0.146

*Note: The t-statistics are reported in parentheses on robust standard errors clustered at the firm level. *, ** and *** designate statistical significance at the 10 %, 5 %, and 1 % level, respectively.*

(2) Other robustness tests

Alternative measures of explained variable. This paper uses the practice of Li et al. (2012) for reference to alleviate the possible impact of variable measurement error on the research conclusion. We measure the differentiation strategy (*Diff1*) with the average of the period expense ratio, operating gross profit margin and market to book value ratio attributed to the differentiation factor, and measure the cost leadership strategy (*Cost1*) with the average of the total asset turnover, fixed asset turnover, and employee efficiency attributed to the cost leadership factor. Table 8 reports the regression results for alternative measures of competitive strategy. The diversity of mixed shareholders, the depth of mixed equity, the control of mixed equity, and the excess control of mixed equity are significantly positively correlated with the differentiation strategy (*Diff1*) but have no correlation with the cost leadership strategy (*Cost1*), and the research conclusions are stable.

Table 8

Alternative Measures of Explained Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Diff1	**Cost1**	**Diff1**	**Cost1**	**Diff1**	**Cost1**	**Diff1**	**Cost1**
MIXS	0.214*** (3.03)	-0.080 (-0.94)						
MIXO			0.262** (2.49)	-0.018 (-0.13)				
NONSOE_D					0.494*** (3.27)	0.115 (0.69)		
NONSOE_OD							0.167*** (3.02)	0.030 (0.50)
CONSTANT	0.617*	-1.180***	0.681**	-1.176***	0.540*	-1.182***	0.585*	-1.171***

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Diff1	**Cost1**	**Diff1**	**Cost1**	**Diff1**	**Cost1**	**Diff1**	**Cost1**
	(1.89)	(-3.19)	(2.07)	(-3.18)	(1.68)	(-3.18)	(1.81)	(-3.16)
CONTROLS	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
YEAR F.E.	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
IND F.E.	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N	10268	10268	10268	10268	10268	10268	10268	10268
R^2	0.184	0.110	0.183	0.109	0.184	0.109	0.182	0.109
adj. R^2	0.181	0.106	0.180	0.106	0.181	0.106	0.179	0.106

*Note: The t-statistics are reported in parentheses on robust standard errors clustered at the firm level. *, ** and *** designate statistical significance at the 10 %, 5 %, and 1 % level, respectively.*

Alternative sample size. The impact of the financial crisis has caused great changes in the operating environment of SOEs. Under the condition of relatively sluggish macroeconomic development, the income expectation of enterprises for high-risk competitive behavior has dropped sharply, resulting in the deviation of the SOEs' decision makers in the competitive strategy choice. During the financial crisis, managers tend to maintain the inherent product type and large-scale production, and maintain a safer competitive strategy to obtain stable returns. Therefore, this paper removes the samples during the financial crisis (2008-2009) for regression. The test results are shown in Table 9. The diversity of mixed shareholders, the depth of mixed equity, the control of mixed equity, and the excess control of mixed equity are significantly positively correlated with the differentiation strategy but have no correlation with the cost leadership strategy, and the research conclusions remain robust.

Table 9

Alternative Sample Sizes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Diff	**Cost**	**Diff**	**Cost**	**Diff**	**Cost**	**Diff**	**Cost**
MIXS	0.369*** (4.05)	-0.107 (-1.04)						
MIXO			0.449*** (3.56)	-0.068 (-0.42)				
NONSOE_D					0.948*** (5.13)	0.055 (0.27)		
NONSOE_OD							0.209*** (2.95)	0.073 (1.01)
CONSTANT	0.777* (1.83)	-0.950** (-2.15)	0.888** (2.09)	-0.965** (-2.19)	0.659 (1.58)	-0.953** (-2.15)	0.783* (1.85)	-0.941** (-2.13)
CONTROLS	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
YEAR F.E.	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
IND F.E.	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N	10070	10070	10070	10070	10070	10070	10070	10070
R^2	0.265	0.148	0.263	0.148	0.267	0.148	0.260	0.148
adj. R^2	0.262	0.145	0.260	0.144	0.264	0.144	0.257	0.144

*Note: The t-statistics are reported in parentheses on robust standard errors clustered at the firm level. *, ** and *** designate statistical significance at the 10 %, 5 %, and 1 % level, respectively.*

Mechanism Test

Based on the baseline regression results, it is found that the higher the degree of mixed-ownership reform, the more likely SOEs are to choose a differentiation strategy rather than a cost leadership strategy. Then, this paper constructs the mediating effect model to explore how mixed-ownership reform affects differentiation strategy. Drawing on the practice of Wen et al. (2004), the analysis is carried out in the following three steps: the first step is to explore the impact of SOEs' mixed-ownership reform on differentiation strategy, which is verified through model (1); the second step is to study the impact of mixed-ownership reform on mediating variables, which is verified by models (2) and (4); the third step is to explore the impact of mixed-ownership reform on differentiation strategy after adding mediating variables, which is verified by models (3) and (5).

(1) Financing constraint mechanism

For testing whether the mixed-ownership reform promotes SOEs to choose the differentiation strategy by easing financing constraints, models (2) and (3) are constructed to examine the mediating effect of financing constraints:

$$SA_{i,t} = \beta_0 + \beta_1 MIX_{i,t} + \beta_2 CONTROLS_{i,t} + \eta_{YEAR} + \eta_{IND} + \varepsilon_{i,t} \quad (2)$$

$$Diff_{i,t+1} = \gamma_0 + \gamma_1 MIX_{i,t} + \gamma_2 SA_{i,t} + \gamma_3 CONTROLS_{i,t} + \eta_{YEAR} + \eta_{IND} + \varepsilon_{i,t} \quad (3)$$

SA represents the degree of enterprise financing constraint. Based on the method of Hadlock and Pierce (2010), the calculation is performed according to the following equation: SA=-0. 737 × (*Total Assets*) + 0. 043 × (*Total Assets*)^2 − 0. 040×*Age*. Among them, *Total Assets* is the natural logarithm of the enterprise's total assets, and *Age* is the listing year of the enterprise. The larger the value of *SA*, the higher the financing constraints of SOEs.

