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The Inhibiting Effect of Inclusive Finance over Urban-Rural Income Gap

Based on Provincial-level Panel Data Threshold Model*

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***Abstract*—The urban-rural income gap expanded increasingly throughout the country has become a major contradiction that it is needed to face during the targeted poverty alleviation, stabilizing economic development and building a harmonious community, and it has been in an urgent need to develop inclusive finance, reduce financial threshold and transaction costs, loosen credit restriction in poor regions and shorten the income gap in order for a high-quality economic progress. Based on analyzing relations between inclusive finance and income gap, the article has made it clear that the inclusive finance can work well to inhibit the income gap, varying with regions as weak in the east region, followed by the middle, and strong in the west. It is concluded that to greatly promote the inclusive finance, create an inclusive finance development environment in poor areas, loosen the credit restriction over farmers and increase the income of the poor will be playing a far and deep role in improving the existing income gas in the country.**

Keywords—inclusive finance; income gap; Theil index; the entropy weight method (EWM)

I. INTRODUCTION

Economy in the country is in a stage where high-speed growth is being shifted to high-quality development, which has significantly elevated the income and life quality of urban and rural residents. However, the country is in a great imbalance in urban and rural income expanded increasingly. And the Gini coefficient increased to 0.491 in 2008 from 0.249 in 2002, which afterwards went stabilized but remaining above 0.4. Although the income gap between urban and rural areas in the country is far to the real polarization in income distribution designed as it should be, yet it is coming near the "warning line" for the international income distribution gap. A great number of poverty alleviation policies have been formulated in the country to increase the income level of low-income groups, yet achieving no significant effect, which is very far from what the public have expected. It's no time to delay in narrowing the income gap. In 2005 earlier, the inclusive finance was first adopted by the United Nations for micro-credit promotion, and was officially adopted by the credit alliance later. The inclusive finance is to provide credit and diversified financial services to low-income groups at a cost affordable in order to eliminate financial exclusion. It was pointed by the 19th National Congress of the CPC that "To carry out inclusive finance will bring new vitality to the supply side structure reform of the Chinese economy", and the inclusive finance can be promoted from three points as coverage, availability and satisfaction related to financial service. Each market player and the public enjoy the equal chance in financial service so as to eliminate poverty and inequality, further avoiding the low-income groups from being excluded by finance, and elevating the income level and social status of the low-income groups. The better the development of financial service is, the easier small and medium-sized enterprises to finance, which can indirectly ease the employment pressure, increasing gains of the working class (Beck T, 2004); the inclusive finance may promote the spread of financial service, helping make it transparent for the wage payment system and ensure the wage safety for low-income groups (Kundu, 2013); the availability of inclusive finance will bring a negative impact on poverty rates, eliminating the poverty to some degree (Kablana & Chhikara, 2013).

It is true that the spread of inclusive finance has financial costs reduced, and financial service threshold lowered, making more groups which are in disadvantage to get more chances to enjoy fair financial service, obtain credit capital and open up new channels for income. On the other hand, remote areas in the country can still see wide financial exclusion, which results in the lack of necessary financial to support the rural areas. The distribution of financial resources is not going as expected; therefore, it is very important to greatly push the inclusive finance.

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Nowadays, there are many reasons causing the income imbalance, such as preference of government support policies, proportion of financial support in agriculture, economic openness, geographical location, resource endowment, human capital and more. Seen from the inclusive financial promotion, it is developing differently in different regions, for one, relying on high efficiency in foreign information exchange and high speed, the inclusive finance in the eastern coastal cities developed earlier than other regions in the country, and relevant policies were carried out earlier and powerfully; on contrast, the central and western regions started late, whose development was relatively slow too. Acting as an important factor restricting the expansion of the income gap, can the inclusive finance restrict the urban-rural income gap? If it can work, how can it work? Moreover, how the inclusive finance restrict the income gap? The discussions on the issues as above will be helpful to carry out and adjust the targeted poverty alleviation strategy, avoiding further expansion of such income gap and creating new ideas to well reduce the income gap.

