

Research on the Impact of Digital Inclusive Finance on the Income Gap between Urban and Rural Areas under the Background of National Unified Market

Ruiqi Zhang *

School of Finance, Anhui University of Finance and Economics, Anhui, China, 233030

*Corresponding Author: 386796446@qq.com

ABSTRACT

In 2022, the "Opinions of the Central Committee of the Communist Party of China and the State Council on Accelerating the Construction of a National Unified Market" proposed the concept of a "unified market", which can effectively allocate resources to maximize social welfare. A national unified market with fair competition, a competitive venue and mechanism with non-monopoly and fair trading characteristics and functions. Since the reform and opening up, China's economy has achieved sustained high-speed growth, and the goal of high-quality development in the new era has shifted to solving the problem of imbalanced and insufficient development, narrowing the gap between urban and rural regional development, achieving comprehensive human development, and achieving common prosperity for all people. In depth exploration of how to further promote rural revitalization and common prosperity has important practical significance and value. This article conducts theoretical analysis to propose research hypotheses, collects digital inclusive finance index and urban-rural income related data from 2013 to 2022, constructs the Theil index to measure urban-rural income gap, constructs a panel data model, studies the impact of digital inclusive finance on urban-rural income gap, verifies hypotheses, and concludes that digital inclusive finance should focus on development in the context of a unified national market.

KEYWORDS

National unified large market; Digital inclusive finance; Urban-rural income gap; Theil index

1. INTRODUCTION

In 2022, the "Opinions of the Central Committee of the Communist Party of China and the State Council on Accelerating the Construction of a National Unified Market" proposed the concept of a "unified market", focusing on enriching market connotations, optimizing market services, and improving market support. An efficient and standardized national unified market, with unified policies, consistent rules, and coordinated execution, can effectively allocate resources to maximize social welfare. A national unified market with fair competition, a competitive venue and mechanism with non-monopoly and fair trading characteristics and functions.

Since the reform and opening up, China's economy has achieved sustained high-speed growth, and the overall income level of residents has significantly increased. However, with the change of industrial structure and the reduction of cheap resources, China's economic growth has gradually entered a new stage of slowdown, and hidden contradictions in distribution, employment, taxation, and other aspects continue to emerge. Especially after China's great victory in poverty alleviation, the goal of high-quality development in the new era has shifted to solving the problem of imbalanced and insufficient development, narrowing the gap between urban and rural regional development,

achieving comprehensive human development, and achieving common prosperity for all people. In depth exploration of how to further promote rural revitalization and common prosperity has important practical significance and value.

As an important means of factor circulation and resource allocation, rural finance is one of the important measures to support the economic development of rural areas and help rural revitalization. The proposal and practice of "inclusive finance" provide new directions for rural finance to better promote income growth of rural residents and promote rural revitalization. With the rapid development of mobile Internet, cloud computing, blockchain and other technologies in China, inclusive finance has entered a new digital stage. With the acceleration of digitalization, inclusive finance has gradually developed into a new form of digital inclusive finance. The 14th Five Year Plan for National Economic and Social Development of the People's Republic of China points out: "Accelerate the construction of digital rural areas, build a comprehensive information service system that covers agriculture and rural areas, establish a mechanism for inclusive agricultural information services, and promote the digitization of rural management services." Faced with the serious supply-demand mismatch, difficult policy implementation, high supply costs, insufficient sustainability, and low marginal efficiency of agricultural and rural financial services in traditional financial services, digital inclusive finance can reduce the cost constraints of financial services, empower the agricultural financial market, improve the agricultural socialized service system to promote agricultural efficiency and farmers' income, thereby promoting high-quality development of agriculture and rural areas, and effectively connecting poverty alleviation with rural revitalization.

