

A Review on the Effect of Digital Inclusive Finance on Income Disparity

Yiteng Yang^{1,*}

¹ *Business School of Shantou University*

^{*} *Corresponding author. Email: 18ytyang1@stu.edu.cn*

ABSTRACT

Nowadays, economic development is unbalanced, and income inequality is becoming more and more serious in China. The advancement of Inclusive Finance provides new methods to solve these troubles. This paper sorts out the previous research paper on the effect of Inclusive Financial Development on the income disparity, finding that the empirical results of the effect of digital Inclusive Finance on income gap can be roughly divided into three categories. This research finds that most of the relevant studies on the impact of digital Inclusive Finance on the size of the income disparity focus on the disparity in wealth between urban and rural locations or other groups based on region and future research can pay more attention to the income gap of specific income groups.

Keywords: *Digital Inclusive Finance, Income Disparity.*

1. INTRODUCTION

Financial services have been monopolized by minorities and excluded poor people for long. This will lead to the imbalance of resource distribution and the intensification of the differentiation of social income classes. The world community has put in a lot of effort to fix this long-standing problem. The concept of Inclusive Finance was first proposed in 2005, dubbed the "first year of UN microfinance." Inclusive Finance aims to make the benefits of the development of financial services generally accessible to all sectors of society, especially the poor. One year later, it was introduced into China. After about seven years of development, inclusive finance has entered the digital development stage with the support of Internet technology. In the early stage of the development of digital Inclusive Finance, the relevant systems and norms are not mature, and the development goal of digital Inclusive Finance is not clear.

In 2016, The concept of digital Inclusive Finance was proposed. As indicated by the definition of G20 high level principles for digital Inclusive Finance, Digital Inclusive Finance refers to all financial services implemented with digital financial services as the carrier for the purpose of developing Inclusive Finance. The development of China's digital Inclusive Finance was first applied in public welfare microfinance. With the fast growth of Internet and portable correspondence innovation, it has gradually expanded into multi business

comprehensive financial services, such as payment and credit. The advancement of digital Inclusive Finance has tremendously improved the availability and convenience of financial services, and provided the possibility of using financial services for groups previously excluded by the threshold of financial services.

In practice, the benefits of digital Inclusive Finance to different groups may be uneven. Different groups benefit from digital Inclusive Finance to varying degrees, which is mainly affected by factors such as the ownership of digital equipment, the utilization capacity of digital equipment and financial literacy. According to the data provided by National Bureau of statistics of China, by 2020, China's Internet penetration rate was only 70.4%. In addition, the Internet penetration rate varies greatly in different regions. In terms of financial literacy, although there is no unified measurement method, due to the late start of China's financial industry, the low financial literacy of Chinese residents has become the consensus of many scholars. In this case, the effect of digital Inclusive Finance on the size of income disparity has become a problem worthy of study.

Some scholars have summarized the research progress of the effect of digital inclusive content on disparity gap. Zhou Luyao summarized four popular research topics: the relationship between digital Inclusive Finance and regional economic growth, industrial structure optimization, urban-rural income gap and rural

poverty reduction effect. He believes that the advancement of digital inclusive finance can effectively narrow the urban-rural income disparity [1]. Qu Jing believes that the research on the impact of digital Inclusive Finance and income disparity has drawn a variety of different conclusions, and the difference between different conclusions lies in whether the advancement of Inclusive Finance can truly match financial supply and demand [2].

At present, the academic field has not yet reached a consensus on the effect of digital Inclusive Finance on income disparity. Based on different influence mechanisms, there are three major different views in academia. The three views respectively believe that the development of digital Inclusive Finance will have a positive, negative and inverted U-shaped impact on the income disparity.

This research focuses on the research progress of the effect of digital inclusive content on income disparity, and looks forward to the future research direction in this field. The rest of this paper is organized as follows. The second part will sort out the theories of the three views and the corresponding empirical research. The third part will summarize the research status and future research direction of this field.

