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Is Financial Inclusion Effective in Reducing Poverty? Evidence from China

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Abstract Despite tremendous development efforts in recent decades, rapid economic development and great achievements in poverty alleviation, there is still an issue of income inequality in China. This paper examines whether financial inclusion reduces income inequality in China. A time-series data are collected, and a Grey relational analysis method is used to perform the analysis. The research results show that financial inclusion and income fairness are positively correlated; financial inclusion to a certain extent expands the breadth of the financial system, increases the coverage of financial products and services, and enables small and medium-sized enterprises to obtain more financing to produce or invest in high-yield projects, plays a role in optimizing resource allocation, improving production efficiency, and promoting income equality. At the same time, financial inclusion is obvious in alleviating financial exclusion and can be used as an important market tool to promote income equality. From the perspective of poverty eradication and social equality, it is of great significance to vigorously develop inclusion financial to promote the sustainable and balanced development of the finance and enhance social equality and social harmony.

Keywords Financial Inclusion, Financial Exclusion, Financial Innovation

1. Introduction

Over the past few decades, especially in the 2000s, there has been a growing interest in promoting equality in economic development. Many scholars and policymakers are interested in research on factors affecting equality, especially the access and usage of financial services. Therefore, "financial inclusion" has been investigated and discussed frequently in previous studies. It is regarded as an important way to address social problems like inequality and poverty (Klapper et al., 2016; Ndlovu & Toerien, 2020) [1,2]. There are still about 1.7 billion people without bank accounts (Ndlovu and Toerien, 2020) [2], indicating that they are unable to access financial services, which is worrying. Financial inclusion can promote equality through various channels, for example, by providing savings services and credit; promoting individual investment in health and education (Demirgüç - Kunt et al., 2017; Fouejieu et al., 2020; Klapper et al., 2016) [3,4,1]. Financial inclusion enables the poor to get safe, affordable financial services (Demirgüç - Kunt et al., 2008; Fouejieu et al., 2020) [4,5]. It can also diminish poverty and inequality through loans, deposits, and credit (Klapper et al., 2016) [1]. It might lead to more investments in the area of healthcare, education, and start-up (Demirguc Kunt et al., 2017; Von Fintel & Orthofer, 2020) [3,6].

China has implemented the largest poverty reduction and poverty alleviation practice. The main contradiction of economic development requires improving the inclusiveness of economic development. The structural contradictions and resource mismatches in the process of financial development require further financial deepening. Then, can financial inclusion achieve inclusive growth characterized by equal opportunities to a greater extent? These are major theoretical and practical issues.

2. Literature Review

2.1. Researches on Financial Inclusion

Relevant research on "financial inclusion" mainly focuses on three aspects. First, the research on the connotation of financial inclusion. Financial inclusion is a process that can enable everyone in the economy and society to get access to formal financial services. Financial services include permeability, effectiveness, and usability (Sarma, 2008) [7]. Financial inclusion emphasizes how vulnerable groups can enjoy financial services at a lower cost (Rangarajan, 2008; Khan, 2011) [8]. It can provide financial services to remote poor areas, and expand the coverage of financial services. Thus, those who need financial services can get appropriate ways. Moreover, financial inclusion is conducive to stimulating the development of poor groups and regions. In the plan *Facilitate the Development of China's Financial Inclusion (2016-2020)*, the State Council of China defined the concept of financial inclusion at the national level: "*financial inclusion refers to providing appropriate and effective financial services to all social strata and groups with financial service needs at an affordable cost based on the requirements of equal opportunities and the principle of business sustainability*". This plan indicates that financial inclusion mainly serves farmers, small businesses, low-income groups and other socially disadvantaged groups. The second is about the research on the utility of financial inclusion. In the developed financial system, the earnings of low-income citizens grow up faster and the Gini index drops faster; when the amount of low-income citizens declines faster, it's easier for companies to solve the cash flow limits. Therefore, there is no trade-off between economic growth and poverty alleviation for policy-making, and building an efficient and inclusive financial system can kill many birds with one stone. Financial inclusion will develop effectively if financial contracts, market structures, and financial intermediation are improved, further reducing poverty and improving equal opportunities (Demirgüc-kunt & Levine, 2009) [9]. Most of the existing research results support this conclusion. For example, the research found that the financial inclusion development and economic and social development of a country show the same direction change relationship. Transnational data show that a 1% increase in financial inclusion Index will result in a 0.142% increase in the human development value index. At the same time, the availability and use frequency of the financial services have negative correlation with the poverty rate. The government strives to improve financial inclusion development and eliminate regional imbalances to achieve inclusive growth (Anand & Chhikara, 2012) [10]. In China, the development of financial inclusion plays an important role in the overall planning of urban and rural areas. From a national perspective, the development of financial inclusion can narrow the gap between urban and rural residents' welfare levels (living standards and quality of life). The third is the research on the measurement of the financial inclusion level, which measures and evaluates the financial inclusion level of developed and developing countries from the three dimensions of banking service scope, convenience, and cost. We can also select indicators such as insurance density, number of financial outlets, financial practitioners, bank loan balance, and added value of the financial industry or measure the inclusive financial index from three aspects, namely, availability, use, and quality. At present, the main methods of China domestic scholars to measure and evaluate the level of financial inclusion are indirectly measuring the accessibility of financial services, directly measuring and evaluating the level of financial inclusion by using the inclusive financial index, indirectly measuring the degree of financial exclusion, and finding different initial levels of economic development. There are significant differences in the impact of financial inclusion on economic growth among economies with different levels of national education, different levels of the rule of law, and different sizes of small and medium-sized enterprises. Moreover, there are significant regional differences in financial inclusion development levels. The development level in economically developed areas is higher than that in economically backward areas. There is limited research to examine the connection between financial inclusion and economic growth, especially the impact mechanism of financial inclusion on economic growth. Some of China's domestic scholars study its impact on economic growth from the perspective of financial exclusion.

