# Mixed-ownership Reform: Private Firms' Role in Targeted Poverty Alleviation —A Perspective on Resource Complementarity and Check & Balance

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**Abstract:** *Targeted poverty alleviation (TPA) serves as a winning formula for fighting poverty and has generated valuable experiences for achieving common prosperity. The mixed-ownership reform has enhanced corporate economic performance. However, further testing is required to assess whether enterprises contribute to the improvement of distribution by participating in TPA. Taking A-share-listed private enterprises between 2016 and 2021 as research samples, we conducted an investigation into the extent and manner in which the mixed-ownership reform contributes to TPA. Our research reveals that a higher proportion of state capital equity participation is correlated with a greater level of private enterprises' contribution to TPA. This indicates that the mixed-ownership reform is beneficial for prompting private enterprises to shoulder responsibilities for building a society of common prosperity. As shown by the mechanism test, state capital equity participation encourages private enterprises to contribute to TPA primarily by alleviating corporate financing constraints through the resource complementarity effect. In contrast, the check & balance effect of promoting corporate poverty alleviation by mitigating the principal-agent problem has not yet been significantly demonstrated. Regarding the poverty alleviation model, state capital equity participation prompts private enterprises to contribute to TPA through industrial development, educational investment, and environmental protection, emphasizing a combination of providing external assistance and cultivating endogenous development capacity. In terms of TPA regions, state capital equity participation plays a significant role in supporting economically less-developed regions, regions with high unemployment rates, and central and western regions. This paper provides new empirical evidence for deepening mixed-ownership reforms and advancing common prosperity.*

**Keywords:** *Mixed ownership, TPA, state capital, resource complementarity, check & balance*

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## 1. Introduction

The 20th National Congress of the Communist Party of China (CPC) defined Chinese modernization as modernization for the common prosperity of all its people. Common prosperity implies that the fruits of economic and social development should be shared by everyone. While it is crucial to pursue efficiency and increase the economic aggregate through productive development, it is equally important to promote fair distribution to narrow wealth gaps. As the saying goes, "the prosperity of a country lies in the well-being of its people": the key to moving towards a society of common prosperity is to lift people out of poverty and enable them to share in the benefits of economic development (Fan and Zou, 2021; Li and Zhu, 2022). China's poverty alleviation battle achieved a complete victory in 2020, fulfilling the important task of eradicating absolute poverty. This marks a solid step forward on the path to common prosperity. However, relative poverty will continue to exist for a long time, and poverty alleviation efforts still need to be continually advanced. According to the *Opinions on Effectively Linking the Consolidation and Expansion of Poverty Alleviation Achievements with Rural Revitalization* issued by the CPC Central Committee and the State Council, there should be a five-year transition period after the completion of poverty alleviation targets, during which poverty alleviation efforts and supervision should be maintained. For new priorities in the next stage, such as consolidating poverty alleviation results, alleviating relative poverty, and promoting rural revitalization, it is also necessary to strengthen collaborative efforts with private actors and market forces (Wang and Su, 2020). As primary participants in market economic activities, businesses play an increasingly important and active role in poverty alleviation (Jiang et al., 2023; Zhang et al., 2023). As President Xi Jinping emphasized, both state-owned and private enterprises are important forces and must shoulder social responsibilities for promoting common prosperity.[1]

The mixed-ownership reform significantly unleashed the vitality of different market entities by supporting cross-shareholding and integration among various ownership capitals, laying an important foundation for promoting common prosperity. Specifically, the mixed-ownership reform includes the reform of state-owned enterprises (SOEs) through the equity participation of private and other non-public entities, as well as the reform of non-SOEs through the equity participation of state capital. Through mixed-ownership reform, enterprises can introduce heterogeneous shareholders to transform their equity structure and optimize their modern corporate governance mechanism (Yang and Yin, 2018; Shen and Yang, 2019). Existing research has revealed that the mixed-ownership reforms of both SOEs and non-SOEs are beneficial for enhancing corporate business performance, as demonstrated by an increase in national income, thereby boosting the economic aggregate (Chen and Chen, 2021). A further query is whether the mixed-ownership reforms can bring the benefits of development to all people and ensure the proper distribution of economic dividends. Given that SOEs prioritize economic and social benefits with robust capacities and incentives for social responsibility, whereas private enterprises concentrate on profit and self-development with relatively weaker social responsibility, this paper will primarily examine whether the reforms of non-SOEs through the equity participation of state capital can prompt private enterprises to take on the social responsibility of promoting common prosperity.

As a strategic approach in the battle against poverty, TPA offers appropriate research samples for addressing the aforementioned question in this paper. Through TPA, enterprises not only provide a substantial amount of financial and in-kind assistance to poor regions but also introduce advanced technologies and business models locally through industrial poverty alleviation, enabling more impoverished people to share in the fruits of development. Currently, the existing literature mainly

[1] During his visit to members of the China Democratic National Construction Association and the All-China Federation of Industry and Commerce attending the Chinese People's Political Consultative Conference (CPPCC), Xi Jinping called for providing proper guidance for the healthy and high-quality development of the private sector of the economy [EB/OL]. Xinhuanet, March 6, 2023, www.news.cn/2023-03/06/c_1129417096.htm.

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focuses on the economic outcomes of enterprises' participation in TPA, while insufficient research has been conducted on how to incentivize enterprises to engage in TPA. For instance, numerous studies suggest that involvement in poverty alleviation helps enterprises improve their business performance, reduce risks, and increase shareholder returns (Bae et al., 2021; Zhen and Wang, 2021; Pan et al., 2021). Such conclusions have unveiled some of the reasons behind enterprises' participation in TPA. However, the underlying motivations and incentives for poverty alleviation investments remain insufficiently explored, hindering the formulation of policies needed to reinforce poverty alleviation, advance rural revitalization, and realize common prosperity. Some scholars have attempted to analyze the determinants of corporate decisions to contribute to poverty alleviation from the perspectives of government procurement and embedded Party organizations (Han and Wu, 2021; Dong and Lyu, 2023). State capital is a precious asset for all people and an important force for safeguarding the common interests of the people. Therefore, it is crucial to verify whether and how state capital can influence corporate contributions to TPA. Hence, taking A-share-listed private enterprises between 2016 and 2021 as samples, this paper investigates the effects of mixed-ownership reform on the participation of private enterprises in TPA and explores the underlying economic mechanism from two aspects of "resource complementarity" and "check & balance".

The contributions of this paper are as follows: First, this paper delves into the broader social impact of the mixed-ownership reform, offering empirical references for consolidating the results of poverty alleviation, facilitating countryside revitalization, and attaining common prosperity in the next stage. Existing research literature mainly focuses on uncovering the impact of state capital equity participation on the level of corporate governance and operational capabilities (He et al., 2022; Zeng et al., 2022). From a TPA point of view, this paper provides empirical evidence on how China's institutional strength contributes to good governance for achieving common prosperity. Second, this paper identifies the motivations for private enterprises to participate in TPA, presenting a new perspective on the economic mechanism through which state capital influences private enterprises. Existing research literature is primarily centered on the economic outcomes of corporate participation in TPA (Zhen and Wang, 2021; Dong and Lyu, 2023). In this paper, we test the resource complementarity effect and check & balance effect of state capital's equity participation in private enterprises, clarifying the reasons behind private enterprises' participation in TPA and providing guidance for the effective equity participation of state capital. Third, this paper conducts an in-depth discussion of the heterogeneous manifestations of the mixed-ownership reform influencing private enterprises' decisions to assist poverty alleviation. Based on a comprehensive analysis of poverty alleviation modes and poverty alleviation regions, we put forward policy recommendations for optimizing the allocation of state capital and explore effective ways to promote common prosperity.