2. DETAILED REVIEW ON DIGITAL INCLUSIVE FINANCE

2.1. The negative effect of digital Inclusive Finance on income disparity

This view is the mainstream view at present, and the theoretical basis is the threshold effect.

The threshold effect of financial development means that residents with low wealth level cannot meet the minimum requirements of financial service cost set by financial institutions due to their limited capital accumulation, but can only enjoy low-quality financial services without high-yield returns under financial constraints. If residents with high wealth level can reach the wealth threshold, they can get high-quality financial services with high-income returns. Therefore, financial development has a differentiated impact on residents with different capital accumulation, which will increase the income gap. Digital Inclusive Finance will greatly reduce this threshold benefit and increase the availability of financial services, which will reduce the income gap.

At the beginning of this century, some studies on the impact of Inclusive Finance on income disparity support this conclusion. Dollar and Kraay (2002) empirically analyzed the sample data of 92 countries and believed that financial development can reduce poverty [3]. Honohan (2005) found that inclusive finance can narrow the income disparity and achieve social inclusive development [4]. Geda (2006) found that inclusive

finance can increase the revenue of low-income people when studying the relationship between finance and poverty in Ethiopia [5]. Bittencourt (2010) found that a deeper level of financial services can improve the living standards of 20% of low-income people [6]. Since the Internet was not developed at that time, the research object of these studies was offline Inclusive Finance.

After the digital Inclusive Finance Research Group of Peking University compiled the digital inclusive finance development index [7], the domestic research on the effect of digital Inclusive Finance on the income disparity has gradually deepened. With the help of clear quantitative measurement standards of digital Inclusive Finance, the research of domestic scholars has expanded from focusing on theoretical elaboration and policy analysis to empirical analysis supported by data. Some scholars found that the development of digital inclusive finance can narrow the income disparity. Song Xiaoling (2017) used the Theil index to quantify the urban-rural income disparity. Using the data of 31 provinces from 2011 to 2015 and the digital inclusive finance index, she found that the advancement of digital inclusive finance can significantly narrow the income disparity between urban and rural inhabitants [8]. Based on the data of China Household tracking survey (CFPS) from 2014 to 2018, Liu Wei (2021) found that for every 1% increase in the digital inclusive financial index, the probability of relative poverty among residents decreased by 3.2% [9].

In the measurement of relative poverty, Song Xiaoling adopted the Theil index, while Liu Wei chose the Kakwani relative deprivation index. In addition, in order to verify the theoretical mechanism of the role of digital Inclusive Finance and poverty governance, Liu Wei added three mechanism variables: risk management, credit financing and social capital. The results showed that digital inclusive finance can alleviate relative poverty through the increase of social capital and the enhancement of family risk management ability. However, financing constraints will make the groups with credit financing benefit more than those without credit financing, which hinders the alleviation of relative poverty by digital Inclusive Finance.

2.2. The development of digital Inclusive Finance is positively related to the size of income disparity

The theoretical mechanism of this view is mainly based on the wealth Matthew effect.

Wealth Matthew effect refers to the phenomenon that the advantage of high-income people in wealth will help them obtain more wealth than low-income people. The development of digital Inclusive Finance may increase the wealth of high-income people more than that of low-income people. Low-income groups are less likely to own and use digital equipment. In addition, financial literacy

determines the double-edged sword role of digital Inclusive Finance for low-income groups. The traditional financial market has a relatively comprehensive risk management mechanism, while the field of digital finance lacks a comprehensive risk management mechanism as it is a new form of financial services. Low-income groups usually lack professional investment decision-making ability and limited access to information, huge information asymmetry, and are easy to make an irrational investment under the influence of herd psychology. Low-income groups are usually prone to irrational investment under the influence of herd psychology due to the lack of professional investment decision-making ability, limited information acquisition ability and strong information asymmetry. This group irrational investment will lead to greater investment losses for low-income groups when the financial market fluctuates violently, thus increasing the income disparity. Although digital inclusive finance increases the availability of financial services, low-income people are subject to limited financial literacy and wealth Matthew effect. These financial services will exacerbate the phenomenon of wealth flowing from low-income people to high-income people, resulting in an increase in the income disparity.

