# The impact of corporate targeted poverty alleviation on corporate value

Yujia Wang *

School of Economics and Management, Science and Technology University, Nan Jing, China

* Corresponding Author Email: wangyujia9527@163.com

**Abstract.** Based on data from A-share listed companies from 2016 to 2020, this paper employs a nonlinear regression model, U-test, and Propensity Score Matching (PSM) method to investigate the impact of corporate participation in targeted poverty alleviation on corporate value. The research reveals a significant positive U-shaped relationship between the intensity of corporate targeted poverty alleviation and corporate value. Specifically, there is an inflection point in corporate value as the intensity of targeted poverty alleviation increases. On the left side of the inflection point, corporate participation in targeted poverty alleviation reduces corporate value; on the right side, it enhances corporate value. Further research indicates that the positive U-shaped relationship between participation in targeted poverty alleviation and corporate value is more pronounced among state-owned enterprises and enterprises located in the eastern region. This paper provides a decision-making basis for enterprises to continue participating in poverty alleviation and offers new empirical evidence for consolidating and expanding the achievements of poverty eradication.

**Keywords:** Targeted poverty alleviation, corporate value, property rights nature, regional differences.

## 1. Introduction

As the country with the largest population in the world, China has taken various measures to help millions of people out of poverty since its reform and opening-up, resulting in a significant reduction in the number of people living in poverty. With the deepening of reform and opening-up, China's poverty alleviation goals have also evolved from simply solving the problem of food and clothing to fully achieving the "two no worries" and "three guarantees". Against this backdrop, China proposed in the 13th Five-Year Plan to build a moderately prosperous society in all respects and eliminate absolute poverty and regional poverty. General Secretary Xi Jinping also proposed a targeted poverty alleviation strategy at the 19th CPC National Congress, implementing a poverty alleviation model featuring precise identification, precise assistance, and precise management. The state also encourages various departments to actively participate in targeted poverty alleviation and win the battle against poverty. In September 2016, the China Securities Regulatory Commission (CSRC) issued the "Opinions of the China Securities Regulatory Commission on Leveraging the Role of the Capital Market to Serve the National Poverty Alleviation Strategy", aiming to fully utilize capital market resources to support and encourage listed companies to fulfill their social responsibilities and serve the national poverty alleviation strategy. With the strong support of national policies and the active participation of all sectors of society, China's targeted poverty alleviation work has achieved great results. In 2018, the number of people living in poverty in China decreased by more than 68 million, and the poverty incidence rate dropped from 10.2% to 3.1%.

As market entities, enterprises can join forces with the government in poverty alleviation efforts, leveraging the unique advantages of industrial poverty alleviation. They should place greater emphasis on transforming the original "transfusion-based" poverty alleviation into "hematopoietic" poverty alleviation, innovating precise poverty alleviation models, and making significant contributions to the country's poverty alleviation cause. According to statistics from the Shanghai and Shenzhen Stock Exchanges, from 2016 to 2020, a total of 783 listed companies in the Shenzhen Stock Exchange engaged in poverty alleviation, with a cumulative investment of 69.875 billion yuan in poverty alleviation funds and material discounts, helping 1.8701 million registered poor people successfully lift themselves out of poverty. From 2016 to September 2019, listed companies in the

Shanghai Stock Exchange invested a total of 83.207 billion yuan to participate in poverty alleviation, helping 15.8483 million poor people lift themselves out of poverty [1]. The participation of enterprises in precise poverty alleviation has a profound impact on the comprehensive construction of a moderately prosperous society. However, poverty alleviation is a long-term undertaking. Even if absolute poverty is eliminated, relative poverty will still persist for a long time. So what impact does the participation of enterprises in precise poverty alleviation have on enterprise value? Is there a difference in the impact of enterprises with different property rights or in different regions participating in precise poverty alleviation on enterprise value?

This paper may make three contributions. Firstly, current research on targeted poverty alleviation mainly focuses on the factors influencing it, with fewer studies exploring its consequences. This paper will deepen and enrich the research on the consequences of targeted poverty alleviation in this field. Secondly, the research content of this paper helps to elaborate on the profound impact of corporate participation in targeted poverty alleviation from the perspective of corporate value, providing theoretical and empirical support for corporate decision-making. Thirdly, by grouping corporate samples and exploring the different impacts of targeted poverty alleviation on corporate value across enterprises with different property rights and in different regions, this paper not only enriches the research in the field of targeted poverty alleviation but also aids the country in formulating proactive guiding policies and better implementing macroeconomic regulation and control.

The framework of the remaining part of this paper is as follows: the second part is a literature review, which summarizes previous research findings mainly from two aspects: the consequences of enterprises' participation in targeted poverty alleviation and the factors affecting enterprise value; the third part is research hypotheses, proposing two hypotheses: there is a significant U-shaped relationship between the intensity of targeted poverty alleviation by enterprises and enterprise value, and there is a significant U-shaped relationship between the intensity of targeted poverty alleviation by state-owned enterprises and enterprises in the eastern region and enterprise value; the fourth part is research design; the fifth part is empirical results and analysis, where basic regression analysis, U-test, heterogeneity analysis, and stability test are conducted using sample data to verify the hypotheses; and the sixth part is conclusions and recommendations.

