

Research on the Effect of Digital Inclusive Finance on the Development Level of Rural Economy in Anhui Province

-- From the Perspective of Common Prosperity

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Abstract

This article integrates digital inclusive finance and rural economic development into the same research framework, and combines the development process of digital inclusive finance and rural economic development in Anhui Province to explore the issue of digital inclusive finance empowering rural economic development. This article takes rural areas in various cities of Anhui Province from 2011 to 2021 as the research object, uses the Peking University Digital Inclusive Finance Index as the relevant variable, and combines factors such as industrial structure and urbanization rate to further analyze the relationship between the development level of digital inclusive finance and the level of rural economic development. The conclusion is that digital inclusive finance is conducive to achieving the goals of rural economic development in Anhui Province, and has a positive effect on improving the rural prosperity, sharing level, and sustainability of Anhui farmers.

Keywords

Inclusive Finance; Rural Economic Development; Rural Revitalization.

1. Introduction

The No. 1 central document of the Central Committee of the Communist Party of China in 2023-Opinions on the Key Work of Comprehensively Promoting Rural Revitalization in 2023 emphasizes that "let farmers share the fruits of reform and development", and strengthening policy guarantee is the fundamental to achieve this goal. The prerequisite for achieving rural economic development is the increase of farmers' income. Currently, the growth rate of farmers' income is slowing down, and the driving force of income growth is slowing down. How to increase this driving force has become a practical issue that must be considered. Previous studies have shown that digital inclusive finance has significant advantages in lowering financial transaction thresholds, promoting information flow and price discovery, and bridging the "last mile" of financial services. In turn, it can significantly alleviate income and wealth inequality, and have a positive impact on rural economic development. However, there are obvious shortcomings in existing research, such as the lack of research on provincial data when incorporating digital finance and rural economic development into one research framework, and the failure to conduct in-depth research on the strategies of digital inclusive finance to support rural economic development in Anhui Province.

Rural areas are a vast expanse of land and contain endless endogenous vitality. A large number of idle or underutilized resources may become important accelerators for their economic development, but farmers lack the funds and guarantees to leverage these resources. Digital inclusive finance can effectively drive the flow of financial products and services to the rural

market, better provide farmers with the necessary income growth momentum and practical security, and optimize and adjust the distribution structure, thereby better promoting the sharing of reform and development achievements among farmers. The digital age has brought more possibilities to our society, and shared thinking has greatly reduced the cost of using resources. One idea may broaden a channel for farmers to increase income and become rich. Especially with the continuous development and improvement of the internet financial system, the effectiveness of digital inclusive finance in achieving common prosperity for farmers and rural areas has received more attention.

Anhui is a typical agricultural province. According to 2021 data, Anhui Province has 40.6% of the rural permanent population, and the per capita disposable income of rural permanent residents is 18368 yuan, an increase of 10.5% compared to the previous year, exceeding 9% of urban permanent residents. However, since 2019, the absolute income gap has slowly increased, and the driving force for farmers' income growth needs to be sustained. In recent years, with the continuous efforts of the Anhui Provincial Government and its various parties, the development of digital inclusive finance in Anhui Province has shown the characteristics of diverse service subjects, wide service coverage, and high usage rate of mobile internet payments. However, there are still some problems in the development process of rural inclusive finance. For example, the development of inclusive financial services in regions and institutions is uneven, and rural financial products and services are still insufficient. Moreover, due to the insufficient extension of the primary industry towards the rear and the insufficient expansion of the secondary industry towards both ends, the development of the tertiary industry in Anhui Province towards the high-end is lagging behind, the interest linkage mechanism is not sound, and the problems of small and scattered, small and low, and small and weak are prominent. The task of empowering rural industries to transform and upgrade through digital inclusive finance is arduous. This article takes rural areas in various cities of Anhui Province from 2011 to 2021 as the research object, uses the Peking University Digital Inclusive Finance Index as the relevant variable, and combines factors such as industrial structure and urbanization rate to further analyze the relationship between the development level of digital inclusive finance and the level of rural economic development.