In terms of the role of digital inclusive finance, Shiller (2013) analyzed from both theoretical and empirical perspectives that digital inclusive finance can significantly reduce the costs of financial services, thereby accelerating rural poverty alleviation and achieving inclusiveness. Lu Panpan (2017) analyzed panel data from 31 provinces in China over the past decade and found that they have significant poverty reduction effects. Overall, digital inclusive finance helps to narrow the income gap between urban and rural areas. Song Xiaoling (2017) believes that digital inclusive finance can narrow the urban-rural income gap by reducing threshold effects, alleviating exclusion effects, and leveraging poverty reduction effects. Zhou Li et al. (2020) analyzed the impact of digital inclusive finance on the urban-rural income gap using quantile regression method and found that the development of digital inclusive finance is conducive to narrowing the urban-rural income gap, and this effect is more significant at the low income percentile. Zhang Xun et al. (2019) compared and analyzed the development level of digital inclusive finance in regions with different levels of economic development, as well as its impact on local income. The conclusion that digital inclusive finance develops faster in economically underdeveloped areas and has a greater impact on improving household income in these areas has been drawn, proving that digital inclusive finance has the ability to narrow income gaps and achieve inclusive growth. Liang Shuanglu and Liu Peipei (2019) discussed the regional differences in the impact of digital inclusive finance on the urban-rural income gap in China. The results showed that the digital inclusive finance system in the western region had the greatest impact on the urban-rural income gap, followed by the eastern region. The deduction effect in the central region was not significant. In addition, some scholars have concluded through research that the development of digital inclusive finance does not have a significant effect on reducing income, and may even lead to increased income inequality. According to Aron (2018), although digital inclusive finance has improved financial inclusiveness, its effect on increasing the income of low-income groups is not yet significant, and its role in alleviating income inequality needs further testing. Choudie et al. (2018) found that elderly people with disabilities and low-income families still lag behind in using and adopting digital financial services such as mobile banking, which hinders the revenue enhancement function of mobile banking and brings new income inequality to these groups.

In summary, this article intends to use 31 provinces and cities in China from 2013 to 2022 as observation samples, and use the Peking University Digital Inclusive Finance Index to construct the

Theil Index to measure the urban-rural income gap, exploring the impact of digital inclusive finance on the urban-rural income gap from a macro perspective.

2. THEORETICAL ANALYSIS AND RESEARCH HYPOTHESES

Inclusive finance refers to providing appropriate and effective financial services to every industry and group with financial needs, at an economically affordable cost, in accordance with fair needs and the principle of sustainable business development. Digital inclusive finance provides comprehensive financial services to low-income individuals in rural and urban areas through an online, digital, intelligent, and big data operation model, making financial services more convenient, efficient, and better meeting the financial needs of consumers. Compared to traditional finance, inclusive finance has a wider coverage and focuses more on the specific needs of rural residents, low-income groups, and other groups in the financial field, providing more efficient and high-quality financial services for various groups of people.

Digital inclusive finance refers to the use of digital technology to provide comprehensive financial services to low-income individuals in rural areas and cities. Digital inclusive finance can lower the threshold for lending, expand the scope of funding supply, and thus alleviate poverty; On the other hand, digital inclusive finance can provide rich and diverse financing channels, solve the problems of information asymmetry and high transaction costs in traditional credit models, and enable low-income groups to better integrate into social production. In addition, digital inclusive finance can also reduce transaction costs, achieve optimal capital allocation, and contribute to economic growth. At the same time, it can optimize industrial structure and improve industrial efficiency. According to McKinnon and Shaw's financial deepening theory, as a developing country, if China wants to promote its own economic development, it needs to abandon financial repression policies, appropriately reduce intervention in financial markets and systems, and play the role of the market. Digital inclusive finance can improve the gap in financial service access between urban and rural areas in China, and narrow the income gap between urban and rural areas. On this basis, a hypothesis is proposed that the development of digital inclusive finance has a promoting effect on reducing the wealth gap between urban and rural residents in China.

3. RESEARCH DESIGN

3.1. Explained Variable: Urban-Rural Income Gap (Theil)

This article uses the Theil index to measure the income gap between urban and rural residents. Compared to the Gini coefficient or the urban-rural income ratio, the advantage of the Theil index is that it can reflect income changes at both high and low ends, as well as differences in urban and rural population structure and migration, which can more objectively, truthfully, and comprehensively show the income gap between urban and rural residents. The formula for calculating the Theil index is as follows:

$$Theil_{it} = \sum_{i=1}^2 \left(\frac{y_{it}}{y_t} \right) \times \ln \left[\frac{y_{it}}{y_t} / \frac{x_{it}}{x_t} \right] \quad (1)$$

In the formula, $i=1$ represents urban areas, and $i=2$ represents rural areas; y_{1t} is the total income of urban residents in period t , y_{2t} is the total income of rural residents in period t , and y_t is the total income of urban and rural residents in period t ; x_{1t} is the number of urban residents in period t , x_{2t} is the number of rural residents in period t , and x_t is the total number of urban and rural residents in period t .

