



A Study on the Impact of Digital Inclusive Finance on the Rural-Urban Income Gap in Shandong Province

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ABSTRACT. Shandong Province is a large agricultural and population province, with a large urban-rural income gap and an obvious urban-rural dualistic structure, and suppressing the urban-rural income gap is a prerequisite for achieving rural revitalisation in Shandong Province. The study shows that the development of digital inclusive finance in Shandong Province can effectively curb the urban-rural income gap and improve the status quo of urban-rural development imbalance, and finally puts forward suggestions for digital inclusive finance to better contribute to narrowing the urban-rural income gap.

Keywords: digital inclusive finance, urban-rural income gap, regional heterogeneity

1 Introduction

China's reform and opening up is more than forty years away from today, our economy has developed rapidly in these years, and many brilliant achievements have been made, and the people's living standard has realized two stages of significant development from poverty to overall well-off, and from overall well-off to comprehensively well-off. 2021, China's GDP ranked steadily the second in the world, reaching 114.37 trillion yuan, which is 311 times as much as that in 1978^[1]. At the same time, China's per capita GDP reached \$12,500, already exceeding the world's average level of per capita GDP, and the income level of China's residents has improved significantly^[2]. However, the rapid economic growth has also brought many problems, the urban-rural dual structure is becoming more and more obvious, the rural economic situation is always lagging behind that of the towns, and the income difference between urban and rural areas in China will be 28,481 yuan in 2021, with a big gap between urban and rural incomes^[3].

As the second most populous province in China, Shandong Province has a large economy, but the income gap between urban and rural areas is still large, and reducing this gap can effectively promote the process of rural revitalisation in Shandong Province.

Realising the effective allocation of financial resources, reducing the cost and threshold of financial transactions, and helping to narrow the income gap between

urban and rural residents^[4]. In recent years, Shandong Province has made more extensive use of digitalisation and Internet technology for financial inclusion, and the financial system has been expanding and becoming more complete. At the same time, the urban-rural income gap in cities across Shandong Province is decreasing year by year. Urban/rural disposable income ratio decreases from 2.52 in 2013 to 2.26 in 2021. The use of digital technology enables inclusive finance to give better play to its unique inclusive nature, to promote the resolution of urban-rural income inequality, effectively reduce the income gap between urban and rural residents, promote the realisation of common prosperity, and improve the overall standard of living of the people of Shandong Province. Analysis of the current situation of digital inclusive financial development and urban-rural income gap in Shandong Province^[5].

2 Analysis of the current situation of digital inclusive financial development in Shandong Province

2.1 Analysis of the Development of Digital Inclusive Finance in Shandong Province.

As can be seen from Figure 1, the development index of digital inclusive finance in Shandong Province in 2021 was 380.68, more than twice as much as that of 2013, with a faster development speed and remarkable results. However, the development speed of digital inclusive finance in Shandong Province has slowed down since 2017, and the development has stabilised from a period of rapid growth to normalised growth. From the point of view of the detailed indicators, the breadth of coverage and depth of use of digital inclusive finance has continued to increase, and has now entered a period of steady growth^[6]. The degree of digital inclusive finance digitisation has fluctuated and increased, with a faster growth rate in 2013-2015, reaching a peak in 2015, a slight decline in 2016 and 2017, and rising again in 2018-2021, and maintaining a stable growth rate.