Table 10 reports the test results of the financing restraint mechanism. Columns (2), (5), (8), and (11) display that the diversity of mixed shareholders, the depth of mixed equity, the control of mixed equity, and the excess control of mixed

equity are significantly negatively correlated with financing constraints, indicating that the non-state-owned shareholders' acquisition of dual control rights reduces the financing constraints on SOEs. Columns (3), (6), (9), and (12) show that under the control of financing constraints, the diversity of mixed shareholders, the depth of mixed equity, the control of mixed equity, and the excess control of mixed equity are still significantly positively correlated with the differentiation strategy. The regression coefficients decrease from 0.380、0.473、0.954 and 0.170 to 0.361、0.449、0.915 and 0.160. It illustrates that financing constraints partially mediate the relationship between the mixed-ownership reform and differentiation strategy. Hypothesis H5 is accepted.

Table 10

The Test Results of the Financing Constraint Mechanism

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Diff	**SA**	**Diff**	**Diff**	**SA**	**Diff**	**Diff**	**SA**	**Diff**	**Diff**	**SA**	**Diff**
MIXS	0.380*** (4.30)	-0.091*** (-3.34)	0.361*** (4.11)									
MIXO				0.473*** (3.76)	-0.106** (-2.51)	0.449*** (3.57)						
NONSOE_D							0.954*** (5.34)	-0.188*** (-3.20)	0.915*** (5.10)			
NONSOE_OD										0.170** (2.48)	-0.046** (-1.97)	0.160** (2.33)
SA			-0.210*** (-2.86)			-0.219*** (-2.95)			-0.208*** (-2.82)			-0.233*** (-3.13)
CONSTANT	0.751* (1.81)	-5.432*** (-36.31)	-0.392 (-0.64)	0.866** (2.07)	-5.458*** (-36.10)	-0.330 (-0.54)	0.615 (1.51)	-5.404*** (-36.11)	-0.507 (-0.84)	0.735* (1.78)	-5.428*** (-36.11)	-0.530 (-0.87)
CONTROLS	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
YEAR F.E.	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
IND F.E.	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N	11473	11473	11473	11473	11473	11473	11473	11473	11473	11473	11473	11473
R^2	0.260	0.595	0.263	0.259	0.594	0.261	0.262	0.594	0.265	0.255	0.592	0.258
adj. R^2	0.258	0.593	0.260	0.256	0.592	0.259	0.260	0.593	0.262	0.253	0.591	0.255
Sobel Test	5.285(p=0.000)			5.237(p=0.000)			5.195(p=0.000)			3.050(p=0.002)		

*Note: The t-statistics are reported in parentheses on robust standard errors clustered at the firm level. *, ** and *** designate statistical significance at the 10 %, 5 %, and 1 % level, respectively.*

(2) Risk-taking mechanism

For testing whether the SOEs' mixed-ownership reform drives the development of differentiation strategy by improving the risk-taking level, models (4) and (5) are constructed to examine the mediating effect of risk-taking:

$$RISK_{i,t} = \beta_0 + \beta_1 MIX_{i,t} + \beta_2 CONTROLS_{i,t} + \eta_{YEAR} + \eta_{IND} + \varepsilon_{i,t} \quad (4)$$

$$Diff_{i,t+1} = \gamma_0 + \gamma_1 MIX_{i,t} + \gamma_2 RISK_{i,t} + \gamma_3 CONTROLS_{i,t} + \eta_{YEAR} + \eta_{IND} + \varepsilon_{i,t} \quad (5)$$

RISK represents the risk-taking level of SOEs. Referring to the practice of He et al. (2019), it is measured by the earnings volatility of the enterprise. The larger the value of *RISK*, the higher the risk-taking level of SOEs. The specific calculation method is as follows:

$$RISK_{i,t} = \sqrt{\frac{1}{T-1}\sum_{t=1}^{T}\left(Adj_{Roa_{i,t}} - \frac{1}{T}\sum_{t=1}^{T} Adj_{Roa_{i,t}}\right)^2}$$

Table 11 reports the test results of the risk-taking mechanism. Columns (2), (5), and (8) reveal that the diversity of mixed shareholders, the depth of mixed equity and the control of mixed equity all have a significant positive correlation with risk-taking. Columns (3), (6), and (9) explain that in the case of controlling the risk-taking level, the diversity of mixed shareholders, depth of mixed equity and the control of mixed equity are still significantly positively correlated with the differentiation strategy. The regression coefficients decrease from 0.380、0.473 and 0.954 to 0.346、0.406 and 0.842, which states that risk-taking plays partial mediating effect. Thus, there is full support for H6. Column (11) shows that the regression coefficient β_1 of the excess control of mixed equity is insignificant and has no correlation with risk-taking, so the Sobel Z test is used for further investigation. Following the test results, the Sobel Z statistics is 0.676. The corresponding P value is 0.499, manifesting that risk-taking does not mediate the relationship between the excess control of mixed equity and differentiation strategy. We find that when the explanatory variable is the excess control of mixed equity, H6 is not accepted. This may be due to the fact that non-state-owned shareholders' over appointed directors entering SOEs require some time to master operational information and perfect governance mechanisms, which cannot significantly elevate the risk-taking capacity of SOEs in the short term.