## 2. Literature Review

### 2.1. The Consequences of Enterprises Participating in Targeted Poverty Alleviation

Corporate participation in targeted poverty alleviation stands as one of the primary means for enterprises to fulfill their social responsibilities. As an emerging research area within social responsibility, targeted poverty alleviation has limited empirical research literature, and the current research framework remains immature. However, despite its distinctiveness from general social responsibility, it still possesses the fundamental characteristics of general social responsibility and maintains a certain correlation with it [2]. There are primarily two viewpoints on exploring the impact of corporate social responsibility on corporate value. Early perspectives largely originated from the perspective of maximizing shareholder wealth, arguing that undertaking corporate social responsibility behaviors runs counter to the value creation activities of enterprises. With the development of resource dependence theory, social exchange theory, and stakeholder theory, enterprises have gradually realized the positive effects of undertaking corporate social responsibility on establishing a good corporate image, maintaining social network relationships, and reducing transaction costs [3].

Precision poverty alleviation is a hot topic in current research and also the essence and highlight of the poverty alleviation work carried out by the Party and the state in the new era. Currently, some scholars have achieved certain results in the field of research on the outcomes of precision poverty alleviation. Corporate participation in precision poverty alleviation can improve government-business relations, greatly increasing the probability and intensity of government subsidies for enterprises [4]; it can enhance corporate reputation, resource acquisition capabilities, and production efficiency,

reduce information asymmetry, and thereby lower corporate risks [5]; it can alleviate the financing difficulties of enterprises by improving government-business relations and enhancing corporate social reputation [6]; and it can enhance corporate innovation performance and innovation capabilities by alleviating financing constraints [7].

### 2.2. Factors Affecting Enterprise Value

From the perspective of internal factors, the factors that affect corporate value are mainly concentrated in the following aspects: Enhancing innovation capability can effectively promote the performance growth of the enterprise, giving the enterprise better development prospects [8], making the enterprise pay more attention to long-term interests, willing to sacrifice short-term profits, and increase investment in research and development innovation, thereby enhancing the sustainable development capability of the enterprise [9]; a good corporate image can improve the company's social trust, gain recognition from stakeholders, and help the enterprise gain favor from investors or customers in fierce market competition due to its good image, thereby promoting the enhancement of corporate value [9]; according to the efficiency wage theory, increasing the enterprise's investment in employee wages and training is conducive to stimulating the enthusiasm of excellent employees. At the same time, enterprises that care about employee interests can share common goals and values with employees, which will strengthen employees' pride and identification with the enterprise, thus encouraging them to work hard and create more value for the company [10]; the beliefs and behaviors of corporate governance layers such as entrepreneurship and management ability will affect the realization of corporate value [8]. The more fully entrepreneurship is utilized, the more it is conducive to improving the overall organizational performance. The stronger the management ability, the less internal power struggles there will be, and the more emphasis will be placed on achieving long-term interests of the enterprise; the effectiveness of internal control can, on the one hand, reduce agency conflicts in the enterprise by improving information transparency, preventing adverse selection and moral hazard, and on the other hand, reduce the enterprise's idiosyncratic risk, regulatory risk, and litigation risk, providing a good development environment and atmosphere for the enterprise. Therefore, the effectiveness of internal control has a positive role in promoting the enhancement of corporate value [11]; financial flexibility is also an important factor affecting corporate value. On the positive side, it can help enterprises resist sudden crises, reduce financing costs, seize excellent investment opportunities, promote corporate dividend distribution, enhance corporate image, and promote the enhancement of corporate value. On the negative side, agency problems and holding cost issues can lead to the invisible depletion of enterprise funds, increase executive perks, result in inefficient investment, and damage corporate value. The impact of financial flexibility on corporate value is complex [12]; according to economic theory, production efficiency is an important factor driving corporate value creation. Improving production efficiency depends on the investment of certain production factors. Land, capital, management, technology, and other production factors are the main sources of corporate value. The types and quantities of production factors, as well as the combination of production factors, are factors affecting production efficiency. Therefore, reasonably arranging the investment of production factors and achieving coordination among various production factor resources are the main paths for corporate value creation and important indicators for testing the inherent value creation ability of the enterprise [13].

From the external perspective of enterprises, it is mainly reflected in the following aspects: Firstly, government subsidies are a form of financial support provided by the government to enterprises for specific purposes and an important means of direct market intervention. By increasing the cash flow of enterprises, government subsidies can effectively buffer "resource depletion" to a certain extent, enhance the financial strength of enterprises, and establish a good communication bridge between enterprises and the government, which helps enterprises obtain more policy-oriented information. They also have a positive signaling effect, which can help alleviate financing constraints on enterprises. All these promote the continuous improvement of enterprise operational performance. Secondly, the density of informatization can increase the return on investment capital of enterprises,

reduce the cost of capital for enterprises, and improve the sustainable growth rate of enterprises, thereby promoting enterprise value creation [14]. Lastly, the increase in the intensity of environmental regulation increases the environmental governance costs of enterprises, forcing them to invest funds and manpower in non-productive environmental activities such as environmental audits, waste disposal, and litigation, which occupies funds that could be used for research and development and production, affecting the allocation of scarce resources by enterprises. This leads to a reduction in the production scale of enterprises, which has a negative impact on the process of enterprise value creation.