## 2. Literature Review and Theoretical Hypotheses

### 2.1 Literature Review

*2.1.1 Mixed-ownership reform and diverse equity structure*

The Third Plenum of the 18th Central Committee of the Communist Party of China noted that the mixed-ownership economy, characterized by cross-shareholding and mutual integration among state-owned capital, collective capital, and non-public capital, represents a key embodiment of the fundamental economic system. It enhances state-owned capital's functionality, value preservation, and competitiveness, while promoting complementarities, mutual support, and collective growth among diverse capital forms. Subsequently, the *Opinions of the State Council on the Development of the Mixed-Ownership Economy in State-Owned Enterprises* released in 2015 called for non-public capital to participate in the mixed-ownership reform of state-owned enterprises and for state capital to be invested

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in non-state-owned enterprises in various ways. It pointed out that the mixed-ownership reform is a "two-way access" that includes both the reform of state-owned enterprises through the involvement of non-public capital and the reform of non-state-owned enterprises through the involvement of state capital. In terms of equity structure, the nature of the mixed-ownership reform in both directions is to introduce heterogeneous shareholders, which can develop resource complementarity while enhancing checks and balances. As for the mixed-ownership reform of state-owned enterprises, the introduction of market-oriented private capital not only helps improve the operational efficiency of state-owned enterprises (La Porta et al., 1999), but also serves to mitigate the principal-agent problem of state-owned enterprises and enhance their business performance (Liu et al., 2018). As for the mixed-ownership reform of private enterprises, the complementary resource endowment brought by state capital to private enterprises may enhance the latter's financing capacity, reduce financing costs and increase corporate value (He et al., 2022). It may also curb tunneling by controlling shareholders and reduce financial risks (Wang et al., 2022).

Scholars have conducted extensive research on the mixed-ownership reforms of state-owned enterprises and non-public enterprises. However, the majority of these studies are centered on economic performance aspects such as the enhancement of internal corporate governance, improvement in performance, and risk mitigation. There is a lack of discussions regarding whether state capital's equity participation can serve national strategies like the TPA program. Specifically, "two-way access" is a corporate governance mechanism with Chinese characteristics, namely the mixed equity structure featuring both state owned and private enterprises. Similar to the widely discussed "institution-individual" heterogeneous structure, this diverse equity structure can fully mobilize the unique resources of various types of equity and bring their respective strengths into play. In particular, existing research literature has fully verified the long-term perspective and professional capabilities of institutional investors in acting as a catalyst for enterprises to assume environmental and social responsibilities (Li and Lu, 2015). In comparison, further research is needed to fully uncover the effects of the diverse equity structure on the performance of corporate social responsibilities in the context of mixed ownership. State-owned capital seeks not just capital appreciation but also follows national mission-driven objectives, compensating for market economy deficiencies and supporting policy implementation. In the new era, state capital serves as the cornerstone and beacon for Chinese modernization and has a symbiotic relationship with private capital and foreign capital. The mixed-ownership reform will foster the convergence of interests between public and private entrepreneurs via ownership alliances. (Zeng et al., 2022).

*2.1.2 TPA in the context of common prosperity*

Reducing poverty is a crucial step towards common prosperity. Poverty is also regarded as a global challenge, and poverty alleviation has garnered significant attention from the international community[2] . Nobel laureates in economics Duflo and Banerjee (2011) posited that the key to reducing poverty lies in altering the external environment for the poor group and reshaping their way of thinking, rather than simply distributing welfare benefits. This view coincides with China's TPA concept and the "Five Measures for Poverty Alleviation[3]". With the comprehensive victory in poverty alleviation in 2020, the scientific nature of China's targeted poverty alleviation strategy has been fully validated and will continue to play a mobilizing and coordinating role in the future. (Wang and Su, 2020). Currently, academic research on TPA is centered on evaluating the policy effect of poverty alleviation based

[2] On October 14, 2019, the Royal Swedish Academy of Sciences awarded the Nobel Prize in Economics for 2019 to three development economists for their outstanding contributions to research on global poverty mitigation.

[3] The "Five Measures for Poverty Alleviation" include boosting the economy to provide more job opportunities, relocating poor people from inhospitable areas, compensating for economic losses associated with reducing ecological damage, improving education in impoverished areas, and providing subsistence allowances for those unable to shake off poverty through their own efforts alone.

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on micro-level tracking data. Research has found that the TPA policy can reduce poverty incidences (Wang and Hsu, 2019); increase the labor income of poor households (Li et al., 2020); and boost the per capita consumption of poor households (Yin and Guo, 2021). At the firm level, existing research is also focused on analyzing the economic outcomes of TPA. For instance, by contributing to poverty alleviation, enterprises can improve their business performance and productivity, increase shareholder return, and lower market risks (Liang and Renneboog, 2017; Zhen and Wang, 2021; Pan et al., 2021). The existing research literature has thoroughly demonstrated the positive economic and social benefits of TPA. How to effectively incentivize private enterprises to actively participate in TPA and assume social responsibilities for common prosperity is a question that merits further investigation.

### 2.2 Theoretical Assumptions

Equity structure exerts a significant impact on business decisions and constitutes a key element in the research on corporate governance (Aghion et al., 2013; Ma et al., 2015). Specifically, the diversification of equity structure has drawn increased attention and sparked more discussions. For instance, the equity participation of overseas shareholders and other institutional investors has been proven to substantially influence the investment and financing decisions of enterprises (Li and Han, 2014; Deng and Sun, 2014). Similarly, the heterogeneous shareholders introduced by mixed-ownership reform have also been proven to optimize the corporate equity structure and enhance the level of corporate governance. (Yang and Yin, 2018; Wang et al., 2022). The new round of state-owned enterprise reform aims to shift from "managing enterprises" to "managing capital" and from "invigorating state-owned enterprises" to "invigorating state capital". In the future, state capital will participate more extensively in the capital market through cross-shareholding and the mixed ownership system. At the same time, state capital and private enterprises will establish closer ties for in-depth integration between the state sector of the economy and the market-based economy. The increasing depth and breadth of state capital equity participation not only represents a flow of capital but, more importantly, a transfer of resource endowments and functional characteristics.

A notable characteristic of state capital is its assumption of significant public and social responsibilities. State capital investment and operations must drive social progress, guarantee national security, and contribute to strategic national priorities, including macroeconomic regulation and the transmission of industrial policies. At the same time, state capital has played a prominent role in maintaining social stability, national security, and fiscal revenues (Jiang and Kim, 2015). Currently, the Party and the government have introduced and implemented a series of key strategies that have set out relevant requirements for the performance of social responsibilities by state-owned enterprises[4]. The State Assets Supervision and Administration Commission (SASAC) has established a Bureau of Social Responsibilities dedicated to guide state-owned enterprises in generating greater social value. According to the CSI ESG Index data, more than 90% of central state-owned enterprises had disclosed their corporate social responsibility reports by the end of 2022, encompassing extensive and diverse information. Evidently, state capital plays a crucial role in supporting high-quality national economic development. While integrating complementary resources and balancing the equity structure, cross-holdings between state and non-public capital also help enterprises contribute more to providing public services, fulfilling social responsibilities, and promoting high-quality development.

In the context of TPA work, state-owned enterprises are naturally expected to shoulder more obligations for poverty alleviation, treat assistance as a political responsibility and exhibit more

[4] For instance, SASAC enacted the Work Plan on Improving the Quality of Listed Companies with Controlling Shares Held by Central State-Owned Enterprises, which calls for establishing and improving an ESG system and prompting more listed companies with controlling shares held by central state-owned enterprises to disclose special ESG reports, so as to achieve "complete coverage" of ESG reporting by 2023.

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prominent performance to poverty alleviation (Jiang and Kim, 2020). In comparison, the traditional private economic sector, especially small and medium-sized private enterprises, lack the motivation and capacity to participate in TPA. On one hand, private enterprises may lack the capacity for poverty alleviation due to limited credit supply, financing constraints, and a lack of supervision (Luo and Zhen, 2008). On the other hand, the nature of the owner determines the general attributes of capital. The highly market-oriented and profit-driven nature of private enterprise capital has led to a lack of incentive for social contribution (Wang et al., 2020). For a long time, the poverty alleviation policy instrument has relied on state-owned enterprises, and the potential strengths of private enterprises and private capital have yet to be fully unleashed. As the mixed-ownership reform deepens, extensive state capital participation has increased the level of equity diversification in private enterprises. In our view, this will enhance the motivation and capacity of private enterprises to contribute to poverty alleviation, thereby better balancing corporate profitability with the public interests. At the same time, state capital will play a greater role in social governance and incentivize enterprises to make improvements and give back to society. Based on the above analysis, we put forward hypothesis $H_1$.

