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Evaluation of Provincial Fiscal and Financial Synergy Efficiency in Boosting Rural Revitalization and Analysis of Spatial Spillover Effects Based on DEA and Spatial Econometric Methods

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SUMMARY: *The coordinated efforts of finance and banking serve as the core support for China's advancement of the rural revitalization strategy. This study is based on relevant data from 30 provincial-level administrative regions in China between 2015 and 2023. The Data Envelopment Analysis (DEA) method was employed to measure the efficiency of fiscal and financial coordination at the provincial level; the global and local Moran's I indices were used to test the spatial correlation characteristics; and the spatial lag model was applied to analyze the spatial spillover effects. At the national level, the overall efficiency of fiscal and financial coordination has not yet reached the desired state. A small number of provinces, such as Jiangsu and Zhejiang, achieved DEA efficiency. Provinces including Beijing, Shanghai, and Guangdong are close to the efficiency frontier but still have room for further improvement. Many western provinces have long maintained low coordination efficiency, showing a clear trend of agglomeration of inefficiency. With a global Moran's I index of 0.321 ($p < 0.01$), there is a significant positive spatial correlation in the provincial coordination efficiency. The Yangtze River Delta region has formed a "high-high" agglomeration spatial pattern, while western provinces like Qinghai and Ningxia exhibit "low-low" agglomeration characteristics. Some high-efficiency provinces appear as "high-low" outliers compared with their surrounding areas. Based on the above research findings, this paper proposes the following policy directions: The eastern region should shift from scale expansion to quality optimization, so as to achieve efficient overall allocation of fiscal and financial resources and strengthen its role in demonstration and leadership. The central region should focus on improving management efficiency and appropriately expanding the scale of relevant investments. The western region should increase fiscal input and financial support, improve the coordinated linkage mechanism, and alleviate resource constraints, so as to enhance the efficiency of advancing rural revitalization.*

KEYWORDS: *Fiscal-Financial Coordination; Rural Revitalization; Data Envelopment Analysis; Spatial Econometric Model; Spatial Spillover Effect*

1 Introduction

The rural revitalization strategy is a key policy measure for China to address issues related to agriculture, rural areas, and farmers [1]. Strengthening the coordinated efforts of fiscal input

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and financial support provides solid guarantees for advancing the modernization of agriculture and rural areas. Fiscal expenditure plays a fundamental supporting role through the provision of public services and transfer payment mechanisms, while financial resources drive the development of rural industries by virtue of credit intermediary services and the function of optimizing capital allocation. However, there exists a disconnection in the linkage and collaboration between finance and banking. In some regions, there is redundant capital precipitation and insufficient allocation efficiency, and the gap in unbalanced development among regions continues to widen. Therefore, systematically measuring the coordination efficiency of finance and banking at the provincial level, and analyzing the characteristics of spatial differentiation and transmission logic, holds important theoretical value and practical guiding significance.

Existing studies have shown that there is a mutually promoting relationship between the allocation of financial resources and the revitalization of rural industries, which is featured by obvious spatial spillover effects and spatiotemporal differences. The coordination efficiency presents a clear regional gradient across the East, Central, and West: the eastern region has relatively high efficiency but lacks progress in technology; the central region remains at a low level; and the western region has achieved significant improvement driven by policies. Furthermore, fiscal decentralization, the structure of public spending, and the development of digital finance stand out as key influencing factors of coordination efficiency [2]. However, much of the existing work centers on single regions or dimensions, lacking a nationwide, system-level comparison and a granular analysis of spatial dependence and spillover pathways.

To address these gaps, we compile a panel of 30 provinces for 2015–2023 and design a DEA-based input–output framework to evaluate coordinated fiscal–financial support for rural revitalization. Comprehensive technical efficiency, pure technical efficiency, and scale efficiency are calculated with the application of the CCR (constant returns to scale) model and the BCC (variable returns to scale) model. We further examine spatial clustering and spillovers using Moran's I alongside spatial lag specifications—namely the SLM and SDM. The innovations of this paper are mainly reflected in three aspects:

(1) Constructing a unified efficiency evaluation system that covers fiscal expenditure and financial resources;

(2) Integrating DEA efficiency measurement with spatial econometric mechanism identification to build an integrated analytical framework;

(3) Describing the heterogeneous characteristics of coordination efficiency in the eastern, central, and western regions and clarifying their formation mechanisms. The conclusions of this study can provide empirical evidence and policy references for improving the fiscal and financial coordination mechanism and enhancing the resource allocation efficiency of rural revitalization.

2 Literature review

Explorations related to efficiency evaluation in the context of rural revitalization have unfolded gradually along three interrelated directions. First, the methodological system has been continuously refined, with increasing emphasis on capturing the comprehensive attributes of production systems featuring multiple inputs and outputs under environmental and spatial constraints. Early relevant studies mostly adopted static DEA models; in recent years, there has been a gradual shift toward dynamic and spatial improvements of such models. For instance, some studies integrated spatial correlation into the ecological efficiency model based on directional distance and applied it to urban-related analysis; certain scholars designed an input-oriented research method for inefficiency and spillover effects targeting arable farms in the

Netherlands [3]; others explored the combination of the super-efficiency DEA model with spatial panel data to enable efficiency comparison across regions [4]; and the biennial environmental technology model was used to analyze the spatial differentiation characteristics of China's green total factor productivity (TFP) in agriculture [5]. Recent explorations have further expanded the scope of methodologies by incorporating spatial heterogeneity, threshold dynamics, and regional coordination mechanisms into the efficiency evaluation system. [6] employed the DEA-Malmquist analytical framework to examine the non-linear impact of agricultural technological progress on China's provincial-level rural revitalization, and found a "U-shaped" relationship between the two: technological substitution in the initial stage imposes short-term constraints on the advancement of rural revitalization, while in the later stage, it drives the long-term development of rural revitalization through the optimization of factor allocation [7]. By applying the panel threshold model and Durbin spatial model, this study explores the core transmission mechanism between large-scale land management and industrial agglomeration, and highlights the core significance of breaking through structural thresholds for maintaining the stability of inter-provincial efficiency. Meanwhile, these methodological innovations seamlessly combine DEA-derived frontier measurement techniques with spatial econometrics and threshold models to markedly boost the capacity of efficiency assessment to portray dynamic regional connections in the rural revitalization framework.