2. Literature Review

Related studies have found that residents' entrepreneurship, optimization and upgrading of industrial structure, and technological innovation of enterprises are the positive impacts brought by digital inclusive finance, ultimately promoting rural economic development. Among them, the depth of use and degree of digitization have a greater impact than the breadth of coverage (Yu Fengqin, Yang Wenxian, 2022). For the development of rural economy, digital inclusive finance not only has the robustness of promotion, but also has a positive spatial spillover effect. Its development in surrounding areas can also have an impact on the local area (He Wenbin, Wang Kefan, 2023). One of the test indicators for rural economic development is the income gap between urban and rural areas and regions. Existing research on this aspect roughly has the following views: firstly, the effectiveness of digital inclusive finance in reducing poverty in rural areas. The improvement of its index significantly reduces the probability of poverty occurrence, and its role is more obvious in the central and eastern regions and high educated groups (Zhang Zhiyuan, Li Xuan, 2022); Secondly, the poverty reduction effect of digital inclusive finance is non-linear. When the level of rural economic development is above a certain level, there is a marginal decrease in poverty reduction (Gong Qinyi, Cheng Xuezheng, 2018); Thirdly, digital inclusive finance can narrow the urban-rural gap due to the "digital dividend" brought by its development (Zhou Li et al., 2020), but its development level needs to be matched with the socio-economic level to better play its role (Yin Yingkai, Chen Naiqing,

2022). The use of digital technology to achieve financing, payment, and investment can be considered as digital finance. The huge user base of financial platforms and the credit system under the background of big data can greatly reduce the search and transaction costs of financial products and services, enhance the development of inclusive finance and become the biggest advantage of digital finance (Huang Yiping, Huang Zhuo, 2018). Scholars have constructed panel data from 11 cities and 135 counties in Hebei Province from 2014 to 2020 to demonstrate the positive impact of digital inclusive finance on the common prosperity of farmers and rural areas in the Hebei region (Yang Ping, 2023). In the study of digital inclusive finance in the Yangtze River Economic Belt, it was found that its promoting effect on reducing urban-rural income is mainly due to the breadth of coverage, and the urban-rural income gap needs to be greater than a certain degree in order for digital inclusive finance to have a convergence effect (Gao Kang et al., 2022). In the data analysis of 4 cities and 30 counties in western Shandong, it was found that the development of digital inclusive finance has significantly promoted economic growth, but there are still certain regional differences (Wang Shujuan and HuoShiyin, 2022).

3. Research Design

3.1. Sample Selection and Data Sources

This study selected data from various cities in Anhui Province from 2011 to 2021 as the initial research sample. The data mainly comes from the National Bureau of Statistics' China Statistical Yearbook, China Rural Statistical Yearbook, and the Fourth Peking University Digital Inclusive Finance Index over the years. The data was processed using STATA17.0 software. In order to reduce the impact of abnormal data on the overall data, this study conducted 1% and 99% tail reduction treatments on the relevant continuous variables.

3.2. Variable Selection

Table 1. Variable Definition

| | Variable Symbol | Variable | Variable Declaration |
|----------------------|-----------------|--|---|
| Explained Variable | RED | Rural Economic Development Level in Anhui Province | Per capita disposable income of rural residents |
| Explanatory Variable | DFI | Digital Inclusive Finance Level | Digital Inclusive Finance Index |
| Control Variable | YEAR | Time | 2011-2021 |
| | IS | Industrial Structure of Anhui Province | (Value added in the secondary industry+value added in the tertiary industry)/GDP |
| | URB | Urbanization rate in Anhui Province | Regional urban population/total regional population |
| | GDP | Degree of Rural Economic Development in Anhui Province | The logarithm of per capita real GDP |
| | FD | Development level of traditional rural finance in Anhui Province | Financial Industry Value Added/GDP |
| | AFE | Financial support for agriculture in Anhui Province | Local fiscal expenditure on agriculture, forestry, and water affairs/GDP |
| | EDU | Rural Education Level in Anhui Province | The logarithm of the average number of students in higher education per 100000 population |

This study selects the level of rural economic development in Anhui Province as the dependent variable and the level of digital inclusive finance as the explanatory variable. The level of rural economic development will be influenced by many factors. Referring to existing research, this study selected 7 indicators as control variables: year, industrial structure, urbanization rate, economic development level, traditional financial development level, fiscal support for agriculture, and education level. The specific variable definitions are shown in Table 1.

3.3. Model Construction

To explore the impact of digital inclusive finance on the level of rural economic development from the perspective of rural economic development, this study constructs the following econometric model:

$$RED_{it} = \beta_0 + \beta_1 DFI_{it} + \sum Control_{it} + \varepsilon_{it} \tag{1}$$

Among them, RED_{it} is the dependent variable, which is the level of rural economic development in prefecture level cities of Anhui Province in year t; β₀, β₁ is a regression parameter; DFI_{it} is the explanatory variable, which refers to the level of digital inclusive finance in prefecture level cities of Anhui Province in year t; Control is the control variable; ε It is a random interference term.

