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The Impact of Corporate Participation in Poverty Alleviation under the Background of Rural Revitalization on Financial Performance

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Abstract

Corporations, as pivotal agents in rural economic development, wield significant influence in the advancement of rural revitalization. Their engagement in this process not only holds the potential to stimulate the growth of distinctive agricultural industries within the region and solidify the accomplishments in poverty alleviation, but also paves new avenues for the fulfillment of their social responsibilities, thereby enhancing their capacity to generate profits. Based on a sample of Chinese A-share listed companies from 2018 to 2021, an Ordinary Least Squares (OLS) model was employed to empirically examine the impact and mechanisms of corporate participation in rural revitalization on their financial performance. The research findings indicate that engaging in rural revitalization effectively enhances the financial performance of companies. The mediating role of financial constraints was identified in this relationship. Further investigations reveal that the positive impact of corporate engagement in rural revitalization on financial performance is particularly pronounced among non-state-owned enterprises and within the central and eastern regions of the country.

Keywords

Corporate Participation in Rural Revitalization, Financial Performance, Financing Constraints, Propensity Score Matching

1. Introduction

In 2021, China successfully achieved its poverty alleviation goals in the new era, and accomplished the first centenary goal, thus embarking on a new journey to-

wards the comprehensive construction of a socialist modernized nation. Consolidating and extending the achievements of poverty alleviation, effectively linking with the rural revitalization strategy, and accelerating the comprehensive revitalization of rural industries, talents, culture, ecology, and organizations have become critical issues in the post-poverty alleviation era. The 2022 Central Document No. 1 called for mobilizing social forces to actively participate in rural revitalization. The 2023 Central Document No. 1 further emphasized the importance of promoting the "Vitalizing Ten Thousand Enterprises, Revitalizing Ten Thousand Villages" initiative, and urged the government to wholeheartedly support and serve corporate participation in rural revitalization through relevant policies. Simultaneously, in the report of the 20th National Congress of the Communist Party of China, General Secretary Jinping Xi comprehensively deployed the rural revitalization strategy and proposed strategic objectives to consolidate and expand the achievements of poverty alleviation and enhance the endogenous development momentum in poverty-stricken areas and among impoverished populations. Corporate engagement in rural revitalization can infuse fresh vitality into regional economic development, effectively leveraging their specific advantages in the market, resources, and technology. By harnessing local distinctive resources to drive industrial development, it can generate more employment opportunities for impoverished populations (Zhang et al., 2021a). Simultaneously, participating in rural revitalization provides a new approach for enterprises to fulfill their social responsibilities. Enterprises contribute to poverty-stricken areas by donating funds, materials, technology, and manpower, thereby helping to improve the infrastructure and living conditions of the impoverished population and promoting sustainable regional economic development (Hu & Zhang, 2020; He et al., 2022a).

Numerous studies have shown that fulfilling social responsibilities can shape a favorable corporate social image, attract inflows of capital, talent, and reputation, among other resources (Xie et al., 2022). This, consequently, helps mitigate financing constraints, enabling companies to increase investments, improve profit margins, and ultimately enhance their financial performance (Zhang et al., 2021b). Precise poverty alleviation, as one of the primary forms of corporate social responsibility (Tang et al., 2021), carries a signaling effect that bolsters information transparency and reputation, thereby fostering investor trust and increasing investment propensity (Deng et al., 2020; Yin et al., 2021; He et al., 2022b). Moreover, such actions send a political signal, reinforcing the government-business relationship, and facilitating preferential resource allocation from the government (He et al., 2022a). Some scholars argue that corporate precise poverty alleviation is driven by self-interest, as it allows companies to interact with stakeholders, exchange resources with the outside world, and gain competitive advantages, thereby enhancing corporate value (Zhen et al., 2021; Wang et al., 2022). Furthermore, engaging in precise poverty alleviation grants companies access to non-substitutable competitive resources, such as moral capital, reputa-

tion capital, and political capital, which help mitigate negative impacts, reduce external operating risks, and strengthen internal risk controllability (Zhen & Wang, 2021; Yue et al., 2021). Consequently, this exerts a positive spillover effect on corporate performance (Hu & Zhang, 2020; Zhang & Dong, 2020).

Upon the successful culmination of targeted poverty alleviation endeavors, researchers have undertaken studies regarding the seamless amalgamation of rural revitalization and precision poverty alleviation. Certain scholars have delved into the topic of enterprise role transitions within this transformative phase. Huang & Hu (2022) argue that to achieve the organic integration of the two, it is necessary to encourage and guide enterprises to leverage the multifunctionality of agriculture, proactively collaborate with other business entities to promote industrial integration, and drive local development. Particularly, the sustainable advantages of local enterprises in the process of transitioning from "alleviation" to "revitalization" should be fully utilized (Wu, 2022). From the perspective of corporate participation in rural revitalization, some researchers have found that party organization governance plays a promoting role in enterprises' willingness and commitment to participate in rural revitalization. Therefore, it is essential to maintain the "dual-entry" normalization mode of corporate party organization and corporate governance structure, to enhance corporate social responsibility fulfillment (Xiu et al., 2022; Yun, 2023). Li (2019) suggests that relational investment, as a "non-pure" investment approach, provides a new perspective for corporate involvement in rural revitalization. Enterprises can provide action demonstrations for more corporate participation in rural revitalization through various forms, such as developing rural tourism, promoting unique agricultural products, and investing in rural infrastructure. Whether participating in precise poverty alleviation or rural revitalization, both reflect corporate social responsibility efforts (Tang et al., 2021; Sun & Yang, 2022). Currently, the focus of rural development in China has shifted from "alleviation" to "revitalization," and the role of enterprises in this transformational process will also change accordingly. Therefore, further research is needed to complement the study on the impact of corporate participation in rural revitalization, particularly regarding its effect on corporate financial performance.