Second, the thematic focus of efficiency analysis has shifted from gauging single-sector production efficiency to exploring synergy across diverse systems and fields, with current research encompassing provincial green energy efficiency [8], digital transformation-driven agricultural total factor productivity, and fiscal-financial synergy at river basin and regional cluster scales [9]. Certain studies have integrated multi-dimensional subsystems like the "water-soil-energy-carbon" coupling; others have examined spatio-temporal changes of agricultural water use efficiency via the DEA-Moran analytical framework; emerging empirical results underscore synergistic connections among rural revitalization, urbanization, and the digital economy. Ma (2025) developed a multi-dimensional indicator system and adopted the Coupling Coordination Degree (CCD) model to examine panel data from 31 Chinese provinces covering 2011–2021, with findings indicating the overall coordination degree among these three areas increased from "mild imbalance" to "barely coordinated" alongside the enduring gradient disparity of "higher in eastern regions and lower in western regions". Relevant studies make it clear that the digital economy is a key structural constraint, and its advancement is hindered by issues such as insufficient penetration of digital finance, low activity in technology transactions, and backward development of rural education and medical infrastructure. In the field of agricultural green transformation research, scholars including Zhang Fan have expanded the boundaries of interdisciplinary research from the perspective of multi-dimensional proximity [10]. They selected 30 provinces (municipalities, autonomous regions) in China as research samples to explore the spatial spillover effect of agricultural technological innovation on agricultural green transformation. The research conclusions show that agricultural green transformation in China exhibits significant spatial heterogeneity and presents a distribution pattern of "stronger in the east and weaker in the west"; agricultural technological innovation not only exerts a prominent positive impact on local agricultural green transformation but also demonstrates an obvious neighborhood spillover effect [11]. These studies apply the DEA model and spatial econometric methods to research on multi-system coordinated development, indicating that the improvement of rural efficiency increasingly relies on the improvement of digital infrastructure, the integrated development of urban and rural areas, and policy coordination among relevant institutions.

Third, there are differences in empirical scenarios, yet the conclusions of existing literature on the influencing factors of regional efficiency have gradually converged. Technological innovation, industrial agglomeration, and digital transformation are core driving factors, whose roles are regulated by spatial heterogeneity; spatial correlation, which includes positive diffusion and negative siphon effects, is often regarded as a core transmission path. [12] found that there exist east-to-west technological spillover and siphon effects in the advancement of rural revitalization, while [13] pointed out that the unbalanced development of the digital economy has widened the gap in system coordination among regions. Taken together, the aforementioned studies demonstrate inter-system linkages and spatial interdependence traits as essential components in assessing rural revitalization performance. When formulating policies related to digital infrastructure construction, industrial agglomeration and fiscal input, it is necessary to fully take into account differences in development stages, regional threshold characteristics and spatial correlation attributes, so as to achieve the balanced and sustainable development goal of rural revitalization.

Relevant research outlined in [14] reflects an evolutionary research paradigm shift—moving beyond static DEA-based frontier evaluation toward spatiotemporal coordination and multi-system collaborative advancement—with this developmental path forming a distinct methodological advancement trajectory. By integrating DEA-Malmquist index, spatial econometric methods (such as SDM, SAR, SEM), threshold models, and coupling coordination frameworks, existing studies have established reliable analytical tools for measuring the fiscal and financial coordination efficiency and spatial differentiation in the process of China's rural revitalization. The accumulated research results have laid a solid foundation for this paper to adopt the integrated analytical path of "DEA-Malmquist-spatial econometrics" in measuring the provincial-level coordination performance and regional differentiation characteristics in the implementation of the national rural revitalization strategy.

3 Research Methodology and Model Construction

3.1 DEA: model overview and suitability

Data Envelopment Analysis (DEA) is a non-parametric efficiency evaluation method. It does not require pre-defining a specific production function, making it highly suitable for measuring the efficiency of complex systems with multiple inputs and outputs in the fields of economics, management, and public policy. In terms of its core essence, DEA uses linear programming to construct a "best-practice production frontier" and compares each Decision-Making Unit (DMU) against this frontier. Relative efficiency is defined by the radial distance between decision-making units (DMUs) and the efficiency frontier: DMUs lying on the efficiency frontier are classified as " fully efficient" (efficiency value = 1), while those failing to reach the frontier fall into the category of efficiency needing improvement (efficiency value < 1); further normalized projection analysis identifies the direction and magnitude of efficiency optimization.

The DEA model encompasses several derivative types, and this study adopts two classic efficiency evaluation models—CCR and BCC. Developed by Charnes, Cooper, and Rhodes in 1978, the CCR model is based on the assumption of "constant returns to scale," where a proportional increase in inputs leads to a proportional rise in outputs. Within the CCR model framework, the efficiency of a decision-making unit (DMU) is obtained by solving the following fractional programming problem:

$$Max\ \theta_0 = \frac{\sum_{r=1}^{s} u_r y_{r0}}{\sum_{i=1}^{m} v_i x_{i0}} \tag{1}$$

$$subject\ to: \frac{\sum_{r=1}^{s} u_r y_{r0}}{\sum_{i=1}^{m} v_i x_{i0}} \leq 1, \forall j = 1,2,\ldots,N; u_r \geq 0, v^i \geq 0. \tag{2}$$

Within the framework of the above-established CCR model, x_{ij} and y_{rj} correspond to the i-th type of input and r-th type of output of the j-th decision-making unit (DMU) respectively, while u_r and v_i represent the endogenously determined output weights and input weights. Solving this programming problem allows for the calculation of the technical efficiency (TE) of each DMU: the closer the efficiency value is to 1, the closer the DMU is to the "best practice"—meaning it achieves the goal of maximizing output at a given input level and minimizing input for a given output scale.

Developed by Banker, Charnes, and Cooper in 1984, the BCC model is an extension of the CCR model. It adjusts the CCR's "constant returns to scale (CRS)" assumption to "variable returns to scale (VRS)" and decomposes overall technical efficiency (TE) into two core components: pure technical efficiency (PTE) and scale efficiency (SE) [15]. Among these, pure technical efficiency excludes the impact of scale effects and reflects the management and technical capabilities of decision-making units (DMUs) in converting inputs into outputs. Scale efficiency measures how close a DMU is to the "optimal operating scale." When SE < 1, the DMU suffers from scale inefficiency (which may result from being either too large or too small in scale) and needs to adjust its scale to reach the efficiency frontier. In terms of mathematical expressions, the three satisfy the corresponding relationship of "T E = PTE × SE", and such decomposition has diagnostic significance: if the low technical efficiency (TE) is mainly caused by insufficient pure technical efficiency (PTE), optimization should be achieved through management improvement and technology implementation; if the core issue lies in insufficient scale efficiency (SE), efficiency enhancement should be realized by adjusting the scale. For instance, a western province with pure technical efficiency close to 1 but low scale efficiency indicates that its fiscal and financial coordination mechanism is relatively sound [16]. However, insufficient fiscal input scale or over-dispersed financial funds restrict the scale effect, leaving the overall efficiency at a low level.

Using the CCR and BCC models simultaneously enables comprehensive efficiency measurement and identifies the exact causes of efficiency gaps. In this study, these two DEA models are applied to evaluate the efficiency of provincial fiscal and financial collaboration in supporting rural revitalization. This application helps grasp the overall efficiency status, distinguish the roles of management-technical inefficiency and scale inefficiency, and provide quantitative support for the improvement of targeted policies.

3.2 Spatial autocorrelation and local clustering

To explore the spatial differences in the efficiency of provincial fiscal and financial collaboration in supporting rural revitalization, this study combines spatial autocorrelation analysis and spatial econometric models to advance relevant research [17], and uses global Moran's I and local Moran's I to verify the spatial agglomeration level of efficiency values. Global Moran's I is used to measure the spatial correlation characteristics of variables across the entire study area, with its value ranging from [-1,1]. A positive value indicates "positive spatial correlation," meaning regions with similar values (either high or low) show an agglomeration trend in space; a negative value indicates "negative spatial correlation," meaning high-value regions are adjacent to low-value regions; a zero value indicates "random spatial distribution," with no significant correlation characteristics.