*$H_1$: Assuming other conditions remain constant, a higher share of state-owned capital leads to increased targeted poverty alleviation inputs by private enterprises*

Regarding the specific mechanism by which state capital equity participation promotes corporate participation in TPA, we provide an analysis of why equity participation may incentivize private enterprises to invest more in poverty alleviation, based on the incentive compatibility principle. Renowned economist and the "father of mechanism design", Leonid Hurwicz, pointed out that under normal circumstances, rational economic entities will act in their own self-interest. Under an incentive-compatible system, the goal of individuals to maximize their self-interest is aligned with the goal of maximizing collective value. The mixed-ownership reform reflects this philosophy of incentive compatibility. Private enterprises will reduce ownership disparities through mixed-ownership reform and increase competitive advantage through cooperation, thereby achieving a better balance between the goal of internal profitability and external social responsibilities (He and Yang, 2021). Further exploring the transmission mechanisms that satisfy the incentive compatibility conditions, this article identifies two possible effects:

First, resource complementarity. The resource dependence theory suggests that enterprises are motivated to search for resources essential for their development (Fan et al., 2007). Resource exchanges also exist between private enterprises and the government (Yang et al., 2015). With a higher degree of institutional standardization, more robust investment strategies, and closer political connections, state capital can attract more economic resources, thereby meeting the development needs of private enterprises (Zhang and Zhang, 2016). The dilemma facing the private economic sector primarily stems from financing constraints. The most straightforward effect of state capital investment in private enterprises is the expansion of their sources of funds, which effectively mitigates the financing constraints of private enterprises (Yu et al., 2019). When their operational efficiency declines, private enterprises may benefit from the entry of state capital that can support their production and operational activities. After the basic economic interests of private enterprises are guaranteed and strengthened, it is more likely for them to meet the incentive-compatible conditions. Therefore, the alleviation of financing constraints could be a major reason for private enterprises to adjust the intensity of their participation in poverty alleviation after state capital equity participation. It should be noted that private enterprises generally have a weak bargaining position for loan rates and face a high cost of external financing. In our view, state capital equity participation may lower the overall borrowing cost for private enterprises, enabling them to finance at a lower cost (He et al., 2022), thereby mitigating their financial pressures and providing them with more resources to give back to society. Based on the above analysis, we put forward the following hypothesis $H_{2a}$:

*$H_{2a}$: State capital spurs private enterprises to engage in TPA through the resource complementarity effect*

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Third, supervision and check-and-balance effect. Given the high equity concentration of China's listed companies, the second type of principal-agent problem, which involves "majority shareholders and minority shareholders", is more severe, presenting a major challenge to the governance of listed companies in China (Jiang and Kim, 2020). Specifically, majority shareholders without effective supervision and check-and-balance often engage in tunneling behaviors for their personal gain, thereby undermining corporate value and hindering the company's ability to fulfill its social responsibilities (Jiang et al., 2010; Jiang et al., 2023). According to the equity check-and-balance theory, a more balanced and diverse equity structure can achieve the effect of supervision and constraint and improve corporate governance by increasing the cost for majority shareholders to engage in opportunistic behaviors (Jiang et al., 2020). In the mixed-ownership reform of private enterprises, state capital equity participation in private enterprises can check the power of majority shareholders, supervise their opportunistic behaviors, and encourage their participation in TPA and fulfillment of corporate social responsibilities. Based on the above analysis, we put forward the following hypothesis $H_{2b}$:

*$H_{2b}$: State capital prompts private enterprises to participate in TPA through supervision and check-and-balance*

## 3. Research Design

### 3.1 Model Specification and Variable Definition

In order to examine the impact of state capital equity participation on private enterprises' contribution to the TPA program, we constructed a model as shown in equation (1) for a regression analysis, taking reference from Han and Wei (2021) and He et al. (2022).

$$TPA_Tot_{i,t} = \alpha + \beta Top5SOE_{i,t} + \delta Control_{i,t} + \sum Ind + \sum Pro + \sum Year + \varepsilon_{i,t} \quad (1)$$

In equation (1), the subscripts *i* and *t* denote the listed company and year respectively. *TPA_Tot* represents the total amount of investment in TPA and serves as the explained variable. It is measured by taking the logarithm of the sum of the total amount of financial assistance and the cash value of in-kind assistance added by 1. The core variable, *Top5SOE*, is the ratio of state capital equity participation. It is measured by the aggregate equity ratio of state capital among the top five shareholders. *Control* is a control variable vector. In this paper, considerations are given at both the company and regional levels. Company-level control variables encompass company size, leverage ratio, company age, return on assets, ratio of independent directors, equity concentration, ratio of institutional investors, and the level of attention from analysts. Region-level variables include the level of economic development in the provincial jurisdiction, industrial structure, and social security. Additionally, we have included the fixed effects of industry, province (autonomous region or municipality), and year to control for the impact of unobservable factors such as the macroeconomy and industry, namely *Ind*, *Pro*, and *Year*. Industry classification is in accordance with the guidelines enacted by the China Security Regulatory Commission (CSRC) in 2012, and manufacturing sector classification is based on broad categories. Refer to Table 1 for the methodology for the creation of key variables.

**Table 1: Introduction of Key Variables**

| Nature of variable | Name of variable | Definition | Method of creation |
|---|---|---|---|
| Explained variable | *TPA_Tot* | Total investment on TPA | Logarithm of enterprise's financial investment on TPA and total cash value of in-kind assistance added by 1 |
| Explanatory variable | *Top5SOE* | State capital equity ratio | Aggregate equity ratio of state capital among top five shareholders (%) |

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Table 1 Continued

| Nature of variable | Name of variable | Definition | Method of creation |
|---|---|---|---|
| Control variable | *Size* | Company size | Logarithm of total assets at the end of period |
| | *Lev* | Leverage ratio | Ratio between total liabilities and total assets at the end of the period |
| | *Age* | Company age | Number of years since company listing added by 1 |
| | *ROA* | Return on assets (ROA) | Ratio between net profit and total assets at the end of period |
| | *Indep* | Proportion of independent directors | Ratio between the number of independent directors and the total number of directors |
| | *H1* | Equity concentration | Ratio of shares held by controlling shareholders to the company's total shares |
| | *Institu* | Share of institutional investors | Ratio of institutional investor held by institutional investors to the company's total shares |
| | *Analyst* | Level of attention from analysts | Logarithm of analyst followers added by 1 |
| | *lnPGDP* | Level of economic development | Logarithm of GDP per capita |
| | *Struc* | Industrial structure | Ratio of value-added from the tertiary industry to regional GDP |
| | *Insur* | Social security | Proportion of people enrolled in the urban and rural pension insurance scheme to the overall population |

### 3.2 Data Source and Descriptive Statistics

In 2016, the China Securities Regulatory Commission (CSRC) released the *Opinions on Leveraging the Role of the Capital Market to Serve the National Strategy for Poverty Alleviation*,,calling on listed companies to provide paired assistance to impoverished counties or villages and support the development of impoverished regions. It also requested listed companies to reflect their poverty alleviation information in their annual reports in a specified disclosure format. Information about listed companies' participation in TPA began to be disclosed in detail in 2016 and thereafter. Hence, we used the annual data of private listed companies on China's A-share market between 2016 and 2021 as research samples. Specifically, data on the ratio of state capital equity participation is from the Wind database, and other data is from the CSMAR database. After excluding the financial sector, ST and PT companies, as well as company samples with missing key variables, we obtained 13,351 company-year observations. Unless otherwise specified, all other variable data used subsequently in this paper is from the Wind and CSMAR databases. All continuous variables have been winsorized at 1% at both ends.

Table 2 presents the descriptive statistics of key variables. Among them, the mean value of *TPA_Tot* is 2.061, the standard deviation is 4.936, and samples with *TPA_Tot* greater than 0 account for approximately 15.2%. This indicates that, on average, the level of private enterprises' participation in TPA remains relatively low. A large number of private listed companies did not engage in TPA, and the intensity of TPA participation among enterprises varies significantly. The mean value of *Top5SOE* is 1.181, the standard deviation is 3.487, and the maximum value is 21.5. This suggests that during the sample period, the average state capital equity ratio among the top five shareholders of each listed private enterprise is 1.181%, and the top five shareholders of the majority of listed private enterprises do not include state capital.

