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A Comparative Study on the Impact of Financial Development on Poverty in Different Countries

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ABSTRACT
In recent years, in order to improve the current situation of global poverty, developed and developing countries have successively implemented financial poverty reduction policies, and the study of poverty from the perspective of financial development has attracted more and more attention. This paper aims to compare the similarities and differences of the impact of financial development level on poverty between developed and developing countries through empirical analysis. After combing the research literature on the impact of financial development on poverty at home and abroad, this paper uses the fixed effect model for regression analysis based on the panel data of five developing countries including China, Russia, Turkey, Indonesia and Thailand and five developed countries including Switzerland, Germany, Spain, France and Italy from 2005 to 2019. The results show that, on the whole, the improvement of financial development level in both developed and developing countries is conducive to poverty alleviation, and the marginal effect of financial development in developing countries is more significant. Finally, by comparing the empirical analysis conclusions of developed and developing countries, this paper puts forward policy suggestions according to China's national conditions.

Keywords: *financial development, poverty, developed countries, developing countries, fixed effect model.*

1. INTRODUCTION

In today's developed economy, poverty is still a world phenomenon. Poverty is an urgent problem to be solved not only in developing countries, but also in developed countries. The harm caused by poverty is multifaceted. Poverty is not conducive to sustainable economic development; Poverty will lead to social stability and further deterioration of the environment. Therefore, although the problem of poverty has been alleviated in some areas in the past, the problem of poverty is still a common problem that needs to be solved urgently in many countries and regions in the world. Therefore, it has attracted much attention. In recent years, in order to improve the current situation of global poverty, countries have begun to implement financial poverty reduction policies, and relevant policy suggestions emerge one after another. The study of poverty from the perspective of financial development has also attracted more and more attention.

This paper studies the relevant foreign literature and finds that financial development has roughly three effects on Poverty Alleviation: financial development promotes poverty alleviation; Financial development inhibits poverty alleviation and even leads to poverty aggravation; There is a "U-shaped" inverse relationship between poverty alleviation and other financial development.

Qinman Li (2019) proposed that the financial poverty alleviation strategy, especially the vigorous development of Inclusive Finance, is one of the effective ways to achieve comprehensive poverty alleviation [1]. Jianqiang Peng (2019) concluded after a series of studies on financial development and poverty alleviation that there is a positive correlation between the scale of financial development and poverty alleviation, while there is a negative correlation between the efficiency of financial development and poverty alleviation; There is a positive correlation between economic growth, industrial structure, urbanization level, fixed asset investment and poverty assistance [2]. Zameer Hashim et al. (2020) used the data from 2007 to 2018 and used the super efficiency DEA model and systematic GMM method for empirical

estimation. The research results show that financial development has a positive impact on China's poverty alleviation efficiency [3]. Zeng Xiaoyi (2016) used time series data to study the relationship between financial development and poverty alleviation from the overall and local perspectives. The results show that financial development can not only directly affect poverty by acting on economic growth, but also help reduce poverty. The difference is that, There are also two factors that are not conducive to poverty alleviation: financial development efficiency and financial fluctuation [4]. Nasreddine Kaidi (2019) and others tested the relationship between financial development, institutional quality and poverty, and selected indicators of poverty, financial development and institutional quality. Based on experience, they tested a sample of 132 countries observed between 1980 and 2014 using a three-stage least squares method. They proved that financial development can not improve the situation of the poor, and the impact of institutional quality on poverty and financial development depends on the choice of indicators. Robustness analysis pointed out the sensitivity of the research results to different financial development, institutional quality and poverty indicators [5]. After studying the data of 30 provinces in China, LV Yongbin (2014) found that the efficiency of financial development is inversely related to poverty reduction [6]. Xie Tingting and Pan Yu (2017) analyzed the panel data of 30 poverty-stricken counties in Xinjiang from 2007 to 2015 by systematic GMM estimation, and found that the financial development of these poverty-stricken counties is generally in the primary stage. With the continuous deepening of finance, it will have a "U" effect on poverty alleviation [7].

This paper first combs the existing relevant literature at home and abroad, then compares the current situation of financial development and poverty between developed and developing countries through data analysis, and makes empirical analysis and demonstration on the selected ten sample countries by using the panel data and fixed effect model from 2005 to 2019. Among them, the countries selected to represent developing countries are China, Russia, Turkey, Thailand and Indonesia, and the countries selected to represent developed countries are Germany, Switzerland, Italy, France and Spain. The stability of the regression results was tested.