II. LITERATURE REVIEWS

In order to analyze how the inclusive finance impact the income gap, first of all, it is necessary to create an evaluation system, based on the calculation method of the UN Human Development Index (HDI), Sarma (2008) selected three points as financial institution coverage, financial service availability, and financial service use to form an inclusive finance evaluation system; due to the difference in financial service sources between developed and undeveloped countries, with the financial service costs and convenience considered, Arora (2010) selected three points as bank service costs, service scope and convenience to calculate the inclusive finance index, optimizing Sarma's evaluation system. With the two evaluation systems integrated as well as financial service depth and range, Gupte (2012) further optimized the evaluation system with financial service costs and convenience added. Some studies are also conducted by scholars at home on the inclusive financial evaluation system. More indicators are integrated to the evaluations such as national conditions, regional economic differences, population distribution, agricultural deposits and loans, credit reporting systems and more (Jiao Jinpu, 2015; Wang Zuogong, 2018). The indicators selected target mainly financial service provision, use and acquisition. Du Qiang (2016), considering whether vulnerable groups can enjoy financial services, added practical effect of the inclusive finance to the system in order to evaluate the development of inclusive finance specifically and overall.

As far as the studies on inclusive financial systems, more and more scholars have put eye on the impact of inclusive finance on income of the people. Relying on eliminating financial exclusion, reducing financial cost and lowering financial thresholds and more, the inclusive finance has worked well to inhibit the income gap between urban and rural residents (Tian Jie, 2011; Xu Min, 2014; Han Xiaoyu, 2017; Wang Yebin, 2018). Going with the rapid development of Internet technology, polices for developing the inclusive finance have been further carried out, The Internet may fill gaps in information spreading, accelerate its efficiency information and lower costs of financial service, as well as provide new paths for financial service. The development of digital inclusive finance further restricts the expansion of income gaps (Zhang Tongjin, 2017; Song Xiaoling, 2017; Zhang He, 2018; Liang Shuanglu, 2019).

In summary, the existing literatures have conducted studies on the creating of the inclusive finance evaluation systems and its roles of inhibiting the income gap, and fully confirmed what scholars think that the development of inclusive finance may restrict the expansion of income gap and done empirical tests on the inclusive finance and even wealth distribution in the country. The inclusive finance is one of the main methods to restrict the income gap, do well to the financial stability. However, due to regional economic imbalances in the country, the developments of inclusive finance vary as well, which result into different effects on restricting the income gap. Borrowing existing studies, the article divides provinces and cities into three traditional economic zones[1] in the country, which are further analyzed according to the eight comprehensive economic zones[2] proposed in the “Strategies and Policies for Regional Coordinated Developments” report made by the Development Research Center of the State Council. On the one hand, it needs to find out whether the inclusive finance can restrict the income gap between the urban-rural incomes in addition to regional difference; on the other hand, authorities are expected to formulate strategies as reference for the inclusive finance development s according to the regional economic development differences.

III. THE IMPACT MECHANISM OF INCLUSIVE FINANCE OVER THE INCOME GAP

A. Cutting Financial Costs

Based on market interest rate, the inclusive finance can have regulating policies as differential deposit reserves and tax incentives directed to financial institutions that offer special service as "Agriculture, rural areas and farmers", and drive the financial costs to be reduced within a range applicable; and the increased number of financial institutions will lower prices of financial products under reasonable competitions between financial institutions, which can not only promote financial product innovation and financial efficiency, but also make the no-station service for financial institutions come true by means

[1] The east region consists of 12 provinces and cities as Beijing, Tianjin, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, Guangxi and Hainan; the mid region consists of 9 provinces as Shanxi, Jilin, Inner Mongolia, Heilongjiang, Anhui, Jiangxi, Henan, Hubei and Hunan; the west region consists of 10 provinces or autonomous regions as Chongqing, Sichuan, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia and Xinjiang.

[2] The northeast integrated economic zone consists of Heilongjiang, Jilin and Liaoning; the northern coastal integrated economic zone consists of Beijing, Tianjin, Hebei and Shandong; the east coastal integrated economic zone consists of Shanghai, Jiangsu and Zhejiang; the south coastal integrated economic zone consists of Fujian, Guangdong, and Hainan; the Yellow River mid-reach integrated economic zone consists of Shaanxi, Shanxi, Henan and Inner Mongolia; the Yangtze River mid-reach integrated economic zone consists of Hubei, Hunan, Jiangxi and Anhui; the southwest integrated economic zone consists of Yunnan, Guizhou, Sichuan, Chongqing and Guangxi; and the northwest integrated economic zone consists of Gansu, Qinghai, Ningxia and Xinjiang.

of Internet technology, further reducing costs in time, transport and price.