The formula for the global Moran's I is given by:

$$I = \frac{N}{\sum_{i=1}^{N}\sum_{j=1}^{N} w_{ij}} \times \frac{\sum_{i=1}^{N}\sum_{j=1}^{N} w_{ij}(x_i-\bar{x})(x_j-\bar{x})}{\sum_{i=1}^{N}(x_i-\bar{x})^2} \tag{3}$$

where N denotes the total number of spatial units, x_i and x_j are the observed values of units i and j, $\bar{x}$ is the sample mean, and w_{ij} represents the elements of the spatial weight matrix (in this study, a contiguity-based spatial weights matrix is adopted). The range of Moran's I is [−1,1]: when I > 0, high-efficiency provinces are more likely to be adjacent to other high-efficiency provinces and low-efficiency provinces cluster with low-efficiency ones, indicating positive agglomeration; when I < 0, high-efficiency provinces tend to be located next to low-efficiency ones, indicating a dispersed distribution; and when I = 0, efficiency is randomly distributed with no spatial dependence.

Local Moran's I serves to pinpoint clustering characteristics between a specific region and its adjacent areas, thus uncovering localized patterns including "high-high" clusters, "low-low" clusters, as well as "high-low" or "low-high" outliers. The mathematical expression for Local Moran's I is as follows:

$$I_i = \frac{(x_i - \bar{x})}{\sigma^2} \sum_{j=1}^{N} w_{ij}(x_j - \bar{x}) \tag{4}$$

where I_i denotes the local Moran's I of the i-th spatial unit, and σ^2 is the global sample variance. According to the sign and significance of I_i, each region can be determined as belonging to a specific type of spatial association pattern: when I_i is significantly positive with x_i above the mean and the neighboring average also high, it is identified as a high–high cluster; when I_i is significantly positive with x_i below the mean and the neighboring average also low, it is identified as a low–low cluster; In cases where I_i shows a significantly negative value, if x_i is higher than the mean while the average of adjacent regions is low, this scenario is classified as a high-low outlier; conversely, when I_i is significantly negative with x_i lower than the mean yet the neighboring average is high, such a case is defined as a low-high outlier.

3.3 Spatial econometric models and model selection

Once spatial correlation has been confirmed to exist, it is further essential to establish spatial econometric models for exploring the underlying mechanisms [18]. Commonly applied models in this domain comprise the Spatial Lag Model (SLM) and Spatial Error Model (SEM): the SLM highlights the spatial interdependence of the explained variable, with neighboring regions' explained variable exerting influence on the same variable in the core region; the SEM centers on the spatial correlation of the error term, reflecting spatial spillover effects arising from omitted variables or unobservable factors. The basic expressions of the two models are as follows:

SLM model: $y = \rho Wy + X\beta + \varepsilon$, where y is the dependent variable (in this paper, the vector of efficiency scores of provincial fiscal–financial coordination supporting rural revitalization), Wy denotes the spatial lag term of y, ρ is the spatial autoregressive coefficient (measuring the intensity of influence from neighboring regions' dependent variables), X is the matrix of independent variables, β is the coefficient vector, and ε is the random error term. If ρ is significantly different from zero, it indicates the presence of a significant "neighbor effect".

SEM model: $y = X\beta + \mu, u = \lambda W\mu + \varepsilon$, where μ is the error term vector, λ is the spatial error coefficient, and the remaining symbols carry the same meanings as those defined earlier. If λ is statistically significant, this implies that there is spatial correlation in the error term, indicating that the model includes omitted factors with spatial correlation properties.

The Lagrange Multiplier (LM) test is commonly used in practical scenarios to determine the applicability of the Spatial Lag Model (SLM) and Spatial Error Model (SEM): when the LM-lag test is significant but the LM-error test is not, the Spatial Lag Model is selected; when the LM-error test is significant but the LM-lag test is not, the Spatial Error Model is selected;

when both tests are significant, further determination is made by combining the test conclusions of their robust forms.

4 Empirical Analysis

4.1 Data Sources and Variable Specification

This study selects 30 provincial-level administrative regions in mainland China (excluding Tibet, Hong Kong, Macao, and Taiwan) as research objects, and uses panel data from 2015 to 2023 for analysis. For assessing fiscal-financial synergy performance in backing rural revitalization, an input-output indicator system has been established. All related variables are comprehensively presented in Table 1, clearly illustrating the logical connections between fiscal and financial input indicators and rural revitalization output indicators, and providing a robust basis for follow-up performance assessment.

Table 1: Indicator Types and Variables

Dimension	Indicato Type	Specific Indicator	Indicator Explanation
Input indicators	Fiscal investment	Rural infrastructure expenditure	Government spending on rural infrastructure, including transportation, water conservancy, and energy projects
		Agricultural production subsidies	Supportive funds such as grain subsidies and subsidies for agricultural machinery purchase
		Expenditure on rural public services	Fiscal spending on education, healthcare, elderly care, and other rural public services
	Financial resources	Agriculture related loans	Loans issued by financial institutions to agriculture, agricultural product processing, and other rural sectors
		Loans to rural micro and small enterprises	Credit support for the development of rural micro and small enterprises
Output indicators	Economic growth	Growth rate of agricul tural output value	Reflects the expansion and efficiency improvement of agricultural production
		Share of secondary and tertiary industries in rural output	Measures the degree of rural industrial structure optimization and diversification
	Livelihood welfare	Growth rate of per capita disposable income of rural residents	Directly reflects improvements in rural residents’ income levels

On the input side, fiscal inputs mainly cover expenditures related to rural infrastructure development, agricultural production subsidies, and the provision of rural public services. The relevant data are sourced from the China Fiscal Yearbook, chapters related to "fiscal expenditures" in the statistical yearbooks of various provinces, and official announcements on agriculture-related special funds issued by the Ministry of Finance. To ensure cross-provincial and cross-year comparability, all fiscal expenditures are uniformly classified and organized in accordance with the Classification of Government Expenditure Functions; financial capacity is measured by the balance of agriculture-related loans and the balance of loans to rural micro and small enterprises; data are sourced from the Statistical Report on Loan Disbursements by Financial Institutions of the People's Bank of China, relevant provincial-level documents released by the China Banking and Insurance Regulatory Commission (CBIRC), as well as the Wind and EPS databases. Standardization is conducted in accordance with the Special Statistical System for Agriculture-Related Loans issued by the CBIRC, so as to eliminate inconsistencies in statistical definitions across regions. In Table 1, fiscal funds and financial resources are grouped into two categories of input indicators, directly reflecting the role of fiscal and financial elements in supporting rural development.

In terms of output indicators, three metrics are chosen: the growth rate of agricultural output value, the proportion of rural secondary and tertiary industries in the total rural output, and the growth rate of per capita disposable income of rural residents. Among these, the growth rate of agricultural output value is calculated based on the provincial annual data from the National Bureau of Statistics of China (NBSC); the proportion of rural secondary and tertiary industry output value in total output value is obtained from the "national economic accounting" section of the statistical yearbooks of various provinces; the growth rate of per capita disposable income of rural residents is derived from the household income, expenditure and living conditions survey organized by the NBSC. These three indicators comprehensively reflect the implementation effect of rural revitalization from three dimensions: economic growth, industrial structure upgrading and people's livelihood improvement; Table 1 clearly lists the definition of the above output indicators and the ways to obtain data, ensuring the scientificity and practicality of indicator selection.