Poverty has always been the concern of countries all over the world. How to alleviate poverty is also a hot issue in social and economic development. This paper aims to compare the impact of financial development on poverty between developed and developing countries through the results of empirical analysis, and explore the impact of financial development on poverty reduction from the perspective of countries, which will help to put forward policies and measures to improve financial poverty alleviation, and then create another effective way of poverty alleviation.

2. VARIABLE SELECTION AND MODEL CONSTRUCTION

2.1. Variable selection and description

In this paper, the proportion of poor people measured by the national poverty line is used to measure the poverty variables. The focus of this chapter is on the impact of financial development on poverty. For the measurement of financial development variables, using the existing relevant research literature for reference, two different variables represent financial development: the ratio of broad money (M2) to GDP represents financial scale (FSI), This indicator measures the proportion of all economic transactions in a country or region using money as a medium in all economic transactions. In general, the greater the ratio of M2 / GDP, the higher the degree of economic monetization and the stronger the financial liquidity, that is, there is a more active credit market, and the society will create more investment and financing opportunities, Stimulating economic growth and increasing residents' income, thus promoting poverty alleviation; Financial efficiency (FE) is represented by the ratio of total capital formation to total social savings. This index measures the financial ability of a country or region to create wealth. Generally, the higher the value of financial efficiency, the higher the proportion of social savings into capital. These capital will create more value-added in the fields of life and production, so as to alleviate poverty.

In order to more effectively measure the impact of financial development on poverty alleviation, the impact of other variables on poverty alleviation needs to be controlled in the regression. Therefore, based on the existing literature, the inflation rate (INF) and the percentage of government expenditure in GDP (gov) that may have an impact on poverty are added to the empirical analysis as the control variables, as shown in table1, table2 describes the characteristics of variables.

This paper selects the data from 2005 to 2019. Considering the unavailability of some data, the countries selected to represent developing countries are China, Russia, Turkey, Thailand and Indonesia, and the countries used to represent developed countries are Germany, Switzerland, Italy, France and Spain.

Table 1. Variable description

Variable	Description
Poverty rate (POV)	proportion of poor people measured by national poverty line (%)
Financial scale (FSI)	ratio of broad money (M2) to GDP (%)
Ratio of total financial efficiency (FE)	capital formation to total social savings (%)

Inflation rate (INF)	inflation as measured by consumer price index(%)
Ratio of government expenditure to GDP (GOV)	government expenditure / GDP (%)

Data sources: World Bank World Development Indicators Database, wind database, China Statistical Yearbook (2005-2019)

Table 2. Description of variable characteristics

	Average value	Standard deviation	Maximum	Minimum value	Sample size
POV	15.318	4.514	30.2	0.600	150
FSI	98.964	49.511	207.674	33.380	150
FE	94.068	17.647	145.512	61.230	150
INF	3.493	3.689	16.333	-1.143	150
GOV	16.567	4.097	24.126	8.109	150

2.2. Model construction

Based on panel data, this paper studies the impact of financial development on poverty alleviation in developed and developing countries. Three tests were conducted before establishing the correct panel data linear regression model. Firstly, in order to determine whether the model has individual effects, that is, the selection of fixed effects and random effects and mixed effects, F test was selected. According to the test results, the F value is calculated and compared by looking up the table. The F value here is greater than the F value obtained by looking up the table. The original hypothesis is rejected, so the fixed effect model is selected. Then conduct Hausman test, P value is 0, less than 5% significance level, accept the original hypothesis, determine that the fixed effect model should be used, and establish the following panel data model:

$$POV_{it} = c + \alpha_1 FSI_{it} + \alpha_2 FE_{it} + \alpha_3 X_{it} + \varepsilon_{it} \quad (1)$$

Where,i and t represent the country and time respectively, the explained variable POV is the proportion of the poor, FSI represents the financial scale index, Fe represents the financial efficiency index, X represents the control variable matrix, and c represents the constant term, α 1、α 2、α 3representing the regression coefficient of each variable, ε Is a random error term.

