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The Impact of Financial Liberalization Policies on Income Inequality

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ABSTRACT

This paper examines impacts of China's financial liberalization policy on income inequality, through three channels: financial scale, financial structure and financial efficiency, an empirical analysis based on panel data of 30 provinces in China from 1996 to 2013 is conducted. The results confirm the Kuznets effect between financial scale, financial structure and income inequality. As the size of the financial sector expands, the financial structure is tilted toward direct financing, and the income gap among residents will experience a "reverse U-shaped" trend that rises first and then falls. Most of China has not yet passed the turning point, and is still in the upper bound of the "inverted U-shaped" curve. Financial liberalization policies will continue to exacerbate income inequality. The impact of financial efficiency on income distribution is quite different in different regions of China. After dividing the whole China into three regions according to the degree of economic development, it is found that the financial efficiency of the eastern and western regions has a Kuznets effect on the income gap, but compared with the eastern region, more provinces and cities in the western region have entered the stage of reducing the income inequality, and the financial development has a great impact on the western region. The effects of financial development on central China are weak, and income inequality increases with financial efficiency.

KEYWORDS

Financial liberalization; urban-rural income gap; Kuznets hypothesis

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1. Introduction

China's rapid economic growth and market-oriented reforms have been accompanied by the implementation of financial liberalization policies over the past few decades (Liu, 2023). These policies aimed to enhance the efficiency and competitiveness of China's financial sector, attract foreign investment, and foster economic development (Guo, 2022 and Liu, 2023). However, concerns have emerged regarding the potential consequences of these policies on income inequality within China (Guo, 2022). This research paper aims to investigate the impact of financial liberalization policies on income inequality in China, providing a comprehensive analysis of this intricate relationship.

According to Mukherjee et al. (2021) and Muganyi et al. (2022), china's financial liberalization policies encompass a wide range of measures, including the liberalization of interest rates, the opening up of capital markets, and the promotion of financial innovation. These reforms have brought about significant changes to China's financial landscape, but their implications for income distribution are not yet fully understood. This research paper seeks to fill this knowledge gap by examining empirical evidence and conducting an in-depth analysis of the impact of financial liberalization on income inequality in China.

Since the reform and opening up, China's economy has developed rapidly, and the income level of urban and rural residents has been significantly improved. In 2018, the per capita disposable income of urban residents reached 39,251 yuan, 114 times that of 40 years ago. The per capita net income of rural residents reached 14,617, 88 times that of 40 years ago. This is accompanied by rising inequality in income distribution. According to the Asian Development Bank, China's Gini coefficient was only 0.16 before 1978. However, official figures released by the Chinese government in 2012 show the national Gini coefficient has reached 0.474. China's real Gini coefficient was more than 0.6 in 2011, according to a survey of household finance led by Southwestern University of Finance and Economics. Historical studies have shown that income inequality is often associated with long-term economic regression (Aghion et al. 1999; Banerjee and Duflo, 2003). Bruckner and Lederman (2015) found that every 1% increase in the Gini coefficient would reduce per capita GDP by 1.1% in five years, based on panel data for 30 years in 104 countries. In the long run, the cumulative effect will increase to 4.5%.

At the same time, China's financial market is undergoing rapid changes. From the fact that there is basically no financial market, to the relatively complete financial system that has been established from banks and stock exchanges to the currency and derivatives markets, China has only used it for less than 30 years. The broad money amount has increased by 118 times from 1,529.34 billion yuan in 1990 to 182,674.42 billion yuan at the end of 2018. The deposits of financial institutions increased by nearly 130 times from 1394.29 billion yuan in 1990 to 182.52 trillion yuan at the end of 2018. In recent years, with the acceleration of financial liberalization, China has gradually realized interest rate liberalization, financial business and access liberalization, and capital account liberalization. The financial liberalization policy has expanded the scale of finance, optimized the financing structure, and improved financial efficiency. As an indispensable part of the process of all developing countries moving towards developed countries, the role of financial liberalization is highlighted.

In the important stage of China's economic transformation and financial opening, research on financial development and income inequality is crucial. Only when the economy is steadily advancing, and taking into account the development of the people's livelihood, can China truly achieve the development goal of "the country is rich and the people are strong". Therefore, the research of this paper has important guiding significance for the formulation of China's macroeconomic policy, and provides policy guidance for further narrowing the income gap and making economic development benefits benefit the poor.

In terms of contributions, this research study on the impact of financial liberalization policies on income inequality in China could contribute by assessing the relationship between financial liberalization and income inequality, exploring if reforms affect income distribution, conducting empirical analysis using specific Chinese data

to determine the effects of financial liberalization on income inequality, identifying mechanisms and channels through which financial liberalization influences income inequality, such as changes in credit access and market development, evaluating the distributional impacts of different financial liberalization measures in China, considering policies like interest rate liberalization and regulatory changes and finally informing policy discussions and providing recommendations to policymakers on designing reforms for more equitable income distribution in China.

The paper is divided into five parts. The second section reviews the literature; the third section briefly describes the development process of China's financial reform; the fourth section conducts empirical analysis, including introduction of indicators and data selection, measurement models, analysis of regression results and robust tests; section 5 summarizes and gives policy suggestion.

2. Literature review

Prior to the literature review, it is necessary to distinguish and understand "financial liberalization" and "financial development". Schumpeter said: "When it comes to development, we should understand that it is only within the economy, not outside, that the changes that occur on their own" (Schumpeter, 1989) Financial development refers to a dynamic process in which the functions of finance are continuously improved, expanded and, in turn, promoted the improvement of financial efficiency and economic growth (PengXin, 2001). And financial liberalization is the policy channel through which governments deepen and develop their finance through deregulation. Kaminsky and Schmukler (2003) divide this policy channel into three parts: capital accounts, domestic financial sectors and securities markets, and classifying 28 countries according to the degree of liberalization as "full liberalization", "partial liberalization" and "financial repression".

Since the 1970s, the relationship between financial development, economic growth and income inequality has been studied and discussed in detail. There is a great deal of literature showing the role of financial development and economic growth (Levine, 2005). From Goldsmith (1969), McKinnon (1973) and Shaw (1973), the theory of "financial repression" and "financial deepening" has been put forward, and the research on the financial sector in developing countries has been gradually increasing. In this paper, we review the literature from two aspects: the relationship between financial liberalization and income inequality; Channels for the role of financial development in income inequality.

2.1. Relationship between financial liberalization and income inequality

There are four main views on the relationship between financial development and income inequality:

The first group of scholars argues that financial development increases inequality in income distribution. This theory predicts that financial development benefits the rich first, because the poor are always dependent on informal financing channels, such as through friends and family, or private banks, pawnshops, etc., and rarely use formal financial institutions. So it is clear that government reform of the formal financial sector will benefit the rich first. A nonlinear model between financial development and income inequality, established by Greenwood and Jovanovic (1990), suggests that, in the early days of development, only the rich had formal financing channels and were better able to benefit directly from reform.

Second, scholars argue that financial development helps reduce income inequality. They argue that financial development could accelerate growth and narrow income disparities by making capital distribution more efficient by easing lending conditions. The main reason for poor people's difficulties in financing is the lack of credit history and collateral. So, as long as the conditions for poor people to lend are relaxed, they will benefit more than the rich (Galor and Zeira, 1993).

The third category of scholars holds that there is a nonlinear relationship between financial development and income disparity. Initially, Kuznets (1955) constructed a quadratic relationship between economic development and income inequality, and confirmed that an economy would experience a widening gap between rich and poor as it progressed from slow to high speed. Theoretical studies by Greenwood and Jovanovic (1990) show that the relationship between financial development and wealth distribution is in line with the Kuznets curve, which is called "inverted U-shaped relationship".

