Inclusive Financing's Development and Urban-rural Income Gap —Empirical analysis based on provincial panel data

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Abstract: With the further development of China's economy, the income of urban and rural residents has increased. At present, China's economy has changed from a stage of high-speed growth to a stage of high-quality development. However, uneven and insufficient regional development is still a problem that requires great attention. Inclusive Financing's development provides residents with more access to financial services and is one of the important ways to build a well-off society and develop the economy in recent years. Based on the Peking University Digital Inclusive Financing Index, this paper studies the relationship between the development level of Inclusive Financing and the income gap between urban and rural residents by constructing panel data of 31 provinces, cities and regions in China and establishing a model for empirical analysis. The study found that the development of Inclusive Financing has a significant impact on the income gap between urban and rural areas, among which the improvement of the level of Inclusive Financing in the economically developed eastern region has a very obvious effect on narrowing the income gap between urban and rural areas. However, blindly developing Inclusive Financing in the underdeveloped central and western regions will also cause the further widening of the income gap between urban and rural areas. The conclusion of this paper has certain positive significance for narrowing the income gap between urban and rural areas and promoting the development of Inclusive Financing.

1 Introduction

How to further narrow the income gap between urban and rural areas is a hot issue studied by experts in the economic field in recent years. Although the income of urban and rural residents has been rising since the reform and opening up, the gap has been gradually widening, and the dual economic structure of urban and rural division has not changed. The report of the 19th National Congress of the Communist Party of China in 2017 pointed out that the gap between urban and rural regional development and income distribution is still large, some outstanding problems of insufficient development imbalance have not yet been solved, and the quality and efficiency of development are still not high, all of which need us to focus on solving.

The concept of Inclusive Financing first appeared in the UN's vocabulary of promoting micro-credit in 2005. It is a financial system that can effectively and comprehensively serve all social strata and groups. The inclusive financial system believes that everyone should have access to financial services and everyone should participate in the economic development process, so as to realize the common prosperity of the society. And the inclusive financial system provides opportunities for low-income people, which is also of great significance in narrowing the income gap between urban and rural areas.

The Third Plenary Session of the 18th CPC Central Committee in 2013 established "developing Inclusive Financing" as a national strategy. In 2015, the State Council issued the Plan for Promoting the Development of Inclusive Financing (2016-2020). In recent years, the development of Inclusive Financing in our country has been supported by the government and the public. Vigorously developing Inclusive Financing is an important embodiment of the financial industry's support for the construction of a modern economic system and the enhancement of its ability to serve the real economy. It is also an important way to ease the contradiction between the people's growing demand for financial services and the inadequate and unbalanced financial supply. It is also an inevitable requirement for China to build a well-off society in an all-round way.

With the rapid development of science and technology, Digital Inclusive Financing has reduced the transaction costs of financial services through the advantages of digital technology, which is a new idea and new way for Inclusive Financing to develop innovation. With the use of information technology, the coverage of basic financial services continues to expand, so that low-income people can have more opportunities and more easy access to financial services, which is of great significance for the income growth of low-income people and thus narrowing the income gap between urban and rural areas.

However, the inclusive financial system is still facing

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many practical difficulties and challenges in its development. The uneven development in regions with economic levels has also affected the development of Inclusive Financing in some regions. However, the concept of digital Inclusive Financing, which has arisen in recent years, is facing greater controversy and restriction.

2 Literature review and theoretical analysis

In the existing literature, scholars have different views on whether Inclusive Financing and the digital Inclusive Financing developed in recent years can narrow the income gap between urban and rural areas.

Some scholars build panel data and models for empirical analysis, and think that the development of Inclusive Financing can effectively narrow the income gap between urban and rural areas. Allen(2016) found that developing Inclusive Financing can expand employment and raise income level^[1]. Zhang Xiaoyan (2016) measured the level of Inclusive Financing in China by using the relevant data of China's Internet finance, Inclusive Financing and urban-rural income gap from 2004 to 2014, and based on this, established a VECM model to empirically analyze the impact of Inclusive Financing's development on urban-rural income gap under the background of Internet finance. The research shows that there is a long-term equilibrium relationship between the development of Inclusive Financing and the income gap between urban and rural areas. Improving the development level of Inclusive Financing can significantly reduce the income gap between urban and rural areas, and the effect is lasting. There is also a mutual promotion effect between the two^[2]. Zhang Zihao (2018) constructed provincial spatial panel data from 2013 to 2015, and used spatial panel econometric model to empirically analyze the impact of digital Inclusive Financing on China's urban-rural income gap. The results show that the income gap between urban and rural areas in all provinces, autonomous regions and municipalities in China shows a significant spatial dependence on the whole, and shows "high spatial agglomeration" and "low spatial agglomeration" locally. Digital Inclusive Financing can significantly promote the narrowing of the income gap between urban and rural areas, improve the welfare level of low-income groups and help underdeveloped areas accelerate their development. And the decomposition indicators of digital Inclusive Financing can significantly reduce the urban-rural income gap^[3].