**Table 2: Descriptive Statistical Result of Key Variables**

| Variable | Number of samples | Mean value | Standard deviation | Min. | Max. |
|---|---|---|---|---|---|
| *TPA_Tot* | 13351 | 2.061 | 4.936 | 0 | 17.240 |
| *Top5SOE* | 13351 | 1.181 | 3.487 | 0 | 21.500 |
| *Size* | 13351 | 21.905 | 1.091 | 19.907 | 25.429 |

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Table 2 Continued

| Variable | Number of samples | Mean value | Standard deviation | Min. | Max. |
|---|---|---|---|---|---|
| *Lev* | 13351 | 0.372 | 0.188 | 0.054 | 0.854 |
| *Age* | 13351 | 8.176 | 6.842 | 0 | 27 |
| *ROA* | 13351 | 0.043 | 0.078 | -0.364 | 0.216 |
| *Indep* | 13351 | 0.380 | 0.052 | 0.333 | 0.571 |
| *H1* | 13351 | 0.350 | 0.144 | 0.080 | 0.745 |
| *Institu* | 13351 | 0.354 | 0.248 | 0.001 | 0.896 |
| *Analyst* | 13351 | 1.280 | 1.198 | 0 | 3.829 |
| *lnPGDP* | 13351 | 11.358 | 0.379 | 10.465 | 12.142 |
| *Struc* | 13351 | 0.558 | 0.097 | 0.432 | 0.837 |
| *Insur* | 13351 | 0.271 | 0.140 | 0.030 | 0.572 |

# 4. Analysis of Empirical Results

## 4.1 Baseline Empirical Results and Analysis

The regression results are presented in Table 3. Column 1 does not include control variables and fixed effects. Column 2 contains control variables but no fixed effects. Column 3 includes both control variables and fixed effects. The coefficients of Top5SOE have passed the statistical significance test at least at the 5% level. This indicates that, holding other conditions constant, a higher proportion of state capital equity participation leads to a higher level of private enterprises' TPA participation. In economic terms, when other determinants are controlled for, the coefficient of Top5SOE is 0.029. This means that for each 1% increase in state capital equity participation, the total investment of private enterprises in TPA will increase by 2.9%. Whether in a statistical or economic sense, state capital equity participation has a significant impact on the participation of private enterprises in TPA. This shows that the mixed-ownership reform of private enterprises through state capital equity participation is conducive to achieving the economic goal of poverty governance. Our hypothesis $H_1$ is generally verified.

**Table 3: Regression of Private Enterprises' TPA Contribution on State Capital Equity Participation**

| Variable | (1) | (2) | (3) |
|---|---|---|---|
| | *TPA_Tot* | *TPA_Tot* | *TPA_Tot* |
| *Top5SOE* | 0.098*** (0.01) | 0.046*** (0.01) | 0.029** (0.01) |
| *Size* | | 0.930*** (0.06) | 0.948*** (0.06) |
| *Lev* | | -0.051 ( 0.26 ) | -0.050 ( 0.26 ) |
| *Age* | | 0.020** (0.01) | 0.007 (0.01) |
| *ROA* | | 4.367*** (0.50) | 4.547*** (0.51) |
| *Indep* | | -1.203 (0.76) | -2.070*** (0.75) |
| *H1* | | 0.448 (0.32) | 0.178 (0.30) |
| *Institu* | | 0.337* (0.18) | 0.145 (0.17) |
| *Analyst* | | -0.028 (0.04) | 0.016 (0.04) |

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Table 3 Continued

| Variable | (1) | (2) | (3) |
|---|---|---|---|
| | *TPA_Tot* | *TPA_Tot* | *TPA_Tot* |
| *lnPGDP* | | -1.924*** (0.18) | -0.880 (2.18) |
| *Struc* | | 4.874*** (0.58) | 8.760* (4.99) |
| *Insur* | | 3.532*** (0.49) | -12.766*** (3.41) |
| Constant term | 1.945*** (0.04) | -0.278 (2.25) | -9.736 (25.54) |
| Industry/province/year fixed effects | No | No | Yes |
| Observation value | 13351 | 13351 | 13351 |
| Adjusted $R^2$ | 0.005 | 0.092 | 0.175 |
| F statistic | 45.45 | 78.85 | 49.44 |

Notes: Numbers in parentheses are robust standard errors; ***, ** and * denote significance levels at 1%, 5% and 10%, respectively. The same applies below.

### 4.2 Robustness Test

The endogeneity concern in our model mainly arises from the existence of reverse causality, self-selection bias, and omitted variables, and is generally free from measurement error and sample selection error. First, reverse causality in the sense that private enterprises' participation in TPA may induce state capital equity participation. In this paper, we assume that private enterprises are likely to undertake social responsibilities under economic or other motivations. In other words, enterprises engage in TPA and introduce state capital shareholders to seek government financial support or establish political connections. Second, self-selection bias in the sense that whether state capital is invested in a private enterprise is related to its own attributes, which may also influence its decision to contribute to TPA. For instance, it is possible for state capital to be invested in a large and profitable private enterprise, while profitability and company size are also important factors behind corporate decisions to participate in TPA. Third, omitted variables. In this paper, we have tried to control for the key factors that might influence corporate involvement in TPA and include fixed effects at the industry, province, and year levels. However, unobservable factors may also exist and influence state capital equity participation and TPA. These factors include, for example, government-business connections and social networks. In order to alleviate the above endogeneity concerns, we have adopted lagged explanatory variables, matching methods, and natural experiment methods to further test the causality between state capital equity participation and the involvement of private enterprises in TPA.

First, lagged explanatory variables. To alleviate the endogeneity concern caused by reverse causality, we regressed the explained variable in period $t$ on all the explanatory variables in period $t$-1. The results are shown in Table 4. As can be seen from Table 4, the coefficients of state capital equity participation with a one-period lag (*Top5SOE_1*) still pass the significance test at least at the 5% level. Thus, after mitigating the concern of reverse causality, state capital equity participation still has a significantly positive effect on private enterprises' participation in TPA. After introducing control variables, the coefficient of *Top5SOE*_1 becomes 0.032, and its economic significance is slightly higher than 0.029 in the baseline regression result. This indicates a lagged and long-term effect of state capital equity participation on private enterprises' involvement in TPA.

Second, matching method. To mitigate the endogeneity concern regarding self-selection bias, we employed PSM (Propensity Score Matching) and entropy balance matching methods to ensure consistent basic characteristics of the two types of private enterprises with and without state capital equity

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participation. The number of private enterprises with state capital equity participation is relatively small. Therefore, in implementing the PSM method, we adopted a 1:2 ratio for the nearest neighbor matching method to ensure that there is no significant difference after matching. For entropy balanced matching, this ratio ensures that there is no significant difference between the two groups of samples at the first, second, and third moments. Covariates include the aforementioned control variables, a dummy variable for province, and a dummy variable for industry. Table 5 presents the regression results of the two matching methods. After matching, the coefficient of state capital equity participation remains significantly positive at least at 10%, and there is no major difference in its economic significance. This implies that after mitigating the self-selection bias, state capital equity participation significantly increases private enterprises' investment in TPA.

**Table 4: Lagged Explanatory Variables**

| Variable | (1) | (2) |
|---|---|---|
| | *TPA_Tot* | *TPA_Tot* |
| *Top5SOE*_1 | 0.056*** (0.02) | 0.032** (0.02) |
| Constant term | 2.217*** (0.05) | 24.241 (32.99) |
| Control variable | Not controlled | Controlled |
| Industry/province/year fixed effects | Yes | Yes |
| Observation value | 10055 | 10055 |
| Adjusted $R^2$ | 0.126 | 0.172 |
| F statistic | 12.00 | 39.04 |

**Table 5: Matching Methods**

| Variable | (1) | (2) |
|---|---|---|
| | PSM | Entropy balanced matching |
| | *TPA_Tot* | *TPA_Tot* |
| *Top5SOE* | 0.033** (0.01) | 0.027* (0.01) |
| Constant term | 18.780 (30.28) | 3.779 (35.79) |
| Control variable | Controlled | Controlled |
| Industry/province/year fixed effects | Yes | Yes |
| Observation value | 8056 | 13351 |
| Adjusted $R^2$ | 0.199 | 0.207 |
| F statistic | 39.02 | 34.52 |

Third, natural experiment method. To mitigate the endogeneity concerns regarding reverse causality, self-selection bias, and omitted variables, we further adopt the natural experiment method to demonstrate the causal relationship between state capital equity participation and private enterprises' TPA participation. Referencing He et al. (2022), we designate state capital equity participation as an exogenous shock to create a multi-period difference-in-differences (DID) model:

$$TPA_Tot_{i,t} = \alpha + \beta Treat_i \times Post_t + \gamma Treat_i + \delta Control_{i,t} + \sum Ind + \sum Pro + \sum Year + \varepsilon_{i,t} \quad (2)$$

In the above equation, *Treat* indicates whether the sample group is the treatment group. If a private enterprise did not receive state capital equity participation during the sample period, it is designated

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as the control group and assigned a value of 0. If a private enterprise received state capital equity participation during the sample period and there was no complete withdrawal of state capital, it is assigned a value of 1. *Post* denotes whether a time period is before or after the policy occurrence. It is assigned a value of 1 if it is after state capital equity participation and 0 if it is not. Given the inconsistent time points of state capital equity participation, we adopted a multi-period difference-in-differences (DID) model. Other variables and footnotes have the same definitions as in equation (1).