3.4. Descriptive Statistics

The descriptive statistical results between variables are shown in Table 2.

Table 2. Descriptive Statistics

| Variable | Observations | Mean value | Maximum value | Minimum value | Median | Standard deviation |
|----------|--------------|------------|---------------|---------------|---------|--------------------|
| RED | 186 | 12786.282 | 27202 | 5638.38 | 11944 | 4563.331 |
| DEI | 186 | 189.741 | 350.165 | 33.07 | 197.974 | 75.181 |
| IS | 186 | 0.883 | 0.982 | 0.727 | 0.889 | 0.06 |
| UBR | 186 | 0.539 | 0.823 | 0.331 | 0.537 | 0.109 |
| GDP | 186 | 10.613 | 11.674 | 9.443 | 10.575 | 0.513 |
| FD | 186 | 0.046 | 0.092 | 0.01 | 0.048 | 0.017 |
| AFE | 186 | 239.939 | 602.115 | 0.022 | 237.218 | 137.06 |
| EDU | 186 | 9.117 | 11.09 | 3.559 | 9.622 | 1.617 |

From Table 2, it can be seen that RED (per capita disposable income of farmers) is an indicator to measure the level of rural economic development in Anhui Province, with a standard deviation of 4563.331. This indicates that there are significant differences in rural economic development levels among different prefecture level cities and years in Anhui Province. The standard deviation of DFI (Digital Inclusive Finance Level) reached 75.181, indicating significant differences in the development of digital inclusive finance among different prefecture level cities and years in Anhui Province.

4. Empirical Analysis

4.1. Correlation Analysis

The correlation coefficient matrix shown in Table 3 shows that the quantity, quality, and level of digital inclusive finance are positively correlated with the level of rural economic

development. At the same time, the industrial structure, urbanization rate, economic development level, traditional financial development level, fiscal support for agriculture, and education level are significantly correlated with the level of rural economic development at a level of 1%, indicating that they will have a certain impact on rural economic development.

Table 3. Correlation Analysis

| | RED | DFI | IS | UBR | GDP | FD | AFE | EDU |
|-----|-----------|----------|-----------|-----------|-----------|--------|-------|-----|
| RED | 1 | | | | | | | |
| DFI | 0.850*** | 1 | | | | | | |
| IS | 0.597*** | 0.428*** | 1 | | | | | |
| UBR | 0.602*** | 0.393*** | 0.880*** | 1 | | | | |
| GDP | 0.815*** | 0.602*** | 0.889*** | 0.851*** | 1 | | | |
| FD | 0.617*** | 0.764*** | 0.338*** | 0.228*** | 0.409*** | 1 | | |
| AFE | -0.302*** | -0.102 | -0.662*** | -0.664*** | -0.596*** | -0.015 | 1 | |
| EDU | 0.194*** | -0.005 | 0.336*** | 0.421*** | 0.335*** | -0.063 | 0.008 | 1 |

Note: *** indicates significant at 1%, ** indicates significant at 5%, and * indicates significant at 10%.

4.2. Regression Analysis

As shown in the model in Table 4, the level of digital inclusive finance has a positive impact on the development level of rural economy. Resident entrepreneurship, optimization and upgrading of industrial structure, and technological innovation of enterprises are the positive impacts brought by digital inclusive finance, ultimately promoting rural economic development. The forces of depth of use and digitization are greater than the coverage breadth. For the development of rural economy, digital inclusive finance not only has the robustness of promotion, but also has a positive spatial spillover effect. Its development in surrounding areas can also have an impact on the local area.

Table 4. Regression Analysis

| Variable | Coefficient | Standard Error | t-values | P-value | Significance |
|----------|-------------|----------------|----------|---------|--------------|
| DFI | 24.522 | 10.729 | 2.290 | 0.022 | ** |
| IS | -36126.690 | 5809.583 | -6.220 | 0.000 | *** |
| URB | 5468.785 | 2755.197 | 1.980 | 0.047 | ** |
| GDP | 5818.899 | 933.260 | 6.240 | 0.000 | ** |
| FD | -8210.147 | 11432.160 | -0.720 | 0.473 | |
| AEF | -2.116 | 1.622 | -1.300 | 0.192 | |
| EDU | 263.792 | 151.021 | 1.750 | 0.081 | * |
| CONS | -27065.590 | 6639.641 | -4.080 | 0.000 | *** |

Note: *** indicates significant at 1%, ** indicates significant at 5%, and * indicates significant at 10%.