Based on this, this paper takes the background of the effective connection between rural revitalization strategy and poverty alleviation as the context and selects all Chinese A-share listed companies participating in rural revitalization from 2018 to 2021 as the research sample. The aim is to explore the impact of corporate participation in rural revitalization on financial performance and its underlying mechanisms. Additionally, it examines the variations in this impact across different enterprises and regions. The findings of the study unveil that corporate involvement in rural revitalization effectively enhances financial performance, with financing constraints acting as a mediating factor. Subsequent analysis further reveals that the positive impact of corporate participation in rural revitalization on financial performance is more pronounced among non-

state-owned enterprises and within the central and eastern regions of the country. In light of these findings, the study calls for accelerated governmental efforts to establish interactive mechanisms for corporate engagement in rural revitalization, while refining and implementing incentive policies to stimulate corporate poverty alleviation initiatives. This, in turn, enables enterprises to simultaneously contribute to comprehensive rural development and enhance their own financial outcomes.

The potential contributions of this study are twofold. Firstly, it expands the research on corporate participation in rural revitalization. Grounded in the policy context of China's transition from poverty alleviation to rural revitalization strategy, the recognition of corporate involvement in rural revitalization as a primary form of fulfilling social responsibility reflects strong Chinese characteristics and contemporary demands. Secondly, it enriches the research on factors influencing corporate financial performance. By adopting an external perspective based on corporate social responsibility, this study breaks through the existing scope of research focused on internal financial indicators' impact on corporate financial performance, offering a novel perspective to better comprehend the behavioral motivations behind corporate participation in rural revitalization.

2. Theoretical Analysis and Research Assumptions

Resource Dependency Theory posits that no organization can exist independently and, to varying degrees, will rely on government and external resources (Zhen et al., 2021). Rural revitalization, as the central focus of the government's efforts in rural areas, embodies the collective aspiration of the Party, the nation, and the people towards achieving common prosperity. Actively participating in government-led rural revitalization initiatives, enterprises provide financial and technological support, thereby aiding in alleviating the government's fiscal burden. Consequently, they may receive compensation or cash subsidies from the government (Hu & Zhang, 2020; Xie et al., 2022; He et al., 2022b). This engagement also enables enterprises to establish a favorable corporate image in the eyes of local governments, facilitating favorable treatment, such as tax incentives, access to special resources, and policy conveniences in the form of market entry facilitation (Yue & Xu, 2021). Therefore, in the process of participating in rural revitalization, enterprises' financing concerns can be mitigated through government fiscal support, enabling them to engage more flexibly in external investments and research and development expenditures. This, in turn, promotes corporate growth and expansion, aiding in enhancing profit margins and thus elevating corporate financial performance (Zeng et al., 2022).

Signaling theory posits that external investors' assessments and decisions regarding a company are influenced by the signals the company conveys (Yang & Pang, 2017). Corporate engagement in rural revitalization contributes positively to the development of rural areas, thereby showcasing a favorable corporate image to society. This engagement also enables companies to enhance their reputa-

tion and influence through positive image cultivation (Xie et al., 2022; Deng et al., 2020; Zhang &d Dong, 2020). Reputation capital, as a crucial intangible asset, plays a pivotal role in a company's survival and growth, aiding in attracting external investments (Hu & Zhang, 2020). Simultaneously, it signifies a company's robust financial standing, mitigates investors' concerns about the company's future development, and increases their willingness to invest in the company. Therefore, corporate participation in rural revitalization can alleviate financing constraints by attracting more external investments, consequently fostering the enhancement of financial performance.

Stakeholder theory posits that the development of any corporation should not solely pursue the maximization of shareholder wealth, but instead aim to maximize the overall interests of stakeholders (Li, 2020). Among these stakeholders, banks tend to collaborate with enterprises that demonstrate robust social responsibility and high social reputation. Presently, corporate social responsibility expenditures are generally undertaken based on the premise of positive future expectations (He et al., 2022b). Corporate engagement in rural revitalization indirectly reflects optimistic expectations for future development (Lys et al., 2015). This behavior enhances financial institutions' confidence in timely repayment and interest payments, reduces risk assessment related to financial aspects, and bolsters their willingness to extend loans. Furthermore, corporate involvement in rural revitalization can lead to government recognition and endorsement, strengthening the aspect of "political endorsement." Essentially, this forms a form of "official guarantee," reducing the likelihood of financial institutions encountering defaults. As a result, these institutions are inclined to provide larger loans at lower costs and longer terms to enterprises, subsequently aiding companies in alleviating financing constraints and enhancing financial performance (He et al., 2022b; Wang & Liu, 2018).

In summary, corporate engagement in rural revitalization can generate diverse sources of funding. From the government's perspective, enterprises can obtain increased subsidies, fiscal support, and tax incentives. From a societal standpoint, it can elevate corporate reputation and investor expectations, consequently attracting more external investment. From the standpoint of financial institutions, based on the notion of "political endorsement," enterprises can secure larger loan amounts with lower costs and longer terms. In light of this, the present study posits that corporate participation in rural revitalization can effectively alleviate financing constraints, thereby enhancing financial performance. Accordingly, the following hypotheses are proposed:

H1: Corporate engagement in rural revitalization can enhance corporate financial performance.

H2: Financing constraints play an intermediary role in the relationship between corporate engagement in rural revitalization and financial performance.

The mechanism through which corporate engagement in rural revitalization affects financial performance is illustrated in **Figure 1**:

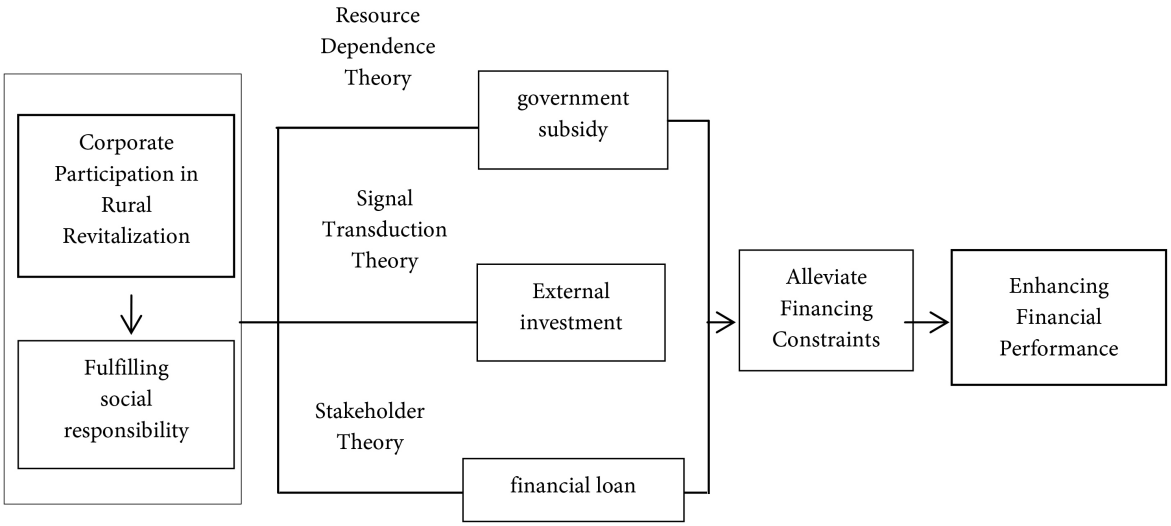

Figure 1. The impact pathways of corporate engagement in rural revitalization on financial performance.