The regression results are presented in Table 6. The interaction term *Treat×Post* is significantly positive, which indicates that state capital equity participation can significantly induce private enterprises to assist in the TPA program. Since the prerequisite for using DID model is to satisfy the parallel trend hypothesis, we further created an interaction term between *Treat* and three or more phases before (*Before3*), two phases before (*Before2*), one phase before (*Before1*), current phase (*Current*), one phase after (*After1*), two phases after (*After2*), and three or more phases after (*After3*) the policy occurrence. With *Treat×Before3* as the baseline, the results are shown in column (2) of Table 6. Before the policy occurrence, the interaction term does not pass the significance test, which indicates that the experimental group and the control group satisfy the parallel trend before the occurrence of the experiment. Lastly, we adopted the PSM method consistent with the previous section to match the experimental group with the control group at a ratio of 1:2 for the nearest neighbor matching. The results are shown in columns (3) and (4). *treat×post* is significantly positive at 1%, and has passed the parallel trend test.

**Table 6: Natural Experiment Method**

| Variable | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | DID | Parallel trend test | PSM-DID | Parallel trend test |
| | *TPA_Tot* | *TPA_Tot* | *TPA_Tot* | *TPA_Tot* |
| *Treat×Post* | 0.727*** (0.25) | | 0.848*** (0.23) | |
| *Treat×Before2* | | -0.188 (0.52) | | -0.138 (0.44) |
| *Treat×Before1* | | -0.244 (0.50) | | -0.238 (0.42) |
| *Treat×Current* | | 0.364 (0.40) | | 0.677** (0.33) |
| *Treat×After1* | | 0.557 (0.45) | | 0.691* (0.41) |
| *treat×After2* | | 0.782 (0.50) | | 0.854* (0.46) |
| *treat×After3* | | 0.736* (0.43) | | 0.798** (0.38) |
| *Treat* | -0.243 (0.22) | -0.110 (0.35) | -0.430** (0.19) | -0.330 (0.29) |
| Constant term | -15.076 (27.82) | -15.804 (27.91) | -45.347 (32.74) | -46.309 (32.91) |
| Control variable | Controlled | Controlled | Controlled | Controlled |
| Industry/province/year fixed effects | Yes | Yes | Yes | Yes |
| Observation value | 11321 | 11321 | 6706 | 6706 |
| Adjusted $R^2$ | 0.175 | 0.175 | 0.195 | 0.194 |
| F statistic | 36.15 | 26.13 | 27.74 | 20.03 |

Having verified the causal relationship between state capital equity participation and private enterprises' involvement in TPA, the following section further verifies the robustness of the conclusions by replacing the variable creation method and the regression model.

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Fourth, replacing the method of variable creation. First, in the previous section, TPA spending was measured by taking the logarithm of the total amount of corporate spending on TPA and the total cash value of in-kind assistance added by 1. In this section, TPA spending is measured by the logarithm of the amount of financial assistance added by 1 (*TPA_Fund*) and the logarithm of the amount of in-kind assistance added by 1 (*TPA_Mat*). The regression results are shown in columns (1) and (2) of Table 11. The results suggest that the coefficients of *Top5SOE* are significantly positive at least at the 5% level. This indicates that state capital equity participation has a significantly positive effect on both the financial and in-kind contributions of private enterprises. Second, the level of private enterprises' involvement in TPA can also be measured by the number of people lifted from poverty and the continuity of involvement in poverty alleviation. Therefore, we designated the logarithm of the number of registered poor people lifted out of poverty added by 1 (*TPA_Pop*) and the existence of any subsequent poverty alleviation plan (*TPA_Plan*) to measure the level of TPA. According to the results listed in columns (3) and (4), the coefficients of *Top5SOE* are all significantly positive at the 1% level, indicating that state capital participation not only induces private enterprises to contribute financially but may also effectively reduce poverty and promote long-term poverty alleviation participation. Lastly, in the previous section, we measured the level of state capital equity participation by the state capital equity ratio among the top five shareholders. In the following section, we will measure state capital equity participation by the existence of state capital (*TopSOE*) among the top five shareholders and the state capital equity ratio (*Top10SOE*) among the top 10 shareholders. The results are shown in columns (5) and (6) of Table 7. The results suggest that the coefficients of both *TopSOE* and *Top10SOE* are significantly positive. After replacing the explanatory variables and the explained variable, our results remain consistent, indicating the robustness of our conclusions.

**Table 7: Replacement of Variable Creation Method**

| Variables | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | *TPA_Fund* | *TPA_Mat* | *TPA_Pop* | *TPA_Plan* | *TPA_Tot* | *TPA_Tot* |
| *Top5SOE* | 0.031** (0.01) | 0.024*** (0.01) | 0.011*** (0.00) | 0.003*** (0.00) | | |
| *TopSOE* | | | | | 0.341*** (0.11) | |
| *Top10SOE* | | | | | | 0.022* (0.01) |
| Constant term | -17.821 (25.08) | 17.984 (15.85) | -2.788 (5.22) | -0.002 (1.87) | -9.861 (25.51) | -9.831 (25.54) |
| Control variable | Controlled | Controlled | Controlled | Controlled | Controlled | Controlled |
| Industry/province/year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Observation value | 13351 | 13351 | 13351 | 13351 | 13351 | 13351 |
| Adjusted $R^2$ | 0.170 | 0.108 | 0.093 | 0.151 | 0.175 | 0.175 |
| F statistic | 48.78 | 19.40 | 16.36 | 44.41 | 49.43 | 49.23 |

Fifth, replacement of regression model. In the previous section, we primarily controlled industry, province and year fixed effects. Here, we will introduce high-order fixed effects. Specifically, we introduced the cross-product term of industry fixed effect, province and year in column (1) of Table 8, and the cross-product term of province fixed effect, industry and year in column (2). Results indicate that after the high-order fixed effects are introduced to control for other possible omitted variables, the coefficient of remains significantly positive at 5%, and there is no obvious change in its economic significance. Second, the robust standard error was employed in the previous section to mitigate the impact of heteroscedasticity and autocorrelation. In the following section, robust standard errors clustered at the level of province are employed to mitigate the impact of correlation between disturbance terms for observation points

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out is impervious in different years, as illustrated in column (3). Third, given the zero truncation of *TPA_Tot*, we performed another round of estimation with tobit model, and the results are listed in column (4). Lastly, considering that 2020 is a critical time point for China's battle against poverty to score a complete victory, it is possible that updates and adjustments may exist in the poverty alleviation work of enterprises. Therefore, we have excluded samples of 2020 for a new round of regression, and the results are listed in column (5). In summary, after the replacement of various models, state capital equity participation has always exerted a significantly positive effect on private enterprises' involvement in TPA.

