How Digital Financial Inclusion Affects Industry Income Disparities

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Abstract. With the continuous improvement of productivity, people's living standards have continued to rise, but the problem of income disparity has become increasingly serious. This article focuses on the income disparities in China's industry and study the impact of digital financial inclusion on the it. The income disparities between employees in 29 provinces in the China Statistical Yearbook was used for analysis, and the parameters were estimated by benchmark regression analysis. Based on the results of the study, it was found that digital financial inclusion had a large impact on the five decentralized industries selected. In view of these results, this paper analyzes the reasons and draws the reasons why digital finance has contributed to the reduction of the income gap in the industry.

Keywords: Digital financial inclusion, Industry income disparities, Benchmark regression analysis.

1. Introduction

1.1 Background

Since the reform and opening up, the income disparities between Chinese residents has generally shown an widening trend. Among the three major income disparities, the study shows that the income gap between urban and rural areas and regional incomes is narrowing, but the income gap in the industry is still expanding. Wind data show that for the first time since 2000, the Gini coefficient of Chinese residents' income has shown a trend of first climbing and then stabilizing. At the same time, since 2003, the Gini coefficient has been greater than 0.46. Therefore, this real problem needs to be urgently addressed.

The proposal of digital inclusive finance has not only solved the development difficulties of small and medium-sized enterprises and alleviated the impact of unemployment on society, but also has a certain impact on the income gap in various industries. Due to its low cost, fast speed and wide coverage, it has different degrees of impact on different industries, but the specific impact situation and impact mechanism are not clear, so how digital inclusive finance affects the income gap in the industry is a topic worthy of in-depth study. Therefore, the study of this problem has certain practical significance.

1.2 Related research

Research on digital financial inclusion, Chen and Liu concluded that the development of digital inclusive finance can promote the financial behavior of residents and improve the probability and degree of their access to the financial market; Income inequality has played a part of the intermediary role between the two, and digital inclusive finance has increased the income of residents in rural areas, alleviated regional income inequality, and enabled more residents to have idle funds to enter the financial market for investment [1]. Zhou and Huang stressed that the development level of digital inclusive finance directly affects the high-quality development of the regional economy; This mechanism is manifested in the fact that digital inclusive finance can promote the high quality of regional economic development by optimizing market development. In addition, there are heterogeneous effects on the high-quality development of digital inclusive finance and market development in different provinces [2]. G and L discuss digital financial inclusion, which has influenced the shift of regional capital from fiction to substance. The article concludes with the idea that digital financial inclusion can help ease financing constraints for small and micro businesses and

improve services related to agriculture, rural and farmer issues [3]. Liu, Zhang and Sun pointed out that digital inclusive finance can promote economic growth and increase household income through the "income increase effect", and improve the financial literacy of families through the "education effect", so as to achieve the impact on the allocation of risky financial assets in households [4].

About the industry income disparities, Cai used the statistical data of the income of different industries in China from 1986 to 2011 to show that there is a significant gap in income between various industries in China, and there is a trend of expansion [5]. Zong and Wu drew three important conclusions in the study: First, in the process of economic development, the income gap in China's industry showed an inverted U-shaped trend. Second, at present, the country as a whole is still some time away from reaching the inflection point, and during this period, the income gap in the industry will show a trend of shock and rise; Finally, monopoly factors have played an effect of widening the income gap in the industry, while human capital is the opposite, which has a significant inhibitory effect on the income disparities in the industry[6]. Chen and Liang show that incomes in capital-intensive and knowledge-intensive industries are high because they have monopoly advantages, while labor-intensive industries have lower incomes because of fierce competition. The income gap across the 16 typical industries is very widespread[7]. Deng and Ye explained the empirical study of the impact of financial development on the wage gap between the state-owned and non-state-owned sectors, and concluded that financial development can reduce this wage gap by changing the supply and demand relationship of labor, and will strengthen the profit extraction mechanism, thereby widening the wage gap between the two sectors[8]. Zhou, Yu and Shi pointed out that capital occupies a strong position in income distribution, and there is a phenomenon of profit erosion of wages; And the financial industry and the manufacturing industry have a huge difference in gold mining capacity, and the tax burden is uneven; One of the important factors contributing to the income gap between the financial and manufacturing industries is the educational attainment of employees[9].

On the relationship between industry income disparities, and digital financial inclusion，Zhang and Li discussed the current large differences in income between farmers. From the perspective of rural household income being affected by digital financial inclusion, the total index and sub-index of digital inclusive finance have a significant positive effect on rural household income, and the degree of digitization has the greatest impact compared with the other two sub-indexes[10]. Xie,Yang and Bai concluded that in the short term, digital inclusive finance will inhibit the upgrading of industrial structure, and resident consumption will have a role in promoting the other two; In the long run, digital inclusive finance and industrial structure upgrading have a positive role in promoting the improvement of residents' consumption. There is regional heterogeneity in the relationship between these three, and digital inclusive finance has a restraining effect on the upgrading of industrial structure in the short term in the northeast, west and north of Guangdong, while it is promoted in the Pearl River Delta region [11].