2.2. Research on the Equality Effect of Financial Inclusion

Scholars have conducted extensive research on the role of financial inclusion in promoting equality. They believe that expanding the coverage of financial services and enabling the poor to participate in more financial activities such as microfinance, will improve their expected income and promote economic equality (Claessens & Feijen, 2006). The wide coverage of financial inclusion is highly consistent with promoting equality. The sustainability of financial inclusion consolidates the effectiveness of poverty alleviation, and the leverage performance of financial inclusion ensures the equality effect. The innovative development of rural financial inclusion also strengthens targeted poverty alleviation. The later development focuses on small and micro informal cooperative finance. Financial poverty alleviation based on industrial support can maintain the "hematopoietic" function and avoid short-term policy poverty alleviation.

With the development of the Internet and information technology, financial inclusion has ushered in a new opportunity, namely digital financial inclusion. A series of researches have evaluated the poverty reduction effect of digital financial inclusion. Most scholars have found that digital finance is conducive to economic growth (Kapoor, 2013)[17]. Digital finance and financial inclusion can help narrow the income gap between the poor and the rich. It is especially helpful to promote the entrepreneurial behavior of low material capital or low social capital families to promote inclusive growth. The development mode of Internet plus finance has obvious advantages for optimizing the allocation of financial assets, improving the social financing environment, and providing financial support opportunities for backward areas. Another view is that digital financial inclusion is essentially consistent with the traditional banking business, except that marketing and business processing are through the Internet. Different people have different ownership, and innovation ability regarding network techniques, which results in an information gap between the poor and the rich (Toffler, 1990)[18]. It shows that digital financial development and poverty may have a complex association. The Internet is only a technical means (Allen et al., 2002)[19]. As a financial channel innovation, it can bring convenience, but it can not solve the problem of trust (Chen Zhiwu, 2014)[21]. Especially when the domestic credit investigation system in China is imperfect and rural areas lack the accumulation of big Internet data, there is a serious “digital gap” between urban and rural areas, and also within rural areas. In rural places, facing the double exclusion of “tool exclusion” and “self-exclusion,” digital finance cannot achieve a good inclusive effect (Chen Baozhen et al., 2020; XingYan, 2021)[20]. The above views are representative. They not only affirm the role of digital financial inclusion in reducing transaction costs and expanding the collection of transaction possibilities, but also find the practical obstacles to digital financial inclusion in rural development.

Digital finance, a combination of finance and technology, has the attribute of finance. Financial inclusion is an important development goal and plays an important role in promoting equality. Under the basic contradiction between "commercial" and "policy" (Lu Minfeng, 2019)[22] and the background of the dual goals of "development" and "poverty alleviation" (Zhou Mengliang, 2019)[23], the "financial inclusion paradox" restricts the role of financial inclusion in promoting social equality (Lu Lei, 2014)[23]. The Internet's essence is to cross a succession of structures, costs, and endowment obstacles to be inclusive and successfully reduce poverty (Wang Yu, 2020)[23]. Although studies have done a lot of research on financial inclusion to promote equality, most of the relevant literature is based on macro-level data, which is difficult to establish the causal chain between micro subjects, digital background, and poverty (Luo Yanjin et al., 2018)[23]. A few studies from the micro perspective failed to accurately identify the group characteristics of financial beneficiaries when evaluating the equality effect of financial inclusion, and the accuracy of the analysis is insufficient (Yang Yanlin et al., 2019)[23]. In particular, the research on the long-term and micro-mechanisms of financial inclusion to alleviate the income gap and promote equality needs to be further enriched and improved.

