Research Review and Outlook on Green Finance Assisting Rural Revitalization

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Abstract: Green development in the new development stage is not only a continuation and innovation of sustainable development, but also an inherent requirement and important support for achieving comprehensive rural revitalization in the new era. This article reviews the research on green finance promoting rural revitalization from five aspects: conceptual connotation, current situation, problems, reasons, and policy recommendations, by reviewing relevant theories and viewpoints. It is of great significance to understand the dynamic of green finance promoting rural revitalization development, and to systematically promote the theoretical and practical research of green finance and rural revitalization. Finally, based on the summary in the previous text, the areas that need to be improved in this field are discussed in an attempt to provide some reference for scholars' subsequent research. In the future, it is necessary to enrich the research content on green finance and rural revitalization, improve research methods, and broaden research perspectives.

Keywords: Green finance; rural revitalization; green development

1. Introduction

The report of the 20th National Congress of the Communist Party of China proposes to promote green development and harmonious coexistence between humans and nature. In 2023, the People's Bank of China, the State Administration of Financial Supervision, the China Securities Regulatory Commission, the Ministry of Finance, and the Ministry of Agriculture and Rural Affairs jointly issued the Guiding Opinions on Financial Support for Comprehensive Promotion of Rural Revitalization and Accelerating the Construction of an Agricultural Strong Country, stating that "green development leads rural revitalization, enhances green development support capabilities, and promotes quality and green agriculture." Developing green finance is an effective way to achieve green development and an important driving force for rural revitalization. Based on this, this article will comprehensively review and summarize relevant literature on green finance and rural revitalization. Firstly, conduct relevant research on green finance by domestic and foreign scholars, and then summarize in detail the internal mechanism of how green finance helps promote rural revitalization and development. Subsequently, an analysis will be conducted on the current situation, problems, and reasons of green finance promoting rural revitalization and development, and corresponding policy recommendations will be proposed. Finally, point out the shortcomings of existing research and explore future research directions.

2. Research on Green Finance

2.1. The connotation of green finance

Since the emergence of green finance theory in the 1980s, green finance, as an emerging financial model, has gradually attracted widespread attention from academia and industry. However, there are many definitions of green finance, and a unified consensus has not yet been reached. In terms of foreign scholars, green finance is regarded as an effective environmental protection tool. They emphasize that when understanding the connotation of green finance, environmental protection should be the starting point. Salazar (1998) [1] believes that green finance is a key bridge between the financial and environmental sectors, providing financial support for the development of green industries, and is a necessary financial innovation means to achieve environmental protection goals. Cowan (1999) [2] pointed out that green finance, as an interdisciplinary field between green economy and finance, aims to provide financial services to promote the development of green economy. Labatt, White (2002)
further explained that the goal of green finance is to use financial instruments based on the market to improve environmental quality and transfer environmental risks. Lee (2022) Green finance refers to financial activities aimed at environmental protection and sustainable development, including green credit, green securities, green insurance, green investment, and carbon finance. Its main purpose is to promote investment in environmentally friendly projects and promote the construction of an ecological society.

In terms of domestic scholars, green finance is a way to reform the financial industry, and the importance of the financial industry as a medium is emphasized in the grasp of its connotation. Li Penglin, Ye Jingtong (2019) believe that green finance will lead the emergence of new financial formats and industrial forms, emphasizing the coordination and unity of traditional financial systems and ecological environment protection. He Qian (2021) believes that green finance is a new type of environmental management tool and an important innovation and transformation in the financial field, aimed at better serving the real economy and promoting high-quality economic development. Guo Feng, Cheng Yaxin (2022) believe that developing green finance promotes the rational allocation of resources, leads the optimization and upgrading of industrial structure, and promotes the transformation and upgrading of economic development models.

2.2. The intrinsic connection between green finance and rural revitalization

Green finance is an important foothold for rural revitalization. He Guangwen et al. (2018) pointed out that in the process of promoting the implementation of the rural revitalization strategy, it is difficult to rely on the traditional financial model of the past to meet the diversified, long-term, and differentiated development of rural revitalization in China. Therefore, Wei Lili et al. (2020) pointed out that green finance can provide better financial support for rural revitalization through innovative financial products and services, and promote the development of rural green industries, circular economy, and other fields more quickly.