1.3 Objective

Digital financial inclusion not only expands the scope of financial services and the variety of financial products, but also reduces financial thresholds and transaction costs.Through the advantages of digital financial sharing, convenience, security, low cost and so on, it can penetrate into various industries, especially decentralized industries, due to small scale, difficult to finance and restrict the development of the industry, resulting in limited income of employees. This article explores the relationship between digital financial inclusion and income disparities between industries, uses benchmark regression analysis to determine the extent of its impact on different industries, and identifies the reasons, and finally makes recommendations.

2. Method

Correlation analysis is to measure the proximity of the correlation of two factors, so that multiple variables with correlation are analyzed, and there needs to be a certain relationship or probability

between related elements to perform correlation analysis.This paper will use correlation analysis to examine the relationship between digital financial inclusion and income disparities between industries.

$$Y = a1x1 + a2x2 + b \quad (1)$$

Because digital inclusive finance is mainly to protect small and medium-sized enterprises and special groups, it is more used in industries with a large number of enterprises,product differentiation, low barriers to entry and no monopoly advantages.According to the purpose and characteristics of digital inclusive finance, the author can know that it is mainly used in agriculture, forestry, animal husbandry and fisheries、manufacturing,、wholesale and retail trade、construction industry、accommodation and catering. This paper will use correlation analysis to study these specific sectors and the correlation index of digital financial inclusion, as well as the correlation between these industries.

3. Result

To visualize the industry income gap, this article uses the China Gini coefficient from 2003 to 2019 and displays it on a line chart.

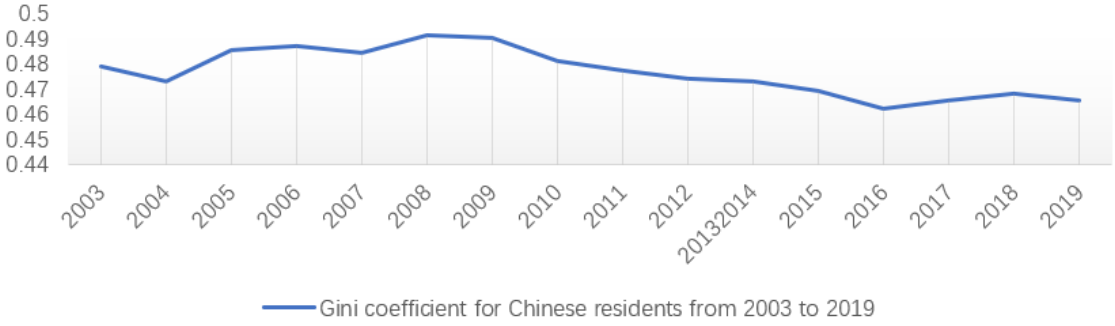

Fig. 1 Gini coefficient for Chinese residents from 2003 to 2019

From the figure, it can be concluded that since the 21st century, the Gini coefficient of Chinese residents has been between 0.4-0.5, and the income gap is large. Although there has been a downward trend in recent years, it is still difficult to change the status quo.

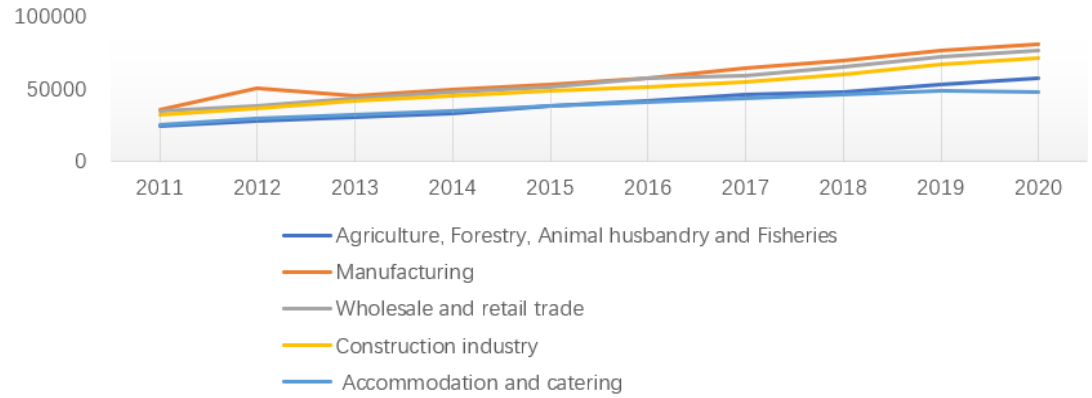

Fig. 2 Changes in average incomes across the five industries between 2011 and 2020

As shown in Fig.2, it can be clearly concluded that the average income of residents in these five industries is rising, and the income of manufacturing and agriculture, forestry, animal husbandry and fishery is quite different.

This study used the average wages of workers in various industries in China from the China Statistical Yearbook. The selected time period is 2011 to 2020, the multiple regression model acquires coefficients, and the five tables are shown below. (Due to the lack of data from Shanghai and Qinghai provinces, there are only 29 provinces and autonomous regions in total).