3. Data and Methods

3.1. Data Description

This paper uses the Gini index to measure inequality, which Italian statistician Corrado Gini develops. A high Gini index indicates a high degree of inequality and vice versa. The indicators of financial inclusion here we choose mainly refer to previous research, such as Park & Mercado (2017) [10], Kim et al. (2018) [11], Mushtaq and Bruneau (2019) [12], Omar and Inaba (2020) [13], assuming that multiple variables related to financial inclusion must be used because they are different dimensions of financial inclusion. Following Eduardo Polloni Silva et al. (2021) [14] research, we mainly define financial inclusion from three aspects: availability, penetration and usage.

The availability aspect indicates the population penetration of financial services. In this research, it is represented by the indicator "ATM number per 100000 adults" (X1) which can assess the difficulty of accessing financial services. The penetration aspect refers to the number of users who are already in the financial system. Here we use variables "number of commercial bank branches per 100,000 adults" (X2) and "number of depositors with commercial banks per 1,000 adults" (X3) to indicate penetration. In addition, the usage aspect can demonstrate the usage rate of financial services, and it can be represented by borrowing, remittance, transfer, etc. Here, we include the variables "number of borrowers from commercial banks per 1,000 adults" (X4), "outstanding loans of commercial banks as a percentage of GDP" (X5), "outstanding deposits of commercial banks as a percentage of GDP" (X6) and "outstanding small and medium enterprise (SME) loans from commercial banks" (% of GDP) (X7) to represent the aspect of usage.

Table 1. Data description

Variable	Description	Source
Y	Gini Index	National Bureau of Statistics of China
X1	Number of ATMs per 100,000 adults	the World Bank
X2	Number of commercial bank branches per 100,000 adults	the World Bank
X3	Number of depositors with commercial banks per 1,000 adults	the World Bank
X4	Number of borrowers from commercial banks per 1,000 adults	the World Bank
X5	Outstanding loans from commercial banks (% of GDP)	the World Bank
X6	Outstanding deposits with commercial banks (% of GDP)	the World Bank
X7	Outstanding small and medium enterprise (SME) loans from commercial banks (% of GDP)	the World Bank
X8	GDP per capita (unit: Chinese yuan)	National Bureau of Statistics of China
X9	The ratio of the urban population to the total population	National Bureau of Statistics of China
X10	Unemployment level	National Bureau of Statistics of China

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Y	5	.465	.004	.458	.468
X1	5	89.343	6.764	81.744	97.119
X2	5	8.831	.035	8.794	8.876
X3	5	29.327	5.703	22.252	36.446
X4	5	464.961	60.035	385.08	535.924
X5	5	106.716	7.819	100.802	119.42
X6	5	150.996	6.014	144.282	157.71
X7	5	37.246	2.487	35.557	41.575
X8	5	64163	7487.615	53783	71828
X9	5	.614	.02	.588	.639
X10	5	3.9	.224	3.6	4.2

In addition to explanatory variables, this paper also considers control variables which are often used in poverty and inequality studies. We integrate per capita GDP (X8) and urbanization rate (X9) into the overall development level of the region. Poorer families will appear in rural areas (Nissanke and Thorbecke, 2010) [15]. We add the level of the unemployment rate (X10) as our variable because of the significance of employment to realize equality (Cabeza Garc ía et al., 2019) [16]. This paper collects the data on China from 2016 to 2020, mainly from the World Bank and the National Bureau of Statistics of China. The data description and descriptive statistics are shown in table 1 and table 2 respectively.

3.2. Model Formulation

In order to verify the correlation between inclusive financial development and social equality, the Grey relational analysis method is proposed to calculate the Grey relational coefficient. We set the Gini index as the explained variable, the inclusive financial index as the explanatory variable, select economic growth, urbanization level and unemployment rate as the control variables, and specify the explained series $Y_i(K)(i=1,2,\cdots,s;K=1,2,\cdots,n)$. Similarly, the explanatory variable series is $X_i(K)(K=1,2,\cdots,n)$. After sorting out the original data, the Grey relational coefficient is calculated.