Some scholars believe that the level and stage of development in Inclusive Financing will have different effects on the income gap between urban and rural areas. Zhao Bingqi and others (2020) constructed the provincial panel data from 2011 to 2018, and selected a single threshold model to conduct an empirical analysis and research on the relationship between the two. They proposed that the development of digital Inclusive Financing will further widen the urban-rural income gap at a low level of digital Inclusive Financing, and play a

role in promoting the narrowing of the urban-rural income gap at a high level, but it is not statistically significant. When the level of digital Inclusive Financing is greater than the threshold value, the income gap between urban and rural areas in the regions with low economic development level will effectively narrow with the improvement of the level of digital Inclusive Financing^[4]. Xiong Deping (2020) selected the data and information of 31 provinces (autonomous regions and municipalities) in China from 2011 to 2018, constructed a fixed and random effect double regression model, and tested the impact of digital Inclusive Financing development on urban-rural income gap by using the empirical method of non-equilibrium effect test. According to the analysis of the results, the infrastructure construction in rural areas is relatively backward in less developed areas, the primitive accumulation of capital in urban areas is significantly higher than that in rural areas, and financial resources are concentrated in cities. On the whole, the income gap between urban and rural areas has not narrowed, but expanded^[5].

By combing the literature, some scholars believe that the impact of Inclusive Financing on residents' income is mainly due to the following reasons. First, the inclusive financial system covers a wider range. Especially after the development of Digital Inclusive Financing, groups with different income levels, especially low-income groups, have more access to financial services and have improved their awareness of financial products. Secondly, the development of Inclusive Financing has provided more people with financial services suitable for them. Many financial institutions have also innovated their products and businesses. Compared with the traditional bank savings income, residents are more inclined to invest in financial products. Third, with the development of digital Inclusive Financing, information technology has improved the efficiency and level of financial services. Through big data analysis and other means, the scheme analysis can be provided for different types of users, so as to reduce investment risks and financing costs for low-income groups, and thus encourage more residents to participate in the development of Inclusive Financing.

To sum up, the narrowing of the income gap between urban and rural areas needs to be driven by economic development, but there are still differences on whether inclusive financial system can play a role in narrowing the income gap between urban and rural areas. Moreover, due to the imbalance of regional economic development in our country, whether the impact of Inclusive Financing's development is always positive or negative in regions with different economic levels needs to be tested and proved. At present, Digital Inclusive Financing has opened up an innovative way for the development of Inclusive Financing, but how to graft relevant technologies with different regions so as to have a positive impact on residents' income and further narrow the income gap is still a problem that needs to be focused on..

3 Data sources and variable selection

3.1 Data sources

This paper selects the panel data of 31 provinces, municipalities and autonomous regions in China from 2010 to 2019. Among them, the data related to digital Inclusive Financing comes from "Digital Inclusive Financing Index of Peking University (2011-2018)", which is compiled by using the massive data of Ant Financial Service on digital Inclusive Financing, and mainly consists of indicators such as account coverage, payment business, credit business and insurance business. Other data such as urban and rural residents' income, economic growth and per capita GDP mainly come from China Statistical Yearbook, website of National Bureau of Statistics, website of local bureau of statistics and Wind database.

3.2 variable selection

1. Explained variable: urban-rural income gap (IG)
 This paper chooses the ratio of urban per capita disposable income to rural per capita disposable income to reflect the urban-rural income gap. The smaller the ratio, the smaller the income gap between urban and rural areas, whereas the more serious the income gap between urban and rural areas. According to the relevant data in China Statistical Yearbook, there were no statistics on per capita disposable income of rural residents before 2013, so the per capita net income of rural residents from 2010 to 2012 was selected for analysis.