3. Research Design

3.1. Sample Selection and Data Source

The rural revitalization strategy was first proposed in the 19th National Congress Report in 2017. Therefore, this study takes the period from 2018 to 2021 as the sample interval, selecting data from all A-share listed companies to investigate the impact of corporate participation in rural revitalization on their financial performance. The data on corporate engagement in rural revitalization are sourced from the "Precise Poverty Alleviation" database within the CSMAR Database, while the data for other variables are obtained from the CSMAR Database. The study follows established literature for sample processing: firstly, it excludes sample companies in abnormal trading states (such as ST, *ST, etc.) and those in the financial and insurance industries. Additionally, companies with missing data are also removed. This screening process results in a final selection of 3524 sample company-year observations. To mitigate the influence of extreme outliers on regression results, Winsorization was applied to all continuous variables, limiting them within the 1% upper and lower bounds. Data selection, processing, and analysis were conducted using Excel and STATA 16 statistical software.

3.2. Variable Definitions and Measurement

3.2.1. Explained Variable—Corporate Financial Performance

Drawing on the research of scholars such as Hu & Zhang (2020), as well as Xie et al. (2022), we employ the metric of Return on Assets (ROA) to gauge corporate financial performance. In the subsequent robustness analysis, we utilize Return on Equity (ROE) as a proxy variable for further examination.

3.2.2. Explanatory Variable—Participation of Enterprises in Rural Revitalization

Building upon the research of Zhang (2019), achieving resource sharing necessi-

tates the enhancement of the precision poverty alleviation database, aligning it with the analytical techniques of rural revitalization big data. Consequently, drawing inspiration from the methodology of Xiu et al. (2022), this study adopts the approach of using the variables "Whether Enterprises Participate in Rural Revitalization" (Rur_D) and "Scale of Rural Revitalization Investment by Enterprises" (Rur_scl) to measure the extent of participation by publicly listed companies in rural revitalization efforts. Notably, the scale of rural revitalization investment is quantified by the natural logarithm of the total funds and materials contributed by enterprises to precision poverty alleviation initiatives.

3.2.3. Mediating Variable—Financing Constraint

Currently, the academic community employs three prominent representative indicators for measuring financing constraints: the KZ index, SA index, and WW index. Drawing from the methodology outlined by Kaplan & Zingales (1997), the KZ index is constructed by incorporating five factors, including operational net cash flow, level of cash dividend distribution, cash holdings, degree of indebtedness, and corporate growth opportunities (proxied by Tobin's Q), to assess the extent of financing constraints faced by firms. A higher value of this index signifies a greater degree of financing constraints. Referring to existing literature, the calculation formula for the KZ index is presented as Equation (1):

$$\begin{aligned} KZ_{i,t} = & -9.256044 \times CF_{i,t} / A_{i,t-1} - 35.69541 \times DIV_{i,t} / A_{i,t-1} \\ & - 5.491246 \times Cash_{i,t} / A_{i,t-1} + 4.872903 \times Lev_{i,t} + 0.5949451 \times Q_{i,t} \end{aligned} \quad (1)$$

3.2.4. Controlled Variabl

The present study controls for several variables, including firm size (Size), the duality of CEO and Chairman roles (Dual), board size (Board), ownership proportion of the largest shareholder (Share), corporate growth opportunities (Growth), and the proportion of independent directors (Idr). Additionally, industry (ind) and year (year) are incorporated as dummy variables for control purposes. The definitions of the main variables are outlined in **Table 1**.

3.3. Model Construction

Initially, to assess the relationship between enterprises' involvement in rural revitalization and their financial performance, referring to the research of Hu & Zhang (2020), the following model is formulated:

$$ROA_{i,t} = \beta_0 + \beta_1 Rur\_D_{i,t} + \beta_j \Sigma Control_{k,i,t} + \Sigma year + \Sigma ind + \varepsilon_{i,t} \quad (2)$$

$$ROA_{i,t} = \beta_0 + \beta_1 Rur\_scl_{i,t} + \beta_j \Sigma Control_{k,i,t} + \Sigma year + \Sigma ind + \varepsilon_{i,t} \quad (3)$$

ROA represents Return on Total Assets, utilized to gauge corporate financial performance. The explanatory variable Rur_D denotes whether an enterprise engages in rural revitalization, while Rur_scl signifies the magnitude of the enterprise's investment in rural revitalization. "Control" encompasses the set of control variables.

Table 1. Variable definitions and measurements.