The calculation steps are as follows:

The mean value of the original data is dimensionless:

$$Y_i^{'}(K) = \frac{Y_i(K)}{\overline{Y}},\quad \overline{Y} = \frac{1}{n}\sum_{K=1}^{n} Y_i(K),$$
$$K = 1,2,\cdots,n$$

$$X'_i(K)^0 = \frac{X_i(K)}{\overline{X}}, \quad \overline{X} = \frac{1}{n}\sum_{K=1}^{n} X_i(K), \quad K = 1,2,\cdots,n$$

$Y_i'(K)$ $(i = 1,2,\cdots,s; K = 1,2,\cdots,n)$ and $X'_i(K)$ $(K = 1,2,\cdots,n)$ is interpreted sequence $Y_i(K)(i = 1,2,\cdots,s; K = 1,2,\cdots,n)$ and explanatory variable $X_i(K)(K = 1,2,\cdots,n)$ are results of the dimensionless mean of original data.

$$\xi_i(K) = \frac{\min_i \min_K \left| X_i'(K) - Y_i'(K) \right| + \rho \max_i \max_K \left| X_i'(K) - Y_i'(K) \right|}{\left| X_i'(K) - Y_i'(K) \right| + \rho \max_i \max_K \left| X_i'(K) - Y_i'(K) \right|}, \quad (K = 1,2,\cdots,n)$$

$\rho \in (0,1)$, usually $\rho = 0.5$. $\xi_i(K)$ is represents the correlation coefficient between the interpreted sequence $X_i(K)$ and the interpreted sequence $Y_i(K)$ in time K .

$$\gamma_i = \frac{1}{n}\sum_{K=1}^{n} \xi_i(K)$$

γ_i is the Grey relational coefficient.

4. Results

First, all aspects of financial inclusion are highly related to social equality, with the highest correlation coefficient with the number of commercial bank branches (X2), outstanding deposits with commercial banks(X6), and bank loans to small and medium-sized enterprises (X7), reaching 0.9885, 0.8753 and 0.8406 respectively, which also shows that residents have entered the modern financial system through opening bank accounts, and the financial system provides financial resources for more people, enables more people to obtain more development opportunities and to promote social equality; However, residents' deposits and loans to small and medium-sized enterprises have realized the transformation of savings loan investment, which has played a great role in increasing residents' income.

Second, the number of depositors (X3), the number of borrowers (X4), and outstanding loans (X5) are relatively low. The coefficients are 0.6434, 0.7263, and 0.6287, respectively. The transformation mechanism from deposits to loans should greatly promote the income level of low-income people; the low correlation between these financial inclusion indicators and equality shows that China's financial system still has financial exclusion to a certain extent, and financial institutions also have a certain tendency of mission drift. There is still a certain space for financial inclusion.

Third, the correlation between urbanization level and employment and equality indicators is relatively high, showing that economic growth is important for promoting equality. Only a higher level of economic development can better promote social equality. The correlation between per capita GDP and equality is low, showing that in future economic development, we need to promote equality and avoid the continuous widening of the income gap.

5. Conclusions

From the perspective of general recognition, the coverage of the financial system and the development of financial inclusion can allow people and enterprises to get access to financial services, help the poor and small enterprises to obtain financial resources to reduce their liquidity constraints, improve the resource allocation efficiency, and thus promote the fairness of income distribution. Through our empirical analysis, it is found that the three dimensions of inclusive finance have a certain role in promoting the fairness of income distribution, especially the number of commercial bank branches, outstanding deposits and outstanding loans to small and medium-sized enterprises.

The research results show that financial inclusion and income fairness are positively correlated; financial inclusion to a certain extent expands the breadth of the financial system, increases the coverage of financial products and services, enables small and medium-sized enterprises to obtain more financing to produce or invest in high-yield projects and plays a role in optimizing resource allocation, improving production efficiency and promoting income equality. At the same time, financial inclusion is obvious in alleviating financial exclusion and can be used as an important market tool to promote income equality. From the perspective of poverty eradication and social equality, it is of great significance to vigorously develop inclusion financial to promote the sustainable and balanced development of the finance and enhance social equality and social harmony.

REFERENCES

[1] Klapper, L., El-Zoghbi, M., & Hess, J. (2016). Achieving the sustainable development goals. The role of financial inclusion. Available online: http://www. ccgap. org. Accessed, 23(5), 2016.