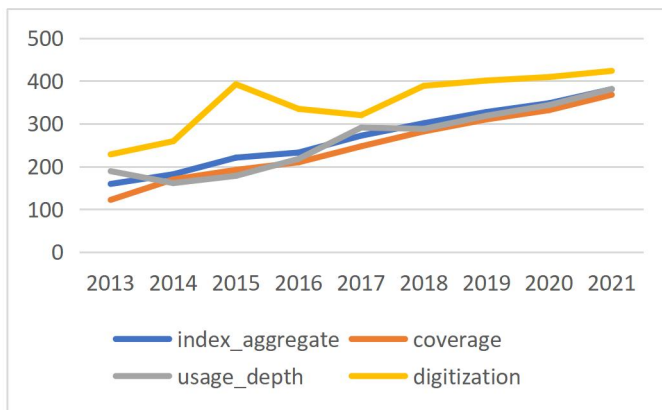


Fig. 1. Digital Financial Inclusion Development Index of Shandong Province

Although digital inclusive finance in Shandong Province has achieved better development in recent years, there is a large gap between regions. As can be seen in Figure 2, the digital financial inclusion index is higher in economically developed regions represented by Jinan, Qingdao and Weihai, which have strong economic and financial strengths and a higher level of digital development. On the other hand, the index of the less economically developed regions in the west, represented by Dezhou, Heze and Jining, is lower. However, as the year grows, the difference in digital financial inclusion between cities also narrows, gradually converging to a more balanced development. in 2013, Qingdao, which has the highest digital financial inclusion index, is 1.36 times that of Heze, which has the lowest, while in 2021, it is only 1.17 times, which is a significant narrowing of the gap between the two. This shows that the less economically developed regions in Shandong Province may be affected by certain factors at the beginning and the initial level is not high, but their development speed is not slow, and they have a great potential for development, full of power, and have a great tendency to catch up.

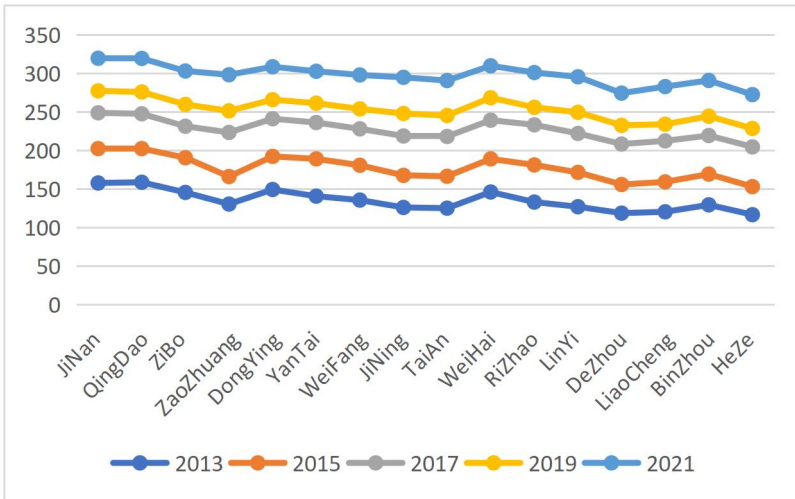


Fig. 2. 2013-2021 Digital Financial Inclusion Index for Municipalities in Shandong Province

2.2 Analysis of the urban-rural income gap in Shandong Province.

As can be seen in Figure 3, the urban-rural income gap in the 16 municipalities in Shandong Province shows an overall decreasing trend between 2013 and 2021, especially between 2014-2017, the decreasing trend is very obvious, but in recent years, the reduction of the urban-rural income gap has slowed down compared with the previous years^[7]. Meanwhile, a cross-section comparison reveals that there are great differences between individual municipalities. Qingdao, Yantai, Weihai, Zibo and other municipalities have a smaller Tel index, but the income gap reduction is also not obvious. Most of these municipalities are located in the eastern part of Shandong and have more developed economies. For example, Weihai has the smallest

decline in the Tel Index, and for a while there has been a slight widening trend. The Thiel index is higher in cities with relatively low economic levels, and most of these are in the western inland areas of Shandong. But the decline in the index has been significant, and the urban-rural income gap has narrowed significantly in recent years. For example, Liaocheng and Heze ranked among the top three cities in the province in 2013, while in 2021 their Tel indexes were at the average level of the province, and the urban-rural income gap has been well alleviated^[8].