### 2.3. Chapter Summary

Overall, exploring the impact of corporate participation in targeted poverty alleviation from the perspective of corporate value reveals that the greater the intensity of targeted poverty alleviation efforts by a company, the higher its corporate value. Further mechanism analysis reveals that corporate participation in targeted poverty alleviation enhances corporate value by improving corporate reputation and board diligence [2]. Listed companies gain more market resources through participating in targeted poverty alleviation, alleviating their financing constraints, and also directly obtaining political resources such as government subsidies, thereby promoting corporate performance growth [3]. Corporate participation in targeted poverty alleviation mainly has a value-adding effect by enhancing corporate social responsibility performance and improving corporate governance [15].

Based on previous research, this paper mainly has two innovations: Firstly, it discovers a significant U-shaped relationship between the intensity of targeted poverty alleviation by enterprises and their value, indicating that there is an inflection point in enterprise value as the intensity of targeted poverty alleviation increases. Compared to previous research conclusions, which mostly presented a linear relationship, this finding is innovative to some extent. Secondly, further research shows that the positive U-shaped relationship between participation in targeted poverty alleviation and enterprise value is more significant among state-owned enterprises and enterprises in the eastern region. This study provides a decision-making basis for enterprises to continue participating in poverty alleviation and offers new empirical evidence for consolidating and expanding the achievements of poverty alleviation.

## 3. Research Hypothesis

### 3.1. Corporate Targeted Poverty Alleviation and Corporate Value Creation

The role of corporate participation in targeted poverty alleviation on corporate value creation is uncertain. Theoretically, how corporate participation in targeted poverty alleviation affects corporate value is essentially a "double-edged sword" role in the process of influencing corporate value creation activities. Specifically, corporate participation in targeted poverty alleviation not only helps enhance its reputation and image, but also gains recognition from the government and society, thereby facilitating access to more resources. The external financing effects of reputation and resource effects can further promote corporate value creation. However, achieving the positive effect of corporate participation in targeted poverty alleviation on corporate value creation requires a long-term accumulation process.

"Elite capture" refers to the situation where a politically or economically powerful minority group utilizes its advantageous position to occupy resources originally intended for the majority. Studies have found that elite capture occurs in the implementation of poverty relief mutual aid fund distribution, national poverty relief relocation projects, and poverty relief policies such as the establishment of poverty-stricken households on file. This behavior is mostly short-term, which not only greatly reduces poverty relief efficiency and economic development benefits, but also violates regulations. Furthermore, it is not beneficial for the enterprise itself, as it not only fails to gain the soft power enhancement brought by social responsibility, but also cannot be recognized by the

government to change the external relationships of the enterprise. It will also directly crowd out investment and production activities, thereby having a negative impact on enterprise value creation.

Therefore, the motivation and sustainability of enterprises' participation in targeted poverty alleviation will affect the relationship between their participation in targeted poverty alleviation and the enhancement of enterprise value. If enterprises participate in targeted poverty alleviation activities with bad motivations in the short term, it will exacerbate the tension of enterprise resources and be detrimental to the enhancement of enterprise value. Only when enterprises participate in targeted poverty alleviation activities with good motivations, responding to the call of the country, and sustainably engage in these activities over the long term, can they reap various dividends brought by it and promote the realization of long-term benefits for the enterprise.

Based on this, a hypothesis is proposed:

H1: There is a significant U-shaped relationship between the intensity of corporate targeted poverty alleviation and corporate value, meaning that corporate value first increases and then decreases as the intensity of corporate targeted poverty alleviation increases.

### 3.2. The Impact of Property Rights Nature and Regional Differences

State-owned enterprises are the backbone of China's socialist economy with Chinese characteristics, occupying a dominant position in the national economy. The status of state-owned enterprises determines their greater responsibility in undertaking social responsibilities. Compared to non-state-owned enterprises, state-owned enterprises have purer motivations for participating in targeted poverty alleviation, exhibit stronger sustainability in their participation, and are more likely to improve their relationships with the government and obtain more policy tilting.

China's economic development exhibits regional imbalances, with the eastern region being the most developed, followed by the central region. Correspondingly, the infrastructure in the eastern region is also more comprehensive, boasting a favorable informationization and innovation environment. Informationization serves as an economic mechanism for saving transaction costs in the socio-economic system, possessing the economic function of weakening information asymmetry and reducing transaction costs. The development of information technology aids in reducing information asymmetry, decreasing corporate capital costs, alleviating financing constraints, and promoting corporate value creation [14]. Simultaneously, Joseph Schumpeter, a representative figure in innovation theory, posited that in the process of socio-economic development, the technology and means of product production exert a crucial influence. Nowadays, the connotation of production factors is increasingly enriched, and only by adopting innovative technologies and means can small and medium-sized enterprises (SMEs) be better empowered for development. To a certain extent, a company's sustained achievement of good business performance relies on its endogenous technological innovation.

Based on this, we propose the following hypothesis:

H2: The positive U-shaped relationship between participation in targeted poverty alleviation and corporate value is more significant in state-owned enterprises and enterprises in the eastern region

## 4. Research Design

### 4.1. Sample Selection and Data Sources

This paper empirically examines the impact of corporate targeted poverty alleviation investments on corporate value, using all A-share listed companies from 2016 to 2020 as research samples. The sample data of listed companies primarily comes from the CSMAR database and has been filtered accordingly: (1) companies with missing relevant data have been excluded; (2) companies in ST or PT status, as well as those in special industries such as finance and insurance, have been excluded; (3) to eliminate the influence of outliers, continuous variables have been Winsorized at the 1% and 99% levels. This results in 16,167 sets of unbalanced panel data.