To ensure data integrity and the timeliness of analysis, this study uses linear interpolation and trend extrapolation to supplement missing observations for some provinces. In line with the "non-negativity" and "directional consistency" criteria of the DEA model, all variables undergo standardized processing to unify measurement units and positive transformation; this processing procedure ensures the scientific validity and reliability of efficiency calculation results.

4.2 DEA Results of Fiscal and Financial Coordination Efficiency Across 30 Provinces

Building on the aforementioned DEA method, this study calculates the fiscal and financial synergy efficiency levels of 30 Chinese provinces in supporting rural revitalization from 2015 to 2023; the evaluation indicators include technical efficiency (TE, derived from the CCR model), pure technical efficiency (PTE, derived from the BCC model), and scale efficiency (SE, derived from the BCC model); the efficiency values and scale return characteristics of all 30 provinces have been compiled in Table 2.

Table 2: DEA results of fiscal–financial coordination efficiency across 30 provinces

Province	TE	PTE	SE	Returns to Scale Type
Beijing	0.912	1.000	0.912	DRS
Tianjin	0.885	0.923	0.959	DRS
Shanghai	0.934	1.000	0.934	DRS
Fujian	0.867	0.925	0.937	DRS
Shandong	0.876	0.952	0.920	DRS
Guangdong	0.923	1.000	0.923	DRS
Chongqing	0.846	0.902	0.938	DRS
Jiangsu	1.000	1.000	1.000	CRS
Zhejiang	1.000	1.000	1.000	CRS
Hebei	0.764	0.812	0.941	IRS
Shanxi	0.723	0.789	0.916	IRS
Inner Mongolia	0.698	0.756	0.923	IRS
Liaoning	0.801	0.867	0.924	IRS
Jilin	0.753	0.821	0.917	IRS
Heilongjiang	0.736	0.802	0.918	IRS
Anhui	0.825	0.887	0.930	IRS
Jiangxi	0.798	0.854	0.935	IRS
Henan	0.789	0.851	0.927	IRS
Hubei	0.832	0.896	0.929	IRS
Hunan	0.811	0.863	0.940	IRS
Guangxi	0.745	0.803	0.928	IRS
Hainan	0.805	0.865	0.931	IRS
Sichuan	0.817	0.874	0.935	IRS
Guizhou	0.689	0.742	0.928	IRS
Yunnan	0.712	0.773	0.921	IRS
Shaanxi	0.763	0.826	0.924	IRS
Gansu	0.664	0.721	0.921	IRS
Qinghai	0.612	0.705	0.868	IRS
Ningxia	0.598	0.683	0.876	IRS
Xinjiang	0.703	0.765	0.919	IRS

The calculation results reveal the following key conclusions:

(1) The eastern region ranks first in efficiency level, while the western region has relatively lower efficiency; eastern provinces such as Jiangsu and Zhejiang have a technical efficiency value of 1.000, solidifying their position at the DEA efficiency frontier — this indicates that these provinces have achieved the optimal alignment between inputs and outputs, i.e., the efficient matching of fiscal funds and financial resources. Leveraging their solid industrial foundations and efficient resource integration capabilities, fiscal and financial inputs have been successfully converted into tangible outcomes for rural revitalization. Beijing, Shanghai, and Guangdong have relatively favorable efficiency scores (close to 0.90), which have not yet reached the optimal score of 1.0, leaving room for further improvement. In contrast, western provinces such as Qinghai (0.612), Ningxia (0.598), and Gansu (0.664) display significantly lower efficiency, reflecting pronounced weaknesses in resource allocation for rural revitalization. As illustrated in Figure 1, the efficiency values show a clear spatial pattern of "higher in the east and lower in the west": high-efficiency provinces are mainly concentrated in

the eastern coastal region, while the central, western, and remote provinces are relatively less efficient.

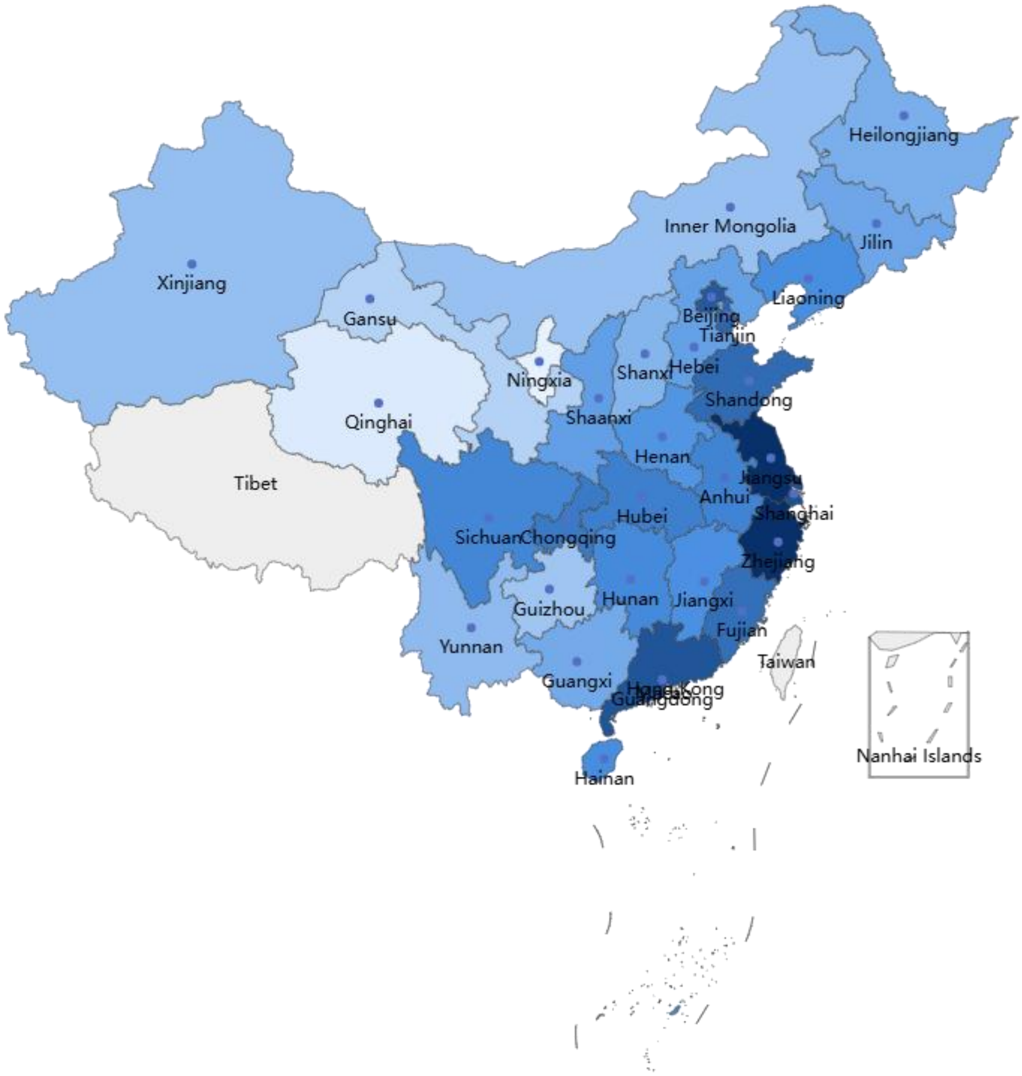

Figure 1: Spatial distribution pattern of provincial fiscal–financial coordination efficiency