Based on CFPS and Peking University inclusive finance database, Hu Lian (2021) found that digital Inclusive Finance has aggravated the relative poverty in rural areas compared with urban areas at current stage, which is mainly due to the deficiency of digital tools for low-income people [10]. Hu Lian used the Seemingly Unrelated Regression Estimation (SUR) to test the difference of coefficients between groups to compare the difference between relatively poor households and non-relatively poor households in the development of digital Inclusive Finance. The results show that there is a significant income disparity between non-relatively poor households and relatively poor households in the development of digital Inclusive Finance. Zou Xueying (2021) used the panel data of 31 provinces from 2011 to 2018 to find that the development of financial technology not only increased the per capita disposable revenue, but also widened the income disparity [11]. Zou Xueying used the Gini coefficient as an indicator of income disparity and found that the development of financial technology will increase the Gini coefficient.

Although there are relatively few empirical studies supporting this conclusion, this conclusion contrary to the mainstream is still obtained by some scholars.

2.3. The effect of the advancement of digital Inclusive Finance on the size of income disparity presents an inverted "U" relationship

The theoretical mechanism of this view is mainly based on Kuznets' hypothesis.

Kuznets put forward the hypothesis that income distribution will show an "inverted U-shape" with economic growth [12]. The hypothesis holds that in the early stage of financial development, that is, between the rise of per capita income from the lowest to the middle level, the income distribution will tend to deteriorate first. After that, with the growth of per capita revenue, the income distribution gradually improved, and finally reached a more equitable income distribution. Therefore, the advancement degree of digital Inclusive Finance and the degree of income disparity will show an inverted U-shaped relationship.

At the end of last century, some scholars have obtained similar empirical conclusions consistent with this hypothesis. Greenwood and Jovanovic (1990) established a dynamic model of economic growth, financial development, and income distribution, and found that the income distribution disparity between urban and rural areas will increase and then narrow in the process of financial advancement, which supports the inverted U-shaped hypothesis [13]. Some scholars who do research with Chinese data have also obtained similar empirical results. Tang Lizhi (2008) made an empirical analysis on China's panel data from 1987 to 2006 and found that the relationship between China's financial development scale and urban-rural income gap obeyed Kuznets inverted U-shaped curve [14]. Tang Lizhi used the ratio of urban residents' disposable income to rural residents' per capita net income as an indicator of the urban-rural income disparity. In order to verify whether it conforms to Kuznets' hypothesis, two quadratic square terms were added to the econometric model. The research found that the scale of financial development and the gap between urban and rural areas obey the Kuznets inverted "U-shaped" curve condition, but there is no inverted U-shaped effect between the efficiency of financial development and the income gap between urban and rural areas.

Li Zhijun and Zhang Mingyu (2015) used the panel data of 29 provinces in China from 1996 to 2012 to find that there is a nonlinear relationship between financial development and urban-rural income inequality, and also verified the Kuznets Effect between economic growth and income inequality [15]. Taking the change of income inequality as the explanatory variable and the level of financial deepening as the explanatory variable, she found that there is a threshold value (2.544) for the level of financial deepening. Compared with the situation that the degree of financial deepening is higher than the threshold value, when the degree of financial deepening is lower than the threshold value, it will have a higher degree of widening effect on the income disparity between urban and rural areas. The research showed that in terms of financial development scale, the urban-rural income disparity followed the Kuznets inverted "U" curve condition, while in terms of financial development

efficiency, it did not meet the Kuznets inverted "U" curve condition.

Although the empirical conclusion in line with this hypothesis is the least among the three mechanisms, the empirical research on the nonlinear relationship between digital Inclusive Finance and income gap is very innovative. Future research using more diversified research methods may draw more empirical conclusions of nonlinear relationship.