3. MATH AND EQUATIONS

3.1. Stationarity test and cointegration test

The ADF unit root test method is used to carry out the stationarity test in this paper. The test results are shown in tables3 and 4. It can be seen from the table that under the 5% significance level, the variables POV, gov, Fe and FSI in developed countries cannot reject the original hypothesis and are non-stationary time series, while the first-order difference of variables POV, FSI, Fe and gov are stationary time series; The variable inf of developed countries is stationary time series. Similarly, under the 5% significance level, the variables FSI, Fe and gov of developing countries can not reject the original hypothesis and are non-stationary time series, while the first-order differences of variables FSI, Fe and gov are stationary time series, and the variables inf and POV of developing countries are stationary time series.

Table 3. Stationarity test of variables in developed countries

Variable name	Inspection form(t,c,n)	P value	Inspection results
POV	(0,c,0)	0.2790	Unstable
?POV	(0,c,1)	0.0362	Stable
FSI	(0,c,0)	0.8952	Unstable
?FSI	(0,c,1)	0.0058	Stable
FE	(0,c,0)	0.3881	Unstable
?FE	(0,c,1)	0.0244	Stable
GOV	(0,c,0)	0.0850	Unstable
?GOV	(0,c,1)	0.0000	Stable
INF	(0,c,0)	0.0430	Stable

Note: parameters T, C and N represent the time trend, constant term and lag order of time series respectively, Δ is the first-order difference.

Table 4. Stationarity test of variables in developing countries

Variable name	Inspection form(t,c,n)	P value	Inspection results
POV	(0,c,0)	0.0146	Stable
FSI	(0,c,0)	0.5679	Unstable
?FSI	(0,c,1)	0.0029	Stable
FE	(0,c,0)	0.2961	Unstable
?FE	(0,c,1)	0.0012	Stable
GOV	(0,c,0)	0.4565	Unstable
?GOV	(0,c,1)	0.0057	Stable
INF	(0,c,0)	0.0257	Stable

Note: parameters T, C and N represent the time trend, constant term and lag order of time series respectively, Δ is the first-order difference.

Based on the hypothesis that there is a significant difference between the first-order test and the developed series, i.e. the first-order test of KAP = -980 and the first-order test of the developed series are respectively carried

out. According to the hypothesis that there is a significant difference between the first-order test and the developed series, i.e. the first-order test and the first-order test of KAP = -980 and 680.045 are selected respectively, It shows that there is a long-term correlation between variables, and the regression of the model can be further carried out.

3.2. Analysis of empirical results

According to the results of F test and Hausman test when establishing the model above, through fixed effect panel regression on the proportion of financial development poor people in developed and developing countries, the results are shown in table5.

Table 5. Stationarity test of variables in developed countries

	Developed country	Developing country
FSI	-0.016678 * * * (-4.613413)	-0.291008 * * (-12.53356)
FE	-0.014852 * * * (-2.930756)	-0.012440 * * (-2.034709)
INF	-0.146098 * * (-2.168773)	-0.077813 * * (-2.235864)
GOV	-0.157615 * (-1.990022)	-0.971595 * * * (-7.444114)
DGDP	23.24916 * * * (14.15604)	53.89986 * * * (18.84812)
R-squared	0.986775	0.921853

Note: the values in brackets are t values, * * *, * *, * respectively represent the significant levels of 1%, 5% and 10%.

According to the panel regression estimation results of the proportion of poor people at the level of financial development shown in table 5, for developed and developing countries, the coefficients of the two indicators measuring the level of financial development are basically negative at the significant level of 5%, indicating that the improvement of the level of financial development in both developed and developing countries contributes to poverty alleviation, The following is a specific analysis from two different indicators to measure the level of financial development.

In terms of financial scale (FSI), the development and increase of financial scale is conducive to poverty alleviation. In this paper, financial scale (FSI) is measured by the ratio of broad money (M2) to gross domestic product (GDP). From the data in table 5, the absolute value of the coefficient of financial scale (FSI) in developed countries is 0.016678 and that in developing countries is 0.291008, indicating that financial scale plays a more significant role in poverty alleviation in developing countries. The reason is that the overall financial development of developing countries is relatively backward compared with developed countries, and there are common problems such as difficult financing of small and medium-sized enterprises and low supply of financial services. Expanding the scale of financial development can further meet the capital needs of poor areas and effectively fill the "blank area" of financial services; In developed countries, the economic and financial development models are relatively mature. It is undeniable that the expansion of financial scale has a certain positive effect, but improving financial efficiency, perfecting financial system and optimizing financial structure play a more obvious role in promoting economic growth.