**Table 8: Replacement of Regression Model**

| Variable | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| | *TPA_Tot* | *TPA_Tot* | *TPA_Tot* | *TPA_Tot* | *TPA_Tot* |
| *Top5SOE* | 0.027** | 0.029** | 0.029* | 0.111* | 0.032** |
| | (0.01) | (0.01) | (0.02) | (0.06) | (0.02) |
| Constant term | -18.372*** | -13.429 | -9.736 | -125.907 | -58.518* |
| | (1.29) | (25.53) | (36.91) | (143.54) | (30.50) |
| Control variable | Controlled | Controlled | Controlled | Controlled | Controlled |
| Fixed effects | Industry / province - year | Province / industry - year | Industry / province / year | Industry / province / year | Industry / province / year |
| Observation values | 13351 | 13341 | 13351 | 13351 | 11290 |
| Adjusting $R^2$ / Likelihood ratio | 0.185 | 0.175 | 0.175 | -11546 | 0.175 |
| F statistic | 63.53 | 48.42 | 28.40 | 158.10 | 50.18 |

# 5. Further Analysis

In the previous section, we have verified the significant positive effect of state capital equity participation on private enterprises' engagement in TPA. The question that arises is how exactly does state capital equity participation prompt private enterprises to assist in TPA? Which specific types of poverty alleviation does it facilitate? Is their relationship free from the influence of different regional characteristics? This section aims to answer these questions. Hence, we will further explore the intrinsic economic mechanism through which state capital equity participation spurs private enterprises to assist in TPA. Judging by the mode and region of poverty alleviation, we will specifically discuss the heterogeneity in the impact of state capital equity participation on private enterprises' involvement in TPA, so as to elucidate how a diverse equity structure may effectively contribute to the realization of the common prosperity policy under the mixed ownership system.

## 5.1 Analysis of Economic Mechanism

*5.1.1 Resource complementarity effect*

Benefitting from resource advantages, state capital is better adept at addressing market failures and externalities than non-public capital (Hsu et al., 2023; Yang et al., 2024). In the context of TPA, the key to motivating private enterprises to take an active part in poverty management lies in alleviating their long-term financing constraints and providing necessary financing support. For example, the Strategic *Cooperation Agreement on Policy-based Financial Support for the "Ten Thousand Enterprises Helping Ten Thousand Villages" Targeted Poverty Alleviation Initiative*, enacted in 2016 extended financing support to private enterprises involved in the campaign. *The Announcement on the Policy for Pre-tax Deduction of Income Tax for Corporate Poverty Alleviation Donations* and the *Announcement on the Policy of Exemption from Value-Added Tax for Donations of Goods for Poverty Alleviation*, enacted in 2019, called for income tax and VAT exemptions for corporate poverty alleviation donations. Thus, the mitigation of financing pressures could be an important mechanism prompting private enterprises

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to participate in TPA. State capital equity participation not only provides private enterprises with government financing to ease their financing constraints but, more importantly, enables private enterprises to access more funds at a lower cost by enhancing their reputation and mitigating their principal-agent problem, thereby leveraging the policy instrument functions to guide private enterprises in contributing to poverty alleviation and development.

First, we conducted a direct analysis of whether state capital equity participation can mitigate the problem of financing constraints for private enterprises and created an index *SA* in the form of equation (3) to measure the overall financing constraint faced by enterprises.

$$SA=-0.737\times Size+0.043\times Size^2-0.040\times Age \quad (3)$$

In equation (3), *SA* represents the level of financing constraint. *Size* is company size, measured by the logarithm of total assets. *Age* is company age. The *SA* index, developed by Hadlock and Pierce (2010), consists of two highly exogenous variables. This may mitigate the endogeneity interference of the *KZ* index and the *WW* index, which arise due to the inclusion of numerous endogenous variables. A greater *SA* index indicates a higher level of financing constraint.

Furthermore, we tested the resource complementarity effect mechanism through which state capital influences private enterprises' involvement in TPA from the two dimensions of financing scale and financing cost. In this paper, financing scale is measured by taking the logarithm of the sum of short-term and long-term liabilities received by an enterprise in the current year added by 1 (*Debt*). A greater *Debt* value indicates a larger amount of debt financing available to the enterprise. Financing cost is measured by interest expenses, processing fees, other financial expenses, and the ratio between long-term and short-term liabilities (*Cod*) in the current year. A smaller *Cod* value means a lower cost of debt financing for the enterprise.

In order to verify that state capital equity participation will prompt private enterprises to engage in TPA by alleviating their financing constraints, we regressed *SA*, *Debt*, and *Cod* on *Top5SOE*. The regression results are shown in Table 9. First, the regression coefficient of *Top5SOE* with respect to *SA* is -0.002 and has passed the significance test at 1%. This implies that state capital equity participation is beneficial for mitigating the problems related to access to and cost of financing for private enterprises, supporting their business operations and development, and providing them with assurances for participating in TPA. Second, the regression coefficients of *Top5SOE* with respect to *Debt* and *Cod* are 0.027 and -0.003 respectively, and have all passed the significance test at 10%. This indicates that a higher proportion of state capital equity participation is more conducive to enhancing the social reputation of private enterprises, reducing the "statistical bias" faced by private enterprises and other issues (He et al., 2022), increasing the financing scale, reducing the financing cost, and thereby establishing the economic foundation for private enterprises to invest vigorously in TPA.

**Table 9: Test of the Resource Complementarity Mechanism Effect**

| Variable | (1) | (2) | (3) |
|---|---|---|---|
| | Financing constraint | Financing volume | Financing cost |
| | *SA* | *Debt* | *Cod* |
| *Top5SOE* | -0.002*** | 0.027* | -0.003* |
| | (0.00) | (0.02) | (0.00) |
| Constant term | -3.882*** | -95.918*** | 2.531 |
| | (0.95) | (33.46) | (2.59) |
| Control variables | Controlled | Controlled | Controlled |
| Industry/province/year fixed effects | Yes | Yes | Yes |
| Observation values | 13346 | 13351 | 10478 |
| Adjusted $R^2$ | 0.300 | 0.378 | 0.045 |
| F statistic | 338.20 | 602.70 | 16.39 |

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*5.1.2 Supervision and check & balance effect*

Based on the above theoretical hypotheses, state capital embodies both national public interests and corporate profitability, while private capital is primarily profit-driven. A diverse equity structure and business objectives are conducive to achieving supervision and checks and balances. In other words, state capital equity participation will greatly reduce tunneling by majority shareholders and effectively counterbalance private controlling shareholders, thereby prompting private enterprises to assume social responsibilities and increase their level of participation in TPA. Therefore, if state capital equity participation can prompt private enterprises to engage in TPA, it should be observed that the coefficient of *Top5SOE* is more significant in companies with poor levels of equity checks and balances and a serious principal-agent problem between "majority and minority shareholders". Specifically, the principal-agent problem between "majority and minority shareholders" facing China's listed companies primarily stems from tunneling due to a highly concentrated equity structure. In private enterprises, it is not uncommon for the controlling shareholder to also hold the position of manager, thereby exacerbating the principal-agent problem between "majority and minority shareholders" (Zeng et al., 2022). To verify whether state capital equity participation influences private enterprises' involvement in TPA through the above conduit, we depict the characteristics of corporate equity structure and the level of shareholder power from three aspects: the degree of equity checks and balances, equity concentration, and the combination of shareholder and manager positions. Specifically, the degree of equity checks and balances is measured by the ratio between the shareholding proportion of the second through fifth largest shareholders and the shareholding proportion of the largest shareholder. Enterprises are divided into high equity check & balance and low equity check & balance enterprises by the mean value. The combination of majority shareholder and manager positions is measured by whether the board chairman and general manager are the same person. If the board chairman also serves as the general manager, it is deemed that the two positions are combined. Otherwise, the two positions are separate.

Referencing Ye and Li (2021), this paper employs a moderating effect model to verify whether state capital equity participation will induce private enterprises to engage in TPA under the supervision and check-and-balance effect. Specifically, we divided samples into two groups according to the degree of equity check & balance, equity concentration, and the assumption of the chairman and general manager positions by the same person. Then, we regressed *TPA_Tot* on *Top5SOE* for various sample groups. If state capital equity participation can prompt private enterprises to take part in TPA, it should be observed that the marginal effect of *Top5SOE* is greater for companies with low levels of equity check & balance, equity concentration, and the assumption of the chairman and general manager positions by the same person. Table 10 reports the regression results for different enterprises involved in poverty alleviation. The coefficient of *Top5SOE* is significantly positive for enterprises with a high level of equity check & balance, scattered equity holdings, and the assumption of the board chairman and general manager positions by different persons. In contrast, the coefficient of *Top5SOE* does not pass the significance test for enterprise samples with a low level of equity check & balance, equity concentration, and the assumption of the board chairman and general manager positions by the same person, while its value is close to zero. This implies that state capital equity participation plays a more significant role in prompting enterprises to assist in TPA for samples with a high degree of equity check & balance and a smaller principal-agent problem between "majority and minority shareholders". This conclusion does not support the supervision and check-and-balance effect suggested by Hypothesis $H_{2b}$. Meanwhile, it has once again verified that the resource complementarity effect serves as the primary mechanism by which state capital equity participation influences private enterprises' TPA behaviors.