2. Core explanatory variable: Inclusive Financing Index (IFI)

According to the report of Digital Inclusive Financing Index of Peking University (Phase II, 2011-2018) released by Digital Finance Research Center of Peking University in April 2019, the provincial digital Inclusive Financing index calculated by this method from 2011 to 2018 is selected as the explanatory variable of the model. And some missing data are supplemented by difference method. The index includes three first-level index

dimensions: coverage breadth, use depth and digitalization degree.

3. Control variables:

(1) Urbanization Level (PURB)

In recent years, urbanization has expanded rapidly, and the urban-rural dual economic structure has widened the income gap between urban and rural areas. The urbanization level is measured by selecting the ratio of urban population to total population.

(2) The level of economic development (RGDP)

The level of economic development in different regions will have an impact on the income of urban and rural residents. In this paper, the per capita GDP is selected to measure the level of economic development, and considering the dimension problem, the index is treated logarithmically.

(3) fiscal expenditure (TAX)

Fiscal expenditure can promote the development of different industries, thus affecting the income of urban and rural residents. When government expenditure tends to be urban, the income gap between urban and rural residents is likely to widen further. This paper measures this index by the proportion of fiscal expenditure to regional GDP.

(4) Industrial structure (IS)

The industrial structure is measured by the ratio of the added value of the secondary and tertiary industries to GDP in various provinces and cities.

(5) Education level (EDU)

At present, China's urban education level and teachers have obvious advantages compared with rural areas, so the education level also has an impact on urban and rural income. This paper selects the average number of students in colleges and universities per 100,000 population to measure the education level.

(6) Employment status (EMP)

The employment situation has a high correlation with the income of urban and rural residents. The high unemployment rate in rural areas and the low unemployment rate in urban areas will further widen the income gap between urban and rural areas. This paper selects the proportion of employed population to the total population to measure the employment situation.

Table 1 Descriptive statistics of each variable index

Variable	Obs	Mean	Std. Dev.	Min	Max
IG	310	84466	27677	10475	190064
IFI	310	184.6	103.4	6.800	419.2
PURB	310	0.561	0.134	0.227	0.896
RGDP	310	4.641	0.207	3.843	5.216
TAX	310	0.293	0.209	0.113	1.354
IS	310	0.900	0.0526	0.742	0.997
EDU	310	2535	830.5	1082	6196
EMP	310	0.254	0.116	0.125	0.761

3.3 Possible problems in the model

(1) the endogenous problem

This paper discusses the influence of the development

level of Inclusive Financing on the income gap between urban and rural areas. The endogenous problem of the model mainly comes from the measurement error. Measurement error refers to the error between the values

of the explanatory variables used in the model and the true values. There are some errors in the measurement of Inclusive Financing level with Inclusive Financing index as an index.

(2) Robustness

When considering the impact of Inclusive Financing's development level on the urban-rural income gap, we should also consider the heterogeneity of different regions. For example, whether it is located in the eastern or central and western regions, and the economic development level of the region. In this paper, the robustness is tested by sub-sample regression.

4 Empirical model and analysis

4.1 model setting

By establishing a panel data model, this paper studies and analyzes the direct relationship between the development level of Inclusive Financing and the income gap between urban and rural residents in 31 provinces, cities and regions of China.

In addition to Inclusive Financing's development level, urbanization level, economic development level, fiscal expenditure, industrial structure, education level and employment status will also affect the income gap between urban and rural areas.

In order to study the relationship between the development level of Inclusive Financing and the income gap between urban and rural areas, the following model is established:

$$IG_{it} = \alpha_1 + \beta_1 IFI_{it} + \beta_2 PURB_{it} + \beta_3 RGDP_{it} + \beta_4 TAX_{it} + \beta_5 IS_{it} + \beta_6 EDU_{it} + \beta_7 EMP_{it} + \varepsilon_{it}$$

Among them, I stands for province, T for year, ε for

random disturbance, IG for income gap between urban and rural residents, IFI for development level of Inclusive Financing, PURB for urbanization level, RGDP for economic development level, TAX for fiscal expenditure, IS for industrial structure, EDU for education level and EMP for employment situation.