3.2. Explanatory variable: Digital Inclusive Finance Index (DIFI)

Most existing literature on digital inclusive finance is based on the Inclusive Finance Indicators released by Peking University. Compared with other measurement methods, the Digital Finance Research Institute of Peking University has constructed a more comprehensive measurement index system, which includes the degree of digitalization of digital finance, the coverage range of digital finance, and the application of digital finance. Based on this, this article uses the digital inclusive finance index it measures as the main explanatory variable. In areas with higher levels of digital inclusive finance development, this indicator is also relatively large.

3.3. Control Variables

3.3.1. Industrial Structure (IS)

In the urban-rural dual model, the proportion of the primary industry is relatively low, and farmers have more job opportunities and higher income in the secondary and tertiary industries. The ratio is an important factor affecting the income gap among residents, so the industrial structure is calculated by the ratio of the total output value of the secondary and tertiary industries in each region to the total output value at the end of the year in each region.

3.3.2. Economic development level (GDP)

At the beginning of China's economic development, resources were mainly concentrated in cities, with a significant increase in urban income levels. When the income of farmers reaches a certain level, it will accelerate the increase. Therefore, this article chooses per capita GDP as the measurement unit and logarithmizes the data series to overcome the possible heteroscedasticity problem in the data.

3.3.3. Degree of openness to the outside world (OPEN)

One of the "three carriages" driving economic development is exports. Our country's development of export processing can bring more job opportunities to farmers, thereby increasing their income. In addition, the more intense the competition in the dry market, the lower the price of exported products, resulting in lower income for residents. However, ultimately, this will reduce the income gap between urban and rural areas. Therefore, we chose the ratio of import and export trade volume to regional GDP as the calculation indicator.

3.4. Model Settings

This article selects economic growth data from 31 provinces and cities from 2013 to 2022, sourced from the China Statistical Yearbook and the official website of the National Bureau of Statistics. Relevant information on digital inclusion is sourced from the Peking University Digital Inclusion Finance Index.

$$Theil_{it} = \alpha + \beta DFII_{it} + \delta Control_{it} + \chi_i + \mu_t + \varepsilon_{it} \quad (2)$$

In the formula, $Theil_{it}$ represents the urban-rural income gap; $DFII_{it}$ represents the level of development of digital inclusive finance; $Control_{it}$ is the control variable; β The coefficient of the development level of digital inclusive finance. If digital inclusive finance can narrow the urban-rural income gap, then β The value is negative; δ The coefficient of the control variable; i and t respectively represent the i -th region and the t -th year; χ_i represents the differences in cross-sections that do not vary with the region; μ_t represents the differences in cross-sections that do not vary with the year; ε_{it} is a random perturbation term that follows a zero mean normal distribution.

4. EMPIRICAL ANALYSIS

4.1. Descriptive Statistical Analysis

From a descriptive perspective, the numerical characteristics of the aforementioned indices were studied, leading to preliminary conclusions on the overall data (see Table 1).

Table 1. Descriptive Statistics of Variables

Variables	N	mean	SD	min	max
DIFI	310	277.5	80.27	115.1	460.7
Theil	310	0.0823	0.0367	0.0171	0.187
IS	310	62,000	30,855	22,089	189,988
GDP	310	1.423	0.746	0.670	5.280
OPEN	310	0.252	0.255	0.01000	1.260

As shown in Table 1, the average income gap between urban and rural areas in China is 0.0823, with a minimum of 0.0171 and a maximum of 0.187, indicating the existence of income gaps between urban and rural areas and between urban and rural areas. Overall, the income gap between urban and rural areas in China is gradually narrowing. The average level of inclusive finance in China is 277.5, with a standard deviation of 80.17. The lowest and highest values are 1155.1 and 460.7, respectively, with a significant difference in numerical values between the two. This leads to different levels of digital inclusive financial development in different regions of China.

4.2. Correlation Analysis

Preliminary conclusions can be drawn from the correlation analysis that digital inclusive finance has a narrowing effect on the urban-rural income gap, which can be analyzed.

Table 2. Correlation Analysis

	Theil	DIFI	IS	GDP	OPEN
Theil	1				
DIFI	-0.516	1			
IS	-0.709	0.685	1		
GDP	-0.321	0.323	0.547	1	
OPEN	-0.645	0.225	0.725	0.486	1

4.3. Empirical Analysis

Based on the model constructed in the previous text, Stata18 econometric software was used to simulate regression, and the results are shown in Table 3. Empirical research was conducted based on the regression results.