Table 1. Agriculture, Forestry, Animal husbandry and Fisheries

		Wages	index
Wages	correlation coefficient	1	
	p value		
index	correlation coefficient	0.712**	1
	p value	0.000	

* $p<0.05$ ** $p<0.01$

Table 2. Manufacturing

		Wages	index
Wages	correlation coefficient	1	
	p value		
index	correlation coefficient	0.574*	1
	p value	0.000	

* $p<0.05$ ** $p<0.01$

Table 3. Wholesale and retail trade

		Wages	index
Wages	correlation coefficient	1	
	p value		
index	correlation coefficient	0.782**	1
	p value	0.000	

* $p<0.05$ ** $p<0.01$

Table 4. Construction industry

		Wages	index
Wages	correlation coefficient	1	
	p value		
index	correlation coefficient	0.748**	1
	p value	0.000	

* $p<0.05$ ** $p<0.01$

Table 5. Accommodation and catering

		Wages	index
Wages	correlation coefficient	1	
	p value		
index	correlation coefficient	0.804**	1
	p value	0.000	

The significance of 0.01 between average income and digital financial inclusion indicators shows a significant positive correlation between revenue and indicators in these five industries.

4. Discussion

The above results show that the industry's revenue is significantly affected by digital financial inclusion. Therefore, the authors then analyze the causes.

4.1 Reasons for Agriculture, Forestry, Animal husbandry and Fisheries

For a long time, agriculture, forestry, animal husbandry and fishery have problems such as difficulties in loans for farmers, inflexible loan terms, and single financial products and services, resulting in the lag in the development of the industry and the slow increase in farmers' income levels. Digital financial inclusion has greatly solved these problems by alleviating financing problems. It is mainly reflected in the following aspects:

First, at the level of agricultural production increase, digital inclusive finance has a significant role in improving agricultural output.

Second, digital inclusive finance has effectively alleviated rural poverty. It plays a role mainly by promoting the development of Internet credit operations and insurance services in rural areas.

Third, at the level of agricultural environmental protection, green production technology is conducive to ensuring the quality of China's agricultural products and the ecological environment, but traditional financial services restrict the promotion of green production technology because it has credit constraints. However, the application of digital financial inclusion technology has had a favorable impact on it.

4.2 Reasons for Manufacturing

Manufacturing enterprises have the characteristics of large capital demand, long payback period and difficult financing. In recent years, digital inclusive finance based on the real transaction background of the industrial chain has been developed at a high speed, what makes digital financial inclusion different from traditional lending in the past is that it effectively solves the problems caused by the unstable operation, insufficient credit and lack of assets of growing manufacturing enterprises.

4.3 Reasons for Wholesale and retail trade

Due to the high degree of marketization of the wholesale and retail industry, it has become one of the most competitive industries in China. Since 2011, retail enterprises have been in an industry with fierce competition and serious monopoly of resources, and problems such as high costs and low returns have hindered the survival and development of enterprises. In addition to the above difficulties and pressures, in the next five to ten years, due to the expansion of retail enterprises, it is inevitable to open a large number of stores, but the rising cost of rent renewal makes it more difficult for enterprises to operate funds. According to research analysis, rents can increase by up to 50%. Therefore, digital inclusive finance can help small and medium-sized enterprises to raise funds, develop online finance, and solve the problem of shortage of funds in the operation process.

4.4 Reasons for Construction industry

As a huge industrial system, the development of the construction industry requires a lot of information, supply chain collaboration will be the trend of the times, and the network economy and data interaction can help its development very well. Digital financial inclusion, which is the convergence of data and the economy, has played an indispensable role in this regard.

The days of single construction general contracting and professional subcontracting will be farther and farther away, and more and more enterprises will begin to find business expansion that suits their own characteristics, Such as 5G base station construction, intercity high-speed railway and urban transportation tracks, new energy vehicle charging piles, big data centers, intelligent manufacturing, industrial Internet and other fields.

4.5 Reasons for Accommodation and catering

The COVID-19 pandemic and the US-China trade dispute have brought crisis to the development of the accommodation industry, and a series of challenges have arising from it. Industry investment confidence has been hit, the capital market has a low degree of recognition of the industry, insufficient investment power, limited sources of funds, and increased financing difficulties, so that some enterprises are facing the risk of capital chain breakage, and some enterprises have begun to default on untrustworthiness. In this context, the emergence of the digital economy has played a role in boosting it.

5. Conclusion

In this paper, descriptive statistics and benchmark regression analysis were used to study the relationship between digital financial inclusion and industry income disparities.During the period 2003-2019, the Gini coefficient remained high and the income distribution gap persisted. Based on the five specific sectors selected, the significance between average income and the digital financial inclusion indicator is 0.01, which indicates that the income problem is greatly affected by digital financial inclusion. This is mainly because of the sharing, convenience, low cost and low threshold characteristics of digital inclusive finance, which enables relatively scattered industries to obtain funds in a timely manner, thereby solving difficulties in development. Therefore, this article strongly recommends that different changes be made on the basis of digital inclusive finance for the development characteristics of different industries, especially agriculture and manufacturing.

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