4.2 Regression analysis of benchmark model

In this paper, the panel data model is used for regression analysis, so we should judge whether to use mixed model, fixed effect model or random effect model. Therefore, this paper uses Hausmann test method to judge the model. The judging steps are as follows: firstly, Hausmann test method is used to judge whether to choose fixed effect model or random effect model. When P value is greater than 0.05, the original hypothesis is accepted and the random effect model is established; If the p value is less than 0.05, the original hypothesis is rejected and the fixed effect model is adopted.

According to Hausman test results, the P value is less than 0.05, and the fixed effect model is adopted for solid selection. Table 2 shows the regression results of gradually adding control variables.

As shown in the table, the first to sixth columns are the regression results obtained by gradually adding the control variables of economic development level, employment status, education level, fiscal expenditure, urbanization level and industrial institutions according to the optimal significance.

The last column shows the most significant set of regression results, that is, the regression results after considering all the above-mentioned core variables and control variables.

Table 2 Stepwise regression results of benchmark model

VARIABLES	(1) m1 IG	(2) m2 IG	(3) m3 IG	(4) m4 IG	(5) m5 IG	(6) m6 IG
IFI	-0.0847 *** (0.008)	-0.0909 *** (0.008)	-0.0726 *** (0.008)	-0.0806 *** (0.009)	-0.0317 *** (0.006)	-0.0327 *** (0.006)
RGDP	2.4711 *** (0.063)	2.4628 *** (0.062)	2.6012 *** (0.060)	2.6167 *** (0.061)	3.0202 *** (0.040)	3.0355 *** (0.040)
EMP		0.4419*** (0.148)	0.2441* (0.138)	0.2540* (0.138)	-0.2456 *** (0.085)	-0.2387 *** (0.084)
EDU			-0.3951 *** (0.054)	-0.3666 *** (0.056)	-0.0147 (0.037)	-0.0213 (0.036)
TAX				0.3057* (0.164)	0.1409 (0.098)	0.1333 (0.096)
PURB					-3.3371 *** (0.150)	-3.1879 *** (0.154)
IS						-0.7279 *** (0.220)
Constant	11.7108***	11.7413 ***	11.6514 ***	11.6904 ***	11.4494 ***	11.4544 ***

	(0.039)	(0.039)	(0.038)	(0.043)	(0.028)	(0.028)
Observations	310	310	310	310	310	310
R-squared	0.93	0.93	0.94	0.94	0.98	0.98
Number of pro1	31	31	31	31	31	31
Adj. R-squared	0.98	0.98	0.98	0.98	0.98	0.98
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1						

According to the regression results, the coefficient sign and significance level of the core explanatory variable are generally consistent, especially the coefficient sign and significance level of the core explanatory variable number Hewlett-Packard Finance are basically the same, indicating that the regression results are relatively robust. There is an obvious negative correlation between Inclusive Financing's development level and urban-rural income gap, which means that the improvement of Inclusive Financing's development level can narrow the urban-rural income gap, and the impact is very significant. By promoting the development of Inclusive Financing, more township residents can learn about various financial products and services, and increase their participation in investment and financial management, thereby increasing their income and further reducing the income gap with urban residents.

Among the control variables, economic development level, employment status, urbanization level and industrial structure also have a very significant impact on the income gap between urban and rural areas. There is a positive relationship between the level of economic development and the income gap between urban and rural areas, which indicates that the improvement of economic level in different regions will lead to the further widening of the gap between urban and rural areas. For urban residents, the income growth brought by the improvement of economic level may be greater than that of rural residents, so it will increase the income gap between urban and rural areas. Employment status, urbanization level, industrial structure and urban-rural income gap are negatively correlated. From the results, the higher the employment coverage, the higher the income level of urban and rural residents will be. For cities, the employment rate is close to saturation most of the time, but for rural areas, many jobs are vacant, and the employment coverage is far less optimistic than that of cities. The increase of rural employment rate can effectively increase the income of rural residents, thus helping to narrow the income gap between urban and rural areas. The improvement of urbanization level can also narrow the income gap between urban and rural areas, which is consistent with the conclusion of Zhang Yiming et al. (2018), which shows that the improvement of urbanization level can drive the development of rural

economy and pull in the distance between rural and urban areas, thus effectively reducing the income gap between urban and rural areas. Industrial structure has a significant impact on narrowing the income gap between urban and rural areas. It shows that the development of secondary and tertiary industries can effectively improve the transformation and development of urban and rural industrial structure, especially in rural areas, where the industrial structure is weaker than that in cities. By focusing on the development of secondary and tertiary industries, the efficiency of industrial adjustment and optimization can be improved, which is closer to the urban industrial development and structure, thus raising the income level and narrowing the income gap.