Variable Types	Variable Names	Variable Meanings	Variable Measurements
Explained Variable	ROA	Financial Performance	Return on Total Assets
Explanatory Variable	Rur_D	Whether Enterprises Participate in Rural Revitalization	Whether the Enterprise Participated in Rural Revitalization in the Current Year, Participation = 1, Non-Participation = 0
	Rur_scl	Scale of Rural Revitalization Investment by Enterprises	Ln(Poverty Alleviation Funds and In-Kind Contributions by the Enterprise in the Current Year)
Mediating Variable	KZ	Financing Constraint	KZ Index
Controlled Variable	Size	Company Size	Ln(Total Assets)
	Dual	Unified Dual Roles	When the Chairman concurrently serves as the CEO, it is denoted as 1; otherwise, it is denoted as 0
	Board	Board Size	Number of Board Members
	Share	Shareholding Percentage of the Largest Shareholder	The ownership proportion of the largest shareholder divided by the total number of shares
	Growth	Company Growth Prospects	Growth rate of operating revenue for listed companies
	Idr	Proportion of Independent Directors	The percentage of independent directors in relation to the total number of board members
	year	Year	Annual dummy variable, taking the value of 1 for a specific year and 0 otherwise
	ind	Industry	Industry dummy variable, following the industry classification standard established by the China Securities Regulatory Commission in 2012, taking the value of 1 for a specific industry and 0 otherwise

Subsequently, the following model is constructed to examine whether financing constraints act as an intermediary variable in the relationship between enterprises' engagement in rural revitalization and their financial performance.

$$\mathrm{ROA}_{i,t} = \beta_0 + \beta_1 \mathrm{Rur\_D}_{i,t} / \mathrm{Rur\_scl}_{i,t} + \beta_j \Sigma \mathrm{Control}_{k,i,t} + \Sigma \mathrm{year} + \Sigma \mathrm{ind} + \varepsilon_{i,t} \quad (4)$$

$$\mathrm{KZ}_{i,t} = \beta_0 + \beta_1 \mathrm{Rur\_D}_{i,t} / \mathrm{Rur\_scl}_{i,t} + \beta_j \Sigma \mathrm{Control}_{k,i,t} + \Sigma \mathrm{year} + \Sigma \mathrm{ind} + \varepsilon_{i,t} \quad (5)$$

$$\mathrm{ROA}_{i,t} = \beta_0 + \frac{\beta_1 \mathrm{Rur}_{Di,t}}{\mathrm{Rur}_{scli,t}} + \beta_2 \mathrm{KZ}_{i,t} + \beta_j \Sigma \mathrm{Control}_{k,i,t} + \Sigma \mathrm{year} + \Sigma \mathrm{ind} + \varepsilon_{i,t} \quad (6)$$

In Model (4), if β_1 is significantly positive, it implies that enterprises' engagement in rural revitalization enhances their financial performance. In Model (5), if β_1 is significantly negative, it indicates that enterprises' participation in rural revitalization mitigates financing constraints. In Model (6), the significance of both coefficients β_1 and β_2 indicates a significant mediating effect. If β_2 is significant while β_1 is not, it suggests a significant complete mediating effect.

4. Empirical Results Analysis

4.1. Descriptive Statistics

Table 2 presents the mean, median, standard deviation, minimum, and maximum values of the key variables. The statistical results reveal that the maximum value of Return on Assets (ROA) is 0.216, while the minimum value is −0.193. This indicates significant variability in the profitability of the selected sample companies, with a few companies operating at a loss. Among the total observed sample instances, 2832 enterprises, accounting for 80.4% of the entire sample, have participated in rural revitalization. The investment scale for enterprises' participation in rural revitalization ranges from 0.104 to 10.24 million RMB, with a mean of 4.657. This underscores the substantial variation in the extent of participation across different enterprises. The mean value of State-Owned Enterprises (SOE) is 0.483, signifying that 48.3% of the sample comprises state-owned enterprises.

4.2. Regression Results Analysis

4.2.1. Primary Effects Analysis

Table 3 presents the impact of enterprise participation in rural revitalization on its financial performance. According to the table, the estimated coefficients for the variables indicating whether the enterprise participates in rural revitalization (Rur_D) and the scale of participation (Rur_scl) are 0.007 and 0.003, respectively. Both coefficients are significant at the 1% level and positive. This signifies that enterprise engagement in rural revitalization contributes positively to its financial performance. Moreover, for enterprises involved in rural revitalization, an increase in the scale of investment is associated with an improved financial performance. This observation lends empirical support to the reasoning outlined in Hypothesis 1, as postulated earlier.

Table 2. Descriptive statistics of variables.

Variable	Observed Value	Mean	Median	Standard Deviation	Minimum	Maximum
ROA	3524	0.042	0.037	0.056	−0.193	0.216
Rur D	3524	0.804	1	0.397	0	1
Rur scl	2832	4.657	4.467	2.036	0.104	10.24
Size	3524	9.060	8.881	1.472	6.454	12.99
Dual	3524	0.238	0	0.426	0	1
Board	3524	8.674	9	1.774	5	15
Share	3524	35.77	33.40	15.21	10.16	75.72
Growth	3524	0.323	0.119	0.824	−0.610	5.805
Idr	3524	37.73	36.36	5.445	33.33	57.14
Soe	3524	0.483	0	0.500	0	1

Table 3. Primary effects testing.

	(1)	(2)
	ROA	ROA
Rur_D	0.007***	
	(2.763)	
Rur_scl		0.003***
		(4.139)
Size	−0.000	−0.002***
	(−0.627)	(−2.650)
Dual	−0.004	−0.005*
	(−1.638)	(−1.813)
Board	0.001	0.001
	(1.414)	(1.019)
Share	0.001***	0.001***
	(12.022)	(9.810)
Growth	−0.001	−0.000
	(−0.900)	(−0.181)
Idr	−0.000	−0.000
	(−0.298)	(−0.704)
Soe	−0.016***	−0.017***
	(−7.570)	(−7.058)
_cons	0.006	0.011
	(0.456)	(0.726)
N	3524	2832
r2_a	0.072	0.083
year	Yes	Yes
ind	Yes	Yes

Note: *** indicates $p < 0.01$, ** indicates $p < 0.05$, * indicates $p < 0.1$; values within parentheses are t-statistics.

4.2.2. Mediation Effects Analysis

Table 4 presents the mediating role of financing constraints in the relationship between whether enterprises participate in rural revitalization (Rur_D) and enterprise financial performance (ROA). In the regression analyses, it is revealed that, as depicted in column (2), there exists a negative correlation between enterprise participation in rural revitalization and financing constraints, with a regression coefficient significant at the 1% level. Simultaneously, in column (3), the extent of financing constraints is significantly negatively correlated with fi-

nancial performance at the 1% level. These findings collectively indicate a substantial mediating effect of financing constraints. Table 5 explores the mediating effect of financing constraints in the relationship between the scale of enterprise

Table 4. Mediation effects testing.