B. Loosening Credit Restriction

Disadvantaged groups that traditional financial services refuse will be integrated to those who are served by the inclusive finance, which eases credit restrictions. In rural areas, the building of ATMs, online banking, financial institution branches and the Internet may fill financial vacancies, lower the information asymmetry and transaction costs, and improve access to financial services by those in rural and poor areas. Second, farmers, who are rejected by traditional financial mortgage, are satisfied in finance by way of lowering the mortgage guarantee requirements and innovating the modes of the same as credit loans from by small and micro financial products, loans from land management rights mortgage, secured loans from guarantee companies and more.

C. Popularizing Formal Finance

Before risks, rural areas are often excluded by finance, failing to get fund due to poor education, asymmetric information, weak self-resistance and high vulnerability as well as existing imperfect social security system. Most there will choose informal financial institutions, or sell assets they own to get funds, as a result, they are under high debts pressure, or are trapped in insolvency, resulting in the low income in rural households and failing to get credit capital for other operations. So the spread of the inclusive finance can work well to eliminate financial exclusions, making is possible for formal financial institutions and branches serve in rural areas and ease the income gap. In addition to providing financial services to farmers, the inclusive finance can also bring capitals, promoting rural industries to develop diversely, helping farmers in commercial activities, creating sufficient drives to the rural economy, raise farmers' income and reduce the poverty.

IV. THE CONSTRUCTION OF INDEX SYSTEM AND THE NOTES TO VARIABLES

A. Creating an Inclusive Financial Index System

In order to study the impact of inclusive finance on the income gap, it is necessary to create an inclusive financial evaluation system to measure the development level. First of all, the reliance of financial services on financial branches and the financial service will be restricted by geographical conditions. It is known that financial branches are terminals for implementing major social and economic policies in the country, where most of social fees are collected; second, there are many channels available for financial service, and what the financial service will do to enable remote rural areas get what they want in finance shall be core for spreading the inclusive finance; in the end, how the finance is used shall be key for the inclusive finance. Currently, the inclusive finance is driven by tech innovation on the Internet, and costs of users in getting information, if solved, will make it accurate for the inclusive finance to target users. Based on the existing inclusive financial system (Wang Jing et al., 2013; Xu Min et al., 2014; Jiao Jinpu, 2015), the article selects what reflected by broad band Internet households about the impact of the inclusive finance, indicating the real inclusive finance developing in the country as a whole by way of three points as financial service access, geographic penetration and users to create 7 indices, given as "Table I".

TABLE I. INCLUSIVE FINANCE EVALUATION INDEX SYSTEM

Dimension	Indices	Attribute	Calculation Methods
Financial service access	Number of financial institutions available per 10 thousand people (X_1)	Positive	Number of financial institution/total workers
	Number of banking workers available per 10 thousand people (X_2)	Positive	Number of banking workers/total workers
	Number of broadband households (X_3)	Positive	Number of broadband households
Geographic penetration	Number of financial institutions per 10 thousand square kilometers (X_4)	Positive	Number of financial institutions/area
	Number of banking workers per 10 thousand square kilometers (X_5)	Positive	Banking workers/area
Users	Proportion of per capita savings in GDP (X_6)	Positive	Balance of per capita saving/GDP per capita
	Proportion of per-capita loan (X_7)	Positive	Balance of per capita loans/GDP per capita

[a] Source: 2008-2017 Regional Financial Development Report

Information entropy is often used as quantitative index about information content in a system, which will be further regarded as target for the system optimization or reference selection. The entropy weight method used to empower indices is to make use of impersonal data inside the database, free of individual subjective judgment, having much stronger basis of mathematical theory, whose evaluation process is given as follows:

First, selection of indices, assuming there is r year, n province/city, m index, $X_{\theta ij}$ shall be j index of i in the θ year;

Second, index standardized process: due to difference in dimension between indices, it needs to standardize indices, given as follows: positive index: $X'_{\theta ij} = X_{\theta ij} / X_{\max}$; negative index: $X'_{\theta ij} = X_{\min} / X_{\theta ij}$

Third, calculation of weight of index: $Y_{\theta ij} = X'_{\theta ij} / \sum_{\theta} \sum_{i} X'_{\theta ij}$