At the same time, we can see that education level and government expenditure have little effect on reducing urban and rural income. Education level negatively affects the income gap between urban and rural areas, while government expenditure positively affects the income gap between urban and rural areas, but it is not statistically significant. Therefore, these two factors have no obvious influence on the income gap between urban and rural areas.

5 Endogenous and robust analysis

5.1 Endogenous problems

Although the regression results show that the development level of Inclusive Financing has a significant effect on the income gap between urban and rural areas, its endogenous problems may still have an impact on the significance, so this paper chooses endogenous test.

Using the explanatory variable of the lag period as the instrumental variable to test the endogeneity, that is, the development level of Inclusive Financing in the lag period. On the one hand, there is a high correlation between lagging indicators and current indicators; on the other hand, lagging indicators affect urban-rural income gap through current digital Inclusive Financing indicators, so lagging indicators meet the correlation and exclusiveness, which is a more reasonable tool variable.

Table 3 Estimation of tool variables

VARIABLES	(1) m1 IG	(2) m2 IG	(3) m3 IG	(4) m4 IG	(5) m5 IG	(6) m6 IG
IFI	-0.1286***	-0.1361***	-0.1106***	-0.1194***	-0.0423***	-0.0429***

	(0.010)	(0.010)	(0.010)	(0.011)	(0.007)	(0.007)
RGDP	2.6389 ***	2.6413 ***	2.7683 ***	2.7853 ***	3.0929 ***	3.1023 ***
EMP	(0.067)	(0.066) 0.5617*** (0.170)	(0.061) 0.4570*** (0.152)	(0.062) 0.4669*** (0.152)	(0.038) -0.1803** (0.091)	(0.038) -0.1771** (0.090)
EDU			-0.4337 *** (0.060)	-0.3981 *** (0.062)	-0.0467 (0.038)	-0.0564 (0.038)
TAX				0.3844** (0.176)	0.3707*** (0.099)	0.3474*** (0.098)
PURB					-3.3705 *** (0.156)	-3.2475 *** (0.165)
IS						-0.5236** (0.241)
Constant	11.9368*** (0.051)	11.9725 *** (0.052)	11.8449 *** (0.050)	11.8880 *** (0.054)	11.5024 *** (0.035)	11.5055 *** (0.035)
Observations	279	279	279	279	279	279
Number of pro1	31	31	31	31	31	31
Adj. R-squared	0.98	0.98	0.98	0.98	0.98	0.98

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

According to the test results, it can be seen that the significance of the core explanatory variables is consistent with the benchmark regression, and the improvement of Inclusive Financing level plays a very significant role in narrowing the income gap between urban and rural areas. Moreover, the most significant model selected from the benchmark regression is still the best in the endogeneity test. In this group, the development level of Inclusive Financing has more obvious influence on narrowing the income gap between urban and rural areas. Among the control variables, the economic development level and urbanization level are still significant, showing positive and negative correlation respectively. Although the significance of employment status and industrial institutions has declined, the overall results are consistent with the results of the benchmark regression model. The effect of education level on narrowing the income gap between urban and rural areas is still not obvious. However, in the test, government expenditure has played a significant

role in narrowing the income gap between urban and rural areas. It can be seen that under the influence of some missing variables, the significance of government expenditure has changed.

To sum up, the test situation basically coincides with the significant results of the benchmark regression model, so this paper controls the endogenous problem well.

5.2 Robustness test

This paper considers the regional heterogeneity of Inclusive Financing's development level, that is, the development of Inclusive Financing in different regions will have a significant impact on narrowing the income gap between urban and rural areas. In this paper, we set up sub-samples of the whole country, the eastern region and the central and western regions for grouping regression to test the robustness.