[2] Ndlovu, G., & Toerien, F. (2020). The distributional impact of access to finance on poverty: Evidence from selected countries in Sub-Saharan Africa. *Research in International Business and Finance*, *52*, 101190. DOI:10.1016/j.ribaf.2020.101190

[3] Demirgüç-Kunt, A., & Singer, D. (2017). Financial inclusion and inclusive growth: A review of recent empirical evidence. World Bank Policy Research Working Paper, (8040). DOI:10.1080/09638199.2020.1785532

[4] Fouejieu, A., Sahay, R., Cihak, M., & Chen, S. (2020). Financial inclusion and inequality: A cross-country analysis. The Journal of International Trade & Economic Development, 29(8), 1018-1048. DOI:10.1080/09638199.2020.1785532

[5] Beck, T., Demirgüç-Kunt, A., & Honohan, P. (2008). Access to financial services: Measurement, impact and policies. The World Bank Research Observer, 22(3), 1-42.

[6] von Fintel, D., & Orthofer, A. (2020). Wealth inequality and financial inclusion: Evidence from South African tax and survey records. Economic Modelling, 91, 568-578. DOI:10.1016/j.econmod.2020.02.001

[7] Sarma, M., & Pais, J. (2011). Financial inclusion and development. Journal of international development, 23(5), 613-628. DOI:10.1002/jid.1698

[8] Rangarajan, C. (2008). Report of the committee on financial inclusion. Ministry of Finance, Government of India.

[9] Beck, T., Demirgüç-Kunt, A., & Levine, R. (2009). Financial institutions and markets across countries and over time-data and analysis. World Bank policy research working paper, (4943).

[10] Anand, S., & Chhikara, K. S. (2013). A theoretical and quantitative analysis of financial inclusion and economic growth. Management and Labour Studies, 38(1-2), 103-133. DOI:10.1177/0258042X13498009

[11] Claessens, S., & Feijen, E. (2006). Finance and hunger: Empirical evidence of the agricultural productivity channel (Vol. 4080). World Bank Publications.DOI: 10.13189/saj.2021.090222

[12] Mushtaq, R., & Bruneau, C. (2019). Microfinance, financial inclusion and ICT: Implications for poverty and inequality. Technology in Society, 59, 101154. DOI:10.1016/j.techsoc.2019.101154

[13] Omar, M. A., & Inaba, K. (2020). Does financial inclusion reduce poverty and income inequality in developing countries? A panel data analysis. Journal of economic structures, 9(1), 1-25. DOI: 10.1186/s40008-020-00214-4

[14] Polloni-Silva, E., da Costa, N., Moralles, H. F., & Sacomano Neto, M. (2021). Does financial inclusion diminish poverty and inequality? A panel data analysis for Latin American countries. Social Indicators Research, 158(3), 889-925. DOI:10.1007/s11205-021-02730-7

[15] Nissanke, M., & Thorbecke, E. (2010). Globalization, poverty, and inequality in Latin America: Findings from case studies. World Development, 38(6), 797-802. DOI:10.1016/j.worlddev.2010.02.003

[16] Cabeza-García, L., Del Brio, E. B., & Oscanoa-Victorio, M. L. (2019, November). Female financial inclusion and its impacts on inclusive economic development. In Women's Studies International Forum (Vol. 77, p. 102300). Pergamon. DOI:10.1016/j.wsif.2019.102300

[17] Andrianaivo, M., & Kpodar, K. (2012). Mobile phones, financial inclusion, and growth. Review of Economics and Institutions, 3(2), 30. DOI:10.5202/rei.v3i2.75

[18] Gomber, P., Koch, J. A., & Siering, M. (2017). Digital Finance and FinTech: current research and future research directions. Journal of Business Economics, 87(5), 537-580. DOI:10.1007/s11573-017-0852-x

[19] Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. Borsa Istanbul Review, 18(4), 329-340. DOI:10.1016/j.bir.2017.12.003

[20] Global Partnership for Financial Inclusion Indicators [C]. (2016), Hangzhou: G20Hangzhou Summit.

[21] Gabor, D., & Brooks, S. (2017). The digital revolution in financial inclusion: international development in the fintech era. New political economy, 22(4), 423-436. DOI: 10.1080/13563467.2017.1259298

[22] Si Dd Ik, M., & Kabiraj, S.. (2020). Digital Finance for Financial Inclusion and Inclusive Growth. DOI: 10.1007/978-3-030-08277-2_10

[23] Zhang Xun, Wan Guanghua, Zhang Jiajia,He Zongyue.(2020).Digital Economy, Financial Inclusion and Inclusive Growth. China Economist(03),92-105. DOI:10.19602/j.chinaeconomist.2020.05.07.