4.3. Result Analysis

This study takes cities at various levels in Anhui Province from 2011 to 2021 as the research object. Through empirical research on the relationship between digital inclusive finance and the level of rural economic development, it is found that there is a significant positive

correlation between the overall development level of digital inclusive finance and the level of rural economic development. That is, the wider the coverage and deeper the use of digital inclusive finance, the higher the overall development level, and the higher the level of rural economic development.

5. Conclusion and Suggestions

5.1. Conclusion

The development of rural economy is a global and historical task related to the comprehensive construction of a socialist modernized country. It is the overall focus of the "three rural" work in the new era and a major task for achieving the great rejuvenation of the Chinese nation. As a major agricultural province in China, Anhui Province should firmly deepen rural industrial reform and play a leading and exemplary role in the rural industrial revitalization strategy. To achieve economic growth and happiness for the people, we firmly believe that through the power of financial technology, digital finance can promote technological innovation, thereby driving economic growth and the transformation and upgrading of rural industries in rural areas of Anhui Province; By improving the inclusiveness of digital finance and cultivating the financial literacy of farmers and rural industries, we can promote the prosperous development of rural economy, making digital finance the driving force for the development of rural economy in Anhui Province, and promoting the rapid development of rural economy in Anhui Province.

5.2. Suggestions

The key issue of rural economic development is also the fundamental contradiction of socialist modernization society. The development of rural economy is not the prosperity of a few people, but the prosperity of the entire people. To achieve economic growth and happiness for the people, we firmly believe that through the power of financial technology, digital finance can promote technological innovation, thereby driving economic growth and people's wealth growth to create "wealth"; By improving the inclusiveness of digital finance and cultivating financial literacy in rural areas to enjoy "wealth", digital finance can become a lever for rural economic development, and promote rural areas to move forward on the path of rural economic development. Therefore, this article proposes the following suggestions:

(1) Promote rural financial reform. The development of agricultural economy cannot do without the investment of funds. Following the rural revitalization strategy, we will further coordinate financial reform, increase investment in rural economy, establish a complete financial service framework, actively develop rural financial markets, and form a good rural financial system. Improve policies and regulations, scientifically plan and guide the development of rural finance, and use technological means such as big data and manual labor to improve farmers' financial information, achieve financial information sharing, and provide guarantees for rural financial development.

(2) Improve the regulations related to digital finance. The concept of rural digital finance needs to be effectively controlled in order to fully leverage its advantages. Therefore, it is necessary to actively improve the relevant laws and regulations of digital finance, flexibly change management models based on the economic conditions and development characteristics of different regions, and avoid situations where policies are not compatible with local conditions.

(3) Develop reasonable monetary and fiscal policies. The biggest problem faced by China in achieving rural economic development is the unequal accumulation of wealth, and the middle-income group is the key group for rural economic development. The inclusiveness of digital finance can efficiently and low-cost coordinate with corresponding monetary and fiscal policies, integrating the enormous advantages of digital finance with reasonable monetary and fiscal policies, thereby strengthening its impact on financial activities and the overall economy.

(4) Improve infrastructure construction. A sound infrastructure construction is the foundation for achieving digital finance. Therefore, accelerating the construction of rural infrastructure, improving the construction of rural information network platforms, achieving data sharing and interoperability between regions, laying a solid hardware foundation for the construction of digital finance, and forming a good rural digital economic ecosystem.

(5) Strengthen the construction of digital finance talents. The development of rural economy cannot be separated from talent reserve work. The development of rural digital finance should attach importance to the construction of information technology talent teams. The government can strengthen the attraction of talents by improving the salary and working environment of professional talents. At the same time, it can also improve the local education level, strengthen manual training, organize relevant technical exchange meetings to enhance the professional and technical level of employees, and fully transform existing resources.

(6) Actively introduce new technologies. Under the concept of digital finance, emphasis is placed on the integration of diverse technologies. China's existing technologies such as big data and cloud computing can effectively innovate intelligent development models, improve the production efficiency of rural economy, and effectively combine the concept of digital finance with rural economic development to achieve the goal of mutual coordination and rural economic development.

(7) Enhance awareness of digital finance. The long-term and effective development of rural digital finance not only relies on policy promotion, but also requires the active cooperation of the masses. Farmers should also actively respond to government policies, actively learn financial knowledge, actively participate in financial activities, and create a good digital financial environment operating system.

Acknowledgments

This study was supported by the Provincial College Student Innovation Training Program of Anhui University of Finance and Economics (No.: S202210378031).

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