### 4.2. Variable Definition

#### 4.2.1. Dependent variable: enterprise value

The main indicators used to measure corporate value in current literature are Tobin's Q ratio [2] and price-to-book ratio [9]. Here, Tobin's Q ratio is sourced from the CSMAR database, and its calculation formula is: Tobin's Q ratio = market capitalization / total assets, where market capitalization = A-shares * current closing price of A-shares for the current period + domestically listed foreign-funded B-shares * current closing price of B-shares for the current period (Shanghai Stock Exchange * CNY_USD, Shenzhen Stock Exchange / HKD_CNY, converted to RMB) + (total number of shares - RMB-denominated ordinary shares - domestically listed foreign-funded B-shares) * (total owner's equity at the end of the period / paid-in capital at the end of the current period) + total liabilities at the end of the current period. Additionally, in the robustness test section, Tobin's Q ratio is replaced by price-to-book ratio (PB), and its calculation formula is: PB = total market capitalization / net assets.

#### 4.2.2. Explanatory variable: Intensity of targeted poverty alleviation investment

Based on the research conducted by Zhen Hongxian and Wang Sanfa , this paper adopts the sum of corporate poverty relief funds and material discounts from the overall indicators as the total amount of corporate targeted poverty relief, and takes the natural logarithm of the total amount of targeted poverty relief to measure the intensity of corporate targeted poverty relief investment.

#### 4.2.3. Control variable

This paper refers to the practices of Zhen Hongxian and Li Yuchuang as well as Yi Xuan and Wu Rong in selecting control variables. These include company size (Size), asset structure (Lev), shareholding ratio of the largest shareholder (Top1), operating capacity (Turn), board size of the company (Board), proportion of independent directors (Indep), and company age (Age). Additionally, to eliminate year-to-year and industry differences, annual effects (Year) and industry effects (Ind) are controlled.

#### 4.2.4. Model specification

To verify the corresponding hypothesis, this paper refers to the research conducted by Cheng Qiongwen and Liu Feng (2022) and constructs the following model:

$$TbQ_{it}=\alpha_{it}+\beta_1 Total_{it}+\beta_2 Total^2{}_{it}+\beta_3 Size_{it}+\beta_4 Lev_{it}+\beta_5 Top1_{it}+\beta_6 Turn_{it}+\beta_7 Board_{it}+\beta_8 Indep_{it}+\beta_9 Age_{it}+\Sigma Year+\Sigma Ind+\varepsilon_{it}$$

## 5. Empirical Results and Analysis

### 5.1. Descriptive Statistics

Table 1 presents the descriptive statistical results for each variable. In the research sample, the maximum value of enterprise value is 8.32, the minimum is 0.84, and the standard deviation is 1.24. This indicates a high degree of dispersion in enterprise value, with significant disparities. The minimum value of enterprise investment in targeted poverty alleviation is 0, the maximum is 8.99, and the standard deviation is 2.25. This suggests that most enterprises have participated in targeted poverty alleviation, but there is a high degree of dispersion in the investment intensity among different enterprises, with significant disparities that need to be improved. The descriptive statistical results for the remaining variables demonstrate that the research sample in this paper covers various enterprises with different characteristics.

### 5.2. Correlation Analysis

Table 2 presents the correlation among variables in the model of this paper. The results show that the correlation coefficient between TbQ and Total is positive and significant, indicating preliminary that corporate participation in targeted poverty alleviation has a positive correlation with corporate

value, but further testing is needed. Meanwhile, the correlation coefficients among all variables do not exceed 0.8, avoiding the problem of multidisciplinary among variables [16].

**Table 1.** Descriptive Statistics

| Variable | Observation | Mean | Standard Deviation | Minimum | Maximum |
|---|---|---|---|---|---|
| TbQ | 15798 | 1.96 | 1.24 | 0.84 | 8.32 |
| $Total^2$ | 16167 | 6.47 | 14.97 | 0.00 | 80.77 |
| Total | 16167 | 1.19 | 2.25 | 0.00 | 8.99 |
| Size | 16167 | 7.68 | 1.23 | 4.93 | 11.16 |
| Lev | 16167 | 0.41 | 0.20 | 0.06 | 0.90 |
| Top1 | 16167 | 0.34 | 0.15 | 0.09 | 0.73 |
| Turn | 16167 | 0.64 | 0.42 | 0.08 | 2.58 |
| Bard | 16167 | 2.11 | 0.19 | 1.61 | 2.64 |
| Indep | 16167 | 0.38 | 0.05 | 0.33 | 0.57 |
| Age | 16167 | 2.96 | 0.29 | 2.20 | 3.53 |