	(1)	(2)	(3)
	ROA	KZ	ROA
Rur_D	0.007***	−0.338***	0.002
	(2.763)	(−3.530)	(0.988)
KZ			−0.015***
			(−32.434)
Controls	control	control	control
_cons	0.006	0.038	0.007
	(0.456)	(0.072)	(0.631)
N	3524	3524	3524
r2_a	0.072	0.156	0.383
year	Yes	Yes	Yes
ind	Yes	Yes	Yes

Note: *** indicates $p < 0.01$, ** indicates $p < 0.05$, * indicates $p < 0.1$; values within parentheses are t-statistics.

Table 5. Mediation effects testing.

	(1)	(2)	(3)
	ROA	KZ	ROA
Rur_scl	0.003***	−0.116***	0.001*
	(4.139)	(−4.864)	(1.798)
KZ			−0.015***
			(−28.915)
Controls	control	control	control
_cons	0.011	0.089	0.013
	(0.726)	(0.166)	(0.987)
N	2832	2832	2832
r2_a	0.083	0.179	0.389
year	Yes	Yes	Yes
ind	Yes	Yes	Yes

Note: *** indicates $p < 0.01$, ** indicates $p < 0.05$, * indicates $p < 0.1$; values within parentheses are t-statistics.

participation in rural revitalization (Rur_scl) and enterprise financial performance (ROA). As indicated in column (2), a negative correlation is observed between the scale of enterprise participation in rural revitalization and financing constraints, with the regression coefficient significant at the 1% level. Furthermore, in column (3), the regression coefficient of financing constraints on financial performance is significantly negative at the 1% level. Additionally, the regression coefficient of the scale of rural revitalization participation on financial performance is significantly positive at the 10% level. These findings affirm the significant mediating effect of financing constraints, demonstrating partial mediation. Thus, Hypothesis H2 is validated, supporting the proposition that financing constraints serve as an underlying mechanism through which enterprise participation in rural revitalization influences financial performance.

4.3. Robustness Testing

4.3.1. Endogeneity Handling

1) Both the explanatory variable and control variables are lagged by one period. This adjustment is employed to mitigate the potential issue of "better-performing enterprises being more inclined to invest more resources in rural revitalization," implying a possible reverse causal relationship between enterprise participation in rural revitalization and investment scale, on one hand, and financial performance on the other. To address this concern, this study follows the approach of Zhen et al. (2021) to introduce a one-period lag for both the explanatory variable and control variables. The regression outcomes corresponding to this approach are presented in **Table 6**. The results in the table indicate that,

Table 6. Lagging of explanatory and control variables.

	(1)	(2)
	ROA	ROA
Rur_D	0.009**	
	(2.394)	
Rur_scl		0.002**
		(2.253)
Controls	control	control
_cons	−0.021	−0.027
	(−1.233)	(−1.525)
N	2550	2233
r2_a	0.089	0.102
year	Yes	Yes
ind	Yes	Yes

Note: *** indicates $p < 0.01$, ** indicates $p < 0.05$, * indicates $p < 0.1$; values within parentheses are t-statistics.

After lagging the explanatory and control variables by one period, the regression coefficients of whether enterprises participate in rural revitalization (Rur_D) and the investment scale of enterprises in rural revitalization (Rur_scl) with the return on total assets (ROA) are positive and significant at the 5% level, which indicates that enterprises' participation in rural revitalization will enhance the financial performance of enterprises in the next year. Additionally, with an increase in the investment scale, the financial performance will improve, further corroborating the validity of Hypothesis 1.

2) Heckman Two-Stage Model. To address potential sample selection bias inherent in Hypothesis 1, akin to the approach adopted by Zhu et al. (2021), the Heckman two-stage model was employed to conduct a robustness assessment. In the first stage, enterprise participation in rural revitalization (Rur_D) was treated as the dependent variable, while control variables served as exogenous instrumental variables. Employing a Probit regression, the likelihood of enterprise involvement in rural revitalization was estimated. Subsequently, based on the regression results, the inverse Mills ratio (imr) was computed. In the second stage, the derived imr was incorporated into the model to mitigate the potential presence of sample selection bias. As indicated in **Table 7**, the regression coefficient of imr in the second-stage regression was statistically insignificant. This finding suggests the absence of severe sample selection bias in the original model. Furthermore, the regression coefficient of Rur_D remains positively significant at the 1% level in the second-stage results, consistent with the prior regression outcomes, thus reinforcing the robustness of the conclusions.

3) Propensity Score Matching (PSM). To address potential omitted variable bias resulting from model misspecification, following the approach outlined by Hu & Zhang (2020), the Propensity Score Matching method proposed by Rosenbaum & Rubin (1985) was employed to handle the experimental and control groups. Firstly, this study selected covariates such as enterprise size, ownership structure, integration of dual positions, shareholding proportion of the largest shareholder, enterprise growth, and proportion of independent directors, to construct a Logit model for determining enterprise participation in rural revitalization. The Nearest Neighbor Matching method was employed to estimate the Average Treatment Effect on the Treated (ATT) value, assessing the significance of PSM effects. Subsequently, balance tests and common support tests were sequentially conducted. Finally, the kernel density plot of propensity scores for both treatment and control groups before and after matching was presented.

Table 8 reveals that the post-matching estimated value of ATT is 0.008, corresponding to a *t*-value of 2.22, and is statistically significant at the 5% level. This signifies a significant positive impact of enterprise participation in rural revitalization on enterprise financial performance.

Table 9 and **Figure 2** present the results of balance tests, while **Figure 3** displays the results of the common support test. As observed from **Table 9**, post-matching standard deviations of covariates are all below 10%, indicating a satisfactory matching performance. Furthermore, the absolute *t*-values for all variables

Table 7. Heckman two-stage model.

	(1)	(2)
	Rur_D	ROA
Rur_D		0.007***
		(2.589)
imr		−0.041
		(−1.344)
Size	0.092***	−0.002
	(4.107)	(−1.524)
Dual	−0.016	−0.004
	(−0.267)	(−1.466)
Board	0.033*	0.000
	(1.696)	(0.733)
Share	0.001	0.001***
	(0.362)	(11.787)
Growth	−0.042	−0.000
	(−1.257)	(−0.322)
Idr	0.009	−0.000
	(1.525)	(−0.795)
Soe	0.228***	−0.020***
	(3.692)	(−5.636)
_cons	−0.799**	0.045
	(−1.992)	(1.485)
N	3524	3524
r2_a/Pseudo_R2	0.138	0.072
year	Yes	Yes
ind	Yes	Yes

Note: *** indicates $p < 0.01$, ** indicates $p < 0.05$, * indicates $p < 0.1$; values within parentheses are t-statistics.