Table 4 Test results of different regional samples

	(1)	(2)	(3)
	M8	M9	M10
VARIABLES	IG	IG	IG
IFI	-0.0327*** (0.006)	-0.0663*** (0.011)	0.0199*** (0.005)
RGDP	3.0355*** (0.040)	3.2424*** (0.046)	2.0248*** (0.070)
EMP	-0.2387*** (0.084)	-0.2433** (0.105)	-0.3358*** (0.109)
EDU	-0.0213 (0.036)	-0.0439 (0.078)	0.0010 (0.026)
TAX	0.1333	0.0164	-0.2622***

	(0.096)	(0.226)	(0.071)
PURB	-3.1879***	-2.0068***	-1.5933***
	(0.154)	(0.366)	(0.162)
IS	-0.7279***	-3.6483***	0.0169
	(0.220)	(1.032)	(0.147)
Constant	11.4544***	11.6545***	11.1810***
	(0.028)	(0.049)	(0.027)
Observations	310	110	200
R-squared	0.98	0.99	0.99
Number of pro1	31	11	20
Adj. R-squared	0.99	0.99	0.99

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

From the regression results, it can be seen that the development level of Inclusive Financing has a very significant impact on the urban-rural income gap in the whole country, the east and the central and western regions. For the whole country and the eastern region, they are negatively correlated, but in the central and western regions, they have different results and are positively correlated. This shows that from the perspective of the whole country and the eastern region, the overall economic development of Inclusive Financing is relatively moderate. With the improvement of Inclusive Financing level, the income gap between urban and rural areas can be effectively narrowed. According to the absolute value of the regression coefficient of variables, Inclusive Financing has the most significant effect in the eastern region, that is, developing Inclusive Financing in the eastern region can effectively narrow the income gap between urban and rural areas. The central and western regions are relatively low-income regions with low economic development level. Developing Inclusive Financing here may further widen the income gap between urban residents and rural residents. For the central and western regions, the economic structure is imperfect, the development is insufficient, and the conditions for contacting with financial services are lacking. If Inclusive Financing is developed hard, it is likely to lead urban and rural residents to participate in financial activities that do not match their own income level and bear higher financial risks. Moreover, the ability to resist risks in the central and western regions is weaker than that in the eastern regions, which makes the development of Inclusive Financing have an opposite impact. We judge that Inclusive Financing can effectively narrow the income gap between urban and rural areas on the basis of economic development to a certain extent, otherwise it will further widen the gap.

From the control variables, the effects of regional economic development level, employment status and urbanization level on narrowing the urban-rural income gap are still very significant, while the effects of education level and industrial structure on narrowing the urban-rural income gap are still not obvious.

Compared with the eastern region and the whole country, the results in the central and western regions are

quite special. The impact of fiscal expenditure changes from insignificant to significant, while the impact of industrial structure changes from significant to insignificant. The results in the eastern region and the whole country are opposite. This shows that the impact of fiscal expenditure in the central and western regions is very direct and effective. Because the economic development is at a low level, if there is some rural bias in fiscal expenditure, it will have a very obvious impact on narrowing the income gap between urban and rural areas. However, in the eastern region, where the economic level is developing at a high level, the impact of fiscal expenditure cannot produce such an effect in the central and western regions. By the same token, the transformation of industrial structure is more urgent and crucial for the eastern region with better economic development, and the eastern region has more preparation and resources for the development of industrial structure, so the upgrading of industrial structure can play a positive role in narrowing the income gap between urban and rural areas. However, the industrial structure in the central and western regions is unreasonable. For the central and western regions, the time for development and further transformation is not yet ripe, which will increase the pressure of economic development and lead to more problems, and may reduce the stability of rural economic development, which is not conducive to the improvement of rural residents' income, thus further widening the income gap between urban and rural areas.

6 Conclusion and policy recommendations

6.1 Conclusion

With the continuous improvement of economic level, China's economy has turned into a high-quality development stage, but narrowing the income gap between urban and rural areas has always been the direction that needs efforts. In recent years, the rise of Inclusive Financing has provided new ideas for narrowing the income gap between urban and rural areas.

With the development and wide application of digital information technology, digital Inclusive Financing has gradually entered the public's field of vision and played an important role in narrowing the income gap between urban and rural areas. Based on the panel data of 31 provinces and cities in China, this paper establishes a model for empirical analysis and studies, and draws the following conclusions:

(1) The development level of Inclusive Financing has a significant effect on narrowing the income gap between urban and rural areas, and developing Inclusive Financing can effectively narrow the income gap between urban and rural areas. To provide more residents

with access to financial products and services, improve the income level and narrow the income gap between urban and rural areas.

(2) From the regional situation, the development of Inclusive Financing plays the most significant role in narrowing the gap between the rich and the poor in the economically developed eastern region.