**5.2 Discussion Based on Different Types of Poverty Alleviation Model**

The models of corporate participation in TPA include industrial development for poverty alleviation, employment transfer for poverty alleviation, basic livelihood protection and social assistance, education-

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**Table 10: Mechanism Test of the Supervision and Check & Balance Effect**

| Variable | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | High degree of equity check & balance | Low degree of equity check & balance | Equity diversification | Equity concentration | Assumption of chairman and general manager positions by separate persons | Assumption of chairman and general manager positions by the same person |
| | *TPA_Tot* | *TPA_Tot* | *TPA_Tot* | *TPA_Tot* | *TPA_Tot* | *TPA_Tot* |
| *Top5SOE* | 0.057*** (0.02) | 0.001 (0.02) | 0.050*** (0.02) | -0.001 (0.02) | 0.051*** (0.02) | -0.021 (0.02) |
| Constant term | 12.059 (37.64) | -24.436 (33.92) | -7.553 (32.35) | -4.941 (39.64) | -7.204 (31.40) | -29.829 (42.95) |
| Control variable | Controlled | Controlled | Controlled | Controlled | Controlled | Controlled |
| Industry/province/year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Observation values | 5451 | 7899 | 7133 | 6216 | 7791 | 5459 |
| Adjusted $R^2$ | 0.188 | 0.186 | 0.174 | 0.203 | 0.196 | 0.159 |
| F statistic | 19.60 | 29.16 | 34.06 | 16.71 | 32.51 | 17.08 |

based poverty alleviation, and ecological conservation for poverty alleviation. For the classification of these poverty alleviation models, we referred to the *Notice on Further Improving Information Disclosure of Listed Companies on Poverty Alleviation Work* and the *Notice on Improving Information Disclosure of Listed Companies on Poverty Alleviation Work* released by the Shanghai and Shenzhen stock exchanges, as well as the *13th Five-Year Plan for Poverty Alleviation* released by the State Council. Among them, industrial development for poverty alleviation includes agricultural and forestry industry support, e-commerce poverty alleviation, asset income support, and technological assistance. These represent the most direct and effective means to eradicate poverty and achieve prosperity, as well as the key to linking rural revitalization with the establishment of a long-term poverty alleviation mechanism (Li et al., 2020). As an industrial investment activity, poverty alleviation through industrial development can create new value for enterprises and poor populations, highlighting the common development between villages and enterprises as a fundamental strategy for escaping poverty. Therefore, poverty alleviation through industrial development is characterized by "long-term development of endogenous capacity", leading to the most significant and lasting poverty alleviation effect with strong government support. Currently, employment, environmental protection, education, and other poverty alleviation modes have also generated a certain level of development capabilities. However, they significantly fall short of the effects of poverty alleviation through industrial development and tend to be classified as poverty alleviation through short-term external assistance. In the TPA program, external assistance and the creation of endogenous development capacity play different roles and jointly contribute to the victory of the battle against poverty.

There still remain questions as to which type of TPA does state capital equity participation prompt private enterprises to participate in and whether such participation is dominated by short-term external assistance, the creation of long-term endogenous development capacity, or a combination of both. In order to answer these questions, we further discuss the effects of state capital equity participation on poverty alleviation through industrial development, poverty alleviation through employment, social protection, educational resources, and ecological protection. In this paper, poverty alleviation through industrial development is measured by the amount of spending on poverty alleviation through industrial development disclosed by enterprises (*TPA_Ind*). Poverty alleviation through employment is measured by the amount of investment on vocational skills training (*TPA_Skill*). The amount of social protection and public participation in poverty alleviation is measured by the sum of investments on elderly persons, women and children who are left behind in

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rural hometowns, on poor handicapped persons, on poverty alleviation cooperation between eastern and western regions, on designated poverty alleviation programs, and on poverty alleviation public-interest fund (*TPA_Full*). Poverty alleviation through educational resources is measured by the amount of investments on supporting poor students and on improving educational resources in poor regions (*TPA_Edu*). Poverty alleviation through ecological protection is measured by the amount of investment on ecological protection (*TPA_Eco*). All the above sums of investment are estimated by taking logarithms after added by 1.

The regression results are presented in Table 11. The regression coefficient of *Top5SOE* with respect to *TPA_Ind* is 0.038 and significant at the 1% level. This indicates that with other conditions remaining constant, each 1% increase in state capital equity participation is associated with a 3.8% increase in the amount of investment on poverty alleviation through industrial development by private enterprises. Evidently, state capital equity participation plays a crucial role in state-advocated poverty alleviation through industrial development. This coincides with the government's advocacy to "encourage qualified large private enterprises to participate in poverty alleviation by means such as setting up industrial investment funds". This suggests that state capital equity participation can prompt private enterprises to establish long-term poverty alleviation mechanisms to truly lift the poor out of poverty. However, the economic effects of *Top5SOE* on *TPA_Skill* and *TPA_Full* are both insignificant. This might imply that there are still gaps in the role of state capital equity participation in supporting private enterprises to invest in vocational skills training and assist left-behind elderly persons, women and children, as well as poor handicapped persons. Lastly, state capital equity participation may also significantly promote poverty alleviation through educational resources and ecological protection, but the marginal effect is smaller than that of poverty alleviation through industrial development. In summary, state capital equity participation assists TPA through a combination of fostering endogenous development capacity and providing external assistance. Its role is primarily manifested in encouraging private enterprises to participate in poverty alleviation through industrial development, followed by a secondary role in poverty alleviation through educational resources and ecological protection. The contributions of state capital to poverty alleviation through skills training, transferred employment, social protection and public participation are less significant.

**Table 11: State Capital Equity Participation, Different Poverty Alleviation Modes, and Role of Private Enterprises in TPA**

| Variable | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| | Industrial development | Skills training | Social protection | Educational resources | Ecological protection |
| | *TPA_Ind* | *TPA_Skill* | *TPA_Full* | *TPA_Edu* | *TPA_Eco* |
| *Top5SOE* | 0.038*** (0.01) | -0.000 (0.00) | 0.007 (0.01) | 0.027*** (0.01) | 0.012* (0.01) |
| Constant term | 5.119 (16.80) | -7.597 (7.21) | -19.548 (20.08) | -40.777** (17.81) | -13.337 (12.87) |
| Control variable | Controlled | Controlled | Controlled | Controlled | Controlled |
| Industry/province/year fixed effects | Yes | Yes | Yes | Yes | Yes |
| Observation values | 13351 | 13351 | 13351 | 13351 | 13351 |
| Adjusted $R^2$ | 0.116 | 0.032 | 0.082 | 0.101 | 0.090 |
| F statistic | 22.85 | 7.84 | 25.05 | 28.40 | 15.82 |

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### 5.3 Discussion Based on Different Regions of Poverty Alleviation

From a regional perspective, poverty alleviation in China includes local poverty alleviation where local enterprises assist the local poor population and cross-regional poverty alleviation where private enterprises from the eastern region assist poor villages in the western region within the framework of poverty alleviation collaboration between eastern and western regions. The social and economic development level or location of the region in which a company operates has implications not only for the local poverty alleviation tasks and policies but also for the business environment of private enterprises. For instance, in less-developed regions, private enterprises face development constraints, high financing costs, and limited resources, and the burden of poverty alleviation is heavier. In such cases, state capital equity participation is essential to support the work of private enterprises on TPA. Therefore, it is possible that state capital equity participation may have originally heterogeneous effects on private enterprises' involvement in TPA. Consequently, it is necessary to analyze in which situation state capital equity participation plays a greater role in prompting private enterprises to fulfill their social responsibilities.

Our discussions are conducted from three dimensions: regional economic development level, regional location, and employment level. Among them, the level of regional economic development is measured by taking the logarithm of regional per capita GDP. Regions with values above the mean are considered prosperous regions, while those below the mean are less-developed ones. Regional location is determined by whether a place is located in the eastern region, which includes Beijing, Tianjin, Hebei, Shandong, Jiangsu, Shanghai, Zhejiang, Fujian, Guangdong, and Hainan provinces. The level of employment is measured by the urban registered unemployment rate. Regions with values above the mean are classified as regions with high unemployment rates, and those below the mean are classified as regions with low unemployment rates.