(2) Some provinces face scale mismatches despite effective management, others constrained by "double deficiencies". From the perspective of sub-efficiency, provinces such as Beijing, Shanghai, Guangdong, Fujian, and Chongqing have PTE values at or near 1.000, indicating well-developed management practices and technological application in fiscal–financial coordination. However, their SE values are relatively lower (e.g., Guangdong SE = 0.923, Fujian SE = 0.937), suggesting that while management efficiency is high, the scale of inputs does not yet fully match output demands, and moderate adjustment of fiscal–financial investment is needed. Conversely, provinces such as Hebei, Shanxi, Inner Mongolia, Liaoning, Jilin, and Heilongjiang perform poorly in both PTE and SE, reflecting dual problems of "inefficient management and technology" as well as "inappropriate input scale." These provinces therefore need to improve the management of resource allocation to enhance capital utilization efficiency, while simultaneously adjusting input scales to avoid both underinvestment and waste.

(3) Divergent scale returns characteristics. In terms of scale returns, Jiangsu and Zhejiang exhibit constant returns to scale, indicating that their current fiscal–financial input scales are broadly aligned with output efficiency, and maintaining the existing scale can sustain high performance. Most provinces in Eastern China, such as Guangdong, Shandong, Beijing, Shanghai, Fujian, and Chongqing, exhibit "decreasing returns to scale"—the marginal returns from further expanding investment will gradually decline. These provinces need to shift from "scale expansion" to "quality upgrading", focusing on the precise allocation and refined management of funds; most provinces in the central, western, and northeastern regions (such as Hebei, Shanxi, Inner Mongolia, Liaoning, Jilin, Heilongjiang, etc.) exhibit the characteristic of "increasing returns to scale." Reasonably expanding fiscal and financial inputs can significantly improve efficiency levels, while simultaneously enhancing management effectiveness and technical standards, thereby avoiding the inefficient situation where input is simply expanded without corresponding output.

Overall, the DEA measurement results indicate that the efficiency level of provincial fiscal and financial collaboration in supporting rural revitalization exhibits distinct regional differentiation characteristics: eastern provinces have relatively prominent efficiency levels, close to the efficiency frontier, and need to focus on enhancing development quality and comprehensive effectiveness; central provinces have efficiency in the medium range, mainly constrained by insufficient internal management effectiveness; western provinces have relatively low efficiency levels, and need to balance expanding input scale and introducing advanced management paradigms to improve implementation outcomes. The above research conclusions lay a foundation for the subsequent analysis of spatial differences.

4.3 Spatial Disparity Analysis

(1)Spatial Autocorrelation Analysis

After gaining a preliminary understanding of provincial efficiency levels, it is necessary to test whether these efficiency values exhibit clustering effects in geographical space. In this study, the average provincial technical efficiency over the period 2015–2023 is used to carry out both global and local spatial autocorrelation analyses. The findings of these analyses are presented in Table 3. The mean value of the global Moran’s I stands at 0.321, accompanied by a corresponding Z-statistic of 3.86($P < 0.01$); this result demonstrates that the fiscal-financial coordination efficiency of China’s provincial-level regions shows a significant positive spatial agglomeration pattern. In other words, provinces with similar efficiency levels tend to be geographically adjacent: high-efficiency provinces are more likely to cluster together, while low-efficiency provinces are also relatively concentrated. This is further confirmed by the Moran scatterplot (Figure 2), where most provinces fall into the first quadrant (high-efficiency regions surrounded by high-efficiency neighbors) or the third quadrant (low-efficiency regions surrounded by low-efficiency neighbors), thereby reinforcing the overall spatial positive correlation.

Table 3: Results of spatial autocorrelation analysis of fiscal–financial coordination efficiency, 2015–2023

Indicator	Global Moran’s I	Z-statistic	P-value	Clustering feature
Technical Efficiency (TE)	0.321	3.86	<0.01	Significant positive clustering

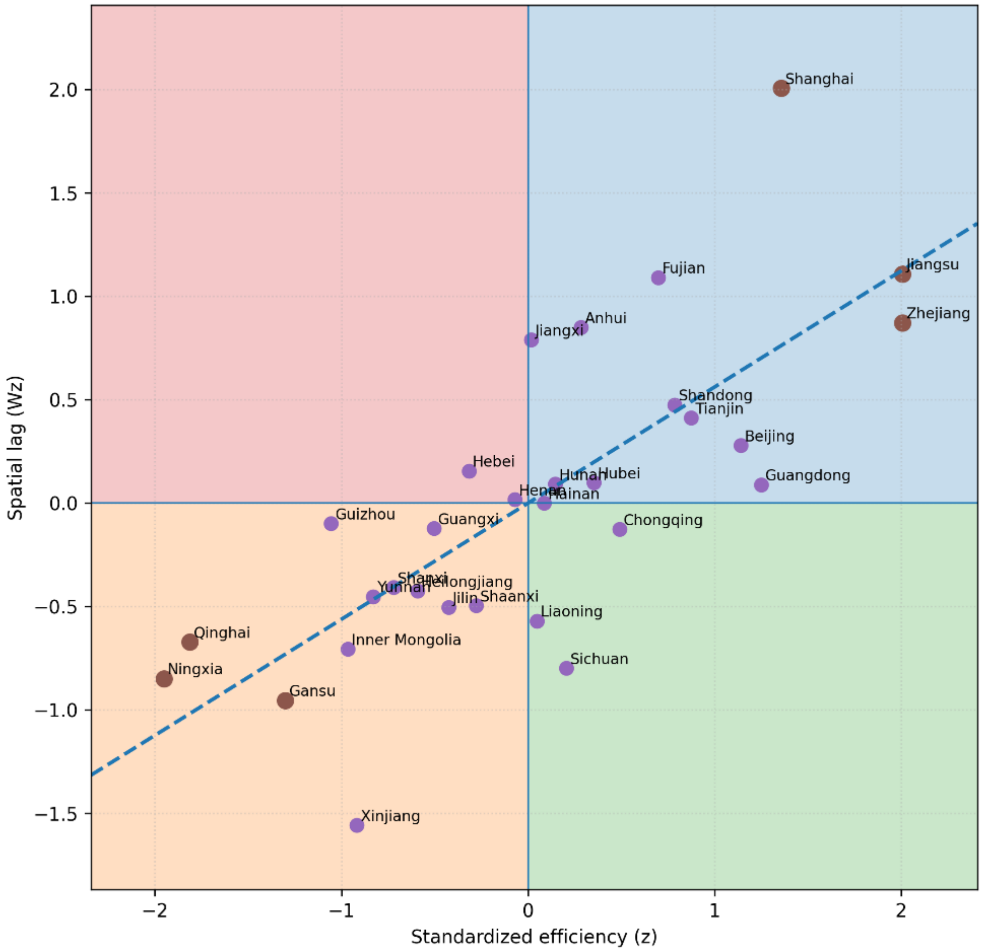

Figure 2: Moran's I scatterplot of provincial fiscal–financial coordination efficiency