Table 8. Average treatment effect.

Type	Treatment Group	Control Group	Discrepancy	*t*-value
Unmatched	0.043	0.037	0.006	2.64***
ATT	0.043	0.035	0.008	2.22**
ATU	0.037	0.046	0.009	
ATE			0.008	

Table 9. Balancing test results.

Variable Names		Mean		Standard Deviation (%)	Reduction in Standard Deviation (%)	*t*-statistic	*t*-test ($p > t$)
		Treatment Group	Control Group				
Size	Pre-Matching	9.157	8.664	34.3	96.9	7.97	0.000
	Post-Matching	9.157	9.173	−1.1		−0.38	0.702
Soe	Pre-Matching	0.517	0.342	35.8	96.8	8.31	0.000
	Post-Matching	0.517	0.523	−1.2		−0.43	0.670
Dual	Pre-Matching	0.222	0.303	−18.6	89.2	−4.54	0.000
	Post-Matching	0.221	0.230	−2.0		−0.79	0.427
Share	Pre-Matching	36.343	33.42	19.6	79.8	4.55	0.000
	Post-Matching	36.348	35.758	4.0		1.46	0.143
Growth	Pre-Matching	0.315	0.355	−4.9	31.5	−1.16	0.246
	Post-Matching	0.313	0.340	−3.3		−1.30	0.193
Idr	Pre-Matching	37.722	37.784	−1.1	27.4	−0.27	0.790
	Post-Matching	37.721	37.765	−0.8		−0.30	0.761

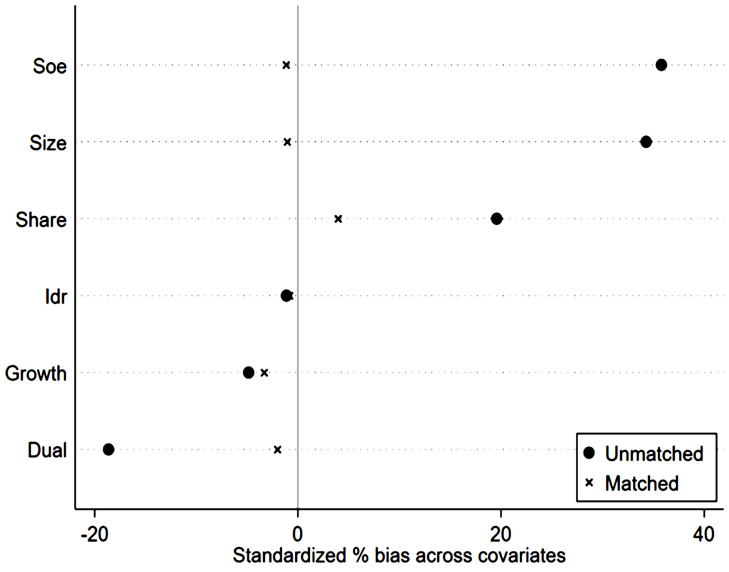

Figure 2. Comparison of standardized % bias across covariates before and after matching.

are greater than 0.1, signifying that after matching, there are no significant differences among the variables, thereby validating the balance assumption. Displayed in Figure 2, post-matching standard errors of covariates are all within the vicinity of 0, satisfying the requirement of balance testing within a threshold of 10%. Examining Figure 3, it can be observed that the majority of observations fall within the common support region, indicating that the employment of PSM only results in a minor reduction in the sample size.

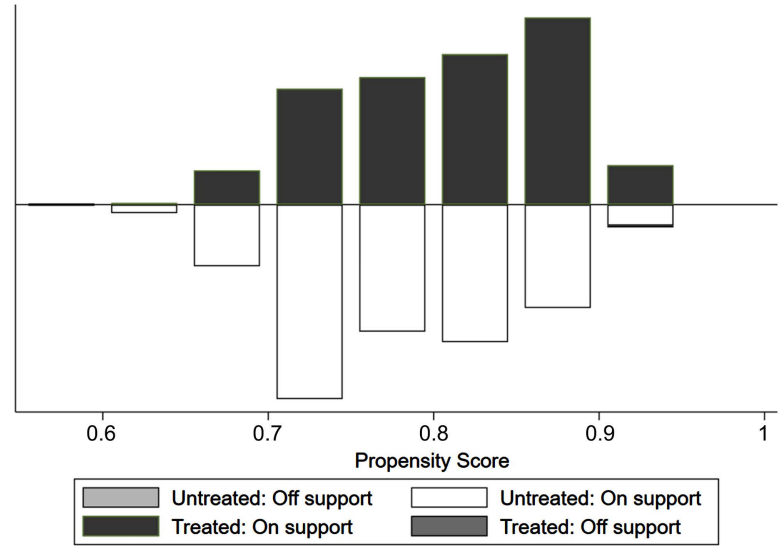

Figure 3. Common support test results.

In addition to contrasting the differences between variables before and after matching, in order to further compare the disparities in propensity score values between the treatment and control groups under nearest neighbor matching, **Figure 4** presents the kernel density plots before and after matching. Prior to matching, discernible disparities existed between the treatment and control groups in terms of the propensity score probability distribution. Subsequent to matching, a noticeable reduction in these differences is evident, signifying an improved matching effect. This enhanced matching outcome validates the rationality of the selected matching variables.

4.3.2. Substituting Financial Performance Variables

Table 10 presents the regression results of replacing financial performance variables. According to the table analysis, the regression coefficients of whether enterprises participate in rural revitalization (Rur_D) and the investment scale of enterprises in rural revitalization (Rur_scl) with return on equity (ROE) are positive and significant at the level of 1%, which indicates that enterprises' participation in rural revitalization enhances their financial performance, and with the increase of investment scale, their financial performance improves further. Hypothesis 1 is further verified.