Rural revitalization is an important opportunity for green finance. Zuo Zhenglong (2022) believes that rural areas have abundant natural resources and are an important foundation for China's green development. Therefore, it is necessary to strengthen the governance of rural ecological environment and build beautiful and livable countryside, which provides broad market space and development opportunities for green finance. There is a mutually reinforcing relationship between green finance and rural revitalization. Wen Tao (2023) indicates that green finance and rural revitalization complement each other. Green finance provides funding, technology, and information support for rural revitalization, solves the problem of insufficient production factors, and stimulates endogenous power in rural areas. Rural revitalization, on the other hand, takes measures such as cultivating new agricultural operators, optimizing industrial structure, and improving infrastructure to reduce the risk and cost of green finance, improve the return on investment of green finance, and form a virtuous cycle and win-win development for both.

3. The intrinsic mechanism of green finance promoting rural revitalization

Everything is in universal connection, and rural revitalization and green finance are no exception. If we want to promote rural revitalization in the development of green finance, we must first deeply understand the internal mechanism relationship between them. According to the core concept of financial functionalism, the six major financial functions play a crucial role in rural revitalization, and these functions should be deeply integrated with rural development. The exertion of financial functions will generate a series of effects, including individual behavioral effects, industrial driving effects, environmental improvement effects, and social normative effects, which together provide solid guarantees for the achievement of rural revitalization goals.

3.1. Industrial driving effect

Green finance has a significant industrial driving effect and is a key way to promote the prosperity of rural industries. From a theoretical perspective, industrial revitalization is the foundation of rural revitalization. Green finance, as an important driving force for promoting industrial green development, serves as an important force for rural industrial revitalization, and is an effective means to promote comprehensive rural revitalization and achieve common prosperity in rural areas. From a practical perspective, the "three weaknesses" in agricultural production lead to insufficient investment in...
agriculture, as well as the need for a large amount of funds for rural revitalization. Financial capital needs to enter the agricultural sector, especially in the field of green agriculture, and green finance helps to broaden the sources of funds for rural green industries.

3.2. Environmental improvement effects

The development of green finance has a significant promoting effect on improving the ecological environment and livable rural construction in rural areas. On the one hand, green finance mainly provides a large amount of direct financial support for the development of key industries in rural ecological and environmental protection, which can accelerate the rapid growth of emerging agriculture such as low-carbon agriculture, and is a financial guarantee for strengthening the effective comprehensive governance of rural ecological environment. On the other hand, in the context of frequent natural disasters and poor arable land conditions, green finance can optimize industrial structure, reduce the proportion of high polluting and high energy consuming secondary industries, and promote the growth of environmentally friendly and efficient tertiary industries by formulating scientific and reasonable differentiated subsidy mechanisms. Existing research also confirms that green finance has a positive impact on the construction of rural ecological civilization at the spatial level. With the rapid development of the economy and the improvement of green finance level, the ecological environment of rural areas will be greatly improved, and the rural ecology will become more livable.

3.3. Social normative effects

Green finance has a significant social normative effect, which can promote rural civilization and effective governance. Social norms are the set of opinions that dominate the behavior of social groups, without legal constraints, but they are the standards and rules that individuals in society jointly abide by. Green finance has a significant social normative effect, which can promote rural civilization and effective governance. Social norms are the set of opinions that dominate the behavior of social groups, without legal constraints, but they are the standards and rules that individuals in society jointly abide by. On the other hand, while continuously improving the green finance system and building a rural credit reporting system, it can promote the formation of an equal and trustworthy contractual spirit among villagers.

3.4. Individual behavioral effects

Individual behavioral effects refer to the effects of changes in individual economic behavior during the process of obtaining green financial services, manifested as an increase in per capita productivity, per capita consumption level, and per capita income. Enhancing the well-being of farmers is an important goal of rural revitalization and development, and the improvement of the living and consumption levels of rural residents is a direct reflection of their well-being. Green finance has the function of allocating social resources. It can optimize the allocation of land resources, promote the optimal combination of agricultural resources, improve the efficiency of rural resource allocation, and enhance the welfare effect of farmers. In addition, green finance can provide green consumption, green employment, and green income, providing farmers with more high-quality choices and improving their quality of life and happiness.