Table 11

The Test Results of the Risk-Taking Mechanism

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Diff	**RISK**	**Diff**	**Diff**	**RISK**	**Diff**	**Diff**	**RISK**	**Diff**	**Diff**	**RISK**	**Diff**
MIXS	0.380*** (4.30)	1.414*** (4.95)	0.346*** (3.93)									
MIXO				0.473*** (3.76)	2.570*** (5.30)	0.406*** (3.24)						
NONSOE_D							0.954*** (5.34)	2.821*** (3.56)	0.842*** (4.68)			

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Diff	**RISK**	**Diff**	**Diff**	**RISK**	**Diff**	**Diff**	**RISK**	**Diff**	**Diff**	**RISK**	**Diff**
NONSOE_OD										0.170**	0.130	0.130*
										(2.48)	(0.33)	(1.92)
RISK			0.0134***			0.0135***			0.0135***			0.0151***
			(2.99)			(2.96)			(3.01)			(3.32)
CONSTANT	0.751*	8.649***	0.633	0.866**	9.309***	0.730*	0.615	8.258***	0.520	0.735*	8.577***	0.605
	(1.81)	(7.47)	(1.53)	(2.07)	(8.00)	(1.76)	(1.51)	(7.11)	(1.28)	(1.78)	(7.31)	(1.47)
CONTROLS	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
YEAR F.E.	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
IND F.E.	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N	11473	11210	11210	11473	11210	11210	11473	11210	11210	11473	11210	11210
R^2	0.260	0.081	0.263	0.259	0.085	0.262	0.262	0.080	0.264	0.255	0.075	0.259
adj. R^2	0.258	0.078	0.261	0.256	0.081	0.259	0.260	0.077	0.262	0.253	0.072	0.256
Sobel Test	4.225(p=0.000)			4.388(p=0.000)			4.112(p=0.000)			0.676(p=0.499)		

*Note: The t-statistics are reported in parentheses on robust standard errors clustered at the firm level. *, ** and *** designate statistical significance at the 10 %, 5 %, and 1 % level, respectively.*

Further Analysis

The previous research conclusions point out that the mixed-ownership reform positively promotes enterprises to choose the differentiation strategy. However, the exertion of this governance role is affected by many factors, the most important of which are the external institutional environment and the internal control quality faced by SOEs.

(1) Heterogeneity analysis of the external institutional environment

A sound market system is necessary for economic development. The promotion of mixed-ownership reform and the exercise of shareholder rights will be affected by the institutional environment in which SOEs are located (Massis et al. 2018). From the governance environment, when the institutional environment of the region where SOEs are located is poor, the degree of government intervention is higher, the level of property rights protection is relatively weak, and the interests of non-state-owned shareholders are vulnerable to infringement (Xu and Liu 2013). It is difficult to rely on shareholder and board power to influence competition behaviors. In regions with a relatively perfect institutional environment, the government has less intervention in the market, and the market competition is sufficient. Non-state-owned shareholders tend to choose a differentiation strategy to gain a competitive position. From the intellectual property, regions with better external institutional environment have more complete intellectual property protection systems, which can greatly reduce the possibility of SOEs' differentiated products or technologies being stolen or imitated by competitors, prevent enterprises from falling into price disputes, and provide institutional guarantee for the smooth development of differentiation strategy. From the financing environment, a differentiation strategy needs to form a unique competitive advantage through technology development or amelioration of distribution channels (Zheng and Li 2011), which consumes more funds. Regions with a sound external institutional environment have a good level of economic development. SOEs are more likely to raise funds from outside, increasing non-state-owned shareholders' willingness to choose a differentiation strategy. Therefore, the more perfect the external institutional environment faced by enterprises, the stronger the positive impact of mixed-ownership reform on differentiation strategy.

Regarding the external institutional environment, this paper draws on the research of Wang et al. (2018), and divides Liaoning, Hebei, Tianjin, Beijing, Shandong, Jiangsu, Shanghai, Zhejiang, Fujian and Guangdong into the eastern region, and the other provinces into the midwest region. The eastern region has a developed economy, a high level of marketization, and a relatively sound external institutional environment, while the midwest region have a low level of marketization, and the external institutional environment needs to be improved. Therefore, this paper defines SOEs in the eastern region as a group with good external institutional environment, and SOEs in the midwest region into a group with poor external institutional environment. Table 12 reports the group regression results of the external institutional environment. It is found that when SOEs are in regions with a good external institutional environment, the positive correlation between the diversity of mixed shareholders, the depth of mixed equity, the control of mixed equity, and the excess control of mixed equity and differentiation strategy is more robust, and all pass the inter-group coefficient difference test. The above results show that the external institutional environment of SOEs determines the impact of mixed-ownership reform on differentiation strategy.

Table 12

The Group Inspection Results of the External Institutional Environment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Good	**Poor**	**Good**	**Poor**	**Good**	**Poor**	**Good**	**Poor**
MIXS	0.390***	0.322**						
	(3.63)	(2.20)						
MIXO			0.543***	0.292				
			(3.66)	(1.27)				
NONSOE_D					0.984***	0.668**		
					(4.90)	(2.01)		
NONSOE_OD							0.237***	-0.042
							(2.78)	(-0.38)
CONSTANT	0.732	0.428	0.861*	0.511	0.489	0.451	0.692	0.465
	(1.52)	(0.61)	(1.80)	(0.72)	(1.04)	(0.65)	(1.45)	(0.67)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Good	**Poor**	**Good**	**Poor**	**Good**	**Poor**	**Good**	**Poor**
CONTROLS	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
YEAR F.E.	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
IND F.E.	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N	6778	4694	6778	4694	6778	4694	6778	4694
R^2	0.283	0.277	0.283	0.274	0.286	0.276	0.278	0.273
adj. R^2	0.279	0.271	0.278	0.268	0.282	0.270	0.274	0.267
Inter-group difference test	-0.068* (P=0.067)		-0.251***(p=0.000)		-0.315** (P=0.000)		-0.279***(p=0.000)	