Fourth, calculation of the information entropy of j index: $e_j = -k \sum_{\theta} \sum_{i} Y_{ij} \ln Y_{\theta ij}$, of which $k > 0, k = \ln(rn)$;

Fifth, calculation of the information utility of j index: $g_j = 1 - e_j$;

Sixth, calculation of weight of each index: $W_j = g_j \Big/ \sum_j g_j$

Seventh, calculation of integrated score of inclusive finance in each area: $Score_i = \sum_j W_j X'_{\theta ij}$

The entropy weight method is used to calculate the index weight during 2008-2017, given as "Table II", the indices with higher weight are X_4 and X_5, about 42%, which means the geographical penetration of financial service is much more important for spreading the inclusive finance, followed by the financial service access, weighting about 32%, and the last is financial service user, weighting about 26%.

TABLE II. INDEX WEIGHTING

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
X1	0.06	0.08	0.10	0.08	0.09	0.08	0.08	0.08	0.09	0.08
X2	0.15	0.16	0.15	0.13	0.12	0.14	0.15	0.13	0.13	0.12
X3	0.12	0.12	0.11	0.11	0.10	0.09	0.09	0.11	0.11	0.11
X4	0.16	0.17	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.17
X5	0.26	0.25	0.23	0.23	0.24	0.24	0.24	0.23	0.23	0.23
X6	0.15	0.15	0.16	0.18	0.17	0.18	0.16	0.19	0.20	0.21
X7	0.10	0.07	0.09	0.11	0.11	0.11	0.10	0.09	0.08	0.08

B. Notes to Variables

1) Explained variable: The explained variable refers to urban-rural income gap, there are many methods to weigh the income gap, mainly including urban-rural income ratio, Gini index, Theil index and more. It is very easy to calculate the urban-rural income ratio, due to the lack of proportion of population, the calculation of urban-rural income gap may be inaccurate; the Gini index is applicable to measure the overall income gap, which, to some extent, will disregard low-income groups. The Theil index shall not only measures the polarization of urban-rural income, but also consider the proportion of population. So the Theil index is selected by the article to measure the urban-rural income gap, and the formula is given as follows:

$$Theil = \sum_{i=1}^{2} \frac{y_{it}}{y_i} \ln\left(\frac{y_{it}/y_t}{x_{it}/x_t}\right) \qquad (1)$$

Where, $i=1$ means town, $i=2$ means village, y_{1t} and y_{2t} mean disposable income at the town and village respectively in the t year; y_t and x_t mean total population at town and village in the t year; the time ranges from 2008 to 2017. However, in 2013, the National Bureau of Statistics unified the "per capita net income in rural areas" and "per capita disposable income in urban areas", which led to changes in the "disposable income in rural areas" reference. Due to few changes in the data gap between the two before and after the changes, the "per capita disposable income of farmers" from 2008 to 2012 is replaced by "per capita net income in rural areas".

2) Core explained variable and control variable: Due to a lot of factors related to the urban-rural income gap as education background, consumption level, government expenditures as well as economic opening-up, the article regard what mentioned above as control variables in order to analyze their impacts on the urban-rural income gap.

a) Regional inclusive finance progress (Score): The inclusive finance development index is used to measure the regional inclusive finance progress, which can be got from the above-mentioned index system and weights, core explained variables in the article.

b) Education progress (Edu): The education progress may reflect the background the residents, ability to acquire knowledge, and human capital of individuals. Those who are well educated will make it easier to obtain high-pay jobs. Besides, the well educated will make it easier to understand and accept new things, which act as major media for IT and financial products spread, and they will have more channels than the badly educated. Since the article needs to consider how to acquire, spread and identify financial knowledge, so it adopts the number of averaged students in school of all grades among 100 thousand people per region to weigh the education level of the same.

c) Government expenditure (Gov): It is used to reflect the support of local governments to local economy, and the government plays an important role in ideas, strategies, supervision and environmental protection. And the local government expenditures will help promote regional economic development and improve the environment where the people live. In addition, the improvement of education and technical level will provide the people with more chances to increase income and perfect the wealth distribution in the country. However, the government expenditures tend to be more cities rather than rural areas, resulting in the lack of development drive in rural areas, widening the urban-rural income gap. Therefore, regional general government expenditure budget is selected by the article to measure the index.

d) Economic opening-up (Open): It is used to reflect the exchange between local economy and external one, and the regional economic opening-up has distinct characteristics in geography and industry. The presence of foreign investors will elevate the local employment rate, bringing new capital and energize the local economy. The solving of farmers' jobs can make them earn more with technical workers' pays increased, which will further impact the urban- rural gap. So the article adopts the total import and export represents the economic opening-up.