**Table 2.** Correlation Analysis

| Variable | TbQ | $Total^2$ | Total | Size | Lev | Top1 | Turn | Board | Indep | Age |
|---|---|---|---|---|---|---|---|---|---|---|
| TbQ | 1.000 | | | | | | | | | |
| $Total^2$ | 0.107*** | 1.000 | | | | | | | | |
| Total | 0.122*** | 0.950*** | 1.000 | | | | | | | |
| Size | 0.276*** | 0.375*** | 0.362*** | 1.000 | | | | | | |
| Lev | 0.264*** | 0.176*** | 0.171*** | 0.369*** | 1.000 | | | | | |
| Top1 | 0.096*** | 0.119*** | 0.126*** | 0.163*** | 0.031*** | 1.000 | | | | |
| Turn | 0.009 | 0.035*** | 0.033*** | 0.239*** | 0.099*** | 0.077*** | 1.000 | | | |
| Board | 0.120*** | 0.146*** | 0.157*** | 0.241*** | 0.141*** | 0.011 | 0.009 | 1.000 | | |
| Indep | 0.046*** | 0.019** | 0.004 | 0.028*** | 0.007 | 0.042*** | 0.010 | 0.573*** | 1.000 | |
| Age | 0.048*** | 0.083*** | 0.106*** | 0.070*** | 0.162*** | 0.040*** | 0.025*** | 0.106*** | 0.031*** | 1.000 |

*Note: ***, **, * represent significance at the 1%, 5%, and 10% levels, respectively. The same applies hereinafter.*

### 5.3. Basic Regression Analysis

To examine the impact of corporate targeted poverty alleviation efforts on corporate value, a regression model was first employed. Table 3 reports the fixed-effects test results of the impact of corporate targeted poverty alleviation efforts on corporate value. Column (1) presents the regression results of corporate targeted poverty alleviation efforts on corporate value alone, with a significant positive coefficient for the quadratic term and a significant negative coefficient for the linear term. Column (2) shows the regression results after adding a series of control variables based on column (1), with the quadratic coefficient still being significantly positive and the linear coefficient still being significantly negative. In column (3), the regression results after adding a series of year and industry fixed effects based on column (2) are presented, with the quadratic coefficient still being significantly positive and the linear coefficient still being significantly negative.

Next, U-test was conducted on the results of columns (1), (2), and (3), resulting in Tables 4, 5, and 6. It can be observed that the model satisfies the following conditions: ① the quadratic coefficient is significantly positive, and the linear coefficient is significantly negative; ② there is an inflection point within the range of the independent variable; ③ the slope of the curve is negative when the independent variable takes its minimum value and positive when it takes its maximum value. Therefore, the regression results exhibit a U-shaped impact relationship. Table 3 shows that condition ① is satisfied. In Table 4, the confidence interval is [3.943; 6.119], indicating that the model has an inflection point. On the left side of the inflection point, corporate participation in targeted poverty alleviation has a negative impact on corporate value; on the right side, it has a positive impact. Thus, there is a significant U-shaped relationship between the intensity of corporate targeted poverty alleviation and corporate value, meaning that corporate value first increases and then decreases as the intensity of targeted poverty alleviation increases. In Table 5, the confidence interval is [3.145; 4.888], indicating that there is still a significant U-shaped relationship between the intensity of corporate targeted poverty alleviation and corporate value. In Table 6, the confidence interval is [0.275; 2.993], indicating that there is still a significant U-shaped relationship between the intensity of corporate targeted poverty alleviation and corporate value. In summary, hypothesis H1 is verified.

**Table 3.** Basic Model Estimation Results

| Variable | TbQ | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| $Total^2$ | 0.009*** | 0.009*** | 0.007*** |
| | (4.253) | (3.890) | (3.223) |
| Total | -0.088*** | -0.065*** | -0.029** |
| | (-5.816) | (-4.340) | (-2.075) |
| Size | | -0.073*** | -0.068*** |
| | | (-2.612) | (-2.618) |
| Lev | | -0.631*** | -0.647*** |
| | | (-6.496) | (-7.170) |
| Top1 | | -1.201*** | -0.769*** |
| | | (-6.294) | (-4.339) |
| Turn | | -0.161*** | 0.003 |
| | | (-3.675) | (0.066) |
| Board | | -0.245** | -0.236** |
| | | (-2.197) | (-2.289) |
| Indep | | 0.309 | 0.306 |
| | | (0.926) | (0.989) |
| Age | | -1.094*** | 2.193*** |
| | | (-11.853) | (8.062) |
| Year | No | No | Yes |
| Ind | No | No | Yes |
| _cons | 2.006*** | 6.953*** | -2.150** |
| | (211.534) | (15.265) | (-2.452) |
| *N* | 15798 | 15798 | 15798 |
| $R^2$ | 0.004 | 0.028 | 0.171 |

*t statistics in parentheses*
*$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$*

**Table 4.** U-test Result – Golumn (1)

| | Lower Bound | Upper Bound |
|---|---|---|
| Interval | 0 | 8.987361 |
| Slope | -0.087867 | 0.0826955 |
| t-value | -5.816069 | 3.100005 |
| P>\|t\| | 3.09E-09 | 0.0009696 |

*Overall test of presence of a U shape:*
*t-value=3.01*
*P>|t|=0.00097*
*95%Fieller interval for extreme point:[3.943; 6.119]*

**Table 5.** U-test Result - Column (2)

| | Lower Bound | Upper Bound |
|---|---|---|
| Interval | 0 | 8.987361 |
| Slope | -0.0651116 | 0.0890355 |
| t-value | -4.339547 | 3.376574 |
| P>\|t\| | 7.20E-06 | 0.0003681 |

*Overall test of presence of a U shape:*
*t-value=3.38*
*P>|t|=0.000368*
*95%Fieller interval for extreme point:[3.145;4.888]*