*Note: The t-statistics are reported in parentheses on robust standard errors clustered at the firm level. *, ** and *** designate statistical significance at the 10 %, 5 %, and 1 % level, respectively.*

(2) Heterogeneity analysis of internal control quality

The internal control quality is the key for micro-enterprises to enhance their control and anti-risk capabilities (Cao et al. 2020). If the internal control quality is high, the property rights owned by non-state-owned shareholders have been well protected, which promotes the sufficient supply and effective allocation of heterogeneous knowledge, skills, and capital in SOEs, establishes a communication bridge with the external market, and provides guarantee for enterprises to conduct differentiation strategy. In SOEs with defects in internal control, the decision-making authority and usufruct of non-state-owned shareholders are limited, and their appointed directors cannot fully understand the competitive behaviors. They lack the motivation to create unique products and services for SOEs. In addition, the SOEs with mixed-ownership reform that actively participate in the market competition have gradually formed a risk awareness of "independent operation, and full responsibility for profits or losses". The enhancement of internal control quality can facilitate SOEs to effectively prevent operational risks (Lin and Ding 2019), reasonably identify, evaluate and deal with the risks related to strategic choice, improve the anti-risk ability of enterprises, and provide the possibility for SOEs to choose differentiation strategy. Therefore, when the internal control quality of SOEs is high, the positive effect of mixed-ownership reform on the differentiation strategy is more prominent.

For the internal control quality, referring to the practice of Wang et al. (2011), we use the internal control information disclosure index in the DIB database for measurement and take the median of the index as the benchmark to divide the sample into the group with higher internal control quality and the group with lower internal control quality. Table 13 reports the group regression results on the internal control quality. In the SOEs with higher internal control levels, the positive correlation between the diversity of mixed shareholders, the depth of mixed equity, and the control of mixed equity and the differentiation strategy are stronger, and all of them have passed the inter-group coefficient difference test. The relationship between the excess control of mixed equity and differentiation strategy has no significant difference in different groups, which may be because non-state-owned shareholders can "effectively" voice in the board after obtaining excess board seats. At this time, whether the internal supervision is strict or not, they can exert substantive influence on competitive strategy decisions during the negotiation process of heterogeneous directors. The above results declare that the internal control quality is an important factor for the mixed-ownership reform of SOEs to affect the differentiation strategy.

Table 13

The Group Inspection Results of Internal Control Quality

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	High	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**
MIXS	0.522***	0.207**						
	(4.99)	(2.09)						
MIXO			0.560***	0.337**				
			(3.51)	(2.53)				
NONSOE_D					1.033***	0.848***		
					(4.74)	(4.21)		
NONSOE_OD							0.196**	0.163*
							(2.13)	(1.81)
CONSTANT	0.167	1.772***	0.302	1.840***	-0.0231	1.666***	0.0536	1.815***
	(0.34)	(3.91)	(0.61)	(4.05)	(-0.05)	(3.71)	(0.11)	(4.02)
CONTROLS	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
YEAR F.E.	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
IND F.E.	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N	5846	5627	5846	5627	5846	5627	5846	5627
R^2	0.308	0.235	0.303	0.236	0.306	0.240	0.298	0.234
adj. R^2	0.303	0.230	0.298	0.230	0.301	0.235	0.293	0.229
Inter-group difference test	-0.315***(p=0.000)		-0.224***(p=0.000)		-0.186**(p=0.022)		-0.033(p=0.220)	

*Note: The t-statistics are reported in parentheses on robust standard errors clustered at the firm level. *, ** and *** designate statistical significance at the 10 %, 5 %, and 1 % level, respectively.*

Conclusions

As a main content of the SOE reform in the new era, mixed-ownership reform has received extensive attention from the theoretical and practical circles. The SOEs' mixed-ownership reform introduces non-state-owned shareholders and their appointed directors, which enriches the resource elements and improves the anti-risk capability of enterprises, thus exerting substantial influence on the competitive strategy. This paper studies the effect of mixed-ownership reform on the competitive strategy of SOEs to provide references for deepening the SOE reform in China. The main research conclusions are as follows: (1) The greater the diversity of mixed shareholders, the depth of mixed equity, the control of mixed equity, and the excess control of mixed equity, the higher the degree of SOEs' mixed-ownership reform, the more it can promote enterprises to choose a differentiation strategy. (2) The mechanism test finds that the mixed-ownership reform drives the SOEs to carry out the differentiation strategy by easing financing constraints, raising the risk-taking level, and urging enterprises to create unique products to obtain sustainable competitive advantages. (3) Heterogeneity analysis indicates that if the SOEs' external institutional environment is relatively complete and the internal control quality is better, the mixed-ownership reform will have a stronger impetus for enterprises to choose a differentiation strategy.

The conclusions presented are based on the unique context of China's mixed-ownership reform. However, scholars from other countries have also explored the impact of privatization on the SOEs' development. Fuchs and Uebehnesser (2014) pointed out that the privatization of SOEs can improve the enterprises' economic efficiency and competitiveness, and enhance the overall economic performance of a country. Boubakri et al. (2020) examined the relationship between state residual ownership and bank risk-taking in privatized banks from 45 countries, finding that banks after privatization exhibit a higher level of risk-taking compared to non-privatized banks that are listed. Therefore, by integrating current research from around the world, we expand upon the study in this paper to reach the following general conclusions: In the process of SOE reform, when SOEs transfer part of their authority to non-state-owned enterprises, they can fully leverage the effect of complementary resources and mutual oversight between state-owned and non-state-owned capital. This enhances the efficiency of resource allocation and the capacity for risk-taking, promotes the adoption of differentiation strategy of SOEs, and helps enterprises to establish unique competitive advantages.