There is also a class of scholars who argue that there is a negative causal link between financial development and income inequality, which also impedes financial development. They believe that political and institutional factors lead to financial and economic imbalances. Acemoglu and Johnson (2005) noted that a responsible Government was a prerequisite for stable economic development. Distorted political participation would enable vested interests to protect their interests by restricting access to financing, and ultimately to curb competition. Perotti and Volpin (2007) studied the relationship between newspaper circulation and credit rights in 104 countries, pointing out that the more accountable a country's political institutions are, the more secure investors' rights are and the more equitable financing channels are, the results of Inekwe (2020) are in the same direction.

In recent years, empirical research on the relationship between financial liberalization policies and income-distribution inequalities has also increased and failed to reach agreement. Beck et al. (2010), by studying the impact of deregulation on income distribution in the United States between 1970 and 1990, it was found that deregulation significantly reduced inequality in income distribution. The study also showed that the channels of improvement are to increase the income of low-income people, without a significant impact on middle-income people. Agnello et al. (2012) Analysis of panel data on financial reform in 62 countries between 1973 and 2005 found that deregulation of guided credit and elimination of excessive margin requirements reduced income inequality. However, some scholars have raised objections through the study. Ben Naceur and Zhang (2016) showed that financial liberalization policies exacerbated income inequality over a 51-year period in 143 countries.

2.2. Channels and Mechanisms:

Understanding the channels and mechanisms through which financial liberalization affects income inequality is crucial for comprehending the complex relationship in the Chinese context. Several studies highlight specific mechanisms through which financial reforms can influence income distribution. Ridzuan et al. (2021) and Mansour (2023) emphasize the role of financial market development in exacerbating income inequality by providing better investment opportunities for high-income individuals. In the China, Koh et al. (2020) found that stock market development and financial deepening contribute to increasing income inequality in China.

Additionally, labor market dynamics play a significant role in the relationship between financial liberalization and income inequality (Ni and Liu, 2019 and Ali, 2022). Le et al. (2021) and De Soysa and Vadlamannati (2021) argue that financial liberalization affects income inequality by influencing the demand and supply of different types of labor. They suggest that financial reforms may favor skilled workers and exacerbate wage disparities, contributing to income inequality.

2.3. Relevant research in the case of China

China, due to its unique urban-rural dual structure, has become a fertile ground for studying the role of financial liberalization policies in the urban-rural income gap. Many scholars have fully explored the impact and channels of financial deepening and financial repression. Yang Jun et al. (2006) based on time series data from 1978 to 2003 showed that China's financial development significantly widened the gap in the distribution of income. Li Yonghui et al. (2008) used time series data from 1952 to 2005 to confirm the inverted U-shaped evolution path between

China's financial deepening and residents' income disparity. In recent years, more scholars have used panel data research methods to analyze the impact of financial development in more detail. Yu Lingzheng (2012) used panel data from 29 provinces and municipalities in China to test the nonlinear relationship between financial development and income inequality, which showed an inverted U-shaped relationship. Gu Xiujuan and Bai Junyi (2015) studied the panel data of 31 provinces and municipalities in China from 1990 to 2014 from three aspects of financial scale, efficiency and structure, and obtained the linear relationship between the three levels of income disparity. Wang Tianyu and Dong Jin (2015) added a quadratic term to the model, confirming the Kuznets effect between financial structure and efficiency and urban-rural income disparity.

The above documents provide a solid theoretical basis and empirical basis for further exploring the impact of financial liberalization policies on the income gap of residents. From different dimensions, using data from different periods and regions to study the relationship between the two, the results are different. However, most of the current literature only studies the linear impact of financial size on income inequality, without considering the Kuznets effect between financial development, economic growth and income inequality, and also takes into account the impact of financial structure and financial efficiency on income inequality. In this paper, we examine the nonlinear relationship between financial liberalization policies and income inequality from the above three dimensions, based on panel data from 30 provinces, municipalities and autonomous regions in China.

3. The development of China's financial reform

2018 marked the 40th anniversary of the reform and opening-up. Over the past four decades, China has made steady progress on the road of "economic reform-financial reform-financial opening" (Zhong Zhengsheng, Zhang Lu, 2017). When China's economic reforms began in 1978, there was only one formal financial institution in the country, the People's Bank of China. As the only commercial bank and central bank at the time, the PBOC held 93% of the country's financial assets. Four decades later, China's four largest banks are among the top 10 in the world, with capital and bond markets at the top of the world, with the renminbi joining the Special Drawing Rights (SRD). China's financial reforms have been effective, but still contradictory. This section briefly reviews the development of China's financial reform since 1978 in the following four aspects.

3.1. Reform of the central bank and financial supervision system

The People's Bank of China was established on November 1, 1948, but it did not perform its main function as a financial institution until the eve of the reform and opening-up. As Deng Xiaoping said, the banks of the past were not real banks, they were accounting cashier, and they were currency issuers. At this point, the central bank is simply a substitute for the government in collecting and distributing funds. In 1984, the People's Bank of China transferred policy and commercial banking to strengthen financial regulation, financial supervision and financial services, and thus exclusively performed the functions of the central bank. Among them, the functions of the commercial bank were independent and the Industrial and Commercial Bank of China was established. After Deng Xiaoping's 1992 speech on his southern tour, the Chinese government accelerated the reform of the market economy. The 1995 Law of the People's Republic of China on the People's Bank of China was passed, and China took the first step of "separating banking from government": For the first time, the central bank was given the right to formulate national monetary policy in the form of national legislation, emphasizing its independence with the Ministry of Finance and the Government.

3.2. Banking reform

The four major state-owned commercial banks are directly under the jurisdiction of the Ministry of Finance

and the Central Huijin Co., representing China's strongest financial capital. Their reforms are the centerpiece of banking reform. The Big Four banks have made significant contributions to the stability of China's financial system and the reform of state-owned enterprises, and they are also burdened with many financial risks and heavy historical burdens. In the 1990s, state-owned enterprises were refunding loans, and bank loans surged. However, with the deepening of market-oriented reform, market competition has intensified, many state-owned enterprises have reduced their ability to repay principal and interest, and production management is not suited to market competition. In the 1998 Asian financial crisis, the NPL ratio of the four major banks soared, and at one point fell into Lardy (1998).

The government first promoted the reform of the four banks by establishing joint-stock banks, and stripped the burden of policy loans from the four banks to create three policy banks. In 1998, the Asian financial crisis erupted, with the Ministry of Finance issuing 270bn yuan of special treasury bonds and refunding the four major banks as capital supplements. In 1999, the four major financial asset management companies were established to deal with the bad assets divested by the Bank of China, the China Construction Bank and the China Development Bank, the Industrial and Commercial Bank of China and the Agricultural Bank of China, totaling 1.4tn yuan. In order to reform the stock system, the four banks listed in 2003, 06, 07 and 10 years respectively. The completion of such tasks as capital injection, issue of subordinated bonds, handling of non-performing loans, and introduction of strategic partners has greatly changed the ownership structure of the four major banks and improved bank information disclosure. Regulation is also growing on the road to market-based regulation. In 2007, the Banking Supervision Law of the People's Republic of China was officially implemented and further improved with the issuance of the Basel Accord. The Big Four will implement Basel II requirements by the end of 2010. The enactment and implementation of the 2015 Deposit Insurance Ordinance is also an embodiment of the application of the Basel Accord in China.