3) Descriptive statistical analysis and data source: All indices and data given in the article are absorbed from the 2008- 2017 National Bureau of Statistics, the Ministry of Industry and Information Technology of the P. R. China and more, which are introduced to study the impact of the inclusive finance on the urban-rural income gap throughout the country. The descriptive statistics of indices are given in "Table III". The max value of urban-rural income gap is 0.2228 and the min 1.8971, between which, the difference is larger. In addition, the standard deviation between the urban-rural income gaps is 0.2731, indicating that the difference is larger in the income gap between regions. And there exist a bigger variable coefficient among the inclusive finance index, urban-rural income gap and government expenditures, indicating that the difference between three indices is bigger. In order to avoid the heteroscedasticity by the data, the article adopts natural logarithm for the control variables.

TABLE III. DESCRIPTIVE STATISTICS OF INDEX VARIABLES

Index	Average	Min	Max	Standard Deviation	Median	Variable Coefficient
Urban-rural income gap (Theil)	0.8123	0.2228	1.8971	0.2731	0.8031	0.3362
Inclusive finance index (Score)	0.1931	0.0642	0.8401	0.1518	0.1452	0.7861
Education level (Edu)	7.7395	6.8763	8.8173	0.3333	7.7189	0.0431
Government expenditures (Gov)	7.9759	5.7826	9.6183	0.3468	8.0941	0.0445
Economic opening-up(Open)	15.9808	7.4229	19.0000	2.3429	16.3715	0.1466

a. Source: 2008- 2017 National Bureau of Statistics, the Ministry of Industry and Information Technology of the P.R.China

V. RESEARCH METHODS AND EMPIRICAL ANALYSIS

Borrowing panel data of 31 provinces and cities in the country during 2008 - 2017 and with Hausman to test attributes of the panel models, the article conducts analysis on the impact of inclusive finance on the urban-rural income gap, followed comparative analysis based on two groups of samples which consist of Beijing-Tianjin-Hebei economic belt and the Yangtze River Economic Belt according to regional economic characteristics of 31 provinces and cities. A model is created which takes 2008-2017 Theil index as the explained variable, the inclusive finance index and other control variables as the explaining, given as follows:

$$Theil = \alpha + \beta_1 Score + \beta_2 Edu + \beta_3 Gov + \beta_4 Open + \varepsilon \quad (2)$$

Where, β_1, β_2, β_3 and β_4 are explaining variable coefficients, reflecting the impact between explaining coefficient and the explained one, ε mean error at random.

In order to further analyze the impact of regional economic development on the relation between explaining variables and the explained ones, the article, based on existing theories, divides the sample into three economic zones namely east, middle and west, and conducts Hausman tests on such samples. Judge the sample of the east according to the P values, select an effect model at random, and fixed models shall be used for samples of the middle and the west, and the regression results are shown in "Table IV".

TABLE IV. REGRESSION RESULTS OF THREE REGIONS

Variable	In The East Random Effect Theil	In the Middle Fixed Effect Theil	In the West Random Effect Theil
Score	-0.612***	-1.266***	-1.436***
	(0.127)	(0.288)	(0.218)
Edu	-0.199***	-0.195**	-0.548***
	(0.0516)	(0.0766)	(0.0611)
Gov	-0.0574***	-0.119***	-0.0623***
	(0.0140)	(0.0160)	(0.0200)
Open	-0.00732	-0.430***	0.263***
	(0.0367)	(0.149)	(0.0749)
Constant	2.861***	3.517***	5.765***
	(0.341)	(0.473)	(0.351)
Hausman test	0.1583	0.0427	0.9988
Observations	120	90	100
R-squared		0.841	
Number of id	12	9	10

a. Note: *** , **, * means estimated coefficient passes 1%, 5% and 10% significant level test respectively, and what given in bracket means standard error.