In consideration of the foregoing, both Hypothesis 1 and Hypothesis 2 have been validated. Following the application of endogeneity adjustments and variable substitutions, the conclusion remains robust. This finding serves as an incentive to encourage greater corporate engagement in the rural revitalization endeavor. Corporations are urged to actively and consistently participate in rural revitalization initiatives, thereby fulfilling their social responsibilities and fostering comprehensive rural development. Simultaneously, such engagement contributes to the cultivation of a responsible corporate social image, ultimately enhancing their financial performance.

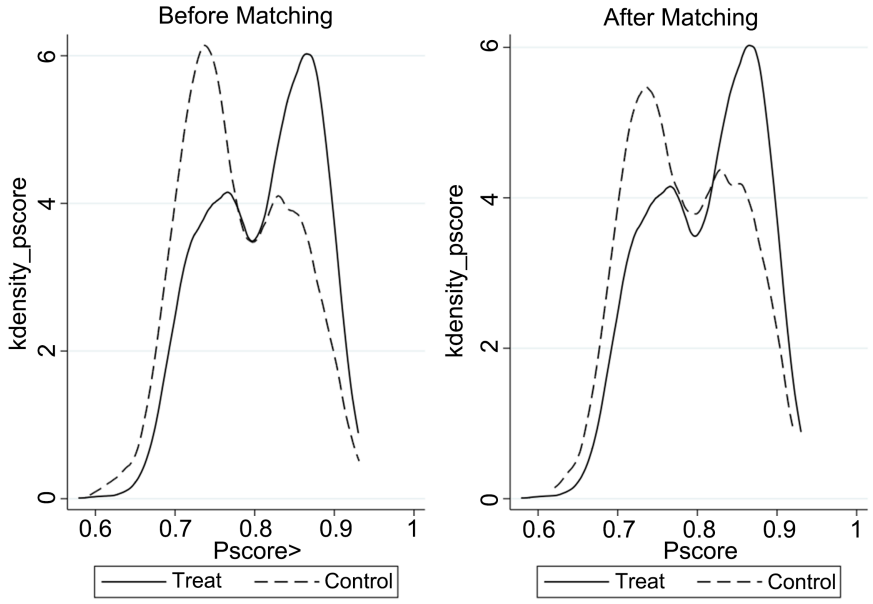

Figure 4. Comparison of propensity score kernel densities before and after matching.

Table 10. Substituting financial performance variables.

	(1)	(2)
	ROE	ROE
Rur_D	0.015***	
	(2.707)	
Rur_scl		0.005***
		(3.532)
Controls	control	control
_cons	−0.078***	−0.071**
	(−2.955)	(−2.335)
N	3520	2828
r^2_a	0.056	0.058
year	Yes	Yes
ind	Yes	Yes

Note: *** indicates $p < 0.01$, ** indicates $p < 0.05$, * indicates $p < 0.1$; values within parentheses are t-statistics.

5. Heterogeneity Analysis

5.1. Taking into Account the Impact of Varying Corporate Ownership Structures

The participation of enterprises with different ownership characteristics in rural revitalization carries distinct societal implications. Generally, as pivotal economic entities of the nation, state-owned enterprises bear the responsibility and

obligation to engage in national strategies, thereby contributing more comprehensively and yielding greater societal returns. Their involvement in rural revitalization is substantially a political imperative that state-owned enterprises must fulfill (Hu & Zhang, 2020). Conversely, non-state-owned enterprises often contend with more stringent financing constraints and loan limitations. Participation in the government-driven national strategy of rural revitalization enables non-state-owned enterprises to secure enhanced government resources and policy support (Deng, 2020), thereby fostering the elevation of corporate value. Consequently, the impact of non-state-owned enterprises' participation in rural revitalization on their own financial performance is more pronounced. To address this, the sample is divided into categories of state-owned and non-state-owned enterprises, and subsequent regressions are conducted. As shown in **Table 11**, irrespective of whether enterprises partake in rural revitalization or the scale of their engagement, the influence on augmenting corporate financial performance is more conspicuous within the non-state-owned sector. This corroborates the prior analysis and underscores the substantial heterogeneity in the impact of enterprise involvement in rural revitalization on financial performance contingent upon ownership attributes.

5.2. Taking into Account the Influence of the Geographical Location of the Enterprises

China has a vast land area, with distinct regional disparities and imbalances in economic development across different areas. This phenomenon is particularly evident among the eastern, central, and western regions, where significant differences in economic conditions exist. The effectiveness of corporate engagement in rural revitalization to enhance their financial performance is influenced by the level of economic development in the respective regions where these enterprises are situated (Wang, 2022). To address this, drawing from the work of Ma & Li (2014), this study employs a grouping regression approach based on the geographical location of the sampled enterprises' registered addresses. Specifically, a value of 1 is assigned if the registered address is in the eastern region, 2 for the central region, and 3 for the western region. **Table 12** presents the regression results concerning the impact of enterprises' participation in rural revitalization on enhancing their financial performance across different geographical areas. As indicated in the table, for enterprises located in the eastern region, the regression coefficients of whether enterprises participate in rural revitalization (Rur_D) and the scale of participation in rural revitalization (Rur_scl) with financial performance are both significantly positive at the level of 1%. In the central region, the coefficient of Rur_scl is significantly positive at the 1% level, while the impact of Rur_D on financial performance is not statistically significant. In contrast, in the western region, the effects of both the participation indicator (Rur_D) and the participation magnitude (Rur_scl) on financial performance are not statistically significant.

Table 11. Group regression based on enterprise ownership characteristics.

	State-owned enterprises		Non-state-owned enterprises	
	(1)	(2)	(3)	(4)
	ROA	ROA	ROA	ROA
Rur_D	0.000		0.011***	
	(0.021)		(2.894)	
Rur_scl		0.002**		0.002***
		(2.266)		(2.914)
Controls	control	control	control	control
_cons	0.005	−0.009	−0.021	−0.063**
	(0.300)	(−0.528)	(−0.728)	(−2.153)
N	1701	1464	1823	1368
r^2_a	0.067	0.258	0.069	0.224
year	Yes	Yes	Yes	Yes
ind	Yes	Yes	Yes	Yes

Note: *** indicates $p < 0.01$, ** indicates $p < 0.05$, * indicates $p < 0.1$; values within parentheses are t-statistics.

Table 12. Grouping regression based on the geographical location of enterprises.