The reform and development of China's financial system and opening up to the outside world complement each other. In addition to the reform of the big four banks, the government is also actively introducing foreign capital. Indeed, Standard Chartered opened a branch in Shanghai in 1858, the longest-running bank in China. After the founding of the People's Republic of China, four foreign-funded banks, HSBC, Bank of East Asia, OCBC and Standard Chartered Bank continued to operate in Shanghai. With the deepening of economic reform, domestic financial markets have gradually opened up to foreign capital.

3.3. Development of financial markets

3.3.1. Securities Market

Restricted by ideology and economic development, China had few financial markets before its reform and opening up. It was not until the early 1980s that small state-owned enterprises began to experiment with the form of equity ownership. In 1981, the government issued initial public debt. The first stock was issued in Shenzhen in 1983. In 1986, the Shenyang Trust and Investment Company was established and began trading small-scale stock securities. The Shanghai Stock Exchange and the Shenzhen Stock Exchange were established in 1990 and 1991 respectively.

The interbank bond market is the main body in the bond market. China's interbank bond market was established in 1997. Treasury bills, financial bonds, and central bank bills are three major components of a complex mix of bonds. Until 1995, government bonds were the main form of Chinese bonds. Financial bonds were born. But since 2004, central bank bills have since topped the list, exceeding Treasury bills and constituting as much as half the total. The rapid development of central bank bills was the result of massive foreign exchange inflows since 2004. The boom in government bonds is a reflection of the weakness of corporate bonds, which have made it difficult to

raise capital. Although corporate bond issuance has grown year by year, the overall content is still small: Between 1991 and 2009, the average was only 2%, and the peak was not more than 5%. Indeed, the backwardness of the corporate bond market is not unique to China. This has been common throughout Asia. For China, the lack of a sophisticated audit system and high-quality bond rating agencies, as well as the lack of protection for lenders, are the main reasons for low demand for corporate bonds.

The coexistence of risks and benefits is a salient feature of financial markets. The derivatives market provides an excellent place for price setting and risk transfer. From 1990 to 1993, there were more than 50 futures markets and nearly 1,000 futures brokerage companies. At the end of 1993, the central government began to clean up the options trading market. In the end, only 15 futures markets were designated as pilot markets, and many futures transactions were canceled. In 1998, when the second campaign began, 15 futures markets were merged into the Shanghai Futures Exchange (SHFE), the Zhengzhou Commodity Exchange (ZCE) and the Dalian Commodity Exchange (DCE).

With the increase in the issuance and trading volume of various securities, corresponding regulatory policies have been gradually introduced. The China Securities Regulatory Commission was established in 1992. Government control over IPOs has also been gradually liberalized, and the securities market has developed rapidly. The number of listed companies on China's stock market has grown from 10 in 1990 to 3,500 in 2017. From 1993 to 2017, the volume of transactions in China's securities market was less than 500 billion yuan, reaching 275 billion yuan.

3.3.2. Introduction of foreign investment

In an effort to attract more international capital, the Chinese government issued renminbi-denominated special stocks, also known as B-shares, in 1991, which are certified and purchased in foreign currencies. In 1993, the first mainland company listed in Hong Kong, and state-owned companies, also known as H shares, were born. In 1994, the first mainland company listed on the New York Stock Exchange, with the creation of N shares. In 1997, the first mainland company listed in London, with an L-share offering.

After China's entry into the WTO, the government promised to further open its securities market to the outside world. A foreign securities company may directly conduct B-share transactions and be permitted to establish a fund management and equity joint securities company. In order to promote the orderly and safe opening of the securities market, the government decided to introduce the "qualified foreign institutional investor" (QFII) system in December 2002, requiring foreign investors to meet certain conditions when entering the Chinese market, and only after obtaining approval from the relevant Chinese departments can they remit certain amount of foreign exchange funds to invest in the securities market of our country. By the end of 2017, the number of QFII had reached 310. In January 2019, restrictions on foreign inflows into A-shares were further loosened, with QFII quota increased from US$150 billion to US$300 billion.

3.3.3. Diversified market participants

An important indicator of a country's stock market maturity is that institutional investors outnumber individual investors significantly. Until 1998, on the eve of the establishment of two closed-end funds, Cathay and South Fund, there were few institutional investors in China. After 1999, with the listing of three types of corporate funds and insurance company funds, the proportion of institutional investor funds in the total amount of securities funds increased rapidly. The total amount of insurance money has risen 13-fold, making it the largest source of funding for institutional investors. Since 2000, the China Securities Regulatory Commission (CSRC) has proposed to focus on developing Chinese institutional investors. In September 2001, the establishment of China's open-end fund marked the beginning of the diversification of China's fund products. Institutional investors have gradually replaced individual investors as major participants in the securities market. Their development will help stabilize

markets, encourage small and medium-sized investors to make mature and rational decisions, promote financial innovation and improve market efficiency.

3.4. Opening of financial markets

3.4.1. Exchange rate reform

Between 1988 and 1993, the renminbi was subject to a dual exchange rate regime, with the official and market exchange rates. However, as the external part of the economic system continues to expand, the market exchange rate will become more important. As a result, the official exchange rate was reformed in 1994 and aligned with the market exchange rate. Since then, the era of managed floating exchange rates has begun, with the abolition of dual exchange rates. In 2005, the exchange rate system was reformed for the second time, namely, the "7.21 exchange rate reform". The reform of large financial institutions was completed in mid-2005 as the backdrop for the FX reform. At the same time, the domestic resource pricing mechanism has gradually taken shape, the reform of state-owned enterprises has been smoothly carried out, and a number of large enterprises have been listed at home and abroad, thus laying a micro-level foundation for the reform of foreign exchange. The July 21 Exchange Rate Reform announced that the renminbi was no longer pegged to the single dollar, but adjusted against a basket of currencies based on market supply and demand. This institutional direction continues to this day.

In 2010, the central bank announced that it would further deepen reform of the renminbi exchange rate to make the renminbi more flexible. In 2012 and 2014, the renminbi exchange rate eased to 1% and 2% against the dollar, respectively, while the renminbi exchange rate changed from one-way appreciation to two-way volatility.

3.4.2. Control and liberalization of capital accounts

Capital-account liberalization is the most important and difficult policy in the process of financial liberalization. In the process of capital account liberalization, China has always pursued a "foreign direct investment priority" strategy. Since 1994, more and more regions have been opened to foreign direct investment, and the approval authority for FDI projects has been delegated to local governments. After China joined the WTO in 2001, China entered a new era of external reform. In addition to tariff cuts, the government has promised to gradually eliminate barriers to foreign entry into China. After 2002, domestic capital markets were opened to QFII. In 2005, the first foreign company listed on the Shanghai Stock Exchange. In the same year, a domestic company may establish special purpose companies overseas, which are convenient for listing overseas, merger and acquisition.

In recent years, academic and policy circles have been fiercely debating whether to accelerate the opening of China's capital account. In 2012, the central bank noted that the time had come to accelerate the opening of the capital account as the global financial crisis lowered valuations for companies in developed countries and provided a window of time for China to encourage outbound investment; Second, the effectiveness of China's capital-account controls is diminishing (PBOC, 2012). But many academics have also voiced opposition. They argue that the tail risks of accelerating capital-account opening are huge, and that the existing financial vulnerabilities will exacerbate them. Since then, the central bank's acceleration of capital-account liberalization has eased, but is continuing.