The local Moran's I analysis further reveals the specific spatial clustering patterns. As shown in the LISA cluster map (Figure 3), the distribution of provincial efficiency demonstrates distinct "high–high" and "low–low" clustering phenomena. Typically, provinces in the Yangtze River Delta, such as Jiangsu, Zhejiang, and Shanghai, form significant "high–high" clusters, suggesting that these provinces not only achieve high coordination efficiency themselves but also generate positive spillover effects on neighboring provinces such as Anhui and Jiangxi. In contrast, western provinces such as Qinghai, Ningxia, and Gansu exhibit "low–low" clusters, meaning that these low-efficiency regions are adjacent to each other and fail to generate synergistic improvements. Moreover, a few provinces neighboring highly efficient municipalities (e.g., Beijing and Tianjin) fall into "high–low" outlier categories, reflecting the limitations of diffusion: even though the central provinces maintain high efficiency, their capacity to drive neighboring underdeveloped regions remains limited. Overall, both global and local spatial autocorrelation analyses confirm that fiscal–financial coordination efficiency for rural revitalization in Chinese provinces demonstrates significant spatial clustering, with distinct blocks of high-efficiency and low-efficiency regions.

Figure 3: Local Indicators of Spatial Association (LISA) cluster map for provincial fiscal–financial coordination efficiency

(2)Spatial Econometric Model Analysis

In regional economic studies, the impact of geographic spatial factors on economic behavior cannot be overlooked. The efficiency of fiscal–financial coordination supporting rural revitalization does not exist in isolation; instead, cross-regional policy implementation, resource flows, and technology diffusion may generate interdependencies, creating "spatial linkages." To capture such spatial interaction patterns, this study employs two types of spatial econometric methods—Spatial Lag Model (SLM) and Spatial Error Model (SEM)—to analyze the transmission mechanism of fiscal and financial synergy efficiency: the SLM focuses on the spatial interaction of the explained variable (synergy efficiency), namely the "neighborhood effect"; the SEM emphasizes the spatial correlation characteristics of the error term, reflecting the spillover effects caused by unincorporated or unobservable factors.

Model selection is based on rigorous statistical test results: the Lagrange Multiplier (LM) test serves as the core basis for determining spatial effects. In this study, the LM lag statistic is verified to be significant ($P < 0.01$), indicating that the spatial lag term of the explained variable exerts a significant impact on the regression results; the robust LM error statistic fails to reach a significant level ($P > 0.1$), which means the spatial correlation degree of the error term remains relatively weak; the Spatial Lag Model (SLM) is identified as the benchmark model in this study, and the regression analysis results are detailed in Table 4. Regarding the spatial spillover effect, the estimated coefficient of the spatial lag term of the explained variable (weighted average of efficiency in neighboring regions) is 0.415, which passes the 1% level statistical significance test (t = 3.37, P < 0.01). For every 1 percentage point increase in the synergy efficiency of adjacent provinces, the synergy efficiency of the central province increases by 0.415% percentage points accordingly, showing a significant positive spatial spillover characteristic. The improvement of provincial-level efficiency is not achieved in isolation: high-efficiency regions drive the performance improvement of surrounding areas through policy demonstration, resource circulation, and technological diffusion. In contrast, low-efficiency regions exert a negative impact on neighboring regions due to resource siphoning and weakened collective utilization efficiency. This quantitative result explains the agglomeration trend observed earlier: eastern coastal provinces spread successful experiences to their surroundings, leading to the formation of high-efficiency agglomeration in regions such as the Yangtze River Delta and the Pearl River Delta. Low-efficiency provinces in the west, lacking the driving force of high-efficiency neighboring regions, struggle to obtain positive spillover effects and remain in a relatively backward state for a long time.

Table 4: Results of the Spatial Lag Model regression

Variable	Coefficient	Std. Error	t-statistic	P-value
Spatial lag term	0.415	0.123	3.37	<0.01
Rural infrastructure expenditure	0.236	0.085	2.78	<0.01
Agriculture-related loans	0.189	0.072	2.63	<0.01
Growth rate of rural residents' per capita disposable income	0.312	0.098	3.18	<0.01
Constant	0.157	0.064	2.45	<0.05
R^2	0.682	-	-	-
Log-likelihood	128.654	-	-	-

Regarding the core influencing factors, all major explanatory variables have passed the significance test, and their signs are consistent with expectations: (1) Rural infrastructure expenditure: The estimated coefficient reaches 0.236 (P < 0.01). When other variables and spatial effects are controlled, each unit of fiscal input into rural infrastructure can increase coordination efficiency by approximately 0.236 units. Infrastructure investment improves rural production and living conditions, reducing the costs and potential risks of financial services. Rural road development promotes rural credit service delivery, boosts financial institutions' resource allocation efficiency and initiative, and forges a transmission channel featuring "improved infrastructure, optimized conditions, and enhanced efficiency." (2) Tourism-related credit: The estimated coefficient is 0.189 (P < 0.01), indicating that the expansion of the scale of agriculture-related financial credit significantly improves synergy efficiency. Under the guidance of fiscal support, financial capital is more smoothly injected into the core links of the agricultural value chain, and fiscal subsidies and agriculture-related credit form a linkage effect. This strengthens support for the cultivation of new agricultural business entities, the promotion of agricultural technologies, and the in-depth processing of agricultural products, thereby enhancing overall efficiency by intensifying financial support. (3) Growth rate of per capita disposable income of rural residents: The calculated coefficient ranks first among all explanatory variables, reaching 0.312, and there is an obvious positive feedback relationship between the growth of rural residents' income and the fiscal-financial synergy efficiency (P < 0.01). The increase in rural residents' income is a direct outcome of the synergistic effect of finance and public finance; it improves rural residents' own credit standards, expands the rural consumer market, and consolidates the fiscal-financial synergy efficiency. The increase in rural residents' income is not only a core goal of rural revitalization but also a key driving factor for the sustained release of fiscal-financial synergy efficiency. The results of the spatial econometric empirical analysis show that the fiscal and financial synergy efficiency at the provincial level in China exhibits distinct spatial correlation characteristics, and the foundation of regional development plays a crucial role in this provincial-level fiscal and financial synergy efficiency. Investment in rural infrastructure, agricultural credit support, and the increase in rural residents' income are the core influencing factors of efficiency, among which the spatial spillover effect and the role of income growth are the most critical. Existing research findings have emphasized the vital significance of regional coordinated development and income-oriented development for rural revitalization.

4.4 Heterogeneity Analysis

To deeply analyze the mechanism by which the differentiation of regional economic development affects fiscal and financial synergy efficiency, this paper classifies 30 Chinese provinces into three economic development levels (high, medium, and low) based on the average GDP data from 2015 to 2023, with 10 provinces in each level. By comparing the differentiated characteristics of technical efficiency (TE), pure technical efficiency (PTE), and scale efficiency (SE), this study clarifies the core role of economic foundation in the formation process of the synergy trajectory of fiscal and financial resources. This grouping approach avoids cross-interference between regions at different development stages, enables more precise identification of core constraining factors, and lays a solid foundation for formulating differentiated policies.