**Table 6.** U-test Result - Column (3)

| | Lower Bound | Upper Bound |
|---|---|---|
| Interval | 0 | 8.987361 |
| Slope | -0.0288644 | 0.0893263 |
| t-value | -2.075263 | 3.66075 |
| P>\|t\| | 1.90E-02 | 0.0001263 |

*Overall test of presence of a U shape:*
*t-value=2.08*
*P>|t|=0.019*
*95%Fieller interval for extreme point:[0.275;2.993]*

### 5.4. Heterogeneity Analysis

To further investigate the differences in the impact of corporate participation in targeted poverty alleviation on enterprise value among enterprises with different property rights, this paper utilizes information from the CSMAR database to categorize the sample enterprises into state-owned enterprises (SOEs) and non-state-owned enterprises (NSOEs) for heterogeneity testing. Table 7 presents the results of the heterogeneity test on the impact of corporate participation in targeted poverty alleviation on enterprise value among enterprises with different property rights. Column (1) shows the regression results of the intensity of targeted poverty alleviation efforts by SOEs on enterprise value, where the coefficient of the quadratic term is significantly positive and the coefficient of the linear term is significantly negative. In contrast, in column (2), the regression coefficient of the intensity of targeted poverty alleviation efforts by NSOEs on enterprise value is not significant, indicating that NSOEs' participation in targeted poverty alleviation does not have a significant U-shaped impact on enterprise value. The possible reason is that NSOEs have been involved in targeted poverty alleviation for a shorter period of time and lack continuity, and their motivations for participating in targeted poverty alleviation are diverse, thus resulting in no significant U-shaped impact. Additionally, to examine the differences in the impact of corporate participation in targeted poverty alleviation on enterprise value among enterprises in different regions,

this paper utilizes information from the CSMAR database to categorize the sample enterprises into eastern, central, and western enterprises for heterogeneity testing. Column (3) shows the regression results of the intensity of targeted poverty alleviation efforts by eastern enterprises on enterprise value, where the coefficient of the quadratic term is significantly positive and the coefficient of the linear term is significantly negative. However, in columns (4) and (5), the regression coefficients of the intensity of targeted poverty alleviation efforts by central and western enterprises on enterprise value are not significant, indicating that the participation of central and western enterprises in targeted poverty alleviation does not have a significant U-shaped impact on enterprise value. The possible reason is that the overall economic development level in central and western regions is not high, and the level of informatization and innovation capabilities in these regions are limited, which affects the transformation of the relationship between corporate participation in targeted poverty alleviation and enterprise value creation, thus resulting in no significant U-shaped impact. In summary, hypothesis H2 is supported.

**Table 7.** Heterogeneity Analysis Results

| Variable | TbQ | | | | |
|---|---|---|---|---|---|
| | Nature of Property Rights | | Region | | |
| | (1) | (2) | (3) | (4) | (5) |
| | State-owned | Non-state | East | Central | West |
| $Total^2$ | 0.010*** | 0.003 | 0.009*** | 0.004 | 0.000 |
| | (4.056) | (1.142) | (3.558) | (0.795) | (0.073) |
| Total | -0.054*** | -0.003 | -0.040** | -0.022 | 0.008 |
| | (-3.022) | (-0.173) | (-2.315) | (-0.679) | (0.221) |
| Size | -0.240*** | -0.010 | -0.026 | -0.069 | -0.285*** |
| | (-5.334) | (-0.312) | (-0.883) | (-1.000) | (-3.280) |
| Lev | -0.202 | -0.743*** | -0.680*** | -0.786*** | -0.373 |
| | (-1.256) | (-6.609) | (-6.513) | (-3.224) | (-1.366) |
| Top1 | -0.983*** | -0.563** | -0.579*** | -1.687*** | -0.256 |
| | (-4.018) | (-2.161) | (-2.736) | (-4.061) | (-0.454) |
| Turn | -0.097 | 0.038 | 0.023 | -0.080 | 0.008 |
| | (-1.564) | (0.693) | (0.488) | (-0.728) | (0.057) |
| Board | -0.012 | -0.322** | -0.290** | 0.023 | -0.499 |
| | (-0.079) | (-2.369) | (-2.416) | (0.095) | (-1.386) |
| Indep | 0.642 | 0.141 | 0.413 | -0.455 | 0.073 |
| | (1.528) | (0.327) | (1.152) | (-0.585) | (0.073) |
| Age | 1.241*** | 2.513*** | 2.027*** | 3.480*** | 1.770* |
| | (2.594) | (7.236) | (6.626) | (4.674) | (1.822) |
| Year | Yes | Yes | Yes | Yes | Yes |
| Ind | Yes | Yes | Yes | Yes | Yes |
| _cons | 0.550 | -2.871** | -1.798* | -6.165*** | 1.072 |
| | (0.358) | (-2.557) | (-1.789) | (-2.728) | (0.352) |
| *N* | 4906 | 10892 | 11448 | 2540 | 1810 |
| $R^2$ | 0.169 | 0.183 | 0.176 | 0.192 | 0.169 |

*t statistics in parentheses*
*$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$*