4. Empirical research

4.1. Indicator selection and data

4.1.1. Measurement of financial liberalization policies

With the analysis of the impact of the most recent financial liberalization policies increasing, the academic

community measures the degree of implementation from various perspectives. The author divides the measurement angle into two categories. The first is direct measurement. Such studies often directly extract decisions on financial liberalization from the financial yearbooks of countries or regions, and then use principal component analysis to calculate financial liberalization indicators. Bandiera et al. (2000) Divide liberalization policies first into three main parts, with eight indicators; Each metric is represented by a virtual variable. If this area is fully liberalized, the value assigned to this year and beyond is 1, otherwise 0. On this basis, Qiu Juandong et al. (2011) made improvements to make a detailed distinction between general events, major events, and major policies, assigning values of 0.5, 1, 2, respectively. Then the principal component analysis is used to arrive at a composite index that measures the progress of China's financial liberalization. The second type of measurement seeks proxy variables for financial liberalization policies. Since financial liberalization generally promotes financial deepening and development, it seeks variables that measure financial development and financial depth. In country-level analysis, monetized M2/GDP is often used to represent financial depth (Mckinnon, 1973, 1993). In the analysis at the provincial and municipal levels, other features of the financial system are often sought to replace the data on money supply, which is not available. China's financial system is mainly bank credit, so the ratio of the balance of deposits and loans to GDP of financial institutions in all provinces and municipalities can measure the level of financial development. This variable is also known as the financial scale variable (Yu Lingzheng, 2012; Wang Tianyu, Dong Jin, 2015; Xu Min, 2017). Financial structures and financial efficiency also often appear in the model as explanatory variables. They are expressed in terms of the ratio of direct financing to total regional financing, and the ratio of regional deposit balances to regional GDP. Given the availability of data, this paper will measure the impact of financial liberalization policies on income distribution from the above three dimensions.

4.1.2. Measurement of income inequality

Income disparity between urban and rural areas is the main factor leading to income inequality in China. So this paper shows income inequality through the income gap between urban and rural. In general, the Gini coefficient is selected as an indicator of income disparity. Because it is difficult to get the data of calculating Gini coefficient, this paper uses the data of residents' income in 30 provinces, municipalities and autonomous regions to calculate the provincial Tire index. At the same time, it uses the ratio of urban to rural income to carry out the robust test.

Over the past three decades, China has gradually transformed its economic system into a market economy. As in other countries in transition, the gap between rich and poor is widening. Since the 11th Five-Year Plan, the government has focused on poverty. As of 2010, according to the poverty line standard issued by the World Bank (US$1.25 per day), the number of poor people in China has decreased by 150m compared to a decade ago, and only 6% of the rural population has a wage income below the poverty line. Despite the achievements in poverty alleviation, the income gap among Chinese residents has continued to widen. This expansion was moderated in the early 2000s. The China Household Income Survey Data (CHIP) and the China Family Dynamics Tracking Survey (CFPS) collected microscopic data for six years from 1995 to 2014. Table 1 shows the Gini coefficient in China over the six years. Income inequality is "inverted U-shaped", with a peak between 2007 and 2010.

Table 1. China Gini Coefficient Survey Data Sheet.

Year	Data	Gini
1995	CHIP	0.349
2002	CHIP	0.445
2007	CHIP	0.478
2010	CFPS	0.533
2012	CFPS	0.504
2014	CFPS	0.495

This paper uses the Theil index and the urban-rural income ratio to measure income inequality. Figure 1 shows the Theil index calculated from the income data of residents in 30 provinces, municipalities and autonomous regions in China. The corresponding data for each year in the figure is the mean of the National Tyre Index for that year. The bigger the Tyre index, the higher the inequality. It can be seen that the income gap between Chinese residents and the results of the CHIP and CFPS surveys converge. The income gap has gradually grown from the late 1990s, peaking between 2003 and 2009, and the income gap has gradually narrowed since 2010. Figure 2 shows the average change in the urban-rural income ratio of 30 provinces, municipalities and autonomous regions. Comparing the two pictures, we can conclude that the income gap in China is "inverted U-shaped".

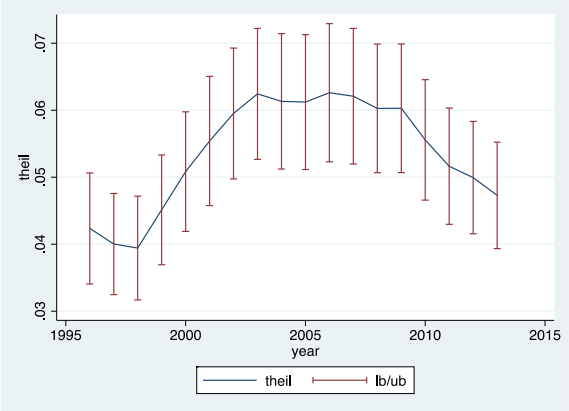

Figure 1. Statistics of the province's Theil index.

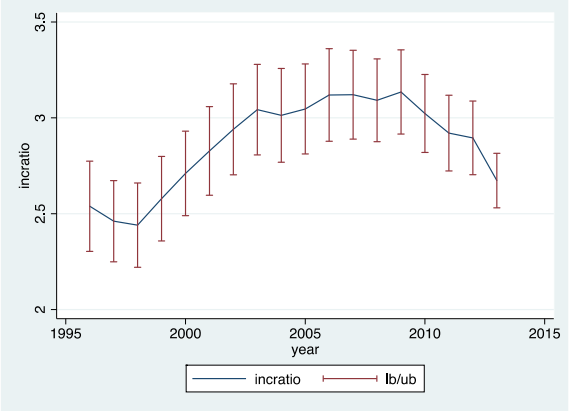

Figure 2. Statistical graph of urban and rural income ratio.

4.1.3. Other control variables

(1) Government fiscal expenditure: This is expressed as the share of public finance expenditure in regional GDP in all provinces and municipalities. Government public spending often has important implications for income distribution. A large body of literature has shown that public spending helps to promote income redistribution, thereby reducing the income gap (Lustig et al. 2013).

(2) Education level: This is expressed as the share of education funds in regional GDP in all provinces and municipalities.

(3) Indicators for opening to the outside world: The ratio of foreign direct investment to regional GDP is used. Since FDI is expressed in dollars, the data is multiplied by the renminbi-dollar exchange rate of the year.

(4) Employment rate: The proportion of the total number of urban and rural employees in all provinces and municipalities to the total number of people in all regions at the end of the year shall be used.

(5) GDP per capita: The model contains the first and second terms of the per capita GDP-to-value of provinces and municipalities to control the Kuznets effect of economic growth on income inequality.

(6) Urbanization level: The proportion of urban population in the total population of the regions at the end of each province or municipality shall be used as the indicator. The literature indicates that urbanization has a significant impact on poverty and inequality indicators and has a "inverted U-shaped" relationship with income inequality (Wu and Rao, 2017; Liddle, 2017). This model also uses the primary and secondary terms of urbanization level to control the impact.

4.1.4. Data Source Description

The financial variable data used in this paper are all from the China Regional Financial Operation Report. The employment population data comes from the Statistical Bulletin of National Economic and Social Development in various regions. Other data and indicators come from the China Statistical Yearbook and the statistical yearbooks of various regions.

Table 2. Main descriptive statistics.