4. Analysis of the current situation of green finance promoting rural revitalization 

4.1. Green finance helps to increase the scale of rural industries

Green finance has provided a strong driving force for the comprehensive revitalization of rural areas in the process of achieving the "dual carbon" goals. With the support of green finance, there were 1828 state-owned farms in China in 2021, with an increase of 324000 employees and a total agricultural output value of 423.03 billion yuan, a year-on-year increase of 10.56%. At the same time, the country has built 50 modern agricultural industrial parks, 50 advantageous characteristic industrial clusters, and 298 important agricultural industrial towns, providing stable employment opportunities for over 15.6 million returning migrant workers. Green finance helps accelerate the development of rural industries, expands income channels, promotes steady development of rural industries, and promotes steady development of rural revitalization.
4.2. Green finance helps rural ecology become more livable

Green finance focuses on supporting green upgrading industries and ecological environment industries, expanding funding sources for the construction of rural ecology. In 2022, the balance of domestic and foreign currency green loans in China has reached 22.03 trillion yuan, an increase of 38.5% compared to the previous year. Among them, the balance of loans for infrastructure green upgrading, clean energy, and energy conservation and environmental protection industries reached 9.82 trillion yuan, 5.68 trillion yuan, and 3.08 trillion yuan, respectively, indicating that green finance has become the main force in supporting rural ecological construction. Meanwhile, many scholars such as Zhu Yaxi et al. (2023) have conducted empirical analysis from the perspective of green finance, combined with the spatial Durbin model, to verify that China's green finance has played a positive role in promoting the construction of rural ecological civilization. Tan Zhongming et al. (2023) used spatial econometric models to find that the development of green finance can significantly improve ecological welfare performance, facilitate the integrated development of "economy environment welfare", and help rural ecology become more livable.

4.3. Green finance assists in the effective and rapid formation of rural civilization and governance

Green finance education and green finance regulations are important pillars of rural financial social norms, which can shape a civilized rural atmosphere and promote effective rural governance. In 2022, the National Development Bank will issue 12 billion yuan of green financial bonds under the theme of "green upgrading of infrastructure", "Bond Connect", to help promote green upgrading of infrastructure and green development of transportation system, and promote the civilized progress of rural society. In 2022, the number of internet users in China has reached an astonishing 1.067 billion, of which 297 million are rural internet users. The internet penetration rate has reached 75.6%, and in rural areas, the internet penetration rate has also reached 59.2%. At the same time, the Chinese government is actively promoting the construction of green finance information websites, aiming to disseminate the concept, policies, and achievements of green finance to the public, which will help promote the effective formation of rural culture and governance.

4.4. Green finance helps farmers increase their income year by year

A green loan that revitalizes the economy and enriches the people is a vivid portrayal of the development of green finance in China. Green credit is an important component of green finance in China, which helps farmers increase their income year by year in rural revitalization. For example, Guizhou Changshun United Society provided financial precision poverty alleviation credit with a total amount of 263.63 million yuan through credit fund support, including a green industry loan of 37.9 million yuan, a loan for impoverished households of 22.573 million yuan, and an increase in agricultural income of 10.15 million yuan. Meanwhile, green insurance, as an important green financial tool, has played an important role in increasing farmers' income. As of the end of 2020, Dadi Insurance has provided anti poverty insurance services to 26 provinces, covering 1.5459 million people.