Seen from the empirical results of three economic belts, the inclusive finance is found to have a significant restriction on the income gap. The estimated coefficient in the east is -0.612, that in the middle is -1.266, and that of the west is -1.436, all of which are significant under the significance level 1% and the restriction effect goes in a trend of being high in the east and low in the west, namely, if the inclusive finance is raised by 1%, the convergence range of urban-rural income gap in the east, middle and the west shall be 0.612%, 1.266% and 1.436%, respectively. The financial development is in imbalance amongst regions in the country, and the inclusive finance rains high in the east and low in the west. The economic development in the eastern coastal areas benefits those surrounding. Due to lower income gap of its own, the inclusive finance has a weak effect on the income gap. On contrast, in the west regions, many from economic goals, initial conditions, systems and policies, industrial structure and more differ from what in the east. The west regions mainly rely on resource intensive industries as metallurgy, petroleum, machinery and more. The income gap in the west itself is larger, and the inclusive finance just started, which has a big space in depth and expansion, so compared to the east, the inclusive finance can work well narrowing the income gap in the west. Moreover, governments' economic interventions still play a positive role on the income gap in the west, indicating that the underdeveloped west remains neglected by government policies. In addition, the estimation coefficient of education level in the middle and the west remains negative, indicating that it is in the lack of educational resources and the poor education of the people there has become a barrier for the people to earn more. So seen from another aspect, the studies of this article conform to the economic significance and existing socio-economic status, the development of inclusive finance in the west will greatly increase the earnings of low-income people, narrowing the gap between the rich and the poor.

Characteristics of economic development in different regions of the country differ from each other, in order to formulate inclusive finance policies according to local conditions and better show regional economic development in the country, the article, based on three belts, subdivides it into 8 integrated economic zones so as to deeply analyze the impact of inclusive finance on the income gap differing in location. Due to limited contents, the article, based on the Hausman tests, selects a model that better conforms to facts in regions for regression analysis, as shown in “Table V”.

TABLE V. REGRESSION RESULTS OF 8 INTEGRATED ECONOMIC ZONES

	In Northeast	In North Coastal	In East Coastal	In South Coastal	In Mid-reach of Yellow River	In Mid-reach of Yangtze River	In Southwest	In Northwest
	Fixed Effect	Random Effect	Random Effect	Random Effect	Fixed Effect	Random Effect	Fixed Effect	Fixed Effect
Variable	Theil	Theil	Theil	Theil	Theil	Theil	Theil	Theil
Score	-0.328	-0.557**	-0.545***	0.0691	-0.583**	-0.339	-0.891*	-2.113***
	(0.421)	(0.269)	(0.0514)	(0.294)	(0.268)	(0.269)	(0.450)	(0.368)
Edu	-0.107	-0.477***	-0.229***	0.272**	-0.0808	-0.257***	-0.504***	-0314**
	(0.190)	(0.0930)	(0.0653)	(0.136)	(0.0918)	(0.0205)	(0.103)	(0.133)
Gov	0.0131	-0.0498***	-0.0749***	-0.113***	-0.177***	-0.125***	-0.0834*	-0.0780**
	(0.0306)	(0.0190)	(0.02)	(0.0198)	(0.0227)	(0.00743)	(0.0445)	(0.0341)
Open	0.584***	0.104**	-0.0193	-0.102**	-0.540***	0.146	0.617***	-0.0413
	(0.180)	(0.0496)	(0.0566)	(0.0457)	(0.169)	(0.0910)	(0.123)	(0.146)
Constant	1.407	5.012***	3.285***	-0.516	2.995***	3.918***	5.466***	4.104***
	(1.375)	(0.726)	(0.401)	(0.942)	(0.552)	(0.142)	(0.442)	(0.786)
Hausman test	0.0000	0.1975	0.9973	0.1269	0.0000	0.8600	0.0001	0.0000
Observations	30	40	30	30	40	40	50	40
R-squared	0.441				0.950		0.931	0.918
Number of id	3	4	3	3	4	4	5	4

a. Note: *** , **, * means estimated coefficient passes 1%, 5% and 10% significant level test respectively, and what given in bracket means standard error.