The research conclusions of this paper provide the following policy suggestions: (1) Actively develop mixed-ownership reform and empower non-state-owned shareholders with sufficient shareholder power and board power. The mixed-ownership reform should consider enriching the types of mixed equity and broadening the shareholding level of non-state-owned capital. It also needs to go deep into the actual governance level so that non-state-owned shareholders have board seats that are equal to or even surpass their equity, optimize the power composition of the board, build a governance mechanism with transparent rights and responsibilities, coordinated operation, and effective checks and balances, promote SOEs to allocate resources and bear risks better, and provide conditions for enterprises to conduct differentiation strategy to participate in the competition. (2) Optimize SOEs' internal and external institutional environment and protect the legitimate rights and interests of non-state-owned strategic investors. The mixed-ownership reform has a more obvious effect in promoting the differentiation strategy when the external institutional environment and internal control quality of SOEs are better. Therefore, it is necessary to strengthen the institutional environment construction in the region where SOEs are located, improve the regional property rights protection system and relevant laws and regulations, and establish a fair market competition environment. We also emphasize the perfection of the internal supervision system, facilitate the internal control quality, standardize the strategic decision process, and provide assistance for SOEs to create differentiated competitive advantages.

This study has important theoretical, practical, and managerial implications. Firstly, from a theoretical perspective, this paper is set against the backdrop of deepening SOE reform in the new era. By drawing on theories related to strategic management and corporate governance, it explores whether and how the governance of non-state-owned shareholders based on mixed-ownership reform can influence the competitive strategy of SOEs. The paper reveals the specific mechanisms of the two, which contributes to a better understanding of the decision-making process for competitive strategy in SOEs and significantly expands the knowledge systems related to mixed-ownership reform and strategic management research. Secondly, in terms of practical perspective, the findings of this paper indicate that the advancement of mixed-ownership reform optimize the resource allocation and enhance risk-taking capabilities of SOEs. This provides evidence to support the guidance of SOEs in carrying out differentiation strategic activities and shaping core competencies. It also offers practical reference for China and other countries in achieving the optimization and upgrading of economic structures. Thirdly, from a managerial perspective, this study forms a unique Chinese case on how institutional arrangements impact the competitive strategy of SOEs. It provides insights for SOE managers in adjusting and formulating competitive strategy during the process of deepening reforms. The research offers useful information for the strategic management of SOEs in different economies, promoting the SOEs' sustainable development worldwide.

There are two research limitations and future research directions. In terms of the research subject, China's mixed-ownership reform includes both the introduction of non-state-owned capital into SOEs and the participation of state-owned capital in private enterprises. This paper focuses only on the former, examining the governance role of non-state capital within SOEs, and does not fully present the complete picture of mixed-ownership reform. In future research, we will consider the mutual shareholding between SOEs and private enterprises to comprehensively investigate the institutional effects of mixed-ownership reform. In terms of indicator measurement, this paper selects publicly available financial indicators and combines confirmatory factor analysis to

measure types of competitive strategy. However, with the ongoing development of machine learning, we may consider employing methods such as annual report text analysis to collect strategic information, characterize competitive strategy indicators, and enhance the objectivity and scientific nature of the measurements.

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References

Alipour, M. (2013). Has Privatization of State-Owned Enterprises in Iran Led to Improved Performance? *International Journal of Commerce & Management*, 23(04), 281–305. https://doi.org/10.1108/IJCoMA-03-2012-0019

Baldenius, T., Melumad, N., & Meng, X. (2014). Board composition and CEO power. *Journal of Financial Economics*, 112(1), 53–68. https://doi.org/10.1016/j.jfineco.2013.10.004

Barroso Casado, R., Burkert, M., Davila, A., & Oyon, D. (2016). Shareholder Protection: The Role of Multiple Large Shareholders. *Corporate Governance: An International Review*, 24(2), 105–129, https://doi.org/10.1111/corg.12131

Bo, Q., & Yang, Y. (2020). The impact of organizational slack resources on green innovation performance - The mediating role of social responsibility. *Finance & Economics* (12), 96–106.

Boubakri, N., Cosset, J. C., & Saffar, W. (2013). The role of state and foreign owners in corporate risk-taking: Evidence from privatization. *Journal of Financial Economics*, 108(3), 641–658. https://doi.org/10.1016/j.jfineco.2012.12.007

Boubakri, N., Cosset, J. C., Guedhami, O., & Saffar, W. (2011). The Political Economy of Residual State Ownership in Privatized Firms: Evidence from Emerging Markets. *Journal of Corporate Finance*, 17(02), 244–258. https://doi.org/10.1016/j.jcorpfin.2010.08.003

Boubakri, N., El Ghoul, S., Guedhami, O., & Hossain, M. (2020). Post-privatization state ownership and bank risk-taking: Cross-country evidence. Journal of Corporate Finance, 64, https://doi.org/10.1016/j.jcorpfin.2020.101625

Boubakri, N., Guedhami, O., Kwok, C. C. Y., & Wang, H. (2019). Is Privatization a Socially Responsible Reform? . *Journal of Corporate Finance*, 56, 129–151. https://doi.org/10.1016/j.jcorpfin.2018.12.005

Brander, J., & Lewis, T. R. (1986). Oligopoly and Financial Structure: The Limited Liability Effect. *American Economic Review*, 76(5), 956–970, https://doi.org/10.2307/1816462