5. Analysis of the problem of green finance promoting rural revitalization

5.1. The government policy system is incomplete

The government currently lacks a comprehensive top-level design and policy and regulatory incentives in the legal system construction of green finance to promote rural revitalization and development, resulting in the regulatory role of the mechanism not being fully reflected. And the government's insufficient promotion of green finance has led to a shallow understanding of it in rural areas. Even some departments lack rationality in formulating green finance service standards, which hinders the promotion of the system of green finance to promote rural revitalization and development. At the same time, the funds supported by green finance for rural revitalization mainly come from national agricultural fiscal expenditures and policy finance, but the lack of social capital participation leads to a single channel of funding, which limits the amount of capital that green finance can support rural revitalization.
5.2. Financial institutions have been less supportive

From the perspective of existing financial products, green financial products supporting rural revitalization are scarce, with problems such as short term and low quota, and farmers can obtain limited green financial credit service products. From the perspective of financial support, only a few agriculture-related financial institutions, such as agricultural development banks and rural credit cooperatives, really use green finance to support agricultural development, while other financial institutions have carried out relevant businesses, but the funds have not flowed to agriculture, and there is a phenomenon of "duplicity". From the perspective of capital supply and demand, there is a conflict between the capital demand for rural revitalization and the supply of green finance. Due to the uncertain return rate, long construction cycle and high risk of green projects, financial institutions lack the enthusiasm to participate, resulting in insufficient endogenous supply power [22].

5.3. The participation of agricultural management subjects is not high

Agricultural operators lack understanding and trust in financial institutions, which leads to their unwillingness to borrow from formal financial institutions, resulting in information asymmetry barriers and low participation of agricultural operators. Agricultural operators are facing serious problems of loan abandonment, and farmer loans exhibit obvious seasonal and singular characteristics. At the same time, income is greatly affected by the external environment, and the uncertainty of repayment also increases accordingly, leading to most agricultural operators choosing to abandon loans more conservatively[23]. Due to the weak nature of agriculture, rural areas, and farmers, as well as the limited collateral for agricultural operators, it is difficult for them to obtain loans with larger amounts and longer terms, resulting in lower enthusiasm for participating in green finance.

6. Analysis of the reasons for green finance to boost rural revitalization

6.1. In terms of Government policies

At present, the laws and regulations of agricultural green finance are not perfect, resulting in the lack of clear guidance and basis for financial institutions to carry out relevant business, and it is difficult to effectively control risks and avoid legal disputes [24]. Secondly, there are relatively few policy documents on the integration of green finance and rural revitalization, lacking top-level design and incentive and constraint mechanisms, and no systematic integration has been formed. In addition, the government has done little to introduce complex talents in green finance, lacking talents with the ability to identify and control green finance projects, and insufficient reserves of high-tech talents and scientific researchers.

6.2. In terms of Financial institutions

The green finance risk sharing mechanism of financial institutions is not perfect, and the lack of effective risk assessment and pricing mechanism makes it difficult to accurately assess the impact of green finance on the development of rural industries. This is difficult to provide scientific and reliable data support for green finance policies, and also makes various green finance participants lack incentives and constraints, and the actual effect of green finance and the institutional guarantee for preventing and resolving potential risks become weak [25]. The adaptability of the green financial support system is low. Judging from the development and service innovation of green financial products at the present stage, the application depth of green bonds, green loans and other products is insufficient and the innovation mode is lagging behind. The financial products and service mode are relatively simple and cannot meet the relevant investment and financing needs, and the support for rural revitalization and development is limited.

6.3. In terms of agricultural management entities

Many regions and households are still in a small-scale agricultural economy stage, lacking sufficient ability to withstand commercial risks. The study by Luo Hehua and Xie Jinyuan (2020) shows that the average score of farmers in financial behavior, financial skills, financial awareness, and knowledge is only 18.043, while the score of poor farmers is as low as 13.277, indicating that the overall financial quality level of most farmers is relatively low. Furthermore, there is a lack of effective
information exchange and cooperation between agricultural management entities, commercial banks, and village committees, which makes it difficult to meet the information needs of agricultural management entities and puts their farmers in a disadvantaged position. This reduces the trust and acceptance of green financial products by agricultural operators [26].