Seen from the empirical results in “Table V”, the impact of inclusive finance on the income gap is differing, where, the estimation coefficients for north coastal, east coastal and northwest are -0.557, -0.545, -2.113 respectively, significant at 1%; the estimation coefficient of the mid- reach of the Yellow River is -0.583, significant at 5%; The estimation coefficient for southwest is -0.891, significant at 10%; the estimation coefficients for other regions are not significant, but the coefficient symbol is negative, indicating that the inclusive finance can well restrict the income gap. Seen from governments' expenditure, except for the Comprehensive Economic Zone in the northeast, other regions all remain significant in estimate with negative sign, and the increased governments' expenditures can also restrict the income gap. Seen from the inclusive financial development, the absolute value of the estimation coefficient in the northwest is the largest, 2.113, indicating that the inclusive finance has the highest restriction on the income gap in the region, it means that the financial development at Gansu, Qinghai, Ningxia and Xinjiang is still in its beginning, and the financial service is far to benefit undeveloped regions, plus the poverty-stricken areas is large, so to carry out the inclusive finance and alleviate the worsening income gap shall be the focus for economic development. The urbanization and factor productivity rates in the northwest are lower, which has markets differing from that of the east. Based intervention in the economy, governments can fully exert the government's functions, promote the non-public economy, accelerate the urbanization, push factors market to grow and promote the northwest economy, and accordingly the governments' behavior can prevent from expanding the income gap, with a significant effect. Seem as a whole, the restriction effect of inclusive finance on the income gap is high in the west, followed by the middle, and low in the east, consistent with the empirical results of the three economic zones.

Seen from the empirical results in “Table IV” and “Table V”, the inclusive finance in the west plays the highest impact on the income gap. Most in the western are poor rural families, and some even are extremely poor, who are unable to participate in economic activities in time or obtain financial service via proper channels and in the lack of sufficient capital against future risks, resulting in high poverty vulnerability. The inclusive finance may greatly lower the vulnerability of rural households, namely strengthening the ability against future risks while elevating the penetration of financial service. Before any risk, they will need no private lending or other informal financial channels to sell assets, unable to re-invest or re-produce, with additional family debts or lowered family income; in case of worse situations, it will cause families getting rid of poverty to be lost in poverty once again. Accordingly, the inclusive finance can alleviate the poverty and vulnerability in poverty, while narrowing the income gap.

VI. Conclusion

First of all, the article adopts the panel data of 31 provinces and cities in the country during 2008 to 2017, and Hausman tests are conducted to select proper models for regression analysis. Theoretically the inclusive finance is proved to have restricted the expansion of income gap. 31 provinces and cities are regrouped as per geographical location; the inclusive finance is further proved that the inclusive finance can restrict the urban-rural income gap, differing in geography, which shows a Hu Line with obvious segmentation characteristic.

Based on what shown above, the article gives suggestions and thoughts as follows:

It is suggested to accelerate the infrastructure of the inclusive finance. Due to series of problems as vast territory, more population, imbalance in social resources distribution as well as slow technical updates in the country, the financing efficiency remains lower. Local governments are expected to balance urban-rural financial expenditures, increase financial support to rural areas, and build good hardware facilities and technical environment in rural areas, really achieving the “inclusiveness” of the inclusive finance. The perfect integration of Internet technology and financial services can lower the threshold for financial service, elevate the efficiency of financial development, widen the penetration of formal financial service, and lower costs of financial service. While building external environment, it needs to better the education level in rural areas, spread financial knowledge, and guide the people obtain necessary financial service via through formal financial channels.

It is suggested to optimize financial support for the inclusive finance. Well carry out existing policies and formulate policies meeting the needs of financial development in rural areas. Push supporting policies as the case may be in the country, supervise policies and improve policy effects. Strengthen financial support to agriculture, push more financial resources to rural areas, guide social capitals to participate in agricultural PPP projects, and continuously upgrade rural infrastructure and public services. Carry out agricultural insurance with local characteristics, speed up the construction of multi-level agricultural insurance systems, fully exert the positive guiding role of financial funds, and make policies be focused on the "agriculture, farmers and villages".

It is suggested to make full use of Internet technology to solve problems faced by inclusive finance as opaque information and difficult to identify risks. This is a period that the Internet develops at a high speed. The Internet technology can not only solve the problem of fewer formal financial branches, but also reduce hidden costs of financial institutions by means of big data in order to expand the coverage of inclusive finance. In addition, the Internet technology financial risk controls can be integrated, risks can be quantified, customer's credit rating can be judged, perfect the transaction efficiency can be perfect, and the block chain technology can be borrowed to test the data authenticity in order to avoid data fraud and ensure the development of the inclusive finance.

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