(3) In the less developed central and western regions, the improvement of Inclusive Financing level may further widen the income gap between urban and rural areas, which is not conducive to the development of rural economy.

Table 5 Basic conclusions of empirical research

	Development level of Inclusive Financing	Income gap between urban and rural areas
whole country	outstanding	Zoom out (negative)
eastern region	outstanding	Zoom out (negative)
Midwest	outstanding	Expand (forward)

6.2 Relevant suggestions

(1) Improve the development system of Inclusive Financing and further promote the digital Inclusive Financing. At present, Inclusive Financing is still in the development stage, and many urban and rural residents don't understand the true meaning and function of Inclusive Financing, which leads to the difficulty of promoting Inclusive Financing, especially in rural areas. Relevant departments should actively popularize the knowledge of Inclusive Financing and do a good job of top-down information transmission. With the development of information technology, the importance of the development of digital Inclusive Financing is increasing, and digital Inclusive Financing can effectively improve the coverage, expand the coverage and make it easier for residents to understand digital Inclusive Financing. The diversified financial products and services developed through digital Inclusive Financing have carried out risk management and control more rationally, reduced the financial investment risks faced by low-income people, helped more residents to invest in the construction of Inclusive Financing, experienced financial services, promoted the development of Inclusive Financing through personal experience, promoted the economic level of urban and rural areas, and further narrowed the income gap between urban and rural areas.

(2) Optimize the development environment of rural Inclusive Financing. Compared with urban areas, rural areas have a lower level of economic development, and their education level and industrial development are in a relatively weak position. We should pay attention to the environmental construction of Inclusive Financing in rural areas, and open up residents' understanding of Inclusive Financing through various publicity and promotion channels. Establish relevant units or carry out structural grafting in relevant rural departments, and carry out publicity and promotion work by authoritative

departments to strengthen residents' confidence. Attention should be paid to the development of Internet information technology in rural areas. Technology is an important driving force and a support for the development of Inclusive Financing. Providing better Internet technology environment for rural residents can accelerate the popularization of Inclusive Financing in rural areas. The government should gradually change the intensity of fiscal expenditure from urban to rural areas, and increase financial support. Encourage and guide private capital to establish new financial institutions in rural areas. Encourage and help small and micro enterprises to obtain financial services, help residents in rural areas who do not need education to choose appropriate financial services or products, promote economic development in rural areas, and further narrow the income gap between urban and rural areas.

(3) Pay attention to the innovation of financial services and promote the diversification of products. Innovative design of financial services and products can reduce the cost of financial services and products. Encourage relevant institutions to open business departments or outlets in rural areas, design and provide corresponding services for rural areas and residents, provide more diversified and personalized products, and set up functional institutions such as self-service banks. Increase the scope of rural collateral, and explore innovations such as rural forest rights, housing property rights and land contractual management rights as collateral. Transfer financial services through digital technology, explore low-cost and high-efficiency digital financial services, improve coverage breadth and depth through financial innovation, and increase agriculture-related financial business.

(4) Promote the economic development of the central and western regions and narrow the regional development gap. Because the economic level of the central and western regions is weaker than that of the eastern regions, it is necessary to further improve the economic level and lay a good economic foundation for

the expansion and development of Inclusive Financing. Pay attention to the rational distribution of educational resources and fiscal expenditure, pay attention to the infrastructure construction and the distribution of educational resources in the central and western regions, and ensure the development of the central and western regions. Through policy implementation and publicity and guidance, we will provide more employment opportunities for the central and western regions and create more possibilities for capital inflow. For the central and western regions, foreign funds can be introduced to improve the development level of regional enterprises, so that they have certain policy support in the development process. At the same time, actively promote and implement digital Inclusive Financing, do a good job in the early stage of promotion, and improve the degree of digital development in the central and western regions.

(5) Strengthen the supervision system to prevent financial risks. The development of Internet finance is accompanied by corresponding problems and risks, which to a great extent hinders and affects the further development of digital Inclusive Financing. The government should improve the information disclosure mechanism and relevant laws and regulations to provide legal guarantee for the development of Inclusive Financing. Improve the credit information system, enrich the information and situation of financial participants, reduce the probability of financial risks, improve the security of inclusive finance, enhance residents' resistance to risks, maintain financial market stability, promote economic growth, and narrow the income gap between urban and rural areas.

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