Table 3. Regression Results

	(1)	(2)	(3)	(4)
	Theil	Theil	Theil	Theil
DIFI	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
IS		0.000***	0.000***	0.000***
		(0.000)	(0.000)	(0.000)
GDP			0.017***	0.015***
			(0.002)	(0.002)
OPEN				-0.028***
				(0.006)
_cons	0.122***	0.117***	0.101***	0.113***
	(0.001)	(0.002)	(0.002)	(0.003)
N	310	310	310	310

The results show that at the 1% level, the impact of digital inclusive finance on narrowing the urban-rural income gap is significant, thus the hypothesis is valid. The main reason is that digital inclusive finance can utilize digital technology to provide comprehensive financial services to low-income individuals in rural and urban areas, thereby narrowing the income gap between urban and rural areas.

4.4. Robustness Testing

We conducted a robustness test on the panel data model by replacing the dependent variable with the Theil index using the urban-rural income ratio (GAP). The results are shown in Table 4, and the effect of digital inclusive finance on the urban-rural income gap is significant at the 1% level. Therefore, the robustness test passed.

Table 4. Robustness Test

	(1)	(2)
	Theil	GAP
DIFI	-0.000***	-0.002***
	(0.000)	(0.000)
IS	0.000***	0.000
	(0.000)	(0.000)
GDP	0.015***	0.170***
	(0.002)	(0.025)
OPEN	-0.028***	-0.249***
	(0.006)	(0.069)
_cons	0.113***	2.794***
	(0.003)	(0.041)
N	310	310

5. CONCLUSIONS AND SUGGESTIONS

Make full use of digital technology means, leverage the advantages of digital inclusive finance, bring high-quality financial services to rural and remote areas, further improve the accessibility of digital payments, micro insurance, and online credit, and enhance the awareness of financial services to fundamentally achieve "universality" and "benefit". Strengthening science and technology education to change the imbalance of teaching in rural areas and improve human capital, taking into account

factors such as the education level, ideological and cultural views of service recipients, so that different audience groups can conveniently and quickly enjoy comprehensive financial services.

Steadily and efficiently implementing the rural revitalization strategy, the impact of digital inclusive finance on the urban-rural income gap is limited by the level of urbanization. In order to better leverage the poverty reduction effect of digital inclusive finance, the level of urbanization should be continuously improved. One is to do a good job in deploying policies for zero threshold rural household registration in cities, so that eligible rural residents can settle down in cities, in order to promote the good development of the new type of urban-rural relationship between industry, agriculture, and rural areas. Secondly, it is also necessary to guide and encourage rural scientific and technological personnel to return to their hometowns to support modern agricultural construction, thereby driving more social public resources and financial resources to flow into traditional agricultural areas, and thus narrowing the income gap between urban and rural areas. Under the construction of a unified national market, the impact of digital inclusive finance on reducing the urban-rural income gap in different regions will become more consistent in the future, achieving maximum social welfare and optimal resource allocation.

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REFERENCES

- [1] Hu Yifan, Liang Yingting, Xu Tongyue. Research on the Strategy of Digital Inclusive Finance to Assist Rural Revitalization: Taking Microcredit as an Example [J]. China Business Review, 2022 (07): 87-93.
- [2] Zhu Xiaoyang. The Impact and Empirical Study of the Development of Digital Inclusive Finance on the Income Gap between Urban and Rural Areas [J]. Business Economics, 2022 (06): 176-179.
- [3] Song Xiaoling. Empirical Test on Reducing the Income Gap between Urban and Rural Areas through Digital Inclusive Finance [J]. Financial Science, 2017 (06): 14-25.
- [4] Zhou Li, Feng Dawei, Yi Xingjian. Digital Inclusive Finance and Urban Rural Income Gap: "Digital Divide" or "Digital Divide" [J]. Economist, 2020 (05): 99-108.
- [5] Zhang Xun, Wan Guanghua, Zhang Jiajia, He Zongyue. Digital Economy, Inclusive Finance, and Inclusive Growth [J]. Economic Research, 2019,54 (08): 71-86.
- [6] Liang Shuanglu, Liu Peipei. Digital Inclusive Finance and Urban Rural Income Gap [J]. Journal of Capital University of Economics and Trade, 2019,21 (01): 33-41.
- [7] Wang Shaoping, Ouyang Zhigang. The threshold effect of urban-rural income gap on real economic growth in China [J]. Chinese Social Sciences, 2008 (2): 54-66205.