### 5.5. Stability Test

To ensure the reliability of the test results, this paper conducted a robustness test. The evaluation index of enterprise value was replaced. To avoid regression test errors caused by variable selection, this paper selected the price-to-book ratio (PB) as the representative variable of enterprise value, replacing the representative variable of Tobin Q, for regression analysis. Column (1) in Table 8 presents the regression results of the impact of enterprise targeted poverty alleviation efforts on

enterprise value alone. The coefficient of the quadratic term is significantly positive, while the coefficient of the linear term is significantly negative, with a confidence interval of [4.398; 6.577]. This model exhibits an inflection point. On the left side of the inflection point, enterprise participation in targeted poverty alleviation has a negative impact on enterprise value; on the right side of the inflection point, enterprise participation in targeted poverty alleviation has a positive impact on enterprise value. Therefore, there is a significant U-shaped relationship between the intensity of enterprise targeted poverty alleviation efforts and enterprise value, that is, enterprise value first increases and then decreases as the intensity of enterprise targeted poverty alleviation efforts increases. Column (2) presents the regression results after adding a series of control variables based on column (1). The coefficient of the quadratic term remains significantly positive, while the coefficient of the linear term remains significantly negative. In column (3), the regression results after adding a series of fixed effects for year and industry based on column (2) are presented. The coefficient of the quadratic term remains significantly positive, while the coefficient of the linear term remains significantly negative.

### 5.6. Endogeneity Test

Considering that enterprises with high enterprise value are more capable of actively participating in targeted poverty alleviation, this paper may face the issue of sample self-selection. Therefore, this paper adopts Propensity Score Matching (PSM) to eliminate endogeneity issues between variables. Specifically, Logit regression is used to match 15,735 samples at a ratio of 1:1 with a matching tolerance of 0.95, using enterprise size, asset-liability ratio, equity concentration, operating capacity, board size, proportion of independent directors, and enterprise age as characteristic variables. After excluding 63 unmatched samples, the variables such as enterprise size, asset-liability ratio, equity concentration, operating capacity, board size, and enterprise age, along with enterprise value, show a significant impact on the matched samples.

Based on this, regression analysis was conducted using the successfully matched samples according to Model (1). Column (4) in Table 8 presents the regression results of the paired enterprises' targeted poverty alleviation efforts on enterprise value. The coefficient of the quadratic term is significantly positive, while the coefficient of the linear term is significantly negative. Therefore, this model exhibits an inflection point. On the left side of the inflection point, enterprises' participation in targeted poverty alleviation has a negative impact on enterprise value; on the right side of the inflection point, it has a positive impact. The relationship between enterprises' targeted poverty alleviation efforts and enterprise value still exhibits a significant U-shaped pattern, meaning that enterprise value first increases and then decreases as the intensity of targeted poverty alleviation efforts increases. The robustness test revealed that the research conclusions are consistent with the previous text. Therefore, the research conclusions of this paper are robust.

**Table 8.** Stability and Endogeneity Test Results

| Variable | Enterprise Value | | | |
|---|---|---|---|---|
| | Stability Test | | | Endogeneity test |
| | (1) | (2) | (3) | (4) |
| $Total^2$ | 0.026*** | 0.023*** | 0.019*** | 0.010*** |
| | (4.889) | (4.585) | (3.946) | (3.380) |
| Total | -0.269*** | -0.141*** | -0.056* | -0.057*** |
| | (-7.379) | (-4.081) | (-1.745) | (-2.736) |
| Size | | -0.648*** | -0.643*** | -0.012 |
| | | (-10.043) | (-10.761) | (-0.209) |
| Lev | | 2.471*** | 2.477*** | -0.257 |
| | | (11.012) | (11.930) | (-1.491) |
| Top1 | | -0.840* | 0.168 | -0.391 |
| | | (-1.906) | (0.411) | (-1.325) |
| Turn | | 0.494*** | 0.849*** | 0.257*** |
| | | (4.871) | (8.961) | (3.228) |
| Board | | 0.342 | 0.392* | -0.171 |
| | | (1.326) | (1.648) | (-0.974) |
| Indep | | 1.621** | 1.700** | 0.710 |
| | | (2.100) | (2.390) | (1.370) |
| Age | | -7.238*** | -0.144 | 0.680 |
| | | (-33.918) | (-0.230) | (1.345) |
| Year | No | No | Yes | Yes |
| Ind | No | No | Yes | Yes |
| _cons | 3.576*** | 27.449*** | 6.694*** | 0.439 |
| | (156.078) | (26.077) | (3.316) | (0.271) |
| *N* | 15798 | 15798 | 15798 | 5959 |
| $R^2$ | 0.007 | 0.113 | 0.249 | 0.133 |

*t statistics in parentheses*
$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

## 6. Summary

Based on data from A-share listed companies from 2016 to 2020, this paper employs a quadratic regression model, U-test, and PSM (Propensity Score Matching) method to investigate the impact of corporate participation in targeted poverty alleviation on corporate value. The research reveals a significant U-shaped relationship between the intensity of corporate targeted poverty alleviation and corporate value, indicating that corporate value first increases and then decreases as the intensity of targeted poverty alleviation increases. Further tests by property rights grouping indicate that the participation of state-owned enterprises in targeted poverty alleviation has a significant U-shaped impact on corporate value; regional grouping tests show that the participation of enterprises in the eastern region in targeted poverty alleviation has a significant U-shaped impact on corporate value.