Cai, G. L., Liu, J. H., & Ma, X. X. (2018). Non-State Shareholders' Governance and Executive Compensation Incentives of SOEs. *Management World*, 34(5), 137–149, https://doi.org/10.19744/j.cnki.11-1235/f.2018.05.011

Cao, Y., Sun, L., Guo, T. X., & Jiang, H. L. (2020). Does "Mixed Reform of State-owned Enterprises" Improve the Quality of Internal Control:Evidence from Chinese Listed State-owned Enterprises. *Accounting Research*(8), 144–158, doi. CNKI:SUN:KJYJ.0.2020-08-011

Chai, C., Huang, S. Z., & Ye, Q. H. (2017). Competitive Strategy,Executive Compensation Incentive and Corporate Performance--An Empirical Study Based on Three Views of Compensation Incentive. *Accounting Research*(6), 45–52+96, doi.CNKI:SUN:KJYJ.0.2017-06-008

Chen, G., Firth, M., Gao, D. N., & Rui, O. M. (2006). Ownership structure, corporate governance, and fraud: Evidence from China. *Journal of Corporate Finance*, 17(02), 424–448, https://doi.org/10.1016/j.jcorpfin.2005.09.002

Chen, L. Y., Huang, J., & Chen, X. Y. (2021). Will the Mixed-ownership Reform Increase the Executive-Employee Pay Gap of SOEs ? . *Nankai Business Review*, 24(5), 150–162.

Cheng, M. Y., & Wei, M. H. (2013). The Excessive Authority of Related Shareholders. *China Industrial Economics*(10), 108–120, https://doi.org/10.19581/j.cnki.ciejournal.2013.10.009

Coviello, N., & Munro, H. (1997). Network relationships and the internationalisation process of small software firms. *International Business Review*, 6(4), 361–386. https://doi.org/10.1016/S0969-5931(97)00010-3

David, J. S., Hwang, Y., Pei, B., & Reneau, J. H. (2002). The Performance Effects of Congruence Between Product Competitive Strategies and Purchasing Management Design. *Management Science*, 48(7), 866–885. https://doi.org/10.1287/mnsc.48.7.866.2819

Deng, J., Ma, H. L., & Ma, L. (2015). Entrepreneur's Social Capital,Competitive Strategy and Enterprise Performance--An Empirical Study Based on the Chinese Manufacturing on Listing Corporation. *Journal of Industrial Technological Economics*, 34(5), 150–160. doi: CNKI:SUN:GHZJ.0.2015-05-019

Djankov, S., & Murrell, P. (2002). Enterprise Restructuring in Transition: A Quantitative Survey. *Journal of Economic Literature*, 40(03), 739–792. https://doi.org/10.1257/002205102760273788

Duanmu, J. L., Bu, M., & Pittman, R. (2018). Does market competition dampen environmental performance? Evidence from China. *Strategic Management Journal*, 39(11), 3006-3030. https://doi.org/10.1002/smj.2948

Feng, H. Q., & Guo, N. (2021). Do Directors Excessively Appointed by Non-state-owned Shareholders Improve the Accounting Information Quality: Evidence from State-owned Enterprise Mixed Reform. *Accounting Research*(5), 15–31. doi:CNKI:SUN:KJYJ.0.2021-05-002

Fosu, S. (2013). Capital structure, product market competition and firm performance: Evidence from South Africa. *The Quarterly Review of Economics and Finance*, 53(2), 140–151. https://doi.org/10.1016/j.qref.2013.02.004

Frambach, R. T., Prabhu, J., & Verhallen, T. M. M. (2003). The influence of business strategy on new product activity: The role of market orientation. *International Journal of Research in Marketing*, 20(4), 377–397. https://doi.org/10.1016/j.ijresmar.2003.03.003

Fu, H. T., Yu, B., & Wang, K. (2018). Environmental uncertainty, redundant resources, and corporate strategic change. *Science of Science and Management of S. & T.*, 39(03), 92–105.

Fuchs, K., & Uebehnesser, S. (2014). Can There Be Too Much Privatization? The Role of Political Incentives. *Ce*sifo *Economic Studies* (04), 722–746. https://doi.org/10.1093/cesifo/ifu025

Guan, J., Gao, Z. M., Tan, J., Sun, W. Z., & Shi, F. (2021). Does the mixed ownership reform work? Influence of board chair on performance of state-owned enterprises. *Journal of Business Research*, 122, 51–59. https://doi.org/10.1016/j.jbusres.2020.08.038

Hadlock, C. J., & Pierce, J. R. (2010). New Evidence on Measuring Financial Constraints: Moving Beyond the KZ Index. *Review of Financial Studies*, 23(5), 1909–1940. https://doi.org/10.1093/rfs/hhq009

He, Y., & Yang, L. (2021). Mixed Ownership Reform of State-Owned Enterprises Since Reform and Opening-up: Course, Effect and Prospect. *Management World*, 37(7), 44–60+44. https://doi.org/10.19744/j.cnki.11-1235/f.2021.0091

He, Y., Yu, W. L., & Yang, M. Z. (2019). CEOs with Rich Career Experience, Corporate Risk-taking and the Value of Enterprises. *China Industrial Economics* (9), 155–173, https://doi.org/10.19581/j.cnki.ciejournal.2019.09.009

Hoskisson, R. E., Hitt, M. A., Johnson, R. A., & Grossman, W. (2002). Conflicting Voices: The Effects of Institutional Ownership Heterogeneity and Internal Governance on Corporate Innovation Strategies. *The Academy of Management Journal*, 45(4), 697–716. https://doi.org/10.2307/3069305

Hu, N., Qiu, F. J., & Liang, P. (2020). Competitive Strategy and Earnings Quality: An Empirical Study Based on Text Analysis. *Contemporary Finance & Economics* (9), 138–148. https://doi.org/10.13676/j.cnki.cn36-1030/f.2020.09.013

Lei, H., Wang, Y. N., Nie, S., S, & Ou Yang, L. P. (2015). Research on Lag Effect of Competitive Strategy based on Composite Index of Financial Performance. *Accounting Research* (5), 64–95. doi:CNKI:SUN:KJYJ.0.2015-05-009.