3. CONCLUSION

Although the concept of digital Inclusive Finance has been put forward for only five years, this field has attracted the attention of many scholars, and the research results are constantly enriched. Many scholars have explored the effect of digital Inclusive Finance on the size of the income disparity and reached a variety of different conclusions. Most of the conclusions believe that the advancement of digital Inclusive Finance is conducive to narrowing the income disparity.

There is still some content to be studied for improvement in this field. Most of the relevant studies on the effect of digital Inclusive Finance on the size of the income disparity focus on the income distribution gap between urban and rural areas or other groups based on region. However, the income disparity between regions cannot fully represent the overall income disparity level of society as each region has relatively poor people and relatively rich people. Future research should try new criteria to divide people and measure income disparity. They may pay more attention to the income gap of specific income groups. For example, scholars can take the poor who receive government subsidies as the research object to study whether digital inclusive finance can help them narrow the income disparity with the non-poor.

In addition to the limited representation of the research object, there are other limitations in the existing research. The basic data of the index used in the existing research to measure the development degree of digital Inclusive Finance are mostly obtained from Alipay, a mobile phone payment application. In the digital age, there are many platforms to provide digital financial services, and even traditional financial institutions will develop some digital businesses. Therefore, the index based on the basic data of Alipay platform is not comprehensive enough. Future research can pay more attention to the use of multi-dimensional empirical data.

REFERENCES

[1] Zhou Luyao (2021) . Review on the development of digital Inclusive Finance. Finance and Accounting Monthly .

- [2] Qu Jing.(2020). Literature review on the impact of Inclusive Financial Development on the income gap between urban and rural residents. *Modern Business* (25),147-149.
- [3] Kraay, D. A. . (2002). Growth is good for the poor. *Journal of Economic Growth*, 7(3), 195-225.
- [4] Honohan, P. . (2005). Measuring microfinance access : building on existing cross-country data. social science electronic publishing.
- [5] Geda, A. , & Shimeles, A. . (2006). Research Paper No. 2006/51 Finance and Poverty in Ethiopia A Household Level Analysis.
- [6] Bittencourt, M. . (2010). Financial development and inequality: brazil 1985-99. *Economic Change & Restructuring*, 43(2), 113-130.
- [7] Guo Feng, Wang Jingyi, WANG Fang, Kong Tao, Zhang Xun, Cheng Zhiyun, "Measuring China's Digital Financial Inclusion: Index Compilation and Spatial Characteristics", *China Economic Quarterly*, 2020, 19 (4) , 1401-1418.(in English)
- [8] Song Xiaoling.(2017). An empirical test of digital Inclusive Finance narrowing the income gap between urban and rural areas. *Finance & Economics* (06),14-25. (in English)
- [9] Liu Wei.(2021). The impact of digital Inclusive Finance on Residents' relative poverty. *Journal of South China Agricultural University (Social Science Edition)* (06),65-77. (in English)
- [10] Hu lian, Yao Shaoqun, Yang Chengyu, Ji Luhan.(2021). Is digital Inclusive Finance conducive to alleviating relative poverty?. *Journal of Finance and Economics* (12),93-107. (in English)
- [11] Zou Xueying.(2021). The impact of financial technology on income gap -- An Empirical Analysis Based on Provincial Digital inclusive financial index. *Science & Technology Economy Market* (07),6-7. (in English)
- [12] Moran, T.P. Kuznets's Inverted U-Curve Hypothesis: The Rise, Demise, and Continued Relevance of a Socioeconomic Law. *Sociol Forum* 20, 209–244 (2005).
- [13] Jeremy Greenwood and Boyan Jovanovic. (1990). Financial Development, Growth, and the Distribution of Income. *Journal of Political Economy*, 98(5), pp. 1076-1107.
- [14] Tang Lizhi, Liu Xihao, Jia Xuan. (2008). An empirical study on the relationship between financial development and urban-rural income gap in China. *Issues in Agricultural Economy* (11),44-48. (in English)
- [15] Li Zhijun, Zhang Mingyu.(2015). Research on the nonlinear relationship between inclusive financial development and income gap. *Statistics and Decision* (22),158-161. (in English)