In terms of financial efficiency (FE), the improvement of financial efficiency is greatly conducive to poverty alleviation. In this paper, financial efficiency (FE) is measured by the ratio of total capital formation to total social savings. From the data in table 5, the absolute value of the coefficient of financial efficiency (FE) in developed countries is 0.014852 and that in developing countries is 0.012440. Different from the financial scale, financial efficiency plays a more significant role in poverty alleviation in developed countries. Although the economy of developing countries has developed rapidly in recent years, the level of economic development of developing countries is still lower than that of developed countries.

3.3. Stability test

In order to further test the robustness of the model, another control variable - per capita GDP growth rate (RGDP) is introduced based on the existing control variables, and panel regression is carried out again. The results are shown in table 6. According to the test results, the positive and negative regression coefficients, size and significance of each variable have only slight changes, which can prove that the above empirical conclusions are robust.

Table 6. Stationarity test of variables in developed countries

	Developed country	Developing country
FSI	-0.018164* * * (-5.561273)	-0.336038* * (-17.9136)
FE	-0.012594* * * (-3.116582)	-0.015630* * (-2.013154)
INF	-0.134434* * (-2.643876)	-0.032696* * (-2.134074)
GOV	-0.065683* (-1.872257)	-1.098202* * * (-14.61744)
DGDP	0.138578* * *	-0.264130* * *

	(5.261845)	(-8.509783)
Constant term	18.93250* * * (11.36229)	55.71234* * * (29.79778)
R-squared	0.990469	0.939640

Note: the values in brackets are t values, * * *, * *, * respectively represent the significant levels of 1%, 5% and 10%.

4. CONCLUSION

In the existing research on the relationship between poverty alleviation and financial development, most scholars take one or a class of countries or regions for verification. This paper selects developing and developed countries for comparative research, which is of great significance to study the relationship between poverty alleviation and financial development. This paper selects the panel data of China, Russia, Turkey, Indonesia, Thailand and Switzerland, Germany, Spain, France and Italy from 2005 to 2019, and uses the fixed effect model for regression analysis.

The main conclusions of this paper are as follows: first, for developed and developing countries, increasing financial scale is conducive to national poverty alleviation. According to the results of empirical analysis, the regression coefficients of financial scale are negative, indicating that the increase of financial scale will reduce the proportion of poor people. Second, for both developed and developing countries, improving financial efficiency is conducive to national poverty alleviation. According to the results of empirical analysis, the regression coefficients of financial efficiency are negative, indicating that the improvement and change of financial efficiency will promote the decline of the proportion of poor people. Third, compared with developed countries, there are more poor people in developing countries, the time to develop the financial industry is later, and the financial system is relatively backward. At the same time, there are greater constraints and pressures on financial poverty reduction in developing countries, but the marginal effect of financial development is more significant.

REFERENCES

[1] Qinman Li. Analysis of Inclusive Financial Development and Poverty Governance in Eastern, Central and Western China[J]. International Journal of Finance and Banking Research,2019,5(6).

[2] Jianqiong Peng. Financial Development and Poverty Reduction—An Empirical Analysis Based on Panel Data[J]. Francis Academic Press,2019,1(5).

[3] Zameer Hashim,Shahbaz Muhammad,Vo Xuan Vinh. Reinforcing poverty alleviation efficiency through technological innovation, globalization, and financial development[J]. Technological Forecasting & Social Change,2020,161.

[4] Zeng Xiaoyi Research on the Anti-poverty Effect of China's financial development [D] Southwest University of Finance and economics, 2016.34-38.

[5] Nasreddine Kaidi,Sami Mensi,Mehdi Ben Amor. Financial Development, Institutional Quality and Poverty Reduction: Worldwide Evidence[J]. Social Indicators Research,2019,141(1).

[6] LV Yongbin, Zhao Peipei Rural financial development and anti-poverty performance in China: Based on empirical evidence from 2003 to 2010 [J] Agricultural economic issues, 2014, 35 (1): 54-60.

[7] Xie Tingting, Pan Yu, Zhang Xiaoli Financial development, human capital accumulation and Poverty Alleviation -- Based on the dynamic panel model of 30 poor counties in Xinjiang [J] Xinjiang Nongken (2017): 81-87.