Variable name	Number of observations	Mean	Standard deviation	Minimum value	Maximum
Theil index	535	0.054	0.025	0.008	0.127
Financial scale	535	2.403	0.826	1.174	6.662
Financial structure	359	0.118	0.109	0	0.701
Financial efficiency	535	1.363	0.573	0.621	4.567
Education	521	0.032	0.013	0.006	0.092
Government	534	0.163	0.084	0.003	0.612
Open	534	0.03	0.029	0.001	0.168
Urbanization rate	517	0.435	0.163	0.139	0.896
Per capita GDP	535	19525.93	17123.39	2048	94648
Unemployment rate	535	3.512	0.827	0.6	6.8

4.2. Measurement model

This paper selects three dimensions to measure the financial liberalization policy and sets the following regression model:

$$Theil_{it} = \alpha + \beta_1 Finscale_{it} + \beta_2 X_{it} + \mu_i + \varepsilon_{it} \quad (1)$$

$$Theil_{it} = \alpha + \beta_1 Finscale_{it} + \beta_2 Finscale_{it}^{2} + \beta_3 X_{it} + \mu_i + \varepsilon_{it} \quad (2)$$

$$Theil_{it} = \alpha + \beta_1 Finstruc_{it} + \beta_2 X_{it} + \mu_i + \varepsilon_{it} \quad (3)$$

$$Theil_{it} = \alpha + \beta_1 Finstruc_{it} + \beta_2 Finstruc_{it}^{2} + \beta_3 X_{it} + \mu_i + \varepsilon_{it} \quad (4)$$

$$Theil_{it} = \alpha + \beta_1 Fineff_{it} + \beta_2 X_{it} + \mu_i + \varepsilon_{it} \quad (5)$$

$$Theil_{it} = \alpha + \beta_1 Fineff_{it} + \beta_2 Fineff_{it}^{2} + \beta_3 X_{it} + \mu_i + \varepsilon_{it} \quad (6)$$

Among them, Theil is the Thiel index as an explanatory variable to measure the urban-rural income gap; Finscale, Finstruc and Fineff are the financial scale, financial structure and financial efficiency, respectively, as three dimensions for measuring financial liberalization policies; X_{it} contains a range of control variables that may affect income inequality, as presented in the previous section. μ_i is the province and time fixed effect; ε_{it} is the error term. Models (1, (3), (5) study the impact of financial size, structure and efficiency on income inequality; The models (2, (4), (6) consider the Kuznets effect on income inequality in these three dimensions, respectively.

4.3. Regression and analysis

Before regression analysis, the panel data were tested by Hausman to determine whether to adopt fixed effect or random effect model. The test results strongly reject the hypothesis that there is no significant difference between the two models, so we choose the fixed effect model.

In the regression analysis, the logarithmic descendants of the Thiel index and the financial scale, institution and efficiency of the independent variables are used in the model to eliminate the heteroscedasticity of the data.

The regression results of the fixed effect model for 30 provinces and municipalities are shown in table 3, and the columns correspond to six models in the previous section. By comparing the coefficients of the independent variables in (1)(2), (3)(4), and (5)(6), we can find that the coefficients of the (2)(4) model independent variables are all significant, which indicates that there is a Kuznets effect on income inequality in financial scale and financial structure; However, the coefficients of the quadratic terms of financial efficiency and financial efficiency are not significant in the (5)(6) model. It is assumed that financial efficiency has no effect on income inequality, or the effect is different in different provinces of China.

Table 3. Estimated results of the impact of financial liberalization policies on income inequality.

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Fixed Effects	Fixed Effects	Fixed Effects	Fixed Effects	Fixed Effects	Fixed Effects
Financial scale	0.0635	0.903**				
	(0.156)	(0.375)				
Financial scale twice		-0.463**				
		(0.199)				
Financial structure			0.0118	0.210*		
			(0.120)	(0.164)		
Financial structure twice				-0.442***		
				(0.225)		
Financial efficiency					-0.0173	-0.197
					(0.118)	(0.151)
Financial efficiency twice						-0.507
						(0.302)
Open	0.540	0.704	-1.216	-1.121	0.644	0.668
	(0.996)	(0.911)	(0.830)	(0.807)	(0.861)	(0.816)
Education	2.247	1.148	1.024	0.774	2.324	2.214
	(1.994)	(1.796)	(1.250)	(1.245)	(1.962)	(1.838)
Government	-1.040*	-0.874	-0.523	-0.449*	-1.030*	-0.918*
	(0.509)	(0.522)	(0.334)	(0.334)	(0.521)	(0.508)
Per capita GDP	-0.710	-0.728	-1.337**	-1.457**	-0.815	-0.905
	(0.813)	(0.746)	(0.573)	(0.606)	(0.842)	(0.786)
Secondary GDP per capita	0.0565	0.0574	0.0799***	0.0851***	0.0609	0.0605
	(0.0426)	(0.037)	(0.027)	(0.0293)	(0.0434)	(0.0411)
Urbanization rate	3.268***	2.192*	6.456***	6.384***	3.390***	3.582***
	(0.971)	(1.153)	(0.956)	(1.015)	(0.995)	(1.018)
Urbanization rate twice	-4.489***	-3.566**	-6.756***	-6.771***	-4.560***	-4.596***
	(1.159)	(1.319)	(0.907)	(1.013)	(1.180)	(1.157)
Unemployment rate	0.0294	0.0224	-0.0515**	-0.0459**	0.0313	
	(0.0244)	(0.0240)	(0.0194)	(0.0201)	(0.0252)	
Constant term t	-2.015	-1.990	1.413	2.068	-1.435	-0.692
	(3.847)	(3.665)	(2.821)	(2.971)	(4.031)	(3.744)
Number of observations	504	504	336	335	504	504
R2	0.716	0.737	0.690	0.695	0.716	0.727

Note: Sign.level: 1%(***); 5%(**); 10%(*).

The following conclusions can be drawn from the regression results:

(1) From the perspective of financial scale, the impact of financial liberalization on income distribution is not a simple linear relationship, but a "inverted U-shaped" relationship. According to coefficient calculation, the financial scale is below 0.975, that is, when the ratio of deposit and loan to GDP is less than 2.651, the income gap will widen with the increase of the financial scale. When the ratio of deposits to loans to GDP is greater than 2.651, the income gap narrows as the size of finance grows. However, as shown in figure III, most of the country is still below the threshold of 2.651. Indeed, only Beijing and Shanghai were above that threshold by 2013. The rest of the world is still going through a widening income gap as finance grows. In light of the actual situation in our country, the impact is understandable. Due to the lack of financing channels in rural areas and the lack of education level of residents, urban residents will enjoy the primary achievement of financial development, namely, financing benefits brought about by the expansion of financial scale. As a result, the income of urban residents has improved, while that of rural residents has not improved significantly. In Beijing, Shanghai and other regions with relatively fast economic development, urban and rural development is gradually balanced, the rural financial system is gradually improving, and the utilization rate of capital is beginning to improve, so the financial scale has begun to play a positive role in promoting the fairness of income distribution.

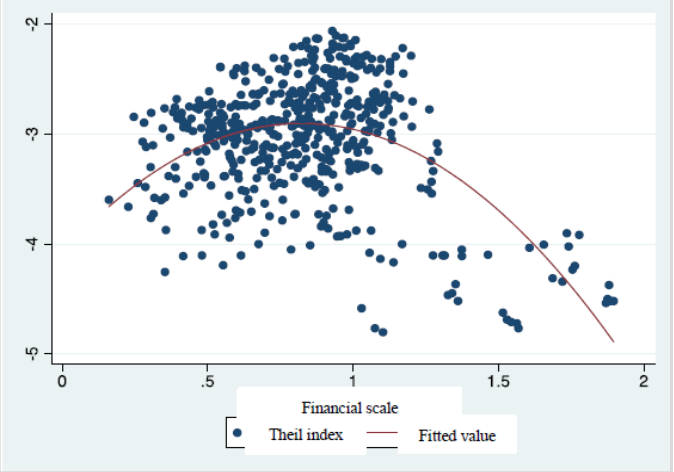

Figure 3. The impact of financial scale on income inequality.