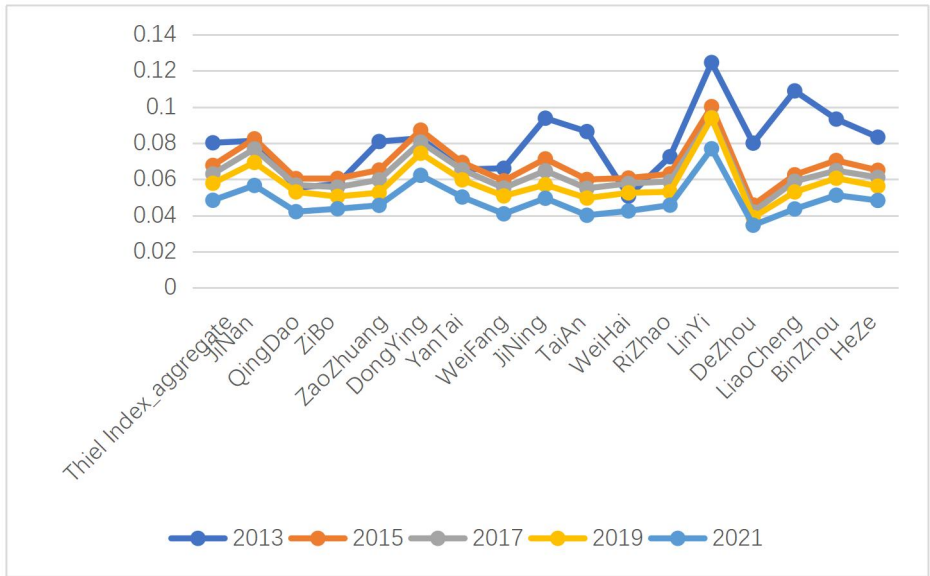


Fig. 3. 2013-2021 Thiel Index of Shandong Province

3 Empirical Analysis

3.1 Model Setting

The following basic model is constructed:

$$GAP_t = \alpha + \beta_1 DFI_t + \epsilon_t \tag{1}$$

The subscript t in the model indicates different years, α is a constant term, β_1 is the regression coefficient of the variable, GAP is an explanatory variable indicating the urban-rural income gap, DFI is an explanatory variable indicating the level of development of digital inclusive finance, and ϵ is a random disturbance term.

Explained variable rural-urban income gap (GAP):In this paper, we choose the Thiel index to calculate. Explanatory variable Digital Inclusive Finance Index (DIF): this paper selects the Digital Inclusive Finance Index of Shandong Province from 2013-2021.

For the above data, the explanatory variables are selected from the Peking University Mathematical Inclusive Finance Index (2013-2021), and all other data are from the Statistical Yearbook of Shandong Province in 2013-2021^[9].

3.2 Regression Analysis

Table 1 Table 2 shows the results of the panel data of Shandong Province from 2013-2021 selected for regression analysis.

Table 1. regression statistics

Multiple R	0.734156383
R Square	0.538985595
Adjusted R Square	0.427032476
SE	0.104364332

Table 2. variance analysis

Source	df	SS	MS	F	P-value
Model	1	0.158709	0.158709	30.92931	0.002483
Residual	8	0.023793	0.004974		
Total	9	0.182502			

Table 3. Regression Analysis

Source	Coefficients	SE	t Stat	P-value	Lower 95%	Upper 95%
_cons	2.787342	0.098291	30.9312	6.714107	2.564576	3.030143
Income gap	-0.00219	0.000405	-5.5785	0.002483	-0.00314	-0.00121

Table 3 reflects the results of the regression analysis, which shows that the digital financial inclusion financial development can significantly reduce the urban-rural income gap.

4 Conclusion

Through effective analysis and research, this paper concludes that there exists a close negative correlation between the income gap between urban and rural residents and the development index of digital inclusive finance, and that the comprehensive and effective development of digital inclusive finance can effectively reduce the income gap between residents in rural and urban areas. The income gap between urban and rural residents is gradually narrowed with the improvement of the digital financial inclusion development index, and at the same time, the scope of influence of this effect is gradually expanding with the passage of time. It can be seen that, in order to

achieve a reasonable and effective reduction of the income gap between urban and rural residents in China, the development of digital inclusive finance needs to maintain a higher degree of attention, and in the subsequent development of its own also has a greater potential for development and a broader space for development^[10].

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