Based on the aforementioned research conclusions, this paper derives the following insights and recommendations:

Firstly, from the perspective of enterprises, their participation in targeted poverty alleviation should be analyzed on a case-by-case basis according to their own situations, adhering to the principle of long-term sustainability. State-owned enterprises, with their larger scale, are willing to bear social responsibility and actively participate in targeted poverty alleviation, which will help establish their good corporate image and effectively gain the positive impact of participating in targeted poverty alleviation on corporate value. For non-state-owned enterprises, their motives are often not pure enough, with the intention of seeking government resource favoritism, and their sloppy participation in targeted poverty alleviation often increases the financial burden of the enterprise and bears the

negative impact of participating in targeted poverty alleviation on corporate value. Therefore, enterprises should take a long-term perspective, make long-term plans for participating in targeted poverty alleviation, and not participate with speculative purposes, otherwise they may lose more than they gain.

Secondly, from the perspective of the government, it should improve relevant laws and regulations to guide enterprises to participate in targeted poverty alleviation in a long-term and effective manner. As the mainstay of the market, enterprises remain the main force in targeted poverty alleviation efforts. The government should provide corresponding assistance to enhance the enthusiasm of enterprises to participate in targeted poverty alleviation. The impact of enterprise participation in targeted poverty alleviation on enterprise value varies across different regions. Compared to the eastern region, the participation of enterprises in targeted poverty alleviation in the central and western regions does not have a significant U-shaped impact on enterprise value. The possible reason is that enterprises in the central and western regions are lacking in informatization, innovation capability, and profitability, making it difficult for them to participate in targeted poverty alleviation. Therefore, the government should formulate specific and targeted policy support documents for enterprises in the central and western regions to participate in targeted poverty alleviation, guiding enterprises to engage in long-term and effective participation

## References

[1] Cheng Yang, Huang Yujing, Huang Caiwen, Xia Wenlei. Corporate Targeted Poverty Alleviation and Debt Financing Capacity [J]. Accounting and Finance Communication, 2022 (11): 68 - 73. 2022.11.025.

[2] Zhen Hongxian, Li Yuchuang, Sun Xiaoyu. Does Corporate Targeted Poverty Alleviation Affect Corporate Value? [J]. Investment Research, 2021, 40 (03): 4 - 19.

[3] Hu Haozhi, Zhang Xiuping. The Impact of Participating in Targeted Poverty Alleviation on Corporate Performance [J]. Reform, 2020 (08): 117 - 131.

[4] He Kang, Xiang Houjun, Fang Xiancang. Does Participation in Targeted Poverty Alleviation Help Enterprises Obtain Government Subsidies? - From the Perspective of Top Management Experience [J]. Journal of Finance and Economics, 2022 (03): 15 - 25. 2022.03.002.

[5] Zhen Hongxian, Wang Sanfa. Does Corporate Targeted Poverty Alleviation Affect Corporate Risk? [J]. Journal of Financial Research, 2021 (01): 131 - 149.

[6] Yin Zhong, Sun Mengchen, Wu Yibo. Can Precision Poverty Alleviation Policies Ease the Financing Constraints of Chinese Enterprises? - From the Perspective of Policy-Oriented Corporate Social Responsibility [J]. Journal of Northeastern University (Social Science Edition), 2021, 23 (06): 32 - 39. 1008 - 3758. 2021.06.005.

[7] Dong Zhu, Zhang Xin. Participation in targeted poverty alleviation and corporate innovation: An analysis from the perspective of external financing [J]. Southern Economic Journal, 2021 (10): 48 - 65.390212.

[8] Liu Yingxuan, Li Peisi. Innovation Investment, Entrepreneurship, and Corporate Value [J]. Chinese Certified Public Accountant, 2022 (03):44 - 48. 2022.03.002.

[9] Wang Linlun, Lian Yonghui, Dong Jie. Research on the Impact Mechanism of ESG Performance on Corporate Value [J]. Securities Market Herald, 2022 (05): 23 - 34.

[10] Kim H R, Lee M, Lee H T, Kim N M. Corporate social responsibility and employee-company identification [J]. Journal of Business Ethics, 2010, 95 (4): 557 - 569.

[11] Zhang Yazhou. Effectiveness of Internal Control, Financing Constraints, and Corporate Value [J]. Research on Financial and Economic Issues, 2020 (11): 109 - 117. 2020.11.012.

[12] Wang Xiaohong, Lei Kun, Fan Jiajia. Financial Flexibility, Employee Training Investment, and Corporate Value [J]. Journal of Accounting Friends, 2022 (01): 106 - 111.

[13] Yi Xuan, Wu Rong, and Xie Zhiming. Have the New Policies for Poverty Alleviation in the Capital Market Promoted Value Creation in Enterprises in Poverty-stricken Areas? An Empirical Study Based on Enterprises Listed on the National Equities Exchange and Quotations (NEEQ) [J]. Accounting Research, 2021 (09): 136 - 149.

[14] Xu Yude, Yang Xiaoxuan, Liu Jianmin. Informatization Density, Social Trust, and Corporate Value Creation [J]. China Soft Science, 2022 (01): 98 - 110.

[15] Wang Jiaxin, Chen Jin, Liu Zhiyu. Precision Poverty Alleviation, Policy Benefits for Enterprises, and Corporate Value [J]. Modern Finance (Journal of Tianjin University of Finance and Economics), 2022, 42 (07): 74 - 93. 2022.07.005.

[16] Cheng Qiongwen, Liu Feng. Research on the Impact of Environmental Information Disclosure on Corporate Value: Based on Empirical Data from Listed Companies in Heavy Pollution Industries [J]. Science and Technology Management Research, 2022, 42 (01): 177 - 185.