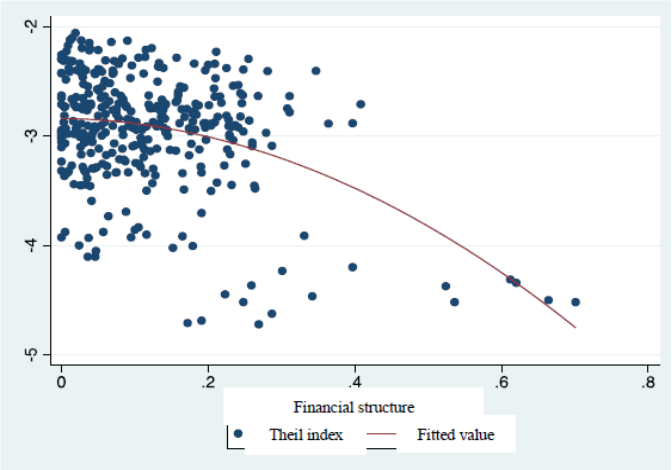

Figure 4. Figure of the impact of financial structure on income.

(2) From the perspective of financial structure, the impact of financial liberalization on income distribution is

also "inverted U-shaped". According to the coefficient calculation, the value of the financial structure corresponding to the extreme value is 0.238, that is, when the proportion of direct financing is less than 23.8% of the total financing, the income gap will increase with the financial structure inclined to direct financing; When direct financing accounted for more than 23.8% of total financing, the income gap narrowed as the financial structure tilted towards direct financing. However, as shown in figure 4, most of our provinces have not yet crossed the threshold. In fact, as of 2012, only some provinces and municipalities such as Beijing (70.1%), Jiangsu (26.3%) and Shanghai (26.9%) were above the threshold. Generally, the higher the share of direct financing in total financing, the smaller the income gap. As the proportion of direct financing increases, it often means the development of direct financing channels such as IPOs, corporate bonds and rights issues. These channels provide SMEs with more financing options, thereby optimizing resource allocation and ultimately reducing income disparities. However, because of the serious "double-track system" development mode in our country, that is, large state-owned enterprises have the priority use right of excellent resources. Excessive government involvement in the formulation of financial indicators has led to the long-term suppression of financial policies, so most provinces and regions in China are still below the threshold of 23.8%, financing channels are occupied by most state-owned enterprises, resulting in an imbalance in the development of state-owned private industries. The nuclear density map for the share of direct financing is shown in Figure 5, and it can be seen that from 2001 to 2012, the share of direct financing is rising, but the overall financing structure is tilted towards indirect financing. China's direct financing channels still have a broad room for improvement.

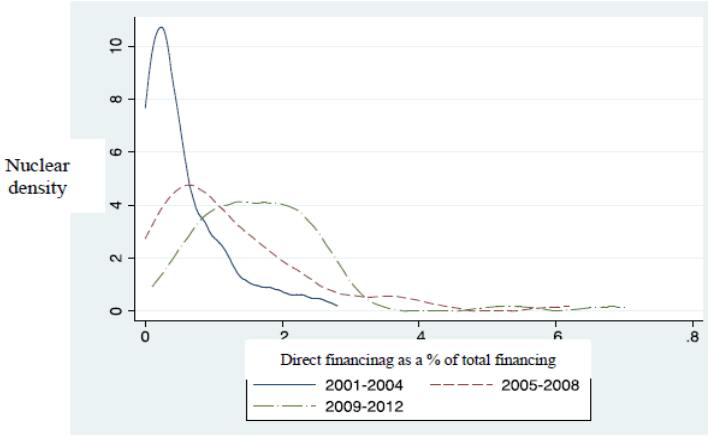

Figure 5. Direct financing ratio nuclear density map.

(3) Financial efficiency does not have a significant effect on the overall income distribution in 30 provinces and regions, taking into account the regional estimates. The 30 provinces and regions are divided into three parts, namely, eastern, western, central and northeastern, according to the degree of economic development. Regression analysis was carried out for them using models (5) and (6) in section II of this chapter. The regression results are shown in table 4, where (1) (2) is the eastern region, (3) (4) is the western region, and (5) (6) is central and northeastern region. The results show that the coefficients of the second term and the financial efficiency are significant. The coefficients of the second term are negative in the eastern and western regions, and the curve is inverted U-shaped. The quadratic coefficient of financial effect is positive and the curve is upward.

In the eastern region, the threshold for financial efficiency to play a role in reducing income inequality is 0.411. That is, when the total amount of deposits reaches 1.5 times of GDP, the increase in financial efficiency will reduce income inequality. As of 2013, 6 out of 10 eastern regions have crossed this threshold, and the increase in deposit rates has pushed funds to a higher rate of return, thereby improving the income of urban and rural residents and promoting distribution equity.

Table 4. Estimated results of the impact of financial efficiency on income inequality by region.

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Fixed Effects	Fixed Effects	Fixed Effects	Fixed Effects	Fixed Effects	Fixed Effects
Financial efficiency	0.0484	0.432**	0.263	0.742*	0.0173	-0.0337*
	(0.0594)	(0.186)	(0.344)	(0.426)	(0.0098)	(0.0146)
Financial efficiency twice		-0.525**		-0.916***		0.0170***
		(0.194)		(0.260)		(0.00347)
Open	0.597	0.332	-3.536**	-2.482*	0.0726	0.0544
	(0.839)	(0.929)	(1.500)	(1.240)	(0.0591)	(0.0442)
Education	6.779	5.462	0.395	-1.003	-0.0900	-0.105
	(4.514)	(5.179)	(2.182)	(2.155)	(0.0778)	(0.0752)
Government	-0.206	1.028	-0.677	-0.658	-0.00878	-0.0083
	(1.329)	(1.395)	(0.612)	(0.589)	(0.101)	(0.0803)
Per capita GDP	-0.900	-3.504**	1.166	1.025	-0.152	-0.0903
	(1.785)	(1.520)	(0.710)	(0.731)	(0.0951)	(0.0751)
Secondary GDP per capita	0.0704	0.192**	-0.0216	-0.0222	0.00929	0.00576
	(0.0914)	(0.0766)	(0.0399)	(0.0402)	(0.00530)	(0.00424)
Urbanization rate	4.692***	3.866***	1.560	1.401	0.246**	0.220**
	(0.951)	(1.025)	(2.272)	(1.834)	(0.0909)	(0.0762)
Urbanization rate twice	-5.476***	-5.305***	-2.941	-2.375	-0.326***	-0.293***
	(1.180)	(0.945)	(2.536)	(1.895)	(0.0934)	(0.0777)
Unemployment rate	0.0677**	0.0240	0.0211	-0.00158	0.00128	-0.000629
	(0.0252)	(0.0336)	(0.0271)	(0.0175)	(0.00234)	(0.00185)
Constant term	-2.480	11.50	-11.13***	-9.788**	0.596	0.368
	(8.770)	(7.615)	(3.206)	(3.356)	(0.405)	(0.318)
Observations	175	175	167	167	162	162
R2	0.778	0.817	0.779	0.815	0.893	0.913

Note: Sign.level: 1%(***); 5%(**); 10%(*).