Li, F. Y., Qin, L. B., & Shi, Y. D. (2021). Pursuing Progress While Ensuring Stability:Can Over-Appointment of Directors by Ultimate Controllers Spur Corporate Innovation? *Finance & Trade Economics*, 42(3), 96–110. https://doi.org/10.19795/j.cnki.cn11-1166/f.20210308.004

Li, J., Chen, C. M., & Sun, J. H. (2012). The Entrepreneur's Political Connections,Choice of Competitive Strategy and Enterprise Value:An Empirical Study Based on the Dynamic Panel Data of Listed Company. *Nankai Business Review*, 15(6), 147–157. doi:CNKI:SUN:LKGP.0.2012-06-015.

Li, S., & Li, D. (2022). Can the board power of non-state-owned shareholders promote innovation in state-owned enterprises? *Foreign Economies and Management*, 44(04), 65–80. https://doi.org/10.16538/j.cnki.fem.20211111.203

Li, W. G., & Yu, M. G. (2015). The Ownership Structure of Private Enterprises and Enterprise Innovation. *Management World* (4), 112–125. https://doi.org/10.19744/j.cnki.11-1235/f.2015.04.011

Lin, L., & Wu, G. S. (2007). An empirical study on service enhancement differentiation mechanism of manufacturing enterprises in China. *Management World* (6), 103–113. https://doi.org/10.19744/j.cnki.11-1235/f.2007.06.012

Lin, Z. G., & Ding, M. H. (2019). Relational Transaction,Strategic Choices and Enterprise Internal Control. *Accounting and Economics Research* (3), 61–78. https://doi.org/10.16314/j.cnki.31-2074/f.2019.03.005

Liu, C. D. (2019). The Composition of Large Shareholders and the Performance of Enterprises under Mixed Ownership--An Empirical Test based on the Threshold Effect of Enterprise Size. Modern Finance and Economics-*Journal of Tianjin University of Finance and Econom*, 39(6), 15–26. https://doi.org/10.19559/j.cnki.12-1387.2019.06.002

Liu, D., Wang, Y. F., & Chen, S. (2018). Impact of Financial Slack on Competitive Strategy Choice of Firms: An Empirical Research Based on Manufacturing Industry of China. *Journal of Systems & Management*, 27(2), 208–218.

Low, A. (2009). Managerial risk-taking behavior and equity-based compensation. *Journal of Financial Economics*, 92(3), 470–490. https://doi.org/10.1016/j.jfineco.2008.05.004

Luo, F. K., Pang, T. Y., & Wang, J. (2019). Does the Mixed Ownership Reform Affect R&D Investment of Enterprises? An Empirical Evidence of the Chinese A-listed Enterprises. *R&D Management*, 31(2). https://doi.org/10.13581/j.cnki.rdm.2019.02.006.

Ma, N., & Jin, G. H. (2021). The Influence of Economic Policy Uncertainty on Corporate Strategic Difference. *Journal of Zhongnan University of Economics and Law* (1), 14–159. https://doi.org/10.19639/j.cnki.issn1003-5230.2021.0002

Ma, X. X., Tang, T. J., & Zheng, G. J. (2021). Non-state Shareholders' Governance, Tax Avoidance and Tax Contribution in SOEs: Based on the Perspective of Mixed Ownership Reform. *Management World*, 37(6), 128–141. https://doi.org/10.19744/j.cnki.11-1235/f.2021.0082

Massis, A. D., Ding, S., Kotlar, J., & Wu, Z. (2018). Family involvement and R&D expenses in the context of weak property rights protection: an examination of non-state-owned listed companies in China. *The European Journal of Finance*, 24(16), 1506–1527. https://doi.org/10.1080/1351847X.2016.1200994

Megginson, W. L., & N., J. M. (2001). From State to Market: A Survey of Empirical Studies on Privatization. *Journal of Economic Literature*, 39(02), 321–389. https://doi.org/10.1257/jel.39.2.321

Nguyen, M. H., & Vo, Q. T. (2020). Investigating the Association between Residual State Ownership and Privatized Firm Efficiency. *The Journal of Asian Finance, Economics and Business*, 7(5), 225–236. https://doi.org/10.13106/jafeb.2020.vol7.no5.225

Ormanidhi, O., & Stringa, O. (2008). Porter's Model of Generic Competitive Strategies. *Business Economics*, 43(3), 55–64. https://doi.org/10.2145/20080305

Ortega, M. J. R. (2010). Competitive strategies and firm performance Technological capabilities' moderating roles. *Journal of Business Research*, 63(12), 1273–1281. https://doi.org/10.1016/j.jbusres.2009.09.007

Pang, T. Y., Luo, F. K., & Li, Q. J. (2019). Does Mixed-ownership Affect Corporate Financing Constraints--Empirical Evidence from Chinese Listed Companies. *Journal of Shanxi University of Finance and Economics*, 41(5), 94–107, https://doi.org/10.13781/j.cnki.1007-9556.2019.05.008

Poter, M. E. (1980). Competitive Strategy: Techniques for Analyzaing Industries and Competitors. New York: Free Press.