Table 5: Comparison of fiscal–financial coordination efficiency across groups with different economic development levels

Economic development group	Average TE	Average PTE	Average SE	Typical provinces
High	0.923	0.987	0.935	Jiangsu, Guangdong, Zhejiang
Medium	0.815	0.856	0.902	Hubei, Henan, Sichuan
Low	0.652	0.723	0.876	Gansu, Qinghai,Ningxia

Table 5 presents the average efficiency level and typical representative provinces of each group. There is a clear gradient correlation between the degree of economic development and the synergy efficiency of fiscal and financial sectors, with distinct characteristics shown in each group:

High economic development group. The average technical efficiency (TE) of this tier reaches 0.923, the highest among the three tiers and very close to the DEA efficiency frontier. This result is mainly supported by the "dual advantages" of pure technical efficiency (PTE) and scale efficiency (SE). With an average PTE of 0.987, provinces in this tier have mature fiscal-financial synergy management models and technical means. For instance, Zhejiang has adopted the operation mode of "fiscal funds + blockchain technology" to achieve full-process traceability of supervision over agriculture-related funds; Guangdong has collected farmers' credit information through a provincial-level credit platform, significantly improving the accuracy of financial resource allocation. These measures ensure the efficient connection and operation of fiscal and financial inputs. The average SE of this tier stands at 0.935, indicating that the scale of fiscal and financial inputs in high-development regions is well-adapted—there is no idle resource or diseconomy of scale. This advantage relies on a sound market system and industrial structure: the mature market enables fiscal funds to give full play to the "leverage effect" (e.g., using risk compensation funds and industrial guidance funds to attract more financial capital); the complete industrial chain provides an effective path for the synergy of fiscal and financial sectors across the entire chain of production, processing, and sales, thus establishing a positive circular mechanism of "investment → output → reinvestment."

Medium economic development group. The average technical efficiency (TE) of this tier is 0.815, falling between the high and low tiers, showing a "transitional" characteristic. Efficiency decomposition data reveals that the average scale efficiency (SE) of this tier is 0.902, only slightly lower than that of the high economic development tier and maintaining a relatively high level—indicating the overall scale of fiscal and financial input has reached a considerable extent. However, the average pure technical efficiency (PTE) of this tier is only 0.856, significantly lower than that of the high economic development tier. This has become a core constraint on efficiency improvement, highlighting insufficient management synergy and technical application. In some provinces of this tier, agriculture-related fiscal funds are distributed in a "fragmented" manner: the direction of fund allocation is relatively scattered, and the connection with the credit allocation of financial institutions is insufficient. Moreover, the progress of rural credit system construction lags behind that of eastern regions. Financial institutions struggle to obtain accurate data on farmers and small and micro enterprises, which limits the effectiveness of targeted lending and risk management. The lack of resource integration efficiency leads to an imbalance in fiscal and financial allocation along the industrial chain. For example, some major grain-producing provinces invest heavily in traditional planting sectors but have insufficient investment in deep processing fields, making it difficult to give full play to the maximum efficiency of synergy.

Low economic development group. The average technical efficiency (TE) of this tier is only 0.652, the lowest among the three tiers. Both its pure technical efficiency (PTE, 0.723) and scale efficiency (SE, 0.876) are significantly lower than those of the other two tiers, showing the dual shortcomings of "weak management effectiveness + insufficient input scale." Underdeveloped regions face severe challenges in the process of fiscal and financial collaboration supporting rural revitalization. Lagging management and technical means result in low utilization efficiency of fiscal funds and insufficient innovation in financial services: fiscal fund approval procedures are complicated and disbursement is delayed, making it difficult to meet the seasonal capital needs of agriculture; financial products are limited to traditional mortgage loan models, failing to adapt to the diversified financing demands of new agricultural business entities. Resource constraints and capital outflows have formed a vicious cycle of "low investment → low return → insufficient reinvestment capacity". Local fiscal strength is weak and the financial system is underdeveloped. High-quality enterprises and capital mostly flow to developed eastern provinces or provincial capitals (the "siphon effect"), leading to insufficient financial support in county and rural areas. For example, in some remote counties in Gansu Province, rural roads are built with fiscal funds, but there is a lack of subsequent industrial subsidies and supporting credit support. Agricultural enterprises face difficulties in expanding their investment scale, and the practical value of infrastructure struggles to be fully realized.

In summary, the findings from group comparisons indicate that the foundation of regional economic development plays a pivotal role in the synergy efficiency of fiscal and financial resources, exhibiting a prominent "Matthew Effect" trait: regions with higher economic development levels are better able to enhance synergy efficiency by leveraging mature market environments, advanced management paradigms, and sufficient resource supply. In contrast, underdeveloped regions face the dual constraints of insufficient management capabilities and limited investment scale, making them more prone to falling into a state of inefficient and stagnant development. This conclusion is mutually corroborated by the results of spatial econometric analysis: regions with higher development levels exhibit significant internal synergy effects and can transmit successful experiences to neighboring regions with medium development levels through spatial spillover effects. However, underdeveloped regions are disconnected from high-efficiency agglomeration regions, struggling to benefit from such diffusion processes and remaining in a relatively disadvantaged developmental position over the long term. The aforementioned research findings suggest that it is necessary to formulate differentiated fiscal and financial regulation policies targeting the core constraints of regions at different development stages, thereby promoting an overall improvement in the effectiveness of rural revitalization.

5 Conclusions and Policy Recommendations

5.1 Research Conclusions

By employing the DEA empirical analysis method and spatial econometric modeling approach, this study clarifies the core characteristics and inherent mechanisms of the efficiency of fiscal and financial collaboration in supporting rural revitalization across different provincial-level regions in China:

(1) Notable regional differences in efficiency levels. Provinces such as Jiangsu and Zhejiang have a technical efficiency score of 1.000, placing them on the DEA efficient frontier, where the input and output in the fiscal and financial fields have achieved an optimal alignment. Provinces and municipalities like Beijing, Shanghai, and Guangdong have an efficiency score of approximately 0.9, with pure technical efficiency approaching 1.0 while scale efficiency remains at a relatively low level. These regions have already developed relatively mature management technologies, yet there is still room for optimization and adjustment in terms of input scale. For provinces in the western region, such as Qinghai, Ningxia, and Gansu, the comprehensive efficiency is around 0.6, with both pure technical efficiency and scale efficiency falling within the relatively low range. These regions need to address the dual challenges of insufficient management capabilities and low resource allocation efficiency. In terms of return to scale characteristics, most developed provinces in eastern China exhibit a decreasing return to scale (excessive input leads to a decline in marginal returns); in contrast, most provinces in central, western, and northeastern China show an increasing return to scale (moderately expanding the input scale is conducive to improving overall efficiency).