In the western region, the threshold for financial efficiency to play a role in reducing income inequality is 0.405. Similar to the eastern region, after the total deposits reach 1.5 times GDP, the increase in financial efficiency will reduce income inequality. Due to the low total GDP in the western region, as of 2013, 9 out of 12 provinces and regions have crossed this threshold. The quadratic coefficient of financial efficiency is -0.916, which is larger than the eastern and central regions. This shows that the income of residents in the western region has been stronger since the financial development.

In the central and northeastern regions, the quadratic coefficient of financial efficiency is positive and significant at the level of %1, the primary coefficient is negative, and the financial efficiency abscissa corresponding to the extreme point is 0.991 and most provinces have crossed the point. The increase in financial efficiency will widen the urban-rural income gap in the central region, but since the quadratic coefficient is small compared with the eastern and western regions, it is only 0.017, which indicates that the financial efficiency of the central region has little impact on the income gap. This may be due to the densely populated and heavily labor-intensive industries in the central region, where residents' income is less dependent on financial development and liberalization.

4.4. Robustness test

In order to make the relationship between financial liberalization policies and income inequality more stable, the urban-rural income ratio is used as another indicator to measure income inequality. The impact of financial liberalization policies on the income gap of residents is still tested from the three dimensions of financial scale, financial structure and financial efficiency. The regression results are shown in Table 5.

Table 5. Estimation results of the impact of financial liberalization policies on urban-rural income ratios.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Fixed Effects	Fixed Effects	Fixed Effects	Fixed Effects	Fixed Effects	Fixed Effects
Financial scale	0.00542	0.238**				
	(0.0873)	(0.121)				
Financial scale twice		-0.0327**				
		(0.0120)				
Financial structure			0.131	0.0749***		
			(0.158)	(0.269)		
Financial structure twice				-0.459***		
				(0.373)		
Financial efficiency					0.0127	0.243
					(0.141)	(0.196)
Financial efficiency twice						-0.0447*
						(0.0243)
Open	-0.185	-0.372	-1.988*	-2.087*	-0.194	-0.390
	(1.149)	(1.076)	(0.993)	(1.057)	(1.133)	(1.088)
Education	4.297	3.400	1.339	1.598	4.326	3.885
	(3.741)	(3.648)	(2.629)	(2.649)	(3.725)	(3.709)
Government	-1.441	-1.429***	-0.970	-1.047**	-1.446	-1.444
	(1.062)	(1.059)	(0.712)	(0.730)	(1.079)	(1.091)
Per capita GDP	0.588	0.466**	-0.531	-0.407**	0.587	0.424
	(1.112)	(1.129)	(0.872)	(0.868)	(1.068)	(1.086)
Secondary GDP per capita	-0.0135	-0.00611***	0.0414	0.0360**	-0.0133	-0.00427
	(0.0570)	(0.0573)	(0.0420)	(0.0415)	(0.0554)	(0.0558)
Urbanization rate	-1.178***	-1.707**	0.908	0.984**	-1.157	-1.330
	(1.144)	(1.157)	(1.406)	(1.355)	(1.155)	(1.122)
Urbanization rate twice	1.170***	1.414***	0.266	0.282**	1.150	1.164
	(1.486)	(1.454)	(1.579)	(1.481)	(1.504)	(1.432)
Unemployment rate	-0.0247	-0.0304	-0.0279	-0.0337	-0.0246	
	(0.0337)	(0.0336)	(0.0296)	(0.0328)	(0.0341)	
Constant term	-1.231	-0.867	4.040	3.359	-1.242	-0.609
	(5.507)	(5.613)	(4.362)	(4.370)	(5.275)	(5.372)
Observations	504	504	335	335	504	504
R2	0.688	0.695	0.517	0.519	0.688	0.692

Note: Sign.level: 1%(***); 5%(**); 10%(*).

Comparison table 5 and table 3 show that the coefficients of each model interpretation variables are identical in sign (considering that some variables become negative after taking the logarithm). When the urban-rural income ratio is taken as an explanatory variable, the effect of financial development and financial structure on income disparity is still not a simple linear model, but a "inverted U-shaped" relation consistent with the Kuznets effect. And financial efficiency has little effect on income inequality as a whole. The results of these estimates are robust.

5. Conclusion

In this paper, the effects of financial liberalization policies on income distribution since 1996 were investigated in three dimensions, namely, financial scale, financial structure and financial efficiency, by using panel data of financial liberalization and income disparity between urban and rural areas in 30 provinces, municipalities and autonomous regions in China from 1996 to 2013. The results show that, from the perspective of 30 provinces as a whole, neither financial scale nor financial structure is a simple linear relationship to income inequality. As the size of the financial sector expands, the financial structure is tilted toward direct financing, and the income gap among

residents will experience a "reverse U-shaped" trend that rises first and then falls. At present, most of our country has not yet passed the turning point, and is still in the upper bound of the "inverted U-shaped" curve. Financial liberalization policies will continue to exacerbate income inequality. The impact of financial efficiency on income distribution is quite different in different regions of the country. After dividing the whole country into three regions according to the degree of economic development, it is found that the financial efficiency of the eastern and western regions has a Kuznets effect on the income gap, but compared with the eastern region, more provinces and cities in the western region have entered the stage of reducing the income inequality, and the financial development has a great impact on the western region. The effects of financial development on central China are weak, and income inequality increases with financial efficiency.

The research findings of this paper have important practical significance for the formulation of our country's economic policy. This paper gives the following recommendations:

(1) Promoting and developing inclusive finance. Building on the continued expansion of financial size, we should emphasize the enhancement of financial inclusiveness, so that vulnerable and low-income groups have broad access to financial services.

(2) Broadening financing channels, giving better play to the role of direct financing in serving the real economy, and giving more policy support to small and medium-sized enterprises in obtaining long-term funds so that small and medium-sized enterprises with good prospects can obtain funds at lower costs.

(3) Strengthening policy support to less developed regions such as the western and central regions. In light of the fine natural resources of the western region, various investors are encouraged to actively participate in the construction of the western region by means of acquisition and reorganization, and use financial development to drive economic development and economic growth to feed financial deepening.

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Declaration of Competing Interest

The author claim that the manuscript is completely original. The author also declares no conflict of interest.

References

Acemoglu, D., Johnson, S., & Robinson, J. A. (2005). Institutions as a fundamental cause of long-run growth. *Handbook of economic growth.* 1, 385-472. DOI: 10.1016/Sl574-0684(05)01006-3

Aghion, P., Caroli, E., & Garcia-Penalosa, C. (1999). Inequality and economic growth: the perspective of the new growth theories. *Journal of Economic literature.* 37, 1615-1660. DOI: 10.1257/jel.37.4.1615

Agnello, L., Mallick, S. K., & Sousa, R. M. (2012). Financial reforms and income inequality. *Economics Letters.* 116, 583-587. DOI: 10.1016/j.econlet.2012.06.005

Ali, A. (2022). Financial Liberalization, Institutional Quality and Economic Growth Nexus: Panel Analysis of African Countries. *Bulletin of Business and Economics (BBE)*, *11*(3), 37-49. https://doi.org/10.5281/zenodo.7639577

Bandiera, O., Caprio, G., & Honohan, Schiantarelli, F. (2000). Does financial reform raise or reduce saving? *Review of Economics and statistics.* 82, 239-263. DOI: 10.1162/003465300558768

Banerjee, A. V., & Duflo, E. (2003). Inequality and growth: What can the data say? *Journal of economic growth.* 8, 267-299. https://doi.org/10.1023/A:1026205114860

Beck T., Levine R., & Levkov, A. (2010). Big bad banks? The winners and losers from bank deregulation in the United States. *Journal of Finance.* 65, 1637-1667. https://doi.org/10.1111/j.1540-6261.2010.01589.x

Ben Naceur, S., & Zhang, R. (2016). Financial development, inequality and poverty: some international evidence. *IMF Working paper* PW. 16-32.