Sheng, M. Q., Yu, L., & Wang, S. (2021). The Belt and Road Initiative and the Competitive Strategy Choice of China's *Enterprises International Economics and Trade Research*, 37(12), 55–73. https://doi.org/10.13687/j.cnki.gjjmts.20211210.003

Sun, Z. Y., & Sun, F. (2021). The Impact of Foreign Shareholdings on Corporate Strategic Choice:A Quasi-natural Experiment from "Shanghai-Hong Kong" and "Shenzhen-Hong Kong" Stock Connect *Journal of Shanghai University of Finance and Economics*, 23(5), 96–106, https://doi.org/10.16538/j.cnki.jsufe.2021.05.007

Tang, T. J., Wu, J. Y., Ma, X. X., & Song, X. Z. (2020). Non-state Shareholders' Governance and Audit Fees--Empirical evidence from mixed ownership reform of SOEs. *Auditing Research* (1), 68–77. doi:CNKI:SUN:SJYZ.0.2020-01-010.

Tian, Z. R., Zhu, B. S., & Lu, Y. Z. (2023). The governance of non-state shareholders and corporate ESG: Empirical evidence from China. *Finance Research Letters*, 56. https://doi.org/10.1016/j.frl.2023.104162

Wang, H., Jiang, Z. H., Hu, W. M., Zhao, L. S., & Lin, B. (2011). Research on Internal Control Index of China Public Company. *Accounting Research* (12), 20–96. doi:CNKI:SUN:KJYJ.0.2011-12-006.

Wang, H. S., & Liu, D. S. (2014). Entrepreneurs' Characteristics and Competitive Strategy and the Growth of SMEs - Evidence from Listed SME Companies of the Manufacturing Industry. *Journal of Beijing Institute of Technology*(Social Sciences Edition), 16(3), 75–82. https://doi.org/10.15918/j.jbitss1009-3370.2014.03.021

Wang, W. H., Ye, Q. Y., & Shen, X. (2021). Can Differentiation Strategy Promote Dual Innovation Investment? --Regulation Based on Environmental Uncertainty and Financial Flexibility. *Forecasting*, 40(2), 47–54.

Wang, X. Y., Ou Yang, C. Y., & Shi, Z. Y. (2018). Controlling Shareholder's Shares Pledge, the Risk of Losing Control Rights and Tax Avoidance. *Economic Research Journal*, 53(01), 138–152.

Wang, Z., J., Wang, H., & Li, Z. Z. (2021). Competitive Strategy, Capital Operation and Firm Performance. *Economic Survey*, 38(6). https://doi.org/10.15931/j.cnki.1006-1096.2021.06.010

Wen, Z. L., Zhang, L., Hou, J. T., & Liu, H. Y. (2004). Testing and Application of the Mediating Effects. Acta *Psychologica Sinica* (5), 614–620. doi:CNKI:SUN:XLXB.0.2004-05-016.

Wernerfelt, B. A. (1984). Resource-based View of the Firm. *Strategic Management Journal*, 5(02), 171–180. https://doi.org/10.1002/smj.4250050207

Wu, J. Z. (2010). Guanbenwei, Political Incentive and Strategic Choice of Chinese SOEs: An Attention-based View. *Paper presented at the the 2010 Conference on Management in China, Lanzhou, PEOPLES R CHINA*, Aug 13-15

Wu, Q. S., & Du, Z. Y. (2022). The Non-state-owned Directors' Enthusiasm for Governance and the Preservation and Appreciation of State-owned Enterprises' Assets --Based on Empirical Evidence of Board Voting. *Nankai Business Review*, 1–22[2022-2005-2024]. http://kns.cnki.net/kcms/detail/2012.1288.F.20210625.20211145.20210006.html.

Xu, X. X., & Liu, X. (2013). Decentralization Reform, Salary Regulation and Corporate Executive Corruption. *Management World* (3), 119–132, https://doi.org/10.19744/j.cnki.11-1235/f.2013.03.011

Yang, X. F., & Liu, C. Q. (2014). Niche Evaluation and Choice of Competition Strategy by Enterprises of Strategic Emerging Industry: a Case from Listed Companies of Energy Conservation and Environmental Protection. *Collected Essays on Finance and Economics* (1), 72–78, https://doi.org/10.13762/j.cnki.cjlc.2014.01.011

Zhang, L., Wang, Y., Su, J. Q., Chang, Q., & Zhang, Q. (2023). Resource-based theory: Evolution, knowledge framework, and prospects. *Nankai Business Review*, 26(04), 246–258.

Zhang, S. P., Zhou, J., & Zhou, F. G. (2019). Influence of Mixed Ownership Reform on Enterprises' Strategic Flexibility--Research from Perspective of Structural Power *Management Review*, 31(1), 183–196, https://doi.org/10.14120/j.cnki.cn11-5057/f.2019.01.017

Zhao, X., Lin, D., L., & Hao, T. (2017). A study on the impact of financial resource slack on R&D investment - The moderating effect of equity incentives. *Forecasting*, 36(03), 36–41.

Zhao, Y. Y., & Mao, J. Z. (2023). Mixed blessing: Mixed ownership reform and innovation behaviour of Chinese state-owned enterprises. *Finance Research Letters*, 56. https://doi.org/10.1016/j.frl.2023.104092

Zheng, B. Y., & Li, S. (2011). The relationship of competitive strategy, innovation selection, and firm performance Science Research Management, 32(4), 59–68, https://doi.org/10.19571/j.cnki.1000-2995.2011.04.008

Zhou, B., Huang, F., & Ren, Z. L. (2018). Enterprise Competition Strategy and Earnings Continuity. China Soft *Science* (3), 141–152. doi:CNKI:SUN:ZGRK.0.2018-03-014.

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