We carried out a regression analysis on subsamples from various regions, and the regression results are shown in Table 12. As can be observed from the results, the coefficient of *Top5SOE* is significantly positive for underdeveloped regions, central and western regions, and regions with high unemployment rates. The coefficient of *Top5SOE* does not pass the significance test for prosperous regions, eastern regions, and regions with low unemployment rates. The results indicate that state capital equity participation has a notably positive effect on private enterprises' involvement in TPA primarily in less-developed regions, central and western regions, and regions with high unemployment rates. The marginal effect is most significant for less-developed regions. In our perspective, less-developed regions are the main arena for the implementation of TPA. Contiguous poverty-stricken areas, ethnic minority areas, border areas, and old revolutionary base areas are in greater need of government assistance and business participation in implementing TPA due to their poor economic development levels, significant proportion of the primary industry, and inadequate social protection. The government and enterprises should collaborate to promote local industrial development, provide educational resources, and protect the environment. In less-developed regions, central and western regions, and regions with high unemployment rates, private enterprises tend to face a poor business environment, higher financing constraints, and development dilemmas. In this case, state capital, as a policy instrument, can exert a greater marginal effect and inspire enterprises to participate in TPA. However, in more developed regions, more abundant market resources may supplant the economic compensation of state capital, thereby weakening the role of state capital in prompting private enterprises to assist in TPA. The above conclusion indicates that, in order to effectively leverage the targeted poverty alleviation governance role of state-owned capital equity participation, it is necessary to increase investment in private enterprises in underdeveloped areas, thereby driving the achievement of common prosperity in impoverished regions. It has also verified that the primary economic mechanism by which state capital equity participation prompts private enterprises to assume social responsibilities lies in the formation of a resource complementarity effect.

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**Table 12: State Capital Equity Participation, Different Poverty Alleviation Regions, and Role of Private Enterprises in TPA**

| Variable | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | Less-developed regions | Prosperous regions | Central and western regions | Eastern regions | High unemployment rate | Low unemployment rate |
| | *TPA_Tot* | *TPA_Tot* | *TPA_Tot* | *TPA_Tot* | *TPA_Tot* | *TPA_Tot* |
| *Top5SOE* | 0.069*** (0.02) | -0.019 (0.02) | 0.075*** (0.03) | 0.001 (0.01) | 0.032* (0.02) | 0.025 (0.02) |
| Constant term | -3.614 (29.04) | 104.176 (81.60) | 12.366 (33.48) | -50.755 (43.30) | -27.922 (34.29) | 19.296 (54.90) |
| Control variable | Controlled | Controlled | Controlled | Controlled | Controlled | Controlled |
| Industry/province/year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Observation values | 6256 | 7094 | 3302 | 10048 | 6020 | 7331 |
| Adjusted $R^2$ | 0.211 | 0.117 | 0.233 | 0.115 | 0.194 | 0.195 |
| F statistic | 33.36 | 18.20 | 21.07 | 27.99 | 29.31 | 22.17 |

## 6. Concluding Remarks and Policy Inspirations

*The Report to the 20th CPC National Congress* has placed greater emphasis on achieving common prosperity for all people, considering it one of the five characteristics and intrinsic requirements of Chinese modernization. The path to poverty alleviation through TPA offers valuable experience for attaining common prosperity and also contributes Chinese wisdom and Chinese solutions to the international poverty alleviation endeavor. In this context, how to incentivize enterprises to play a greater role in poverty management and fulfill their social responsibilities has become an important and highly relevant real-world question. Unlike SOEs, which serve as the mainstay of the national economy and assume economic, political, and social responsibilities, the dynamism and capabilities of private enterprises in poverty alleviation have yet to be fully unleashed. Through cross-holdings and mutual integration of capital from different ownership systems, the mixed-ownership reform is conducive to the complementarity, mutual reinforcement, and common development of entities of various ownership types. Then, the question arises as to whether the mixed-ownership reform can introduce the advantages and missions of state capital into private enterprises, thereby prompting private enterprises to assume social responsibilities for poverty alleviation. Taking China's A-share-listed private enterprises between 2016 and 2021 as samples, our study finds that each percentage point increase in state capital equity participation is associated with a significant rise of 2.9% in the total amount of spending on TPA. This suggests that the mixed-ownership reform is beneficial for involving private enterprises in TPA. Further testing reveals that state capital equity participation primarily achieves the resource complementarity effect. That is, it helps private enterprises expand financing scale, reduce financing cost, and mitigate financing constraints, thereby prompting private enterprises to assume more social responsibilities. In contrast, supervision and checks and balances have yet to play any significant role and cannot serve as an effective economic mechanism for involving private enterprises in TPA through state capital. Additionally, we also find that state capital equity participation has significantly positive effects on poverty alleviation through industrial development and education spending, contributing to the creation of long-term poverty alleviation mechanisms to truly lift the poor out of poverty. Lastly, state capital equity participation has a more significant poverty-reducing effect in less-developed regions, regions with high unemployment rates, and regions with a less sophisticated industrial structure.

Based on the above research findings, this paper proposes the following insights and policy recommendations:

First, to achieve the goal of common prosperity, we can rely on mixed-ownership reforms to

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encourage more market entities to participate in targeted poverty alleviation. Our study has found that in the context of mixed-ownership reform, state capital has exerted an important positive effect on involving private enterprises in TPA. Therefore, the government should fully utilize the mixed ownership institutional design of cross-holdings and mutual integration, stimulate private enterprises to assume social responsibilities, make up for the deficiencies and failures of the market mechanism in poverty alleviation, and guide private enterprises to actively participate in fostering endogenous development capacity through industrial development and other means. At the same time, private enterprises should be guided to fully leverage the resource advantage of state capital equity participation, achieve in-depth integration of diverse equities, enhance their capacity to assume social responsibilities, and conform to the new requirements of the high-quality development.

Second, In the course of mixed-ownership reform, policymakers should closely monitor the improvement of the financing environment and financing capacity for private enterprises. State capital should serve the people's interests and support the private sector of the economy to fulfill social responsibilities and achieve high-quality development. Our research findings indicate that the resource complementarity effect plays a crucial role in promoting private enterprises' involvement in TPA through state capital equity participation. Therefore, it is essential to attach great importance to the financing challenges facing private enterprises and keep a close eye on their development to ensure the healthy growth of the private sector of the economy. Moreover, the mixed-ownership reform should promote the complementarity of advantages and sufficient integration between state capital and private capital, and address the pain points that enterprises encounter in various aspects of their financing activities. It should avoid merely injecting capital and prevent cross-shareholding a mere formality.

Third, deepening the mixed-ownership reform necessitates leveraging the role of state capital in supervision and checks and balances to mitigate the principal-agent problem. Current empirical results have yet to uncover significant evidence that state capital equity participation has promoted private enterprises to assist in TPA through the supervision and check-and-balance effect. However, this does not imply the non-existence or impracticality of such a potential effect. State capital equity participation may exert a check-and-balance effect in other aspects of business operations. In deepening the mixed-ownership reform, it is advisable to strengthen supervision and management over state capital to ensure a complementary equity structure and governance system and enhance the quality of corporate governance.

Fourth, to make mixed-ownership reform one of the effective means to achieve the goal of common prosperity, it is necessary to fully consider the characteristics of regional development and select effective poverty alleviation methods to achieve precise policy positioning. Particularly, state capital equity participation and corporate poverty alleviation investment are also influenced by differences in location characteristics and poverty alleviation approaches. Our study finds that industrial development cultivates endogenous capacity for sustainable poverty alleviation, which is conducive to providing more stable development impetus to poor regions and groups. It also acts as an instrument to leverage private enterprises' advantages and experiences in business management and technological innovation. In less-developed regions, central and western regions, and regions with high unemployment rates, state capital equity participation yields more significant effects. In the process of state capital investments, it is important to take into account regional differences and development needs and adopt targeted policy measures, thus achieving more balanced regional development and poverty alleviation goals, consolidating poverty alleviation achievements and promoting common prosperity.

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