	Eastern region		Central region		Western region	
	(1)	(2)	(3)	(4)	(5)	(6)
	ROA	ROA	ROA	ROA	ROA	ROA
Rur_D	0.010***		0.000		0.001	
	(3.197)		(0.008)		(0.093)	
Rur_scl		0.003***		0.006***		0.001
		(3.088)		(3.528)		(1.041)
Controls	control	control	control	control	control	control
_cons	0.017	0.018	−0.003	0.002	−0.013	−0.011
	(0.937)	(0.917)	(−0.095)	(0.052)	(−0.476)	(−0.348)
N	2151	1656	636	542	737	634
r^2_a	0.073	0.080	0.093	0.125	0.063	0.072
year	Yes	Yes	Yes	Yes	Yes	Yes
ind	Yes	Yes	Yes	Yes	Yes	Yes

Note: *** indicates $p < 0.01$, ** indicates $p < 0.05$, * indicates $p < 0.1$; values within parentheses are t-statistics.

The formulation of this conclusion may be attributed to several underlying factors. First, in less developed western regions, participation in rural revitalization might necessitate higher investment costs, potentially depleting their inherent resources. Moreover, the comparatively lower investment return rates could result in a lack of immediate financial performance improvement for enterprises in the short term. Second, the western regions' lagging economic development may demand projects requiring elevated technological and managerial capabilities for revitalization. Enterprises, however, might possess relatively weaker capacities in these domains, impeding their effective execution of support projects and consequently negating the positive impact of their involvement in rural revitalization on financial performance. In contrast, the rapid economic development and robust internal capabilities of enterprises in the eastern and central regions, coupled with the government's capacity to offer enhanced policy support and resources, intensify the enterprises' commitment to rural revitalization efforts. This, in turn, amplifies the enhancement of corporate financial performance. Third, enterprises in the eastern regions display a greater diversity and depth in their engagement with rural revitalization, while their counterparts in the central and western regions exhibit comparatively weaker participation (Wu et al., 2022). Notably, the sample size of enterprises participating in the central and western regions is smaller, revealing a pronounced discrepancy when compared to the eastern region.

Based on the two distinct heterogeneity analyses conducted above, it is evident that the positive impact of corporate participation in rural revitalization on financial performance is more pronounced within non-state-owned enterprises and across the central and eastern regions of the country. As such, for private enterprises, it becomes imperative to seize the prevailing opportunities and actively engage in rural revitalization efforts. By doing so, these enterprises can leverage these opportunities to acquire additional resources, thereby augmenting their financial performance. Conversely, in the western regions where the influence of corporate engagement in rural revitalization on financial performance remains statistically insignificant, local governments should intensify fiscal and technological support mechanisms for enterprises. Concurrently, they should undertake adjustments in industrial policies and provide bolstered backing for agricultural initiatives. These endeavors collectively aim to attract a greater influx of external enterprises into the sphere of rural revitalization.

6. Conclusions and Implications

In the post-poverty alleviation era, enterprises closely align with the demands of national development strategies by proactively engaging in rural revitalization initiatives. This proactive involvement not only serves as a primary means of fulfilling social responsibilities but also constitutes a significant avenue for enhancing corporate value. This study utilizes a sample of Chinese A-share listed companies from 2018 to 2021, employing an Ordinary Least Squares (OLS)

model to empirically examine the impact and underlying mechanisms of enterprises' participation in rural revitalization on their financial performance. The findings of this research are as follows: Enterprises' engagement in rural revitalization contributes to a noteworthy enhancement of their financial performance. Furthermore, there is a positive correlation between the scale of investment in rural revitalization and the degree of financial performance improvement; this relationship is mediated by the presence of financing constraints. Further investigation reveals that, in comparison to state-owned enterprises, non-state-owned enterprises exhibit a more pronounced positive influence on financial performance through participation in rural revitalization. Moreover, the positive effect of enterprise participation in rural revitalization on financial performance is more pronounced in the central and eastern regions when contrasted with enterprises in the western regions.

Based on this, the following policy implications are proposed.

From the perspective of enterprises as agents of support, it is imperative to recognize that engaging in rural revitalization is not a burdensome obligation but rather a beneficial endeavor capable of yielding positive spillover effects. Enterprises should proactively and consistently participate in rural revitalization endeavors, thereby fulfilling their social responsibilities, fostering comprehensive rural development, and concurrently cultivating a responsible corporate image. Through such engagement, enterprises can enhance their financial gains. Specifically, for enterprises facing elevated financing constraints, innovative approaches to rural revitalization participation are recommended. This could involve forging cooperative partnerships with local governments and operational entities, collectively participating in rural revitalization efforts, and sharing resources and outcomes. Alternatively, collaborating with other enterprises to jointly invest in rural projects could alleviate financial pressures. In the case of private enterprises, which confront stricter financing constraints and loan limitations, active involvement in rural revitalization strategies is even more crucial. Such participation can facilitate the acquisition of additional resources to enhance financial gains. Regarding enterprises located in the central and eastern regions, their robust internal capabilities and the substantial policy support extended by the government present an opportunity to expand investments in rural projects in the western regions. This strategic initiative not only contributes to societal welfare but also elevates their own financial performance.

From the perspective of government as the responsible entity, it is imperative to accelerate the establishment of interactive mechanisms for enterprise engagement in rural revitalization. This necessitates the refinement and implementation of incentive policies, which would encourage and guide a greater number of enterprises to proactively partake in rural revitalization efforts. This proactive engagement is aimed at stimulating corporate impetus for poverty alleviation and cultivating a corporate ethos of contributing to agricultural development. Subsequently, a comprehensive assessment framework should be de-

vised, anchored in the accumulation of reputational capital and the fulfillment of social responsibilities as primary objectives. This approach aims to forestall enterprises' engagement in rural revitalization driven solely by political motivations for critical resource acquisition. Consequently, it would heighten the scrutiny and evaluation of enterprises' tangible contributions to rural revitalization. Moreover, local governments in the western regions should intensify financial and technological support for enterprises. This strategic thrust not only elevates indigenous enterprises' technological proficiency and innovation capacity but also entails policy adjustments in the industrial sphere and agricultural project support. This would attract a greater influx of external enterprises to participate in rural revitalization efforts.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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