7. Policy recommendations for accelerating green finance to promote rural revitalization

7.1. Improve the green finance policy system and optimize the business environment for green industries

The government should clarify the green direction of rural development, further optimize the green finance policy system, accelerate the construction of the evaluation system, and establish a mandatory disclosure system for environmental information. At the same time, a green project database should be created based on local characteristics and industrial needs, and shared with financial institutions as an important information foundation for promoting rural revitalization [27]. However, due to the fact that financial institutions, as market entities, fundamentally pursue maximum benefits, the government needs to take measures to increase the enthusiasm of social capital to invest in green finance, including expanding the dimensions of fiscal subsidies and increasing preferential measures, in order to stimulate the enthusiasm of green finance investors and business entities, and better optimize the business environment of the green industry.

7.2. Consolidate financial infrastructure and improve the inclusive green finance system

To promote rural revitalization and development, we should strengthen the construction of financial infrastructure in rural areas. Guide and encourage various forms of new rural financial institutions to provide financial services to rural areas. Fully leverage the role of rural small and medium-sized banks in serving grassroots financial markets, and lay a solid foundation for the sustainable development of green finance. We also need to accelerate the improvement of the inclusive green finance system, while increasing innovation in rural green finance products and businesses. By comprehensively utilizing various green financial tools such as green credit, green bonds, green funds, green insurance, etc., we continuously reduce the cost and risk of providing green financial services for rural revitalization projects, significantly improving the efficiency and level of rural green finance. This approach can better meet the diversified and multi-level green financing needs in the process of rural revitalization [28].

7.3. Coordinate green financial resources and improve the income level of farmers

Green finance balances ecological and economic benefits, helps to curb environmental problems, increase farmers' income, and promote sustainable development of rural economy. Therefore, it is recommended to implement tax incentives for green finance such as green credit and carbon finance. At the same time, in order to incentivize green projects, especially high-risk low return projects, a green development incentive mechanism should be established, green financial resources should be fully coordinated, and the popularization of green finance in rural areas should be promoted. In the fields of agriculture and rural areas, we are actively expanding the scope of collateral, aiming to provide more competitive interest rates, higher loan amounts, and more flexible loan terms for eligible green agricultural operators. In addition, we are also vigorously developing the loan business for new agricultural operators, promoting green certification work, and providing preferential green financial products and services for certified entities. At the same time, we continuously strengthen cooperation with insurance institutions, further improve the risk sharing mechanism of green agriculture, and more effectively support sustainable agricultural development, thereby indirectly increasing the income level of farmers.

8. Conclusion

Through reviewing literature on green finance promoting rural revitalization, it was found that domestic scholars have conducted comprehensive and in-depth discussions based on their respective academic perspectives. But at the same time, there are some practical shortcomings that can be deepened and expanded from the following perspectives. From a research perspective, green finance is a key topic of concern for scholars, and rural revitalization has always been a hot topic of academic
discussion, forming rich and mature theoretical systems. However, few scholars have discussed the relationship between green finance and rural revitalization. In terms of research methods, there is more theoretical analysis on green finance and rural revitalization, but less empirical analysis, especially less literature on empirical analysis from the perspectives of heterogeneity and threshold effects. In terms of research content, scholars have conducted more research on the impact of green finance on rural revitalization at the national level, while there has been less research on the regional and provincial levels. There is also a need for further research on the mechanisms and specific paths of green finance in promoting rural revitalization.

The implementation of green finance policies will affect various aspects of rural revitalization. In order to overcome the difficulties of green finance development, accelerate its progress, and promote sustainable development of rural revitalization in China. According to the research results, future development will focus on the following three directions: firstly, policy research on promoting rural revitalization through green finance, exploring how to guide the flow of green financial resources to rural areas through policies, and promoting sustainable development of rural revitalization. This includes studying the government's policies in green finance and rural revitalization, as well as how to optimize these policies to better promote rural revitalization. Next is innovation in green finance, studying how to innovate green finance products and services to meet the diverse needs of rural development. For example, developing financial products such as green credit, green bonds, and green insurance that are suitable for rural environments, as well as providing green investment consulting services, will be a major research hotspot in the future. Finally, the synergy between ecological protection and economic development will be explored, exploring how to achieve sustainable economic development while protecting the rural ecological environment. This will enable a more comprehensive and in-depth study of the impact of green finance on rural ecological development, which will also become a focus of future research.

References