Bruckner, M., & Lederman, D. (2015). Effects of income inequality on economic growth. *World Bank Group. Office of the Chief Economist, Latin America and the Caribbean Region*. http://hdl.handle.net/10986/22203

De Soysa, I., & Vadlamannati, K. C. (2021). Free market capitalism and societal inequities: assessing the effects of economic freedom on income inequality and the equity of access to opportunity, 1990–2017. *International Political Science Review*, 01925121211039985.

Galor, O., & Zeira, J. (1993). Income distribution and macroeconomics. *Review of economic studies.* 60, 35-52. https://doi.org/10.2307/2297811

Goldsmith, RW. (1969). Financial Structure and Development. New Haven: Yale University Press, (No. HG174 G57).

Greenwood, J., & Jovanovic, B. (1990). Financial development, growth, and the distribution of income. *Journal of political Economy.* 98, 1076-1107. http://dx.doi.org/10.1086/261720

Gu Xiujuan, & Bai Junyi. (2015). Empirical Study on China's Financial Development and Urban-Rural Income Gap : Based on Panel Data of 31 Provinces. *Southwest Finance.* 10, 3-8.

Guo, S. (2022). Research on Finance Liberalization and Regulation Based on the Experience of China's Liberalization Transformation. In *2022 7th International Conference on Financial Innovation and Economic Development (ICFIED 2022)* (pp. 2746-2753). Atlantis Press.

Inekwe, J. N., Jin, Y., & Valenzuela, M. R. (2020). Income inequality, financial flows and political institution: sub-Saharan African financial network. *Empirical Economics.* 58, 2635–2665. https://doi.org/10.1007/s00181-019-01634-3

Kaminsky, G. L., & Schmukler, S. L. (2003). Short-Run Pain, Long-Run Gain: The Effects of Financial Liberalization," *NBER Working Paper* 9787. http://www.nber.org/papers/w9787.pdf

Koh, S. G., Lee, G. H., & Bomhoff, E. J. (2020). The income inequality, financial depth and economic growth nexus in China. *The World Economy*, *43*(2), 412-427. https://doi.org/10.1111/twec.12825

Kuznets, S. (1955). Economic growth and income inequality. *American economic review.* 45, 1-28.

Lardy, N. R. (1998). China's unfinished economic revolution. *Brookings Institution Press*.

Le, Q. H., Do, Q. A., Pham, H. C., & Nguyen, T. D. (2021). The impact of foreign direct investment on income inequality in Vietnam. *Economies*, *9*(1), 27. https://doi.org/10.3390/economies9010027

Levine, R. (2005). Finance and growth: theory and evidence. *Handbook of economic growth.* 1, 865-934.

Li Yonghui, Jiang Xuquan, & Liu Guineng. (2008). The Evolution of Income Gap in China Based on Financial Deepening. *Hainan Finance.* 3, 17-21.

Liddle, B. (2017). Urbanization and inequality/poverty. *Urban Science*. 1, 35. https://doi.org/10.3390/urbansci1040035

Liu, W. (2023). Economic Growth, Market-Oriented Reform, and Monetary Policy in China. In *Research on China's Monetary Policy System and Conduction Mechanism* (pp. 1-20). Singapore: Springer Nature Singapore. https://doi.org/10.1007/978-981-19-9060-1_1

Lustig, N., Pessino, C., & Scott, J. (2013). The impact of taxes and social spending on inequality and poverty in Argentina, Bolivia, Brazil, Mexico, Peru and Uruguay: Introduction to the Special Issue, *Public Finance Review.* 13. ttps://doi.org/10.1177/1091142113506931

Mansour, O. (2023). Empirical Analysis of Institutional Quality and Financial Development on Income Inequality in Central America. *Empirical Economic Bulletin, An Undergraduate Journal*, *16*(1), 10.

McKinnon, R. I. (1973). Money and capital in economic development. *Brookings Institution Press.*

McKinnon, R. I. (1993). The order of economic liberalization: Financial control in the transition to a market economy. *JHU Press*.

Muganyi, T., Yan, L., Yin, Y., Sun, H., Gong, X., & Taghizadeh-Hesary, F. (2022). Fintech, regtech, and financial development: evidence from China. *Financial innovation*, *8*(1), 1-20. https://doi.org/10.1080/09638199.2021.1948589

Mukherjee, P., Roy Chowdhury, S., & Bhattacharya, P. (2021). Does financial liberalization lead to financial development? Evidence from emerging economies. *The Journal of International Trade & Economic Development*, *30*(8), 1263-1287. https://doi.org/10.1080/09638199.2021.1948589

Ni, N., & Liu, Y. (2019). Financial liberalization and income inequality: A meta-analysis based on cross-country studies. *China Economic Review*, *56*, 101306. https://doi.org/10.1016/j.chieco.2019.101306

PBOC. (2012a). "The Conditions are mainly matured for China to accelerate capital account openness," Financial Survey and Statistics Department, People's Bank of China, February 13th.

Peng, X. (2001). *Path dependence of financial development and financial liberalization*. Shanghai Sanlian Bookstore.

Perotti, E., & Volpin, P. (2007). Investor protection and entry. *Tinbergen Institute Discussion Paper,* No. 07-006/2. https://papers.tinbergen.nl/07006.pdf

Qiu, J., He, F., & Ai, Y. (2011). Discussion on the Interactive Relationship between Financial Restraint, Financial Restraint, Financial Liberalization and Financial Deepening. *Journal of Tianjin University of Finance and Economics.* 6, 55-63.

Ridzuan, A. R., Zakaria, S., Fianto, B. A., Yusoff, N. Y. M., Sulaiman, N. F. C., Razak, M. I. M., ... & Lestari, A. (2021). Nexus between financial development and income inequality before pandemic covid-19: Does financial Kuznets Curve exist in Malaysia, Indonesia, Thailand and Philippines. *International Journal of Energy Economics and Policy*, *11*(2), 260-271.

Schumpeter, J. A. (1989). *Theory of economic development. Essays On Entrepreneurs, Innovations, Business Cycles and the Evolution of Capitalism*, Routledge.

Shaw, E. S. (1973). Financial deepening in economic development, *New York: Oxford University Press*

Wang, T., & Dong, J. (2015). Empirical Test of the Impact of Financial Deepening on Urban-Rural Income Gap. *Statistics and Decision.* 9, 172-175.

Wu, D., & Rao, P. (2017). Urbanization and income inequality in China: An empirical investigation at provincial level. *Social Indicators Research.* 131, 189-214. https://doi.org/10.1007/s11205-016-1229-1.

Xu, M. (2017). Financial Inclusion, Financial Deepening and Urban-Rural Income Gap. *Journal of Finance and Accounting*.11, 118-121.

Yang, J., Li, X., & Zhang, Z. (2006). An Empirical Analysis of China's Financial Development Level and Residents' Income Distribution. *Economic Science.* 28, 23-33.

Yu, L. (2012). Financial development and income inequality: just linear relationship? *Shanghai Finance.* 4, 16-19.

Zhong, Z., Zhang, W. (2017). China's Financial Reform: Experience, Dilemma and Future. *International Economic Review.* 5, 57-79.