(2) Distinct spatial agglomeration traits. The spatial agglomeration trend is prominent and significant, with the average value of global Moran’s I reaching 0.321. There is an obvious positive spatial autocorrelation attribute in the provincial fiscal and financial synergy efficiency—provinces with high efficiency show a clustered distribution pattern, while provinces with low efficiency also have a relatively concentrated spatial distribution. In terms of specific distribution, the eastern coastal regions (especially Jiangsu, Zhejiang, and Shanghai in the Yangtze River Delta) have formed a "high-high" cluster pattern, exerting a positive radiating and driving effect on surrounding regions such as Anhui and Jiangxi. Western regions including Qinghai, Ningxia, and Gansu present a "low-low" agglomeration trend, lacking internal impetus for efficiency improvement. Some regions around Beijing and Tianjin show an atypical "high-low" distribution pattern, reflecting partial constraints on the spillover effect from high-efficiency regions. The conclusions of the spatial econometric model further verify the existence of a significant spillover effect. The coefficient of the spatial lag term is approximately 0.415 (statistically significant at the 1% level), meaning that for every 1% increase in the efficiency of adjacent regions, the local efficiency increases by approximately 0.415%. This reflects the presence of a cross-regional positive transmission effect in fiscal and financial synergy—developed eastern regions drive surrounding areas through demonstration leadership, resource sharing, and technological spillovers, while low-efficiency regions may hinder neighboring areas through a "siphon effect."

(3) "Matthew effect" between economic development level and coordination efficiency. Differences in regional economic foundations are the core driving factor behind the inter-provincial efficiency gap. Regions with a high development level (mainly in the east) have an average technical efficiency of nearly 0.923 and a pure technical efficiency of over 0.98, achieving efficient resource integration through mature management models, technical application, and relatively high scale efficiency. In contrast, regions with a low development level (mainly in the west) have an average technical efficiency of only 0.65, with both pure technical efficiency and scale efficiency at relatively low levels. Restricted by insufficient management capabilities and inadequate input scale, their efficiency remains low for a long time. The "Matthew Effect" is prominent: the more developed a regional economy is, the better it can leverage efficient management and reasonable input to optimize synergy efficiency. Underdeveloped regions, being far from high-efficiency agglomeration areas, struggle to obtain the dividends of technology and resource spillovers, leading to a continuous widening of the gap between regions. This aligns with the conclusions related to spatial spillover: high-efficiency regions in the east drive surrounding regions with a medium development level, while underdeveloped regions in the west lack external support and need to rely more on internal breakthroughs to achieve improvement.

5.2 Policy Recommendations

Based on the above research findings, this study puts forward the following targeted policy recommendations to enhance the efficiency of fiscal and financial coordination in supporting rural revitalization:

(1) Promote regional coordinated development. Strengthen the linkage between eastern, central, and western regions, and establish a resource-sharing mechanism of "eastern regions aiding western regions". Guide developed eastern regions to transfer mature practices, capital, and technological resources to underdeveloped regions through paired collaboration models, so as to advance the coordinated promotion of cross-regional rural revitalization. Support high-efficiency regions such as the Yangtze River Delta in issuing special bonds for rural revitalization and building cross-regional rural financial cooperation platforms to ensure the efficient flow of fiscal and financial resources. For the "low-low" inefficient agglomeration areas in the west, increase the intensity of central fiscal transfer payments, with key investments in rural infrastructure construction (in transportation, water conservancy, and communication sectors) and public service supply (in education and medical sectors) to lay a solid foundation for development. Highlight the role of policy banks, define special credit scales, appropriately relax credit approval conditions, and guide commercial banks to increase investment in the rural industries of western regions. Rely on regional collaboration and resource inclination policies to gradually narrow the efficiency gap between eastern, central, and western regions and achieve the goal of common development.

(2) Improve fiscal–financial coordination mechanisms. Strengthen the coordination and cooperation between fiscal and financial regulatory authorities, and establish a regular mechanism for information sharing and joint research and judgment. Integrate the provincial-level rural revitalization project reserve database with the financing demand information of agricultural business entities to avoid misalignment of fund allocation, overlapping investment, or imbalanced distribution. On this basis, build a long-term coordinated mechanism for fiscal and financial policies, jointly formulate rural revitalization investment plans, clarify the scope and core directions of government investment and bank credit, and guide funds to flow into high-benefit areas. Implement differentiated support policies based on regional development characteristics: For major grain-producing provinces such as Heilongjiang and Henan, increase the intensity of subsidies and preferential credit support to consolidate the foundation for food security. For rural revitalization demonstration regions such as Zhejiang and Jiangsu, provide support in terms of tax reductions and approval process optimization, back the innovative practices of fiscal and financial models, and refine replicable experiences for promotion across the country.

(3) Unleash spatial spillover and agglomeration effects. Leverage the radiating role of high-efficiency regions to drive surrounding areas, and establish a framework for positive spatial linkage and shared development. Set up inter-provincial rural revitalization cooperation alliances or regional demonstration pilot zones, break down administrative barriers, and promote coordinated progress in industrial planning and project investment among neighboring provinces. Encourage high-efficiency regions to develop demonstration projects; support low-efficiency regions in sending cadres and technical professionals for exchange and training, so as to transfer advanced management concepts and outcomes of financial innovation. Improve mechanisms for cross-regional capital and factor circulation, reduce institutional barriers to the flow of talents and capital, and facilitate more efficient allocation of resources from high-efficiency regions to underdeveloped ones. Cultivate a number of growth poles for rural revitalization-driven regional development, expand positive external effects, and transform the spontaneous agglomeration trend into a core driver for coordinated regional development.

(4) Explore paths to enhance synergy efficiency. Implement targeted policies to address development bottlenecks in different regions. Developed eastern regions need to shift from "scale expansion" to "quality upgrading": optimize the allocation of fiscal and financial resources, reduce redundant investment in inefficient rural construction projects, and channel more fiscal funds and credit support into emerging industrial fields such as smart agriculture, rural e-commerce, and rural tourism. This will facilitate industrial upgrading and diversified development, as well as improve output efficiency. Regions with relatively low efficiency in central and western China need to pursue both "expanding scale" and "enhancing quality and management": appropriately increase investment volume to fully unlock the effect of increasing returns to scale, strengthen management efficiency and technical application, and eliminate issues of scattered investment and inefficiency. The government should establish a performance evaluation system for rural revitalization, strengthen the performance management of fiscal expenditures and the supervision of agricultural credit, integrate third-party evaluation and reward-punishment mechanisms, and improve the efficiency of fund utilization.

(5) Strengthen support for western regions and unlock regional development potential. Focus on addressing the low efficiency issue in underdeveloped western regions. Increase the intensity of central fiscal transfer payments to the "three rural issues" (agriculture, rural areas, and farmers) field, giving priority to ensuring the construction of rural roads, p ublic facilities, and internet infrastructure, the popularization of agricultural technologies, and the development of rural education and medical services to optimize the conditions for production and living security. Establish an agricultural credit risk compensation fund co-funded by the government, banks, and guarantee institutions. Rely on the risk-sharing mechanism to encourage expanding the scale of credit supply for rural industries in western regions. Expand paired collaboration between eastern and western regions and two-way talent exchanges to promote the transfer and sharing of agricultural technologies and management experience, and attract talents to engage in rural construction in western regions. Based on their own resource endowments, western regions should cultivate advantageous industries such as characteristic agricultural products, ecological cultural tourism, and renewable energy, and build new industrial growth poles with the support of fiscal and financial policies. Through the above measures, avoid the phenomenon of "no return on investment", gradually activate the endogenous growth momentum, and fully